UNDERGROUND UTILITIES SHALL BE COMPLETED OR SLEEVING PROVIDED BEFORE ANY LIMEROCK BASE COURSE CONSTRUCTION BEGINS. ALL PAVEMENT SUBGRADE MATERIAL SHALL HAVE AN LBR OF 40 AT 100% MAXIMUM DENSITY AT OPTIMUM MOISTURE PER AASHTO T-180, METHOD "D". THE ENGINEER SHALL SPECIFY THE LOCATION AND NUMBER OF DENSITY TESTS, MINIMUM EVERY 7000 S.F. OF PAVEMENT REQUIRED OR A MIN. OF ONE DENSITY TEST OVER EVERY TRENCH. THE TEST RESULTS SHALL BE ACCEPTED BY

IF THE PLANS INDICATE A STABILIZED SUBBASE IS TO BE USED IT SHALL HAVE A MINIMUM LBR VALUE OF 40 OR A FBV OF 75 AND SHALL BE IN ACCORDANCE WITH F.D.O.T. SECTION 160. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT TO THE ENGINEER FOR APPROVAL THE MATERIAL TO BE USED FOR THE SUBBASE AND THEIR PROPORTIONS, AND LABORATORY LBR, BEFORE DELIVERY TO THE SITE. QUALITY CONTROL LBR'S MAY BE REQUIRED BY THE ENGINEER TO PROVE THE IN PLACE CONDITION.

IF THE PLANS INDICATE A LIMEROCK BASE, THE CONSTRUCTION AND THE MATERIAL FOR THE LIMEROCK BASE SHALL CONFORM TO THE REQUIREMENTS OF F.D.O.T. SPECIFICATIONS, SECTION 200. THE LIMEROCK BASE SHALL BE COMPACTED TO 98% MAXIMUM DENSITY AT OPTIMUM MOISTURE, AASHTO T-180, METHOD "D". THE ENGINEER SHALL SPECIFY THE LOCATION AND NUMBER OF DENSITY TESTS REQUIRED. THE TEST RESULTS SHALL BE ACCEPTED BY THE ENGINEER PRIOR TO APPLICATION OF THE PRIME AND TACK COATS. ALL GRADES SHOWN REFER TO FINISHED ASPHALT PAVEMENT UNLESS OTHERWISE NOTED. FOR STABILIZING AT INTERSECTIONS, TURNOUTS, AND GRADED CONNECTIONS SEE STANDARD INDEX NO. 515. SEE TYPICAL SECTION FOR DEPTH AND LBR. LIMEROCK BASES SHALL BE EIGHT INCHES (8") THICK. LIMEROCK OF THE MIAMI FORMATION SHALL BE USED AND SHALL HAVE A MINIMUM CARBONATE CONTENT OF 70%, 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.

A PRIME COAT SHALL BE USED ON THE FINISHED ROCK BASE AND A TACK COAT BETWEEN THE PRIME AND TACK COAT CONSTRUCTION AND MATERIALS FOR THE PRIME AND TACK COATS SHALL CONFORM TO THE REQUIREMENTS OF F.D.O.T. STANDARD SPECIFICATIONS, SECTION 300. THE PRIME AND TACK COATS SHALL BE APPLIED PRIOR TO CONSTRUCTION OF THE ASPHALT SURFACE COURSE AND SHALL BE SANDED AND ROLLED IN ACCORDANCE WITH SECTION 300.APPLICATION RATES SHALL BE 0.25 GAL/SY FOR LIMEROCK BASE.

ASPHALTIC CONCRETE SURFACE COURSE SHALL BE AS SHOWN ON THE PLANS. THE MATERIALS FOR THE ASPHALT CONCRETE SURFACE COURSE SHALL CONFORM TO THE REQUIREMENTS OF F.D.O.T. STANDARD SPECIFICATIONS, SECTION 331 AND BROWARD COUNTY. SURFACE COURSE SHALL BE 1-1/2" IN ACCORDANCE W/ THE SECTIONS AS SHOWN ON PDD1. RAISE ALL P.C.P. OR P.R.M. SHOWN ON THE PLAT TO FINAL GRADE IF THEY ARE LOCATED IN PAVEMENTS OR CONCRETE. (PER SECTION 8810.7.5 OF THE SUBDIVISION CODE).

A PROCTOR SHALL BE PERFORMED ON ALL SUBGRADE AND LIMEROCK BASE MATERIAL AND SUBSEQUENT CHANGES IN MATERIAL LBR'S, SIEVE ANALYSIS, AND DENSITIES SHALL BE SUBMITTED TO THE CITY. ALL ORGANIC DELETERIOUS MATERIAL SHALL BE REMOVED UNDER ALL PAVEMENT, CONCRETE AND BUILDING.

NOTES FOR FPL CONDUIT INSTALLATION:

EXTEND CONDUIT 5' BEYOND EDGE OF PAVEMENT EITHER SIDE OF ROAD AS REQUIRED BY UTILITY COMPANIES. PLUG AND MARK WITH EMS ALL CONDUIT ENDS. INSTALL PVC AS SHOWN MIN. 36" BELOW GRADE. MAINTAIN MIN. 3' FROM ALL OTHER UTILITIES.

WATER AND SEWER SEPARATION NOTES:

SANITARY SEWERS AND FORCE MAINS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. SANITARY SEWERS AND FORCE MAINS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHENEVER POSSIBLE.

WHERE SANITARY SEWERS AND FORCE MAINS MUST CROSS A WATER MAIN WITH LESS THAN 18 INCHES VERTICAL DISTANCE. THE SEWER SHALL BE DIP (POLYLINED) AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 12 INCHES MUST BE

ALL CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE

WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN 18 INCHES VERTICAL CLEARANCE, THE NEW PIPE SHALL BE ARRANGED TO MEET THE CROSSING

A MINIMUM 10 FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT

THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SANITARY SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP (POLYLINED) WITH A MINIMUM VERTICAL DISTANCE OF 12 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).

ALL DIP SHALL BE CLASS 350 OR HIGHER. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY THE DESIGN.

RECORD DRAWING REQUIREMENTS:

- 1. WATER AND SEWER AS-BUILT DRAWINGS AND DISKETTES SHALL BE SUBMITTED TO THE CITY AFTER COMPLETION OF THE PROJECT, AS-BUILT DRAWINGS SHALL CONSISTS OF: A. FOUR (4) COMPLETED FULL SETS OF BLUEPRINTS, SIGNED AND SEALED. B. ONE (1) FULL COMPLETED SETS OF MYLARS.
- 2. AS-BUILT INFORMATION SHALL INCLUDE:
- A. DISTANCE AND OFFSET FROM REFERENCED POINT FOR WATER MAIN, FITTINGS, VALVES, SERVICE LINE, BLOW OFF, FIRE HYDRANT, ETC.
 B. ELEVATION TOP OF PIPE FOR WATER MAIN AND FORCE MAIN AT 50 FEET INTERVALS, FITTINGS, VALVES AND PIPE AT CROSSINGS.
 C. ELEVATION OF MANHOLE RIMS AND INVERTS.
 D. DISTANCE OF SEWER PIPE BETWEEN MANHOLES.
 E. TYPE OF MATERIALS INSTALLED INCLUDING LOCATIONS OF CHANGES OF MATERIALS.

WATER NOTES: ALL WORKMANSHIP AND MATERIAL SHALL CONFORM TO STANDARDS OF THE CITY OF COCONUT CREEK. NO PHYSICAL CONNECTION OF NEW WATER MAINS TO ACTIVE WATER MAINS SHALL BE MADE UNTIL SUCH TIME THAT THE NEW MAINS ARE CONFIRMED TO BE BACTERIOLOGICALLY SAFE AND THE HEALTH DEPARTMENT RELEASE HAS BEEN OBTAINED. TEMPORARY CONNECTIONS OF NEW MAINS TO ACTIVE MAINS FOR THE PURPOSE OF FILLING AND FLUSHING SHALL BE MADE BY A METHOD DEEMED ACCEPTABLE TO THE CITY OF COCONUT CREEK.

ALL WATER MAINS SHALL BE DUCTILE IRON PIP AND DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI AND HAVE COMPRESSION TYPE BELL AND SPIGOT JOINTS. THE WATER SYSTEM SHALL BE HYDROSTATICALLY PRESSURE TESTED AND DISINFECTED PER AWWA/ANSI C651/99 AND TESTED FOR A PERIOD OF 2 HOURS AT NOT LESS THAN 150 PSI IN ACCORDANCE WITH ANSI/AWWA STANDARD C600-99 WITH AN ALLOWABLE LEAKAGE AS DETERMINED BY THE FOLLOWING FORMULA:

L = ALLOWABLE LEAKAGE IN GALLONS/HOUR S = PIPE LENGTH IN FEET D = NOMINAL DIAMETER OF PIPE IN INCHES P = AVERAGE TEST PRESSURE IN PSI

TEST PRESSURE SHALL NOT VARY MORE THAN 5 P.S.I. THROUGHOUT THE TEST. THRUST BLOCKS AS SHOWN ON THE DETAIL SHEETS SHALL BE PROVIDED AT ALL BENDS UNLESS NOTED OTHERWISE ON PLANS. IF RESTRAINT JOINT PIPE IS SPECIFIED ON THE PLANS IT SHALL BE INSTALLED TO MEET THE REQUIREMENTS OF THE PIPE MANUFACTURER AND THE CITY OF COCONUT CREEK. MAXIMUM TEST LENGTH SHALL BE LESS THEN OR EQUAL TO 2000 FT.

 $L = SDP^{5}/133,200$

ALL PIPE SHALL BE SUITABLE FOR USE AS A PRESSURE CONDUIT. PROVISIONS MUST BE MADE FOR EXPANSION AND CONTRACTION AT EACH JOINT WITH AN ELASTOMERIC RING. THE BELL SHALL CONSIST OF AN INTEGRAL WALL SECTION WITH AN ELASTOMERIC RING WHICH MEETS THE REQUIREMENTS OF ASTM F-477 STANDARD SPECIFICATIONS FOR ELASTOMERIC SEALS (GASKETS FOR JOINTING PLASTIC PIPE). THE WALL THICKNESS IN THE BELL SECTION SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3139 DIP PIPE SHALL BE DELIVERED TO THE JOB SITE FROM THE FACTORY AND STORED AT THE JOB SITE IN PALLATIZED UNITS OR BUNDLES TO PREVENT UNNECESSARY DEFLECTION PRIOR TO INSTALLATION. EACH PALLATIZED UNIT SHALL BE SIZED TO LIMIT THE STACKING OF PIPE TO NOT MORE THAN SIXTY (60) INCHES HIGH OR AS APPROVED BY THE ENGINEER.

CARE SHALL BE TAKEN DURING THE TRANSPORTING OF THE PIPE TO INSURE THAT THE BINDING AND TIE DOWN METHODS DO NOT DAMAGE OR DEFLECT THE PIPE IN ANY MANNER. PIPE BENT, DEFLECTED, OR OTHERWISE DAMAGED DURING SHIPPING WILL BE REJECTED. DIP MAINS SHALL BE LAID WITH A MINIMUM OF 30" CLEAR COVER.

FITTINGS SHALL BE DUCTILE IRON PRESSURE CLASS 350 OR THICKNESS CLASS 51THROUGH 12" AND CLASS 250 IN SIZES 16" AND LARGER. ALL FITTINGS SHALL BE CEMENT LINED AND SEALED THE SAME AS PIPE IN ACCORDANCE WITH AWWA/ANSI C110/A-21-10-98. JOINTS RESTRAINED BY EBBA IRON SERIES 2800 HARNESS FOR BELL AND SPIGOT PVC PIPE AND FITTINGS SHALL BE MECHANICAL OR RUBBER GASKET (EITHER ON SPIGOT OR IN BELL) COMPRESSION TYPE AS SPECIFIED IN ACCORDANCE WITH AWWA/ANSI STANDARD C111/A21.11-00. SPECIAL FITTINGS

ALL WATER MAINS SHALL HAVE CONTINUOUS DETECTOR TAPE 18 INCHES ABOVE MAIN. DETECTOR TAPE SHALL HAVE BLUE SIDE-UP. A 14 GUAGE MULTI STRAND WIRE SHALL BE ATTACHED TO ALL NON-CONDUCTIVE WATER MAIN TO FACILITATE FUTURE LOCATION. AN EXTRA 4 FEET OF WIRE SHALL BE PROVIDED AT VALVES, BLOWOFFS, FIRE HYDRANTS

DUCTILE IRON PIPE SHALL BE PRESSURE CLASS 350 OR THICKNESS CLASS 51 AND SHALL BE CEMENT LINED AND SEALCOATED WITH ASPHALT OR COAL TAR EPOXY IN ACCORDANCE WITH AWWA/ANSI STANDARD C151/A21.51-96. ALL GASKETS TO BE NEOPRENE. WATER MAINS SHALL BE LAID WITH A MINIMUM 30" CLEAR COVER. DUCTILE IRON FITTINGS SHALL BE CLASS 350 THROUGH 12" AND CLASS 250 IN SIZES 16" AND LARGER. ALL FITTINGS SHALL BE CEMENT LINED AND SEALCOATED THE SAME AS THE PIPE IN ACCORDANCE WITH C104/A21-4-95 & C153/A21-53-00.

DIP WATER MAINS REQUIRE A 14 GUAGE MULTI-STRAND WIRE TO BE STRAPPED TO THE PIPE. THE WIRE SHALL BE BROUGHT UP AT ALL VALVES, HYDRANTS, BLOWOFFS, ETC. LEAVING AN EXCESS OF 4 FT. OF WIRE COILED AT EACH VALVE. AT THE PRESSURE TESTING OF THE MAINS, A CONTINUITY TEST SHALL BE PERFORMED BY THE CONTRACTOR. THE TEST IS TO BE WITNESSED AND APPROVED BY BOTH THE CITY AND THE ENGINEER. ALL WATER MAINS SHALL BE BEDDED AND BACKFILLED PER STANDARD TRENCH DETAIL. D.I.P. NOT TO BE DEFLECTED MORE THAN ONE-HALF OF MANUFACTURER'S RECOMMENDATION.

BACTERILOGICAL TESTING SHALL BE IN ACCORDANCE WITH AWWA C-651-99. DISTANCE BETWEEN SAMPLE POINTS SHALL NOT EXCEED 1000 ft.

POLYETHYENE ENCASEMENT/WRAP SHALL BE INSTALLED ON ALL IRON PIPES INCLUDING VALVES, FITTINGS, SLEEVES, HYDRANTS, ETC. POLYWRAP SHALL BE INSTALLED IN ACCORDANCE WITH THE MINIMUM ANSI/AWWA C105/A21.5—99 STANDARDS. DUCTILE IRON WATER MAIN SEALCOAT SHALL BE COAL TAR EPOXY OR ASPHALT. JOINTS SHALL BE PUSH-ON DUCTILE IRON AND RESTAINED USING TR-FLEX U.S. PIPE OR FLEX RING BY AMERICAN PIPE.

CORP STOPS FOR 2" OR LESS TO BE BRASS ALLOY TYPE ASTM B-62. ALL FIRE LINES TO BE TEST FOR 2 HRS. A 200 PSI.

WATER SERVICE LINES NOTES: WATER SERVICES SHALL BE POLYETHYLENE TUBING (PE 3408) COMPLYING WITH APPLICABLE REQUIREMENTS FOR PE, AWWA C902-88 HIGH MODECULAR WEIGHT PLASTIC MATERIAL ASTM C-2666, 250 PSI RATING (CTS-OD) SDR-9. JOINTS FOR TUBING SHALL BE OF THE COMPRESSION TYPE UTILIZING A TOTALLY CONFINED GRIP SEAL AND COUPLING NUT. STAINLESS STEEL TUBE STIFFENER INSERTS SHALL ALSO BE USED FOR TUBING SERVICES.

SERVICE LINES SHALL BE MARKED WITH 2"x4" POST, PAINTED BLUE. ALL WATER SERVICES SHALL BE BEDDED AND BACKFILLED PER STANDARD TRENCH DETAIL. PIPE DEFLECTION SHALL BE NO MORE THAN ONE HALF OF THE MANUFACTURE'S

MINIMUM COVER SHALL BE 24".

ALL METER VALVES TO BE BRONZE, A.S.T.M. B-62, LATEST REVISION.

ALL WATER SERVICE LINES UNDER PAVED AREAS SHALL BE SLEEVED IN SCHEDULE 40 PVC. ALL WATER SERVICE LINES TO BE TESTED AT 150 P.S.I. WITH NO VISIBLE LEAKAGE.

<u>SERVICE FITTINGS NOTES:</u>

METER VALVES (ASTM B-62 LÄTEST) SHALL BE FORD ANGLE STOPS MODEL #KV43-342W FOR SINGLE SERVICES AND FORD MODEL #UV63-42W FOR DOUBLE SERVICES OR APPROVED EQUAL. CURB STOPS SHALL BE OF THE INVERTED KEY TYPE WITH TEE-HEAD SHUT OFF. CURB STOPS SHALL BE MADE OF BRASS ALLOY IN ACCORDANCE WITH ASTM SPECIFICATIONS B62 LATEST REVISION. METER VALVES AND CORPORATION STOPS (FORD BALL CORP. NO. FC 202) SHALL BE OF BRONZE CONSTRUCTION IN ACCORDANCE WITH ASTM SPECIFICATIONS B62-82A WITH EPOXY BRONZE CONSTRUCTION IN ACCURDANCE WITH ASIM SECURIOR BY FORD. INLET THREAD FOR METER VALVES AND CURB STOPS SHALL BE AWWA TAPER THREAD IN ALL SIZES IN ACCORDANCE WITH ANSI/AWWA STANDARD C800-89. OUTLET CONNECTIONS SHALL HAVE A COMPRESSION TYPE FITTING SAME AS VALVES.

FIRE HYDRANTS: ALL FIRE HYDRANTS SHALL COMPLY WITH AWWA/ANSI STANDARD C502-94 AND THE FOLLOWING DESIGN STANDARDS: THE WATER DISTRIBUTION MAINS AND FIRE HYDRANTS SHALL BE INSTALLED, ACCEPTED, COMPLETED AND IN SERVICE PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE FIRE HYDRANTS SHALL BE OF THE COMPRESSION TYPE, OPENING AGAINST THE PRESSURE AND CLOSING WITH THE LINE PRESSURE WITH A 5" VALVE OPENING. THE HYDRANT SHALL BE EQUIPPED WITH 2 - 2 1/2 " HOSE NOZZLES AND 1 - 4 1/2 " PUMPER

FIRE HYDRANTS SHALL BE FURNISHED WITH A SEALED OIL OR GREASE RESERVOIR LOCATED IN THE BONNET SO THAT ALL THREADED AND BEARING SURFACES ARE AUTOMATICALLY LUBRICATED WHEN THE HYDRANT IS OPERATED. THE HYDRANT WILL BE DESIGNED FOR DISASSEMBLY BY USE OF A SHORT DISASSEMBLY WRENCH OR THE HYDRANT SHOE SHALL HAINTEGRAL CAST TIE BACK LUGS ON THE MAIN VALVE TO PERMIT THE HYDRANT SHOE SEMBLY WE SHALL BE DESIGNED FOR THE HYDRANT SHOE SHALL HAINTEGRAL CAST TIE BACK LUGS ON THE MAIN VALVE CAST TO PERMIT HYDRANT SHOE SHALL BY DISASSEMBLY OF DISASSEMBLY BY AND VALVE SEAT TO BE REMOVED WITHOUT DIGGING EARTH OR DISASSEMBLING THE HYDRAN

FIRE HYDRANTS SHALL BE FURNISHED WITH A BREAKABLE FEATURE THAT WILL BREAK CLEANLY UPON IMPACT. THIS SHALL CONSIST OF A TWO PART BREAKABLE SAFETY FLANGE WITH A BREAKABLE STEM COUPLING. THE UPPER AND LOWER BARRELS SHALL BE FLUTED AND RIBBED ABOVE AND BELOW THE SAFETY FLANGE OR HAVE AN EXTRA STRENGTH LOWER

THE FIRE HYDRANT INTERNAL VALVE SHALL BE 5 1/4 "MINIMUM. THE PENTAGONAL OPERATING NUTS AND THE CAP NUTS SHALL BE 1 1/2 "POINT TO FLAT. DRAIN VALVE OUTLETS FOR THE HYDRANTS SHALL BE PLUGGED OR OMITTED. THE HYDRANTS SHALL OPEN COUNTER CLOCKWISE AND THE DIRECTION OF OPENING SHALL BE CAST ON THE TOP. THE BURY LENGTH, MEASURED FROM THE BOTTOM OF THE CONNECTING PIPE TO THE GROUND LINE AT THE HYDRANT SHALL BE THREE FEET SIX INCHES (42") MINIMUM OR AS REQUIRED BY

THE HYDRANT SHALL BE EQUIPPED WITH A 6" MINIMUM MECHANICAL JOINT BASE INLET UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. FIRE HYDRANTS SHALL BE AMERICAN DARLING OR CLOW MEDALLION

GATE VALVES:

ALL GATE VALVES MUST COMPLY WITH AWWA C500-93. GATE VALVES 4" AND LARGER SHALL BE MECHANICAL JOINT TYPE, COMPLY WITH AWWA/ANSI STANDARD C509-94, AND HAVE THE FOLLOWING DESIGN STANDARDS: MECHANICAL JOINTS SHALL CONFORM TO AWWA/ANSI C111/A21.11-00 ALL GATE VALVES ARE TO BE IRON BODY, BRONZE MOUNTED, DOUBLE DISK, NON-RISING STEM, RESILIENT SEAT TYPE, OPENING LEFT (COUNTER CLOCKWISE). THE INTERIOR LINING SHALL BE FUSION BONDED EPOXY ACCORDING TO AWWA 550-90 AND AN EXTERIOR EPOXY GATE VALVES 4"-12" SHALL HAVE A MAXIMUM WORKING PRESSURE OF 200 PSI AND BE TESTED AT 400 PSI. GATE VALVES SHALL BE RESILIENT SEATED MUELLER, AMERICAN DARLING, CLOW, OR M&H RESILIENT GATE VALVE, WITH RESTRAINT JOINTS. GATE VALVES UNDER 4" IN SIZE SHALL BE BRONZE GATE VALVES CONFORMING TO M.S.S. STANDARD PRACTICE SP-37. THEY SHALL BE DOUBLE DISC, NON-RISING STEM, OPEN LEFT (COUNTER CLOCKWISE) WITH OPERATING WHEEL. PEWTER AND POT METAL OPERATING WHEELS SHALL NOT BE PERMITTED. GATE VALVES SHALL MEET AWWA C500-93 STANDARDS. VALVE BOXES SHALL BE CAST IRON EXTENSION TYPE WITH NOT LESS THAN 5 1/4 "DIAMETER SHAFT AND WITH COVERS MARKED "WATER", PAINTED BLUE. USF 7500 OR APPROVED EQUAL. GATE VALVES 16" AND LARGER WILL BE SUBSTITUTED WITH BUTTERFLY VALVES AS MANUFACTURED MUELLER, AMERICAN DARLING OR APPROVED EQUAL. BUTTERFLY VALVES ARE TO BE CAST OR DUCTILE IRON BODY; ALLOY CAST IRON OR DUCTILE IRON DISC; BODY MOUNTED ADJUSTABLE SEAT; ONE-PIECE STAINLESS STEEL SHAFT; SHORT OR LONG BODY TYPE; WITH THE VALVE CLASS, SHAFT SIZE AND OTHER SPECIAL REQUIREMENTS SELECTED IN ACCORDANCE WITH THE SPECIFIC DESIGN; AND ARE TO COMPLY WITH THE PROVISIONS OF AWWA C504-00, "RUBBER SEATED BUTTERFLY WALVES"

VALVE OPERATION IS TO BE APPROVED GEAR ACTUATORS, WITH SEALED ENCLOSURES FOR BURIED OR SUBMERGED SERVICE. POSITION INDICATORS WILL BE FURNISHED AS REQUIRED. UNITS ARE TO BE EQUIPPED WITH 2-INCH ACTUATING NUTS, CAST IRON HANDWHEELS OR CHAIN OPERATORS, WITH GALVANIZED STEEL CHAINS, AS APPROPRIATE FOR THE INSTALLATION. APPURTENANCES ARE TO BE FURNISHED BY THE VALVE MANUFACTURER.

SANITARY SEWER: UNLESS OTHERWISE NOTED OR APPROVED, ALL GRAVITY MAINS AND SERVICES SHALL BE UNPLASTICIZED POLYVINYL CHLORIDE (PVC) NONPRESSURE PIPE CONFORMING TO ASTM D3034 AND SDR 35 WITH INTEGRAL WALL BELL AND SPIGOT JOINTS FOR PUSH-ON RUBBER GASKET TYPE JOINT SEALS CONFORMING TO ASTM D1869. PVC FITTINGS SHALL BE OF MONOLITHIC CONSTRUCTION OF THE TYPE SPECIFIED BY THE MANUFACTURER OF THE PIPE BEING USED. NO SOLVENT WELDS OR THREADED JOINTS WILL BE PERMITTED. ALL JOINTS SHALL BE COMPRESSION GASKET TYPE. THE JOINING OF PIPE ON THE JOB SHALL BE DONE IN STRICT ACCORDANCE WITH THE PIPE MANUFACTURER'S INSTRUCTIONS AND SHALL BE DONE ENTIRELY IN THE TRENCH UNLESS OTHERWISE DIRECTED BY THE ENGINEER. CONNECTION OF PVC PIPE TO MANHOLES SHALL BE MADE WITH "KOR-N-SEAL" MANHOLE COUPLINGS CORRESPONDING TO THE SIZE AND TYPE OF SEWER PIPE OR OTHER ADAPTERS AS MAY BE APPROVED BY THE UTILITY. INFLUENT AND EFFLUENT SEWERS SHALL BE GROUTED IN PLACE USING A TYPE II WATER-PROOF, EXPANDING GROUT ACCEPTABLE TO THE ENGINEER. ALL OPENINGS AND JOINTS SHALL BE SEALED WATERTIGHT. REFER TO GENERAL NOTES FOR NON SHRINK GROUT.

LIFT HOLES THROUGH PRECAST STRUCTURES ARE NOT PERMITTED. A FLOW CHANNEL SHALL BE CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM, REFER OUTSIDE DROP CONNECTIONS WILL BE REQUIRED WHEN THE VERTICAL DISTANCE BETWEEN PIPE INVERTS EXCEEDS TWO FEET (2'). DROP CONNECTIONS, WHERE REQUIRED, SHALL BE CAST MONOLITHICALLY WITH THE MANHOLE ELEMENTS AS SHOWN ON DETAILS. THE LID AND FRAME SHALL BE CAST OF CLOSE—GROUND GREY IRON CONFORMING TO ASTM A—48, CLASS 30 AND SHALL BE OF UNIFORM QUALITY, FREE OF BLOW HOLES, POROSITY, CRACKS, AND OTHER OBVIOUS VISUAL DEFECTS. THE COMBINED WEIGHT OF THE FRAME AND LID SHALL NOT BE LESS THAN 420 POUNDS, AND THE LID SHALL WEIGHT A MINIMUM OF 160 POUNDS. THE SEATING SURFACES BETWEEN FRAMES AND COVERS SHALL BE MACHINED TO FIT TRUE. NO PLUGGING OR FILLING WILL BE ALLOWED. CASTING PATTERNS SHALL CONFORM TO THOSE DESIGNATED BY THE CITY.

THE LID SHALL HAVE THE WORDS "SANITARY SEWER" CAST IN ALL MANHOLE COVERS. CASTINGS SHALL BE CLEANED AND COATED WITH A COAL TAR PITCH VARNISH WHICH IS TOUGH WHEN COLD BUT NOT TACKY OR BRITTLE. PICK TYPE LIFTING HOLES WILL BE CAST INTO LIDS, BUT SHALL NOT GO CLEAR THROUGH THE LID. MINIMUM COVER ON SANITARY SEWER SHALL BE 36" TO TOP OF PIPE

ALL LIDS SHALL BE PROVIDED WITH WATERTIGHT POLYETHYLENE MANHOLE INSERTS AS APPROVED BY THE COCONUT CREEK UTILITIES DEPARTMENT. INSIDE SURFACES OF MANHOLES TO BE TREATED WITH TWO COATS KOPPERS BITUMASTIC 300-M OR EQUAL, MINIMUM DRY THICKNESS 16 MILS. MANHOLES SHALL BE CURED TWENTY-ONE (21) DAYS BEFORE COATING. MANHOLES SHALL BE PAINTED AT FACTORY ON THE OUTSIDE PRIOR TO SITE DELIVERY. FIRST COAT TO BE RED, SECOND COAT TO BE

UPON COMPLETION OF THE WORK A LAMPING INSPECTION SHALL BE MADE OF THE COMPLETED SYSTEM ALONG WITH AN INFILTRATION AND EXFILTRATION TEST. AFTER ALL TESTING HAS BEEN COMPLETED, THE DEVELOPER WILL MAKE A TELEVISION INSPECTION AT HIS EXPENSE OR MAY CHOOSE OUTSIDE AN COMPANY BEFORE THE LINES ARE ACCEPTED FOR USE AND THE EXTERIOR OF ALL SANITARY SEWER MANHOLES SHALL BE WATERPROOFED. MANHOLE JOINTS WILL BE SEALED WITH RAMNEK OR APPROVED EQUAL AND ANTI-HYDRO

SANITARY SEWER GRAVITY MAINS AND SERVICES SHALL BE BEDDED AND BACKFILLED PER STANDARD TRENCH DETAIL. WORKMANSHIP AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF PRIOR TO THE RELEASE OF THE ONE YEAR MAINTENANCE BOND, ALL SEWER LINE SHALL BE

CITY SHALL INSPECT INSIDE OF MANHOLE AFTER EACH APPLICATION/COAT OF PAINT

EARTHWORK:

THE CONTRACTOR'S BID FOR EARTHWORK SHALL INCLUDE THE EXCAVATION, REMOVAL, AND DISPOSAL OF ALL MATERIALS, OF WHATEVER CHARACTER WITHIN THE LIMITS OF CONSTRUCTION. ALL TOPSOIL THAT IS SUITABLE FOR LANDSCAPING OR GRASSING OPERATIONS MAY BE STOCKPILED NEARBY FOR SUCH USE IF APPROVED BY OWNER. WHERE MUCK, ROCK, CLAY, OR OTHER MATERIAL WITHIN THE LIMITS OF CONSTRUCTION IS UNSUITABLE IN ITS ORIGINAL POSITION, THE CONTRACTOR SHALL EXCAVATE SUCH MATERIAL IN ITS ENTIRETY AND BACKFILL WITH SUITABLE MATERIAL WHICH SHALL BE COMPACTED IN PLACE TO CONFORM TO THE REQUIRED GRADES AND SECTIONS AS SHOWN ON THE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE UNSUITABLE MATERIAL PRESENT ON—SITE AND INCLUDE THE REMOVAL AND REPLACEMENT OF SAME IN HIS BID PRICE. THE CONTRACTOR SHALL MAKE HIS OWN ESTIMATE ON THE VOLUME OF MATERIAL ACTUALLY REQUIRED TO OBTAIN THE CROSS SECTIONS OR GRADES AS SHOWN ON THE PLANS. THE ENTIRE WIDTH OF THE RIGHT-OF-WAY SHALL BE COMPLETELY DEMUCKED BEFORE CONSTRUCTION BEGINS. NO MATERIAL OF CLASSES A-5, A-7, OR A-8 SHALL BE ALLOWED. ALL MATERIAL SUPPORTING THE ROADWAY SHALL BE STABILIZED TO HAVE A MINIMUM LBR OF 40 SUBGRADES SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY PER AASHTO T-180. WHEREVER EXCAVATIONS FOR UTILITIES ARE MADE BELOW THE GRADES INDICATED ON THE PLANS, GRANULAR MATERIAL FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL SHALL BE USED TO RESTORE THE AREA TO THE PROPER GRADE, AND SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE PER AASHTO T-180. AREAS TO BE COMPACTED SHALL BE MOISTENED AND COMPACTED BY EITHER ROLLING, TAMPING, OR ANY OTHER METHOD APPROVED BY THE ENGINEER, IN ORDER TO OBTAIN THE DESIRED DENSITY. THE ENGINEER SHALL INSPECT ALL COMPACTED AREAS PRIOR TO FURTHER CONSTRUCTION OPERATIONS. PRIOR TO BACKFILLING AROUND STRUCTURES THE AREAS SHALL BE CLEAN OF ALL TRASH AND DEBRIS OF ANY DESCRIPTION, UNLESS DIRECTED BY THE ENGINEER TO BE LEFT IN PLACE, SUCH AS SHEETING AND BRACING. BACKFILL SHALL BE HAND TAMPED IN 12" THE EXISTING ELEVATIONS SHOWN HEREON ARE FOR THE PURPOSE OF INDICATING THE GROUND ELEVATION ONLY AT THE POSITION SHOWN AND IN NO WAY SHOULD INDICATE ELEVATION AT ANY POINT OTHER THAN THAT SHOWN. ALL ORGANIC AND DELETERIOUS MATERIALS SHALL BE REMOVED UNDER ALL PAVEMENT, CONCRETE AND BUILDING.

DRAINAGE NOTES:

DRAINAGE PIPES SHALL BE REINFORCED CONCRETE PIPE REINFORCED CONCRETE PIPE SHALL MEET THE REQUIREMENTS OF F.D.O.T. STANDARD SPECIFICATIONS SECTION 941. CONCRETE PIPE SHALL BE CLASS III OR AS SHOWN ON THE PLANS. PIPE GASKETS SHALL MEET F.D.O.T. STANDARD SPECIFICATIONS SECTION 942. PRIOR TO BACKFILLING THE DRAINAGE SYSTEM, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE CITY OF COCONUT CREEK FOR INSPECTION. BOTTOM OF ALL INLETS SHALL BE 18" BELOW THE LOWEST INLET INVERT OR MINIMUM 30" FOR P.R.B..

CORRUGATED ALUMINUM PIPE SHALL PIPE MEET THE REQUIREMENTS OF AASHTO M-196. CORRUGATED ALUMINUM PIPE SHALL BE FABRICATED WITH HELICAL CORRUGATIONS WITH A MINIMUM OF TWO ANNULAR CORRUGATIONS FORMED INTO EACH END OF EACH PIPE TO ACCOMMODATE A COUPLING BAND. REFER TO TABLE 1, SECTION 945 FOR THICKNESS OF

CATCH BASINS/INLETS/JUNCTION BOXES SHALL NOT BE LOCATED IN DRIVEWAYS.

DRAINAGE STRUCTURES SHALL BE CLEANED PRIOR TO ACCEPTANCE BY THE CITY.

GENERAL NOTES

ALL CONSTRUCTION, MATERIAL, INSTALLATION, AND TESTING SHALL BE IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION TOGETHER WITH THE CITY'S MINIMUM DESIGN STANDARDS AND SPECIFICATIONS AS APPLICABLE. IF F.D.O.T. MATERIAL IS SPECIFIED, IT SHALL IMPLY THAT THEIR CONSTRUCTION PROCEDURES SHALL BE FOLLOWED. ALL WORK WITHIN WILES ROAD R/W TO BE IN ACCORDANCE W/ BROWARD COUNTY ENGINERING MINIMUM STANDARDS. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION.
CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER PROPERTY AND SHALL BE
RESPONSIBLE FOR ANY DAMAGES INCURRED DURING CONSTRUCTION AND SHALL REPAIR SAID THE ENGINEER WILL HOLD A PRE-CONSTRUCTION MEETING PRIOR TO THE START OF ANY CONSTRUCTION AND INCLUDE A REPRESENTATIVE FROM THE RESPECTIVE ENGINEERING AND UTILITY DEPARTMENTS, THE CONTRACTOR, OWNER, AND OTHER APPLICABLE AGENCIES. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS PRIOR TO CONSTRUCTION. THE LOCATIONS OF THE EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY; THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IF "OTHER" UTILITIES (NOT SHOWN ON THE PLANS) EXIST WITHIN THE AREA OF CONSTRUCTION. SHOULD THERE BE "OTHER" UTILITIES, THE CONTRACTOR SHALL NOTIFY THE RESPECTIVE UTILITY OWNERS TO RESOLVE UTILITY CONFLICTS AND UTILITY ADJUSTMENTS, AS REQUIRED. ALL DEVIATIONS FROM PLANS ARE TO BE APPROVED BY ENGINEER IN WRITING PRIOR TO CONSTRUCTION AND FOR ALL INSPECTIONS AND TESTING. THE ENGINEER MUST BE GIVEN A MINIMUM 48 HOURS NOTICE PRIOR TO START OF CONSTRUCTION AND FOR ALL INSPECTIONS AND TESTING.

COMPLETE AS—BUILT INFORMATION RELATIVE TO LOCATIONS AND ELEVATIONS OF VALVES, SERVICES, FITTINGS, LENGTHS OF PIPE, TOP OF WATER MAIN ELEVATIONS, AND THE LIKE SHALL BE ACCURATELY RECORDED AND SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE WORK. ALL INFORMATION SHALL BE TAKEN BY A PROFESSIONAL SURVEYOR AND MAPPER AND SHOWN ON A SEALED AS—BUILT PLAN ALONG WITH AN AUTOCAD DISK. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES AND IMPROVEMENTS FROM DAMAGES, DISRUPTION OF SERVICE, OR DESTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY, AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE

WALL REINFORCEMENT AND THICKNESS FOR PRECAST STRUCTURES SHALL BE IN ACCORDANCE WITH ASTM C478. MINIMUM WALL THICKNESS SHALL BE 8" AND A MINIMUM 6" BASE EXTENSION OUTSIDE OF MANHOLE WALL.

MORTAR USED TO SEAL THE PIPE INTO THE WALLS OF THE PRECAST STRUCTURES WILL BE NON-SHRINK GROUT AND WILL NOT CAUSE LEAKAGE IN OR OUT OF THE STRUCTURES, THE MAXIMUM OPENING THROUGH WALLS FOR PIPES SHALL BE THE MAXIMUM REQUIRED OUTSIDE DIAMETER BLUE 6" NO PIPE SHALL BE COVERED UNTIL INSPECTED AND APPROVED BY THE ENGINEER AND OTHER APPLICABLE AUTHORITIES.

ALL PIPE SHALL BE LAID IN A DRY TRENCH; ALL MUCK OR OTHER UNSTABLE MATERIAL ENCOUNTERED IN TRENCH BOTTOM SHALL BE REMOVED AND BACKFILLED WITH GRANULAR MATERIAL, COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99,

SHOP DRAWINGS FOR ALL STRUCTURES AND MATERIALS TO BE USED ON THE PROJECT SHALL BE SUBMITTED TO THE DESIGN ENGINEER AND THE RESPECTIVE ENGINEER AND UTILITY DEPARTMENTS FOR APPROVAL PRIOR TO CONSTRUCTION OR INSTALLATION. ALL ELEVATIONS REFER TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929. CONTRACTOR TO CONTACT SUNSHINE STATE ONE-CALL OFFICE (1-800-432-4770) AND ALL LOCAL UTILITY COMPANIES FOR UNDERGROUND UTILITY LOCATIONS PRIOR TO

EXISTING SECTION CORNERS AND OTHER LAND MARKERS OR MONUMENTS LOCATED WITHIN PROPOSED CONSTRUCTION ARE TO BE MAINTAINED BY THE CONTRACTOR AND/OR RESET AFTER CONSTRUCTION UNDER CERTIFICATION BY A PROFESSIONAL SURVEYOR AND MAPPER. CONTRACTOR IS TO PREVENT INTRODUCTION OF DEBRIS OR DIRT INTO EXISTING STORM DRAIN AND/OR SANITARY SYSTEM AS A RESULT OF CONSTRUCTION ACTIVITIES. ALL LINES AND STRUCTURES SHALL BE CLEANED PRIOR TO FINAL INSPECTION AND ACCEPTANCE. LOCATION OF DRAINAGE AND SANITARY SEWER STRUCTURES GOVERN, ADJUST PIPE LENGTHS AS REQUIRED. THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE USED AS THE STANDARD FOR THE SIGNAGE AND PAVEMENT MARKING REQUIREMENTS OF THE PROJECT.

ALL UNDERGROUND UTILITY MAINS AND STRUCTURES, FOR WATER, SEWER, GAS, IRRIGATION, DRAINAGE, TELEPHONE, POWER, CABLE TV, AND OTHERS MUST BE INSTALLED, INSPECTED, TESTED AND APPROVED PRIOR TO ANY SUBGRADE CONSTRUCTION. ALL PERMANENT GRASS AREAS ARE TO RECEIVE A 4" MUCK BLANKET OR TOPSOIL TREATMENT. A MINIMUM 10' SEPARATION BETWEEN ALL UTILITIES SHALL BE MAINTAINED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE SAFETY PRECAUTIONS DURING EXCAVATION AND TRENCHING OPERATIONS AS REQUIRED BY THE "TRENCH SAFETY ACT" AND THE O.S.H.A. PART "P". THE CONTRACTOR'S MATERIALS AND TEST CERTIFICATE FOR UNDERGROUND PIPING WILL BE SUBMITTED TO THE CITY OF COCONUT CREEK AND THE ENGINEER. ALL MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE AND SHALL REST ON A FIRM CAREFULLY GRADED SUBGRADE WHICH SHALL PROVIDE UNIFORM BEARING UNDER BASE. ALL JOINTS SHALL BE FURNISHED WATERTIGHT.

ALL ELEVATIONS ARE RELATIVE TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 CONTRACTOR TO PROTECT BENCH MARKS AT ALL TIMES.

INSPECTIONS:

THE CONTRACTOR SHALL NOTIFY THE CITY OF COCONUT CREEK (973-6786) AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION AND PRIOR TO THE INSPECTION OF THE FOLLOWING ITEMS:

CLEARING AND FILLING.

STORM DRAINAGE SYSTEM LAMPING.

SUBGRADE (PROCTORS AND DENSITY TESTS SHALL BE APPROVED PRIOR TO THE PLACEMENT OF LIMEROCK).

LIMEROCK BASE (PROCTORS AND DENSITY TESTS AND AS-BUILTS MUST BE SUBMITTED WITH A CERTIFIED LETTER FROM THE ENGINEER OF RECORD INDICATING THEY CONFORM WITH THE APPROVED PLAN PRIOR TO THE PLACEMENT OF ASPHALT.

ASPHALTIC CONCRETE.

THE CONTRACTOR SHALL CONTACT THE ABOVE AGENCIES FOR INSPECTIONS OF

PRESSURE TESTING 2. PIGGING/FLUSHING 3. TIE—INS/DISINFECTION/SWABBING/VISUAL B. WASTEWATER:

1. PRESSURE TESTING/FLUSHING 2. SANITARY SEWER LAMPING 3. MANHOLE PAINTING 4. LIFT STATION START-UPS, IF APPLICIABLE

. SUBGRADE INSPECTIONS . BASEROCK INSPECTIONS . DENSITIES

D. STORM SEWER: 1. LAMPING
2. STRUCTURE INSPECTIONS

E. WALK THROUGH: 1. PRELIMINARY/FINAL

C. ROADWAYS:

FOR WORK WITHIN LYONS ROAD RIGHT-OF-WAY CONTRACTOR TO CONTACT BROWARD COUNTY ENGINEERING 577-4600 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION AND PRIOR TO ALL MATERIALS AND WORKMANSHIP WITHIN LYONS ROAD RIGHT OF WAY TO BE PER BROWARD COUNTY MINIMUM STANDARDS

En ech S

DATE:

NOV. 2001

SCALE: N.T.S.

DESIGNED BY: M.G.

DRAWN BY:

JOB NUMBER 01-2486

SHEET No. GN1

SEAL TECHNIL Stiles Constitution