

TOWNGATE - VILLAGE 7

CITY OF PEMBROKE PINES, BROWARD COUNTY, FLORIDA

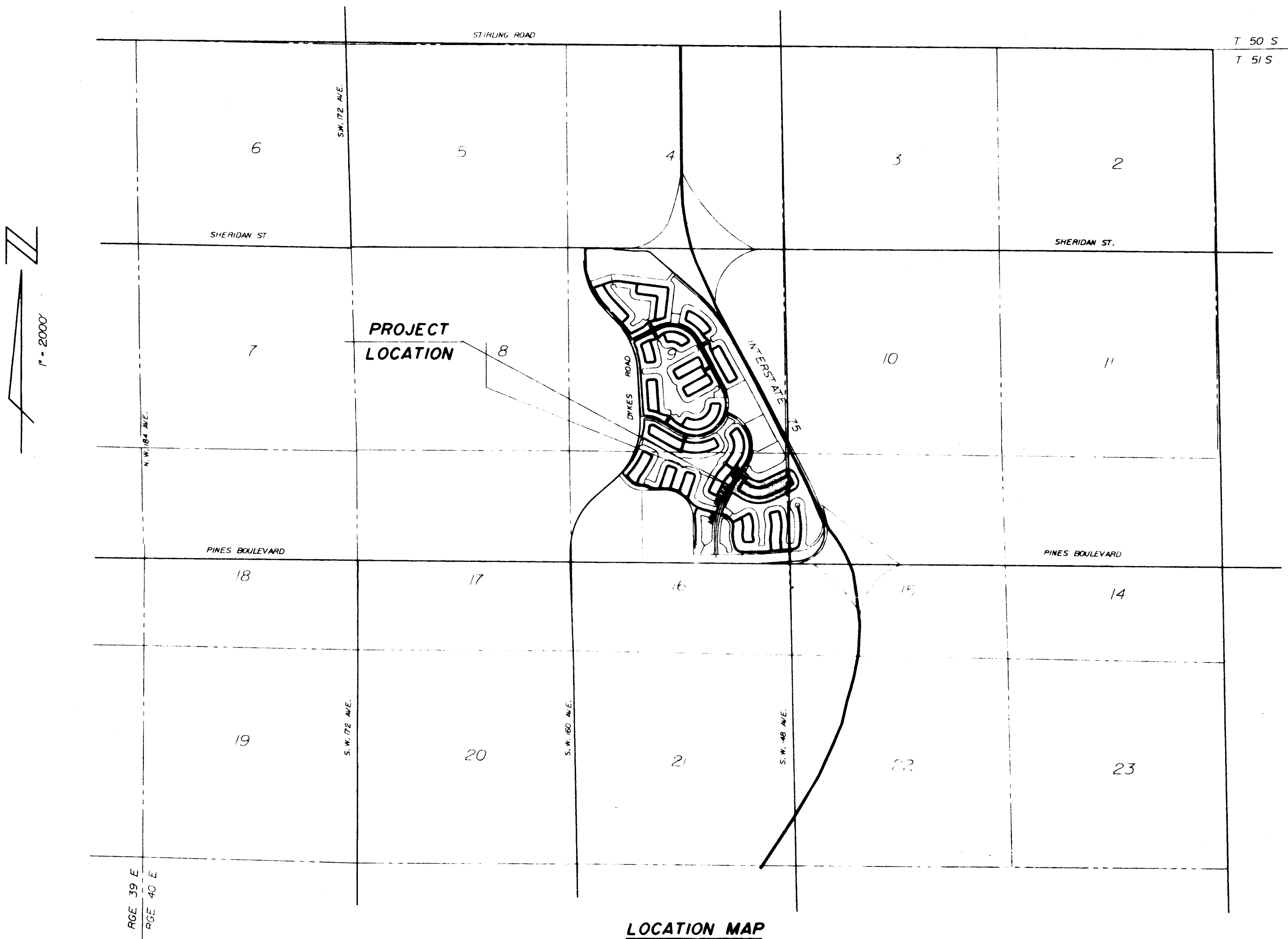
TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE), INC.

LEGAL DESCRIPTION

A portion of parcel "B", TOWNGATE, according to the plat thereof, as recorded in Plat Book 156, Page 11, of the Public Records of Broward County, Florida, more particularly described as follows:

COMMENCING at the most southerly southwest corner of Parcel "B" also being on the northerly right-of-way of Pines Boulevard, as shown on said plat of TOWNGATE; thence North 45°34'58" West, bearings based on the record plat, thence and the following four described courses, being along the easterly right-of-way on NW 155th Avenue as shown on said plat of TOWNGATE for 49.50 feet; thence North 00°34'58" West for 300.08 feet to a point of curvature; thence northerly along the arc of a curve to the right, having a radius of 2604.00 feet and a central angle of 24°04'25", for 1094.11 feet to the POINT OF BEGINNING; thence continue northerly along the arc of a curve to the right, having a radius of 2604.00 feet and a central angle of 04°19'56", for 196.89 feet to a point of tangency; thence North 27°49'23" East for 254.12 feet; thence North 34°25'02" East for 471.61 feet; thence South 55°34'58" East for 60.00 feet; thence South 34°25'02" West for 63.96 feet to a point of curvature; thence southerly and southeasterly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 90°00'00", for 54.98 feet to a point of tangency; thence South 55°34'57" East for 37.90 feet to a point of curvature; thence southeasterly along the arc of a curve to the right, having a radius of 90.00 feet and a central angle of 37°29'23", for 58.89 feet to a point of reverse curvature; thence southeasterly along the arc of a curve to the left, having a radius of 75.00 feet and a central angle of 39°54'26", for 52.24 feet to a point of tangency; thence South 58°00'00" East for 94.14 feet to a point of curvature; thence easterly along the arc of a curve to the left, having a radius of 285.00 feet and a central angle of 58°00'00", for 288.50 feet to a point of tangency; thence North 64°00'00" East for 579.49 feet to a point of curvature; thence easterly, southeasterly and southerly along the arc of a curve to the right, having a radius of 200.00 feet and a central angle of 88°33'51", for 309.15 feet to a point of tangency; thence South 27°26'09" East for 150.05 feet to a point of curvature; thence southerly and southwesterly along the arc of a curve to the right, having a radius of 200.00 feet and a central angle of 9°26'09", for 319.17 feet to a point of tangency; thence South 64°00'00" West for 583.25 feet to a point of curvature; thence westerly along the arc of a curve to the right, having a radius of 835.00 feet and a central angle of 58°00'00", for 845.26 feet to a point of tangency; thence North 58°00'00" West for 190.00 feet to a point of curvature; thence westerly and northwesterly along the arc of a curve to the right, having a radius of 60.00 feet and a central angle of 25°50'07", for 27.05 feet to a point of reverse curvature; thence northwesterly, westerly, southwesterly and southerly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 120°01'35", for 73.32 feet to a point of compound curvature; thence southerly along the arc of a curve to the left, having a radius of 2544.00 feet and a central angle of 04°19'05", for 191.72 feet; thence North 66°30'33" West, on a line radial to the last described curve, for 60.00 feet to the POINT OF BEGINNING.

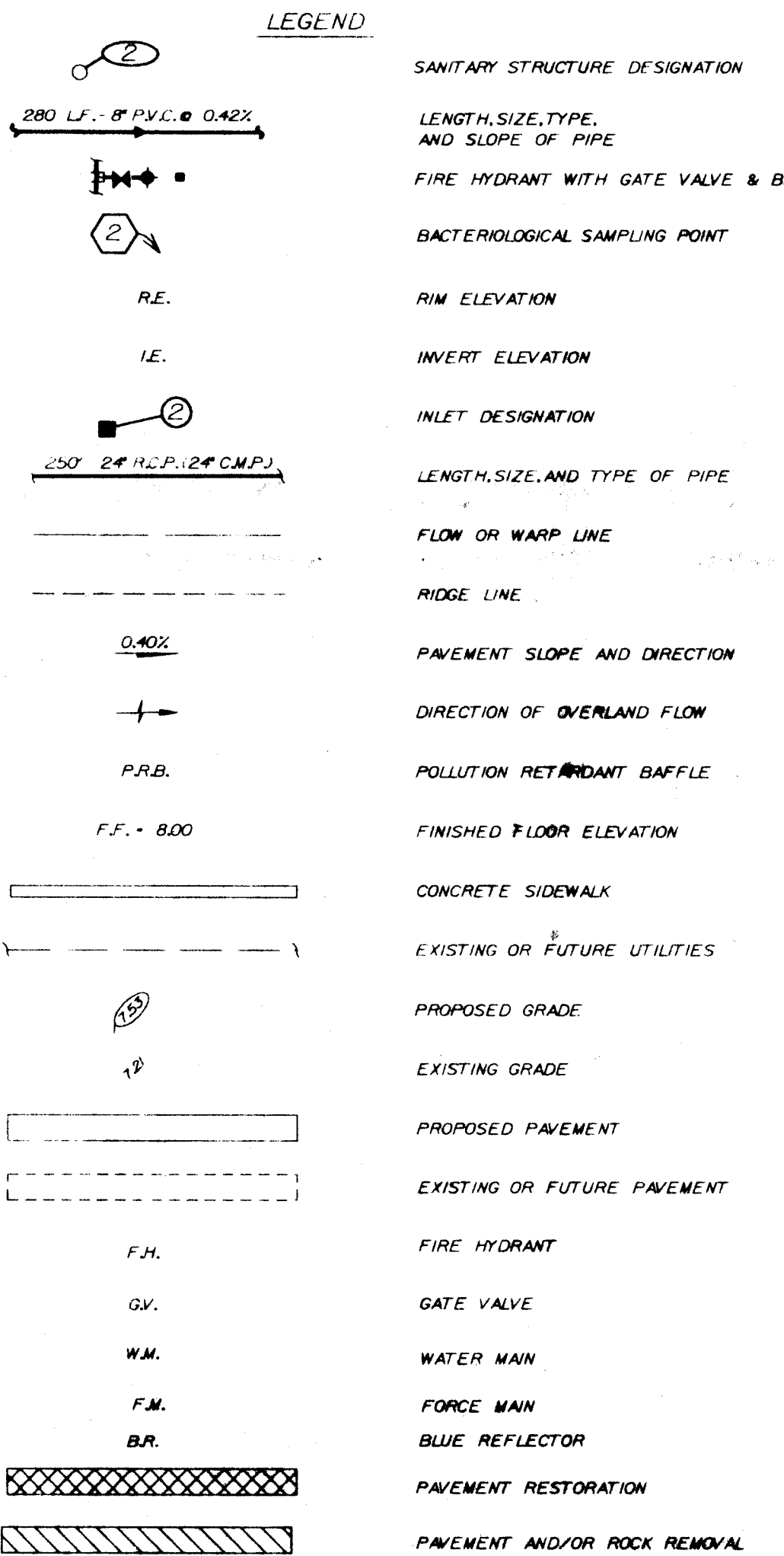
Said lands situate lying and being in the City of Pembroke Pines and containing 21.506 acres, more or less.



PAVING & DRAINAGE SYSTEM WATER DISTRIBUTION SYSTEM SEWAGE COLLECTION SYSTEM TRAFFIC MARKINGS

INDEX TO SHEETS

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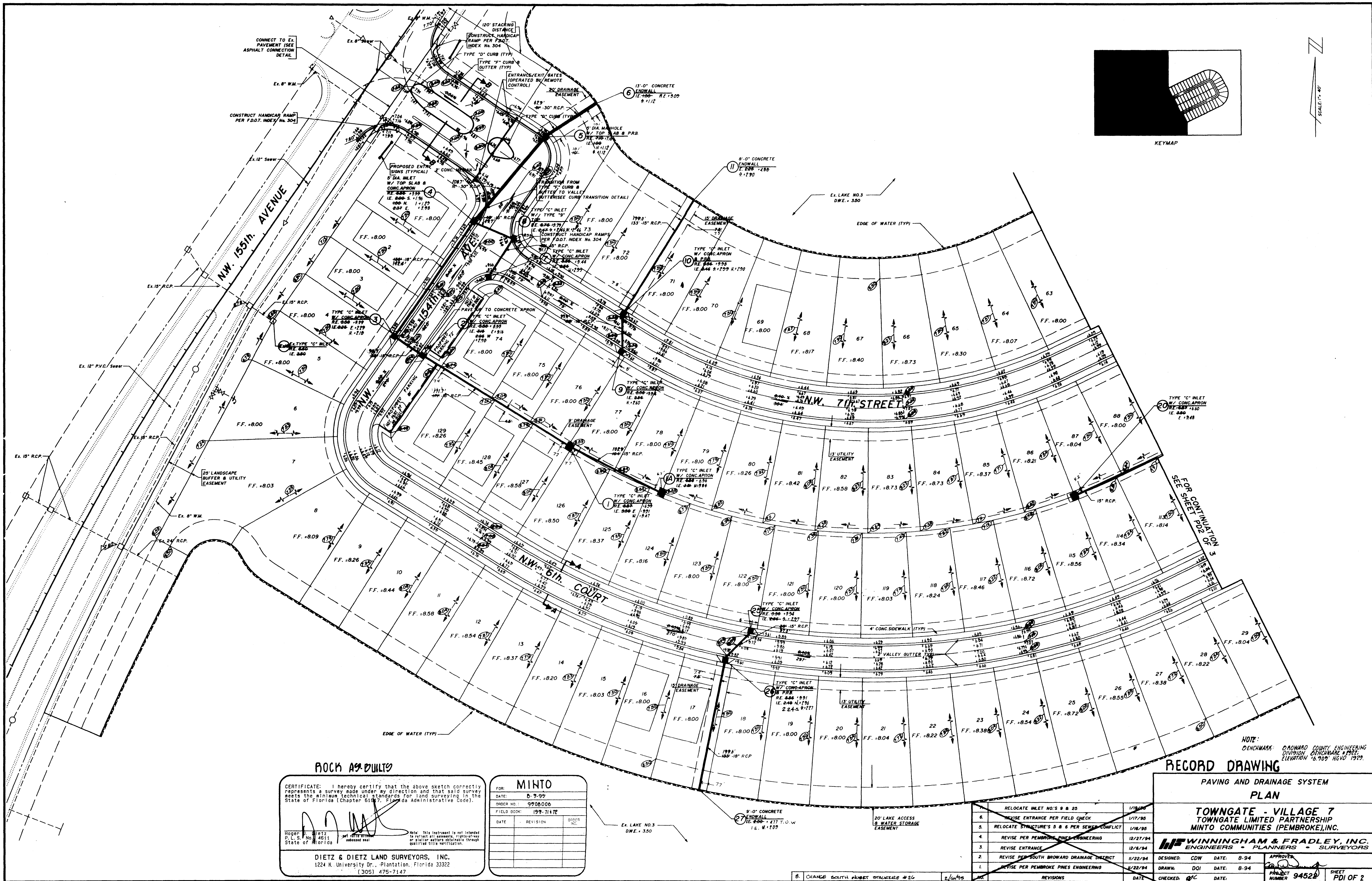
SOUTH BROWARD DRAINAGE DISTRICT

APPROVED
AS - BUILT

DATE: 3/2/97

WINNINGHAM &
FRADLEY, INC.
ENGINEERS - PLANNERS - SURVEYORS

APPROVED
PROJECT NUMBER 94522
DATE SEPT 94
JAN 28 1997



ROCK A9-BUILT

CERTIFICATE: I hereby certify that the above sketch correctly represents a survey made under my direction and that said survey meets the minimum technical standards for land surveying in the State of Florida (Chapter 6107, Florida Administrative Code).

[Signature]
Roger J. Dietz
P.L.S. No. 4611
State of Florida

Note: This instrument is not intended to be used for any purpose other than that for which it was issued.

DIETZ & DIETZ LAND SURVEYORS, INC.
1224 N. University Dr., Plantation, Florida 33322
(305) 475-7147

MINTO			
FOR:	MINTO		
DATE:	8-7-99		
ORDER NO.:	9208006		
FIELD BOOK:	199-7147		
DATE	REVISION	DIPR	
		NO.	

REVISIONS	
1.	RELOCATE INLET NO. 8 & 25
2.	RELOCATE INLET NO. 8 & 25
3.	RELOCATE INLET NO. 8 & 25
4.	RELOCATE INLET NO. 8 & 25
5.	RELOCATE INLET NO. 8 & 25
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27.	RELOCATE INLET NO. 8 & 25
28.	RELOCATE INLET NO. 8 & 25
29.	RELOCATE INLET NO. 8 & 25
30.	RELOCATE INLET NO. 8 & 25

NOTE: DEMONSTRATION: ORANGE COUNTY ENGINEERING DIVISION, DEMONSTRATION #1992, ELEVATION 16.900 NGVD 1929.

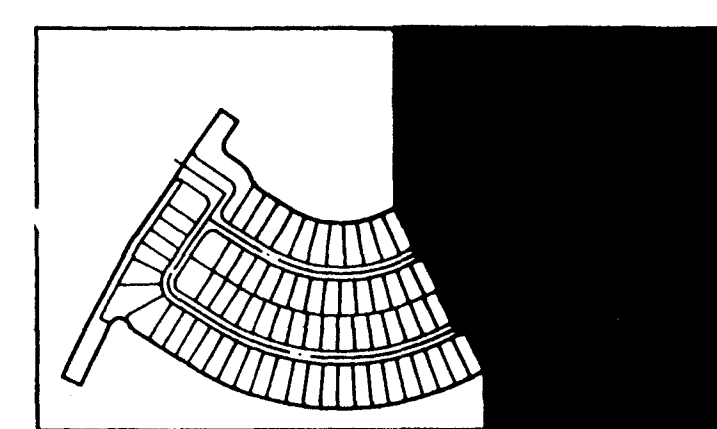
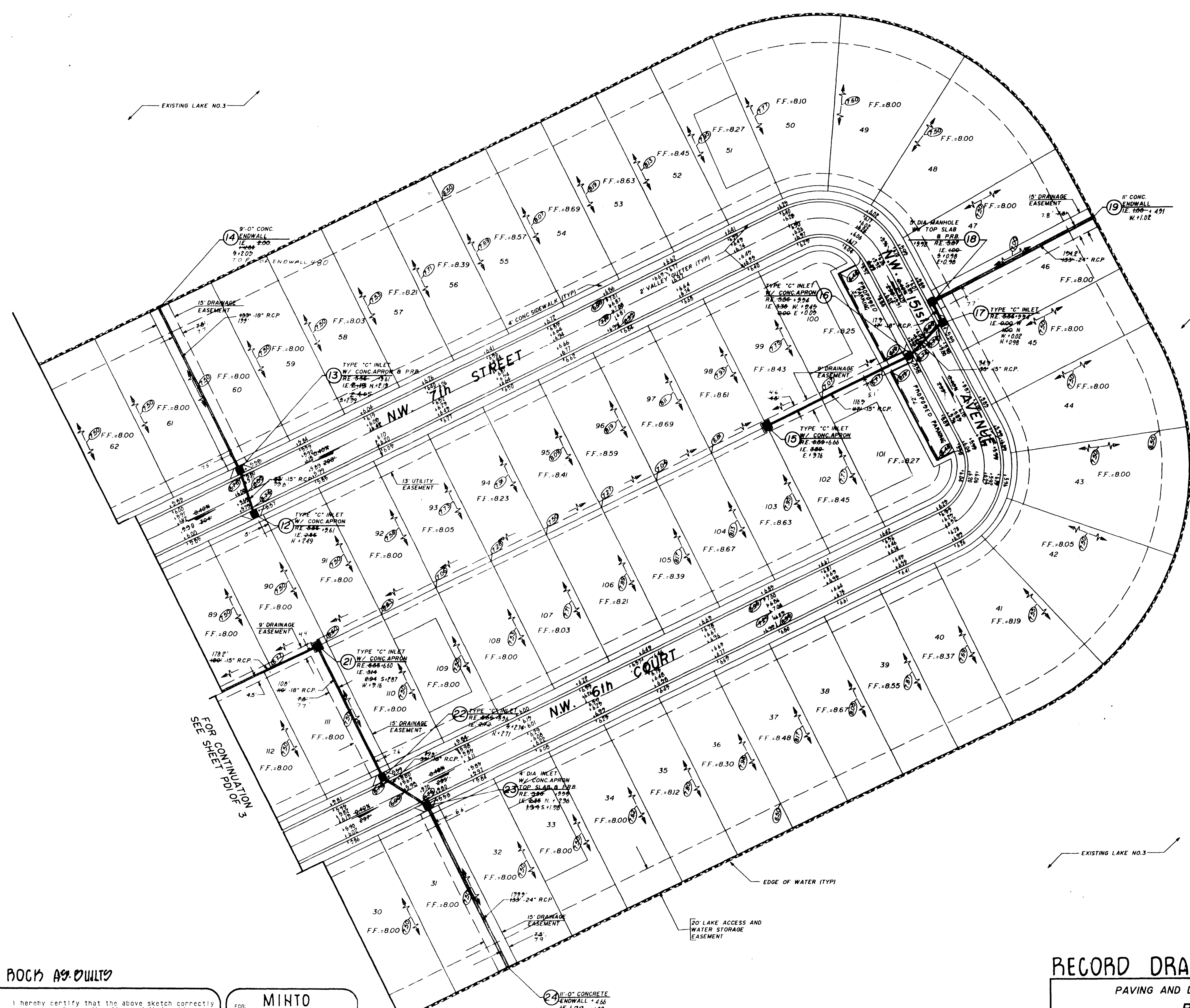
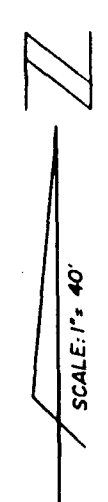
RECORD DRAWING

PAVING AND DRAINAGE SYSTEM
PLAN

TOWNGATE - VILLAGE 7
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE), INC.

WINNINGHAM & FRADLEY, INC.
ENGINEERS - PLANNERS - SURVEYORS

DESIGNED: CDW DATE: 8-94
APPROVED: [Signature] DATE: 11/17/95
DRAWN: DOI DATE: 8-94
CHECKED: JC DATE: 11/17/95
PROJECT NUMBER: 94528 SHEET: PDI OF 2
DATE: JAN 28 1997



ROCK AS BUILT

CERTIFICATE: I hereby certify that the above sketch correctly represents a survey made under my direction and that said survey meets the minimum technical standards for land surveying in the State of Florida (Chapter 610.17, Florida Administrative Code).

[Signature]

DIETZ & DIETZ LAND SURVEYORS, INC.
1224 N. University Dr., Plantation, Florida 33322
(305) 475-7147

MINTO			
FOR:	DATE:	ORDER NO.:	FIELD BOOK:
	8-9-99	9708006	197-7147
DATE:	REVISION:	ORDER NO.:	

NOTE:
DENHAMARZ: BOWARD COUNTY ENGINEERING
DIVISION DENHAMARZ, 1992
ELEVATION: 8.90' NOV 1999

NO.	REVISIONS	DATE
1	CHANGING INVERT STRUCTURE W/ 15" & 24" RCP	1/18/95
2	RELOCATE INLET NO'S 12 & 17	1/18/95
3	REVISE INVERTS STRUCTURE W/ 15" & 24" RCP PER SDO	12/16/94
4	REVISE PER PEMBROKE PINES ENGINEERING	1/22/94

RECORD DRAWING

PAVING AND DRAINAGE SYSTEM
PLAN

TOWNGATE - VILLAGE 7
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE), INC.

WINNINGHAM & FRADLEY, INC.
ENGINEERS - PLANNERS - SURVEYORS

DESIGNED: CDW DATE: 8-94
DRAWN: DOJ DATE: 8-94
CHECKED: PC DATE: 8-94

PROJECT NUMBER: 94521 SHEET: RD2 OF 2
DATE: JAN 26 1997

TOWNGATE - VILLAGE 7

CITY OF PEMBROKE PINES, BROWARD COUNTY, FLORIDA

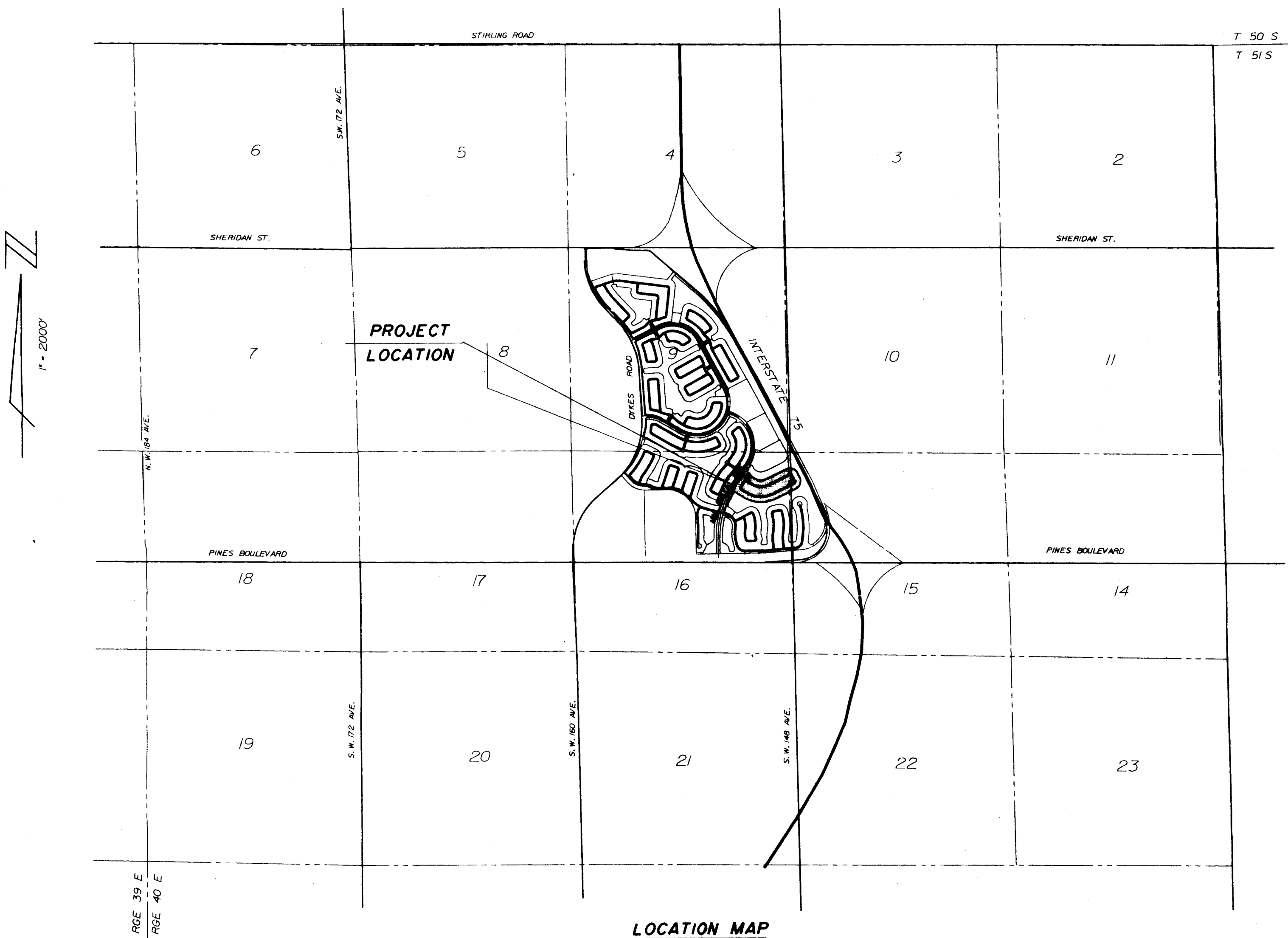
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LOCATION MAP

PAVING & DRAINAGE SYSTEM WATER DISTRIBUTION SYSTEM SEWAGE COLLECTION SYSTEM TRAFFIC MARKINGS

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WATER DISTRIBUTION SYSTEM - DETAILS

SHEET NUMBER

GNI OF 1
PDI OF 3
PD2 OF 3
PD3 OF 3
TMI OF 2
TM2 OF 2
WSI OF 6
WS2 OF 6
WS3 OF 6
WS4 OF 6
WS5 OF 6
WS6 OF 6

LEGEND

	SANITARY STRUCTURE DESIGNATION
	LENGTH, SIZE, TYPE, AND SLOPE OF PIPE
	FIRE HYDRANT WITH GATE VALVE & B.R.
	BACTERIOLOGICAL SAMPLING POINT
	RIM ELEVATION
	INVERT ELEVATION
	INLET DESIGNATION
	LENGTH, SIZE, AND TYPE OF PIPE
	FLOW OR WARP LINE
	RIDGE LINE
	PAVEMENT SLOPE AND DIRECTION
	DIRECTION OF OVERLAND FLOW
	POLLUTION RETARDANT BAFFLE
	FINISHED FLOOR ELEVATION
	CONCRETE SIDEWALK
	EXISTING OR FUTURE UTILITIES
	PROPOSED GRADE
	EXISTING GRADE
	PROPOSED PAVEMENT
	EXISTING OR FUTURE PAVEMENT
	FIRE HYDRANT
	GATE VALVE
	WATER MAIN
	FORCE MAIN
	BLUE REFLECTOR
	PAVEMENT RESTORATION
	PAVEMENT AND/OR ROCK REMOVAL

RECEIVED
JAN 24 1995

WINNINGHAM & FRADLEY, INC.
ENGINEERS • PLANNERS • SURVEYORS

APPROVED: [Signature]
PROJECT NUMBER 94522 DATE SEPT 94

GENERAL NOTES FOR WATER DISTRIBUTION AND SEWAGE COLLECTION SYSTEM

1. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. ALL APPLICABLE FEES AND CHARGES MUST BE PAID PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE APPROVED PLANS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. APPROVAL OF DEVELOPMENT PLANS BY THE CITY IN NO WAY IMPLIES VERIFICATION OF THE ACCURACY OF THOSE PLANS OR FEATURES DEPICTED THEREON. ANY DISCREPANCY IN, OR VARIATION FROM, THE APPROVED PLANS IS TO BE BROUGHT TO THE ATTENTION OF THE CITY'S ENGINEER BY THE OWNERS ENGINEER.
4. 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 DAMAGE, DISRUPTION OF SERVICE, OR DESTRUCTION.
5. 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.
6. THE CONTRACTOR SHALL INFORM THE CITY OF PEMBROKE PINES ENGINEERING & UTILITY DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS OF ALL UTILITIES, AND NOTIFICATION OF UNCLE 48 HOURS IN ADVANCE OF CONSTRUCTION.
8. THE CONTRACTOR SHALL INFORM THE CITY OF PEMBROKE PINES ENGINEERING & UTILITY DEPARTMENT AND WINNINGHAM & FRADLEY, INC. A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCEMENT OF CONNECTING TO A CITY FACILITY.
9. A PRE-CONSTRUCTION MEETING IS TO BE HELD AT CITY HALL AND ATTENDED BY THE CONTRACTOR, OWNER'S ENGINEER, AND OTHER INTERESTED PARTIES PRIOR TO ISSUANCE OF ANY CONSTRUCTION PERMITS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING OF TESTS AS MAY BE DEEMED NECESSARY BY THE CITY OF PEMBROKE PINES UTILITY DEPARTMENT AND THE OWNER'S ENGINEER OR AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
11. CONSTRUCTION SHALL BE CARRIED OUT IN STRICT COMPLIANCE WITH THOSE STANDARDS ACCEPTED BY BROWARD COUNTY OFFICE OF ENVIRONMENTAL SERVICES AND ADOPTED BY THE CITY OF PEMBROKE PINES.
12. THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION PLANS ON-SITE. THE PLANS ARE TO BE MADE AVAILABLE TO THE CITY ENGINEER OR HIS DESIGNEE UPON REQUEST.
13. WHERE SANITARY SEWER MAINS CROSS UNDER WATER MAINS WITH LESS THAN 18 INCH VERTICAL CLEARANCE, AND WHERE THE SANITARY SEWER CROSSES ABOVE A WATER MAIN, THE SANITARY SEWER SHALL BE OF CLASS 52 DUCTILE IRON PIPE FOR A DISTANCE OF 20 FEET CENTERED ON THE POINT OF INTERSECTION. IN NO CASE SHALL VERTICAL CLEARANCE BETWEEN ANY UNDERGROUND PIPING BE LESS THAN 12 INCHES. A HORIZONTAL SEPARATION OF 10 FEET SHALL BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
14. THE OWNER'S ENGINEER SHALL MAKE SUFFICIENT OBSERVATIONS OF THE WORK TO ENABLE HIM TO CERTIFY TO THE INSTALLATION AS BEING IN SUBSTANTIAL CONFORMANCE WITH APPLICABLE STANDARDS AND SPECIFICATIONS.
15. THE CITY OF PEMBROKE PINES UTILITY DEPARTMENT AND THE ENGINEER OF RECORD WILL CARRY OUT INSPECTIONS OF THE WORK, AND WILL WITNESS PRESSURE, BACTERIOLOGICAL, AND INFILTRATION/EXFILTRATION TESTS. TELEVISION INSPECTION OF ALL GRAVITY SANITARY SEWER SYSTEMS ARE REQUIRED.
16. THE CONTRACTOR SHALL SUPPLY AND INSTALL APPROVED REFLECTIVE MARKERS TO BE PLACED IN THE CENTER OF THE DRIVING LANE ADJACENT TO FIRE HYDRANTS (BLUE REFLECTOR) AND VALVES OR M.H.S. OUTSIDE PAVEMENT AREAS.
17. THE FOLLOWING DOCUMENTS ARE TO BE ON FILE AT THE CITY OF PEMBROKE PINES PRIOR TO THE CONNECTION OF THE FIRST WATER METER:

A. LETTERS OF ACCEPTANCE FROM:
BROWARD COUNTY HEALTH DEPARTMENT
BROWARD COUNTY OFFICE OF ENVIRONMENTAL SERVICES
STATE DEPARTMENT OF ENVIRONMENTAL REGULATION

B. CERTIFICATION OF ENGINEER OF RECORD.

C. THREE SIGNED AND SEALED COPIES OF AS-BUILTS CERTIFIED BY A
PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA.

18. NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF THE OWNER'S ENGINEER.

19. THE MINIMUM ALLOWABLE HORIZONTAL CLEARANCE BETWEEN UTILITIES AND OBSTRUCTIONS TO BE 3'-0" INCLUDING CATCH BASINS. THE MINIMUM ALLOWABLE HORIZONTAL CLEARANCE BETWEEN UTILITIES AND TREES IS TO BE 5'-0".

GENERAL NOTES FOR SEWAGE COLLECTION SYSTEM & DRAINAGE SYSTEM

1. PRECAST CONCRETE MANHOLES AND CATCH BASINS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND 64.1 FOR CONCRETE STRENGTH, STEEL REINFORCEMENT, AREA, PLACEMENT, AND APPEARANCE WHEN MANUFACTURED. ENGINEERING TESTING LABORATORY, SIGNED AND DATED, CERTIFYING THAT THEY MEET THE REQUIREMENTS OF ASTM C-478 FOR CONCRETE STRENGTH, STEEL REINFORCEMENT, AREA AND PLACEMENT, AND APPEARANCE. MANHOLES AND CATCH BASINS MUST BE INSPECTED BY THE CITY ENGINEER BEFORE UNLOADING.
2. CONCRETE FOR PRECAST MANHOLES AND CATCH BASINS OR CAST IN PLACE MANHOLES AND CATCH BASINS SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
3. MINIMUM WALL AND BASE THICKNESS FOR PRECAST MANHOLES SHALL BE 8 INCHES, EXCEPT FOR P BOTTOMS WHICH SHALL HAVE 6" WALLS. REINFORCING STEEL FOR MANHOLES AND CATCH BASINS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615, A-305, A-185, AND A-497. LATEST REVISION. SPLICES SHALL HAVE A MINIMUM LAP OF 24 BAR DIAMETERS. MINIMUM COVER OVER REINFORCING STEEL SHALL BE 3 INCHES. ALL DRAINAGE STRUCTURES SHALL MEET FOOT SPECIFICATION.
4. ALL OPENINGS IN PRECAST MANHOLES AND CATCH BASINS SHALL BE CAST AT THE TIME OF MANUFACTURE.
5. PRECAST MANHOLE AND CATCH BASIN SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY OF PEMBROKE PINES AND ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
6. ALL MANHOLES AND CATCH BASINS SHALL BE SET PLUMB TO LINE AND GRADE, AND SHALL REST ON A FIRM, CAREFULLY GRADED SUBGRADE, WHICH SHALL PROVIDE UNIFORM BEARING UNDER BASE.
7. MANHOLE SECTIONS SHALL BE JOINED WITH A MASTIC COMPOUND PRODUCING A WATER TIGHT BOND. THE REMAINING SPACE SHALL BE FILLED WITH CEMENT MORTAR AND FINISHED SO AS TO PRODUCE A SMOOTH CONTINUOUS SURFACE INSIDE AND OUTSIDE THE WALL SECTIONS.
8. ALL CONCRETE AND MORTAR USED IN MANHOLE AND CATCH BASIN CONSTRUCTION SHALL HAVE TYPE II CEMENT.
9. ALL SPACES AROUND PIPES ENTERING OR LEAVING MANHOLES SHALL BE COMPLETELY FILLED WITH EMBECCO MORTAR (NON-METALLIC) OR BONSAL (NON-SHRINKING).
10. TWO COATS OF KOPPER'S 300 M SHALL BE APPLIED TO THE INSIDE OF THE MANHOLES AND WETWELLS. FIRST COAT RED, SECOND COAT BLACK ON THE OUTSIDE OF THE MANHOLE, ONLY ONE COAT IS NECESSARY.

11. SANITARY MANHOLES AND LIDS SHALL BE CAPABLE OF WITHSTANDING AASHTO H-20 LOADING, USF 420A. D.A.E. LIDS SHALL SAY "CITY OF PEMBROKE PINES SANITARY SEWER".
12. ALL GRAVITY SEWER PIPE SHALL BE PVC OR DUCTILE IRON. PVC PIPE SHALL CONFORM TO ASTM D 3034, SDR 35, LATEST REVISION, WITH MAXIMUM 13 FOOT LENGTHS AND PUSH-ON RUBBER GASKET JOINTS. DUCTILE IRON GRAVITY PIPE SHALL CONFORM TO THE SPECIFICATION FOR FORCE MAIN.
13. CONNECTING TO THE EXISTING SYSTEM. ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE UNDER THE DIRECTION OF THE CITY UTILITIES DEPARTMENT. VALVES THAT SEPARATE THE MAINS BEING INSTALLED FROM THE EXISTING MAINS SHALL BE OPERATED BY OR UNDER THE DIRECTION OF THE CITY UTILITIES DEPARTMENT REPRESENTATIVE ONLY.
14. THE CONTRACTOR SHALL TEST THE COMPLETED SEWER LINE TO DETERMINE THE ALIGNMENT AND TIGHTNESS OF THE JOINTS. GRAVITY SEWER MAINS SHALL BE LAMPED AND MUST SHOW A FULL CIRCLE OF LIGHT. INFILTRATION AND EXFILTRATION TESTING SHALL BE CONDUCTED. LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH DIAMETER PER MILE PER DAY. NO VISIBLE INFILTRATION SHALL BE ALLOWED.
15. A READ STAKE SHALL BE INSTALLED AT EVERY SEWER SERVICE LOCATION.
16. SANITARY SEWER SHALL BE TELEVIEWED AT OWNERS EXPENSE.

WATER DISTRIBUTION SYSTEM NOTES

1. ALL WATER MAIN SHALL BE PVC CONFORMING TO ANSI/AWWA SPECIFICATION C-900-89-DR18.
2. FITTINGS SHALL BE DUCTILE IRON CLASS 350 MEETING AWWA/ANSI C153/A21.53-88 SPECIFICATIONS. FITTINGS MUST BE CEMENT LINED AND SEAL COATED PER AWWA/ANSI C104/A21.4-90.
3. GATE VALVES 4" AND LARGER SHALL MEET AWWA C-509-87 SPECIFICATION. VALVES MUST BE MUELLER CO. OR APPROVED EQUAL. MECHANICAL JOINT, RESILIENT SEATED.
4. WATER SERVICE PIPING, FITTINGS, AND SERVICE TUBING SHALL BE POLYBUTYLENE (PB) CONFORMING TO AWWA SPECIFICATION C-902-88. SDR 9, 250 PSI RATING.
5. ALL METER SERVICE CONNECTIONS SHALL BE BRONZE FROM PLUG VALVE TO PLUG VALVE. NO GATE VALVES ARE TO BE USED (2" OR LESS). 90° ANGLE LOCK WING.
6. PAVEMENT RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
7. ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING AND DISINFECTING MUST COMPLY WITH THE CITY OF PEMBROKE PINES UTILITIES WATER AND WASTEWATER MINIMUM CONSTRUCTION REQUIREMENTS.
8. THE ENGINEER WILL TAKE ALL BACTERIOLOGICAL SAMPLES TO AN HRS. CERTIFIED LABORATORY AND SUBMIT RESULTS TO THE CITY OF PEMBROKE PINES UTILITIES.
9. ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE UNDER THE DIRECTION OF THE CITY OF PEMBROKE PINES UTILITIES DEPARTMENT.
10. ALL PIPE, ETC. SHALL BE TESTED UNDER A CONSTANT PRESSURE OF 150 PSI FOR A MINIMUM TEST OF 2 HOURS AND SHALL NOT EXCEED THE LEAKAGE REQUIREMENTS AS PER AWWA/ANSI SPECIFICATIONS OF C600-93 LEAKAGE FORMULA:

$$Q = \frac{S \cdot D \cdot P}{133200}$$

Q = ALLOWABLE LEAKAGE IN GALLONS PER HOUR
S = TOTAL LENGTH OF PIPE TESTED IN FEET
D = DIAMETER OF THE PIPE TESTED IN INCHES
P = AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH

11. THE MINIMUM DEPTH OF COVER OVER WATER MAINS SHALL BE 36 INCHES.
12. DISINFECTING OF MAINS SHALL COMPLY WITH AWWA C-651-92 SPECIFICATIONS. STANDARD BACTERIOLOGICAL SAMPLING POINTS SHALL BE DESIGNATED ON THE ENGINEERING PLANS.
13. MINIMUM VALVE SPACING SHALL BE AS PER SECTION B2 OF THE TEN STATES STANDARDS.
14. WHEN PVC IS USED FOR WATER MAIN, A 3" STRIP OF METALIC TAPE SHALL BE INSTALLED THE LENGTH OF THE PIPE 18" ABOVE THE PIPE WITH THE WORDS "WATER MAIN BURIED BELOW" FACING UPWARD. NON-METALIC TAPE SHALL BE USED ON D.I.P.
15. ALL D.I.P. WATER MAIN SHALL BE CLASS 350, CONFORMING TO ANSI/AWWA SPECIFICATION C151/A21.4-91 AND BE CEMENT MORTAR LINED AND SEAL COATED PER ANSI/AWWA SPECIFICATION C104/A21.4-90.

PAVING AND DRAINAGE SYSTEM NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PEMBROKE PINES ENGINEERING DEPARTMENT, THE SOUTH BROWARD DRAINAGE DISTRICT, AND THE FLORIDA DEPARTMENT OF TRANSPORTATION.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL GIVE TIMELY NOTIFICATION TO ALL UTILITY COMPANIES WITH FACILITIES IN THE AREA.
3. THE LOCATIONS OF EXISTING FACILITIES WERE PLOTTED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SAFEGUARD ALL EXISTING STRUCTURES, UTILITIES AND SURVEY MARKERS.
4. ALL DRAINAGE PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) MEETING THE REQUIREMENTS OF ASTM SPECIFICATION C76-85a OR HELICAL CORRUGATED ALUMINUM PIPE (CMP) MEETING THE REQUIREMENTS OF ASTM B209 AND AASHTO M196.
5. THE DRAINAGE SYSTEM HAS BEEN DESIGNED FOR THE USE OF RCP. THE INVERT ELEVATIONS SHOWN ON THE PLANS ARE FOR RCP. IF CMP IS USED, THE CROWN OF THE CMP IS TO BE EQUAL TO THE CROWN OF THE RCP. TYPE OF PIPE TO BE USED SHALL BE DETERMINED ONCE A CONTRACTOR IS HIRED.
6. MINIMUM COVER FOR ALL PIPE CULVERTS SHALL MEET THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (INDEX NO. 205).
7. ALL UNDERGROUND FACILITIES SHALL BE INSTALLED PRIOR TO PLACING THE LIMEROCK BASE MATERIAL.
8. THE CONTRACTOR AND/OR HIS SUPERINTENDENT SHALL HAVE AT LEAST ONE COPY OF EACH OF THE FOLLOWING PUBLICATIONS ON THE JOB SITE DURING CONSTRUCTION OF THIS PROJECT:
A. CITY OF PEMBROKE PINES ENGINEERING DEPARTMENT STANDARD DETAILS SPECIFICATIONS & PROCEDURAL MANUAL, JANUARY 1990.
B. FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
C. FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, JANUARY
D. U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, MARCH 1988.

9. THE FOLLOWING INSPECTIONS ARE REQUIRED BY THE CITY OF PEMBROKE PINES ENGINEERING DEPT. PLEASE CALL 435-6512 48 HRS PRIOR TO THE TIME THE INSPECTION IS NEEDED.

A. CLEARING AND FILLING
B. STORM DRAINS/UTILITIES
C. SUBGRADE
D. ROCK BASE
E. PRIME COAT
F. ASPHALT
G. FINAL
H. PAVEMENT MARKINGS

10. DENSITY TESTS FOR SUBGRADES MUST BE SUBMITTED TO AND APPROVED BY THE CITY OF PEMBROKE PINES.
11. DENSITY TESTS AND AS-BUILTS FOR LIMEROCK BASE MUST BE SUBMITTED AND APPROVED BY THE CITY OF PEMBROKE PINES PRIOR TO THE PLACEMENT OF ANY ASPHALT.
12. A PRECONSTRUCTION MEETING IS TO BE HELD IN THE ENGINEERING DEPARTMENT AND ATTENDED BY THE OWNER, ENGINEER-OF-RECORD, CONTRACTOR AND INTERESTED PARTIES PRIOR TO THE ISSUANCE OF PAVING & DRAINAGE CONSTRUCTION PERMITS.

SOUTH BROWARD DRAINAGE DISTRICT
GENERAL NOTES

1. THE FOLLOWING GENERAL NOTES ARE REQUIRED BY SOUTH BROWARD DRAINAGE DISTRICT. THEY ARE NOT MEANT TO BE ALL INCLUSIVE AND IT IS THE ENGINEER'S RESPONSIBILITY TO ADD ANY NOTES WHICH INSPECTION MUST BE MADE BY DISTRICT PERSONNEL OF ALL UNDERGROUND STORM DRAIN FACILITIES BEFORE BACKFILLING. CALL (305) 680-3337 OR (305) 680-3338 FOR AN INSPECTION APPOINTMENT. A MINIMUM OF TWENTY-FOUR (24) HOURS IN ADVANCE. ALL COSTS OF PERIODIC INSPECTIONS OF CONSTRUCTION BY THE DISTRICT SHALL BE BORNE BY THE DEVELOPER.
2. LIMEROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 910 OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS EXCEPT THE MINIMUM PERCENTAGE OF CARBONATE OF CALCIUM AND MAGNESIUM SHALL BE SIXTY PERCENT (60%).
3. THE CONTRACTOR SHALL CALL THE SOUTH BROWARD DRAINAGE DISTRICT 24 HOURS PRIOR TO BACK-FILLING OF DRAINAGE TRENCHES, PLACEMENT OF ASPHALT, SHAPING OF CANAL OR LAKE BANKS FROM THE DEEP CUT LINE AND AS REQUIRED BY DISTRICT. CALL (305) 680-3337 OR (305) 680-3338. THE SOUTH BROWARD DRAINAGE DISTRICT'S WORKING HOURS ARE FROM 8:00 A.M. TO 4:30 P.M.
4. ANY REVISIONS TO THESE PLANS MUST BE APPROVED BY SOUTH BROWARD DRAINAGE DISTRICT PRIOR TO CONSTRUCTION.
5. BONDS AND INSPECTIONS

UPON DISTRICT BOARD OF SUPERVISORS APPROVAL OF PLANS, BUT BEFORE CONSTRUCTION CAN COMMENCE, THE FOLLOWING ITEMS MUST BE COMPLIED WITH:

- A. BOND (CASH OR SURETY) OR LETTER OF CREDIT, IN THE DISTRICT'S FAVOR, MUST BE POSTED IN THE AMOUNT STATED IN SECTION 411 OF THE DISTRICT'S DESIGN CRITERIA MANUAL.
- B. ALL EASEMENTS, DEED RESTRICTIONS, INDEMNIFICATION AGREEMENTS, MAINTENANCE AGREEMENTS AND DEEDS AS REQUIRED BY THE DISTRICT SHALL BE PRESENTED TO THE DISTRICT MANAGER AND ATTORNEY FOR APPROVAL BEFORE RECORDATION. ALL COSTS OF RECORDING THE APPLICABLE INSTRUMENT WILL BE BORNE BY THE DEVELOPER.
- C. UPON COMPLIANCE WITH THE CONDITIONS REQUIRED BY THE DISTRICT FOR APPROVAL AND RECEIPT OF APPROVED PLANS FROM THE DISTRICT'S ENGINEER, THE DISTRICT'S MANAGER WILL MARK THE PLANS "APPROVED" AND SIGN SAME AND DISTRIBUTE THE APPROVED PLANS TO THE DEVELOPER AND THE DISTRICT FILES.
- D. BONDS SHALL BE PROVIDED BY THE PRINCIPALS OF DEVELOPMENTS ONLY. CONTRACTOR OR SUB-CONTRACTOR BONDS ARE NOT ACCEPTABLE.
- E. IF REQUIRED BY DISTRICT, A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.

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 CHANGES AND DIMENSIONED LOCATIONS AND ELEVATIONS OF ALL IMPROVEMENTS AND SHALL BE SIGNED BY THE CONTRACTOR.
4. ALL "AS-BUILT" INFORMATION ON ELEVATIONS OF SANITARY SEWAGE, PAVING AND DRAINAGE SHALL BE CERTIFIED BY A REGISTERED LAND SURVEYOR.
5. AS-BUILT INFORMATION ON THE WATER SYSTEM SHALL INCLUDE, BUT NOT LIMITED TO, LOCATION OF ALL VALVES, FITTINGS, FIRE HYDRANTS AND WATER SERVICES AND TOP-OF-PIPE ELEVATION ON 100-FOOT INTERVALS AT A MINIMUM.
6. PRIOR TO A FINAL INSPECTION BY THE CITY OF PEMBROKE PINES, 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, THE ENGINEER SHALL SUBMIT TO THE CITY ONE (1) COMPLETE SET OF REPRODUCIBLE MYLARS AND 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.

FIRE HYDRANTS

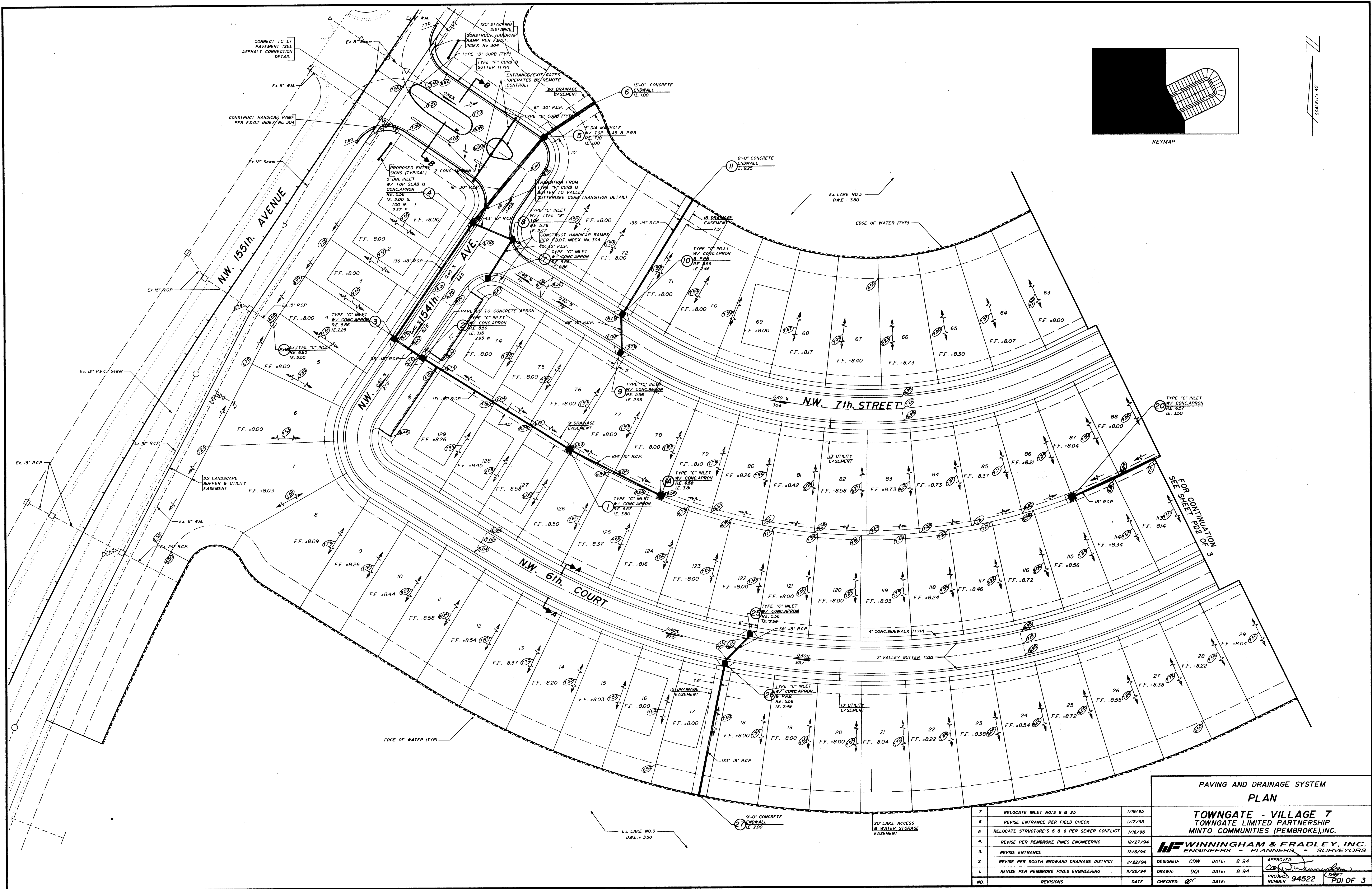
FIRE HYDRANTS SHALL HAVE A MINIMUM 5 1/4" VALVE OPENING AND SHALL OPEN AGAINST THE PRESSURE AND CLOSING WITH THE FLOW. HYDRANTS SHALL BE MUELLER CENTURION, MODEL NUMBER A-423 OR EQUAL. HYDRANTS SHALL MEET OR EXCEED ANSI/AWWA C502-85, C503-88 OR LATEST REVISION, AND SHALL COMPLY WITH FACTORY MUTUAL RESEARCH CORPORATION AND UNDERWRITERS LABORATORIES UL246 STANDARD.

GENERAL NOTES

TOWNGATE - VILLAGE 7
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE), INC.

WINNINGHAM & FRADLEY, INC.
ENGINEERS • PLANNERS • SURVEYORS

DESIGNED: WBF DATE: 9/94
DRAWN: WBF DATE: 9/94
CHECKED: WBF DATE: 9/94
PROJECT NUMBER: 94522
SHEET: 01 OF 1

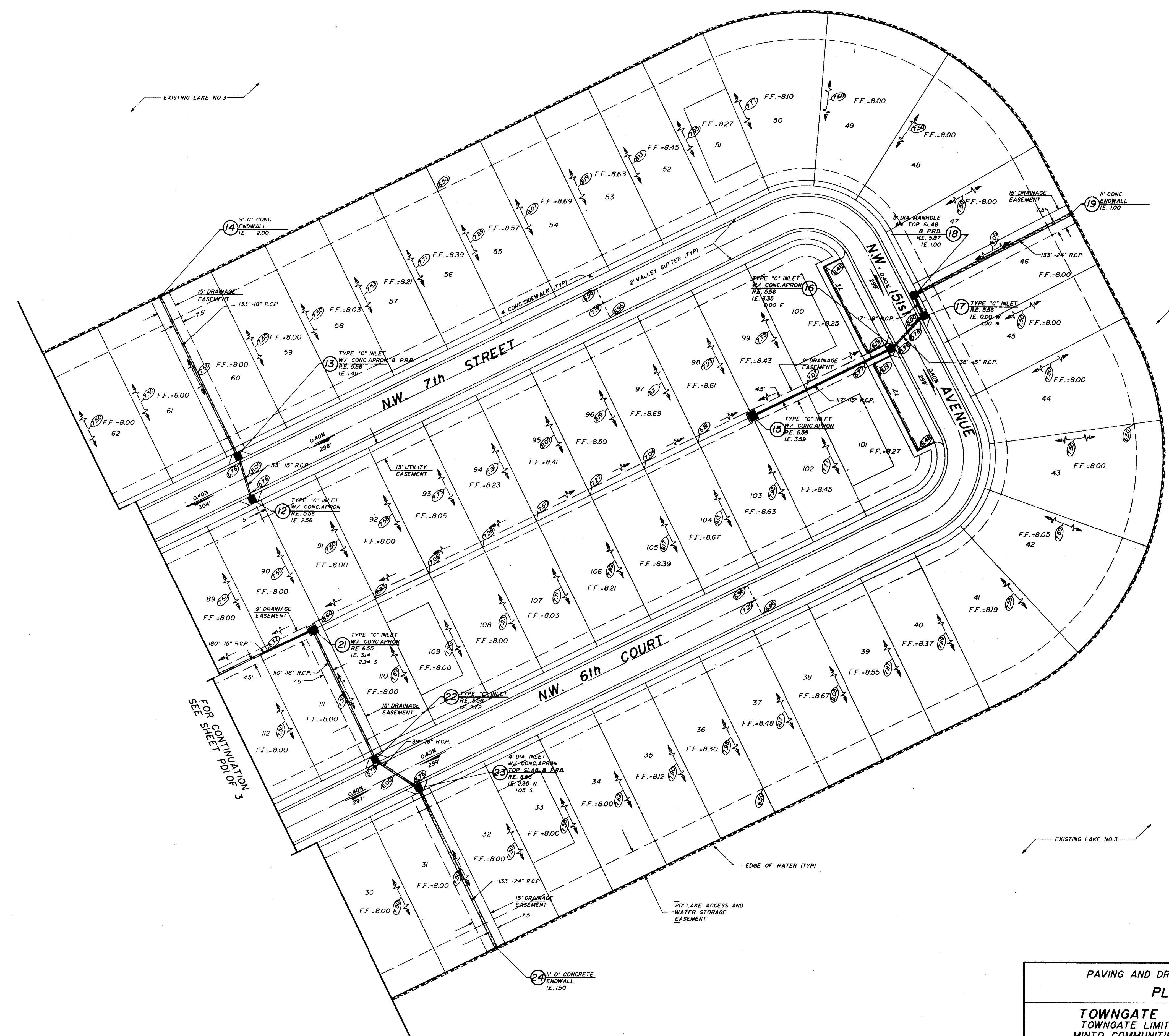
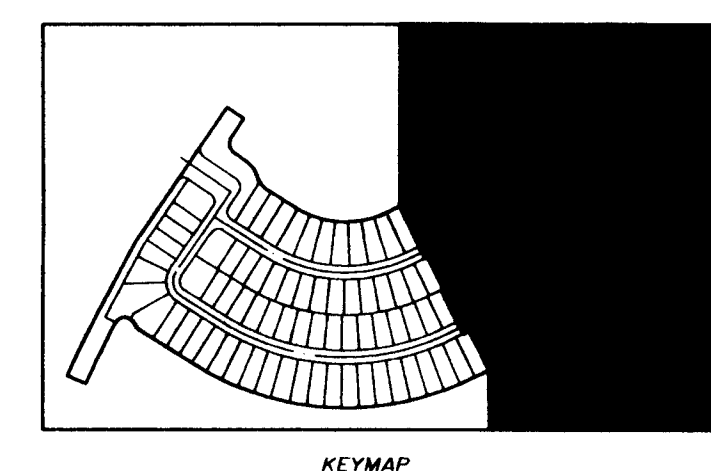


7.	RELOCATE INLET NO. 9 & 25	1/19/95
6.	REVISE ENTRANCE PER FIELD CHECK	1/17/95
5.	RELOCATE STRUCTURE'S 5 & 6 PER SEWER CONFLICT	1/16/95
4.	REVISE PER PEMBROKE PINES ENGINEERING	12/27/94
3.	REVISE ENTRANCE	12/6/94
2.	REVISE PER SOUTH BROWARD DRAINAGE DISTRICT	11/22/94
1.	REVISE PER PEMBROKE PINES ENGINEERING	11/22/94
NO.	REVISIONS	DATE

PAVING AND DRAINAGE SYSTEM PLAN	
TOWNGATE - VILLAGE 7 TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE), INC.	
WINNINGHAM & FRADLEY, INC. ENGINEERS - PLANNERS - SURVEYORS	
DESIGNED: CDW	DATE: 8-94
DRAWN: DOI	DATE: 8-94
CHECKED: <i>QC</i>	DATE:
PROJECT NUMBER: 94522	SHEET: PDI OF 3



SCALE: 1" = 40'



PAVING AND DRAINAGE SYSTEM PLAN			
TOWNGATE - VILLAGE 7 TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE), INC.			
WINNINGHAM & FRADLEY, INC. ENGINEERS • PLANNERS • SURVEYORS		DESIGNED: CDW	DATE: 8-94
APPROVED: <i>[Signature]</i>		DRAWN: DQI	DATE: 8-94
PROJECT NUMBER: 94522		CHECKED: <i>[Signature]</i>	DATE: 1/19/95

NO.	REVISIONS	DATE
3.	RELOCATE INLET NO. 12 & 17	1/19/95
2.	REVISE INVERTS STRUCTURE'S 16/7/10/9 PER S800	12/16/94
1.	REVISE PER PEMBROKE PINES ENGINEERING	11/22/94

SECTION
RECTANGULAR STRUCTURE

SECTION
CIRCULAR STRUCTURE

PIPE BEDDING DETAIL

PRECAST CONCRETE ENDWALL DETAIL

SIDEWALK DETAIL

D	A	B	C	E	X
15"	24"	37"	2'-3"	1'-0"	18"
18"	24"	37"	2'-6"	1'-0"	24"
21"	36"	36"	2'-9"	1'-3"	27"
24"	36"	36"	3'-0"	1'-5"	30"
30"	36"	42"	3'-6"	1'-7"	36"
36"	42"	54"	4'-0"	2'-2"	48"
42"	48"	60"	4'-8"	2'-6"	54"
48"	48"	66"	5'-0"	2'-10"	60"

POLLUTION RETARDANT

BASIN DETAIL

NOTE: 18" X 18" SUMP TO BE INSTALLED
WHEN INLET BOTTOM IS ABOVE
WATER TABLE

PRECAST INLET DETAIL

NOTE: SEE CONSTRUCTION PLANS FOR
BASIN TYPE 8 F.D.O.T. "ROADWAY
AND TRAFFIC DESIGN STANDARDS,
LATEST REVISION FOR DETAILS

SECTION B-B

SECTION A-A

2' CONCRETE MEDIAN DETAIL

GUTTER INLET DETAIL

WHEEL STOP DETAIL

**TYPE "F" CURB &
GUTTER DETAIL**

ASPHALT CONNECTION DETAIL

TYPE "D" CURB DETAIL

CURB TRANSITION DETAIL

2' CONCRETE VALLEY GUTTER

GUEST PARKING DETAIL

REAR YARD APRON DETAIL

NOTE: SODDED BERMS MEANDER WITHIN LIMITS SHOWN. REFER TO LANDSCAPE PLANS PREPARED BY MIKE PETROW AND ASSOCIATES FOR EXACT LOCATION AND HEIGHT.


PAVEMENT NOTES: (ON-SITE)


2. THE WEARING SURFACE OVER PARKING AREAS SHALL BE 1 1/2" OF TYPE S-3 ASPHALTIC CONCRETE OVER PRIME COAT AND SAND SEAL.
2. THE WEARING OVER THE INTERIOR LOOP SHALL BE INSTALLED IN TWO LIFTS. THE FIRST LIFT SHALL BE 3/4" OF TYPE S-1 ASPHALTIC CONCRETE OVER PRIME COAT AND SAND SEAL. THE SECOND LIFT SHALL BE 3/4" OF TYPE S-3 ASPHALTIC CONCRETE (APPLY TACK COAT BETWEEN LIFTS)
3. THE BASE COURSE SHALL BE LIMEROCK (70% CALCIUM MIN) CONSTRUCTED TO THE THICKNESS INDICATED AND SHALL HAVE A MINIMUM LBR OF 100. THE BASE COURSE SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. ALL BASES SHALL BE PRIMED AS PER F.D.O.T. STANDARDS.
4. ALL ORGANIC AND YIELDING MATERIAL WITHIN THE LIMITS SHOWN SHALL BE REMOVED AND REPLACED WITH CLEAN FILL. THE SUB-BASE SHALL EXTEND 12" BELOW THE BASE COURSE. SHALL HAVE A MINIMUM LBR OF 40 AND SHALL BE COMPACTED TO 100% OF MAXIMUM DRY DENSITY AS PER AASHTO T-99-C.
5. INDEX NO.'S REFER TO THE FLORIDA DEPARTMENT OF TRANSPORTATION-ROADWAY AND TRAFFIC DESIGN STANDARDS, JANUARY 1992.

PAVING AND DRAINAGE SYSTEM DETAILS

TOWNGATE - VILLAGE 7
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE), INC.

WF WINNINGHAM & FRADLEY, INC.
Consulting Engineers • Land Surveyors

				 WINNINGHAM & FRADLEY, INC. Consulting Engineers • Land Surveyors	
2.	REVISE PER PEMBROKE PINES ENGINEERING	1/16/95	DESIGNED:	N/A	DATE: 9/93
1.	REVISE PER PEMBROKE PINES ENGINEERING	11/22/94	DRAWN:	D.D.D.	DATE: 9/93
NO.	REVISIONS	DATE	CHECKED:	D.C.	DATE:

APPROVED: 

PROJECT NUMBER **94522** SHEET **PD3 OF 3**

TOWNGATE - VILLAGE 7

CITY OF PEMBROKE PINES, BROWARD COUNTY, FLORIDA

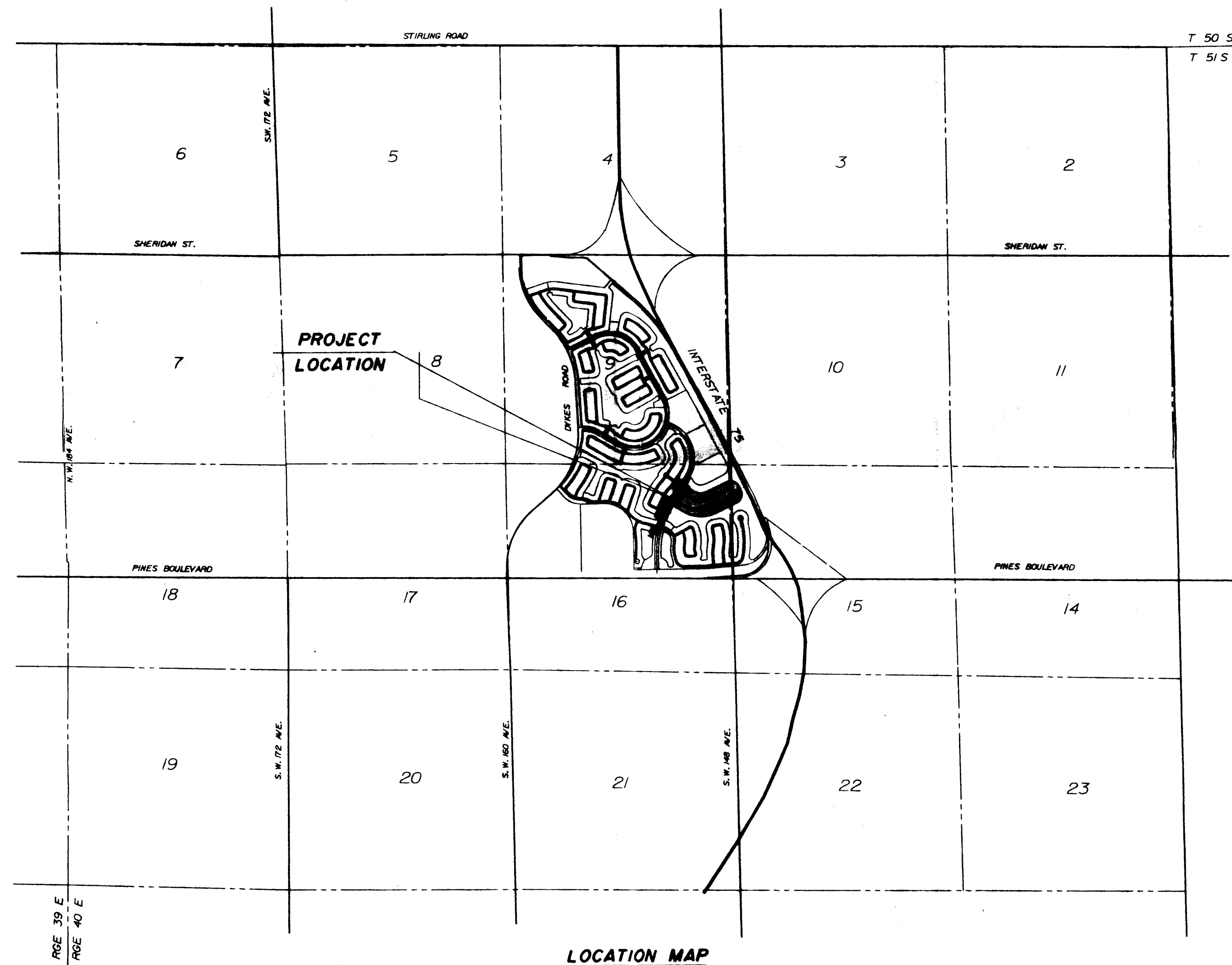
TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE), INC.

LEGAL DESCRIPTION

A portion of parcel "B", TOWNGATE, according to the plat thereof, as recorded in Plat Book 156, Page 11, of the Public Records of Broward County, Florida, more particularly described as follows:

COMMENCING at the most southerly southwest corner of Parcel "B" also being on the northerly right-of-way of Pines Boulevard, as shown on said plat of TOWNGATE; thence North 45°34'58" West, bearings based on the record plat, this and the following four described courses being along the easterly right-of-way on N.W. 155th Avenue as shown on said plat of TOWNGATE for 49.50 feet; thence North 00°34'58" West for 300.08 feet to a point of curvature; thence northerly along the arc of a curve to the right, having a radius of 2604.00 feet and a central angle of 24°04'25", for 1094.11 feet to the POINT OF BEGINNING; thence continue northerly along the arc of said curve to the right, having a radius of 2604.00 feet and a central angle of 04°19'56", for 196.89 feet to a point of tangency; thence North 27°49'23" East for 254.12 feet; thence North 34°25'02" East for 471.61 feet; thence South 55°34'58" East for 60.00 feet; thence South 34°25'02" West for 63.96 feet to a point of curvature; thence southerly and southeasterly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 90°00'00", for 54.98 feet to a point of tangency; thence South 55°34'58" East for 37.90 feet to a point of curvature; thence southeasterly along the arc of a curve to the right, having a radius of 90.00 feet and a central angle of 37°29'23", for 58.89 feet to a point of reverse curvature; thence southeasterly along the arc of a curve to the left, having a radius of 75.00 feet and a central angle of 39°54'25", for 58.24 feet to a point of tangency; thence South 58°00'00" East for 94.44 feet to a point of curvature; thence easterly along the arc of a curve to the left, having a radius of 285.00 feet and a central angle of 58°00'00", for 288.50 feet to a point of tangency; thence North 64°00'00" East for 579.49 feet to a point of curvature; thence easterly, southeasterly and southerly along the arc of a curve to the right, having a radius of 200.00 feet and a central angle of 88°33'51", for 309.15 feet to a point of tangency; thence South 27°26'09" East for 150.05 feet to a point of curvature; thence southerly and southwesterly along the arc of a curve to the right, having a radius of 200.00 feet and a central angle of 91°26'09", for 319.17 feet to a point of tangency; thence South 64°00'00" West for 583.25 feet to a point of curvature; thence westerly along the arc of a curve to the right, having a radius of 835.00 feet and a central angle of 58°00'00", for 845.26 feet to a point of tangency; thence North 58°00'00" West for 190.00 feet to a point of curvature; thence westerly and northwesterly along the arc of a curve to the right, having a radius of 60.00 feet and a central angle of 25°50'00", for 27.05 feet to a point of reverse curvature; thence northwesterly, westerly, southwesterly and southerly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 120°13'31", for 73.32 feet to a point of compound curvature; thence southerly along the arc of a curve to the left, having a radius of 2544.00 feet and a central angle of 04°19'05", for 191.72 feet; thence North 66°30'33" West, on a line radial to the last described curve, for 60.00 feet to the POINT OF BEGINNING.

Said lands situate lying and being in the City of Pembroke Pines and containing 21.506 acres, more or less.



LOCATION MAP

PAVING & DRAINAGE SYSTEM WATER DISTRIBUTION SYSTEM SEWAGE COLLECTION SYSTEM TRAFFIC MARKINGS

INDEX TO SHEETS

DESCRIPTION	SHEET NUMBER
GENERAL NOTES AND SPECIFICATIONS	GNI OF 1
PAVING & DRAINAGE SYSTEM - PLAN	PD1 OF 3
PAVING & DRAINAGE SYSTEM - PLAN	PD2 OF 3
PAVING & DRAINAGE SYSTEM - DETAILS	PD3 OF 3
TRAFFIC MARKING - PLAN & DETAILS	TM1 OF 2 TM2 OF 2
WATER DISTRIBUTION & SEWAGE COLLECTION SYSTEM - PLAN	WS1 OF 6
WATER DISTRIBUTION & SEWAGE COLLECTION SYSTEM - PLAN	WS2 OF 6
SEWAGE COLLECTION SYSTEM - PROFILES	WS3 OF 6
SEWAGE COLLECTION SYSTEM - PROFILES	WS4 OF 6
SEWAGE COLLECTION SYSTEM - DETAILS	WS5 OF 6
WATER DISTRIBUTION SYSTEM - DETAILS	WS6 OF 6

LEGEND

	SANITARY STRUCTURE DESIGNATION
	LENGTH, SIZE, TYPE, AND SLOPE OF PIPE
	FIRE HYDRANT WITH GATE VALVE & B.R.
	BACTERIOLOGICAL SAMPLING POINT
	RIM ELEVATION
	INVERT ELEVATION
	INLET DESIGNATION
	LENGTH, SIZE, AND TYPE OF PIPE
	FLOW OR MAN LINE
	RIDGE LINE
	PAVEMENT SLOPE AND DIRECTION
	DIRECTION OF OVERLAND FLOW
	POLLUTION RETARDANT BAFFLE
	FINISHED FLOOR ELEVATION
	CONCRETE SIDEWALK
	EXISTING OR FUTURE UTILITIES
	PROPOSED GRADE
	EXISTING GRADE
	PROPOSED PAVEMENT
	EXISTING OR FUTURE PAVEMENT
	FIRE HYDRANT
	GATE VALVE
	WATER MAIN
	FORCE MAIN
	BLUE REFLECTOR
	PAVEMENT RESTORATION
	PAVEMENT AND/OR ROCK REMOVAL

PD 934501-9

Approved	<input type="checkbox"/>
Approved, Require Revisions	<input type="checkbox"/>
Approved, Subject to Revisions	<input type="checkbox"/>
Denial, Resubmit	<input type="checkbox"/>

Date: _____

WINNINGHAM & FRADLEY, INC.
ENGINEERS • PLANNERS • SURVEYORS

APPROVED
DATE: _____
SEPT 94

DEC 12 1994

GENERAL NOTES FOR WATER DISTRIBUTION AND SEWAGE COLLECTION SYSTEM

- ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ALL APPLICABLE FEES AND CHARGES MUST BE PAID PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE APPROVED PLANS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. APPROVAL OF DEVELOPMENT PLANS BY THE CITY IN NO WAY IMPLIES VERIFICATION OF THE ACCURACY OF THOSE PLANS OR FEATURES DEPICTED THEREON. ANY DISCREPANCY IN, OR VARIATION FROM, THE APPROVED PLANS IS TO BE BROUGHT TO THE ATTENTION OF THE CITY'S ENGINEER BY THE OWNERS ENGINEER.
- 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 DAMAGE, 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.
- THE CONTRACTOR SHALL INFORM THE CITY OF PEMBROKE PINES ENGINEERING & UTILITY DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS OF ALL UTILITIES, AND NOTIFICATION OF UNCLE 48 HOURS IN ADVANCE OF CONSTRUCTION.
- THE CONTRACTOR SHALL INFORM THE CITY OF PEMBROKE PINES ENGINEERING & UTILITY DEPARTMENT AND WINNINGHAM & FRADLEY, INC. A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCEMENT OF CONNECTING TO A CITY FACILITY.
- A PRE-CONSTRUCTION MEETING IS TO BE HELD AT CITY HALL AND ATTENDED BY THE CONTRACTOR, OWNER'S ENGINEER, AND OTHER INTERESTED PARTIES PRIOR TO ISSUANCE OF ANY CONSTRUCTION PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING OF TESTS AS MAY BE DEEMED NECESSARY BY THE CITY OF PEMBROKE PINES UTILITY DEPARTMENT AND THE OWNER'S ENGINEER OR AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
- CONSTRUCTION SHALL BE CARRIED OUT IN STRICT COMPLIANCE WITH THOSE STANDARDS ACCEPTED BY BROWARD COUNTY OFFICE OF ENVIRONMENTAL SERVICES AND ADOPTED BY THE CITY OF PEMBROKE PINES.
- THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION PLANS ON-SITE. THE PLANS ARE TO BE MADE AVAILABLE TO THE CITY ENGINEER OR HIS DESIGNEE UPON REQUEST.
- WHERE SANITARY SEWER MAINS CROSS UNDER WATER MAINS WITH LESS THAN 18 INCH VERTICAL CLEARANCE, AND WHERE THE SANITARY SEWER CROSSES ABOVE A WATER MAIN, THE SANITARY SEWER SHALL BE OF CLASS 52 DUCTILE IRON PIPE FOR A DISTANCE OF 20 FEET CENTERED ON THE POINT OF INTERSECTION IN NO CASE SHALL VERTICAL CLEARANCE BETWEEN ANY UNDERGROUND PIPING BE LESS THAN 12 INCHES. A HORIZONTAL SEPARATION OF 10 FEET SHALL BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
- THE OWNER'S ENGINEER SHALL MAKE SUFFICIENT OBSERVATIONS OF THE WORK TO ENABLE HIM TO CERTIFY TO THE INSTALLATION AS BEING IN SUBSTANTIAL CONFORMANCE WITH APPLICABLE STANDARDS AND SPECIFICATIONS.
- THE CITY OF PEMBROKE PINES UTILITY DEPARTMENT AND THE ENGINEER OF RECORD WILL CARRY OUT INSPECTIONS OF THE WORK, AND WILL WITNESS PRESSURE, BACTERIOLOGICAL, AND INFILTRATION/EXFILTRATION TESTS. TELEVISION INSPECTION OF ALL GRAVITY SANITARY SEWER SYSTEMS ARE REQUIRED.
- THE CONTRACTOR SHALL SUPPLY AND INSTALL APPROVED REFLECTIVE MARKERS TO BE PLACED IN THE CENTER OF THE DRIVING LANE ADJACENT TO FIRE HYDRANTS (BLUE REFLECTOR) AND VALVES OR M.H.S. OUTSIDE PAVEMENT AREAS.
- THE FOLLOWING DOCUMENTS ARE TO BE ON FILE AT THE CITY OF PEMBROKE PINES PRIOR TO THE CONNECTION OF THE FIRST WATER METER.
 - LETTERS OF ACCEPTANCE FROM:
BROWARD COUNTY HEALTH DEPARTMENT
BROWARD COUNTY OFFICE OF ENVIRONMENTAL SERVICES
STATE DEPARTMENT OF ENVIRONMENTAL REGULATION
 - CERTIFICATION OF ENGINEER OF RECORD.
 - THREE SIGNED AND SEALED COPIES OF AS-BUILTS CERTIFIED BY A PROFESSIONAL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA.

- NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF THE OWNER'S ENGINEER.
- THE MINIMUM ALLOWABLE HORIZONTAL CLEARANCE BETWEEN UTILITIES AND OBSTRUCTIONS TO BE 3'-0" INCLUDING CATCH BASINS. THE MINIMUM ALLOWABLE HORIZONTAL CLEARANCE BETWEEN UTILITIES AND TREES IS TO BE 5'-0"

GENERAL NOTES FOR SEWAGE COLLECTION SYSTEM & DRAINAGE SYSTEM

- PRECAST CONCRETE MANHOLES AND CATCH BASINS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND 64 T.F. FOR CONCRETE STRENGTH, STEEL REINFORCEMENT, AREA, PLACEMENT, AND APPEARANCE WHEN MANUFACTURED. ENGINEERING TESTING LABORATORY, SIGNED AND DATED, CERTIFYING THAT THEY MEET THE REQUIREMENTS OF ASTM C-478 FOR CONCRETE STRENGTH, STEEL REINFORCEMENT AREA AND PLACEMENT, AND APPEARANCE. MANHOLES AND CATCH BASINS MUST BE INSPECTED BY THE CITY ENGINEER BEFORE UNLOADING.
- CONCRETE FOR PRECAST MANHOLES AND CATCH BASINS OR CAST IN PLACE MANHOLES AND CATCH BASINS SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- MINIMUM WALL AND BASE THICKNESS FOR PRECAST MANHOLES SHALL BE 8 INCHES, EXCEPT FOR P BOTTOMS WHICH SHALL HAVE 6" WALLS. REINFORCING STEEL FOR MANHOLES AND CATCH BASINS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615, A-305, A-185, AND A-497. LATEST REVISIONS. SPLICES SHALL HAVE A MINIMUM LAP OF 24 BAR DIAMETERS. MINIMUM COVER OVER REINFORCING STEEL SHALL BE 3 INCHES. ALL DRAINAGE STRUCTURES SHALL MEET FOOT SPECIFICATION.
- ALL OPENINGS IN PRECAST MANHOLES AND CATCH BASINS SHALL BE CAST AT THE TIME OF MANUFACTURE.
- PRECAST MANHOLE AND CATCH BASIN SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY OF PEMBROKE PINES AND ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
- ALL MANHOLES AND CATCH BASINS SHALL BE SET PLUMB TO LINE AND GRADE, AND SHALL REST ON A FIRM, CAREFULLY GRADED SUBGRADE, WHICH SHALL PROVIDE UNIFORM BEARING UNDER BASE.
- MANHOLE SECTIONS SHALL BE JOINED WITH A MASTIC COMPOUND PRODUCING A WATER TIGHT BOND. THE REMAINING SPACE SHALL BE FILLED WITH CEMENT MORTAR AND FINISHED SO AS TO PRODUCE A SMOOTH CONTINUOUS SURFACE INSIDE AND OUTSIDE THE WALL SECTIONS.
- ALL CONCRETE AND MORTAR USED IN MANHOLE AND CATCH BASIN CONSTRUCTION SHALL HAVE TYPE II CEMENT.
- ALL SPACES AROUND PIPES ENTERING OR LEAVING MANHOLES SHALL BE COMPLETELY FILLED WITH EMBOCO MORTAR (NON-METALLIC) OR BONSAL (NON-SHRINKING).
- TWO COATS OF KOPPER'S 300 M SHALL BE APPLIED TO THE INSIDE OF THE MANHOLES AND WETWELLS. FIRST COAT RED, SECOND COAT BLACK ON THE OUTSIDE OF THE MANHOLE, ONLY ONE COAT IS NECESSARY.

- SANITARY MANHOLES AND LIDS SHALL BE CAPABLE OF WITHSTANDING AASHTO H-20 LOADING, USF 420A. D.A.E. LIDS SHALL SAY "CITY OF PEMBROKE PINES SANITARY SEWER".
- ALL GRAVITY SEWER PIPE SHALL BE PVC OR DUCTILE IRON. PVC PIPE SHALL CONFORM TO ASTM D 3034, SDR 35, LATEST REVISION, WITH MAXIMUM 13 FOOT LENGTHS AND PUSH-ON RUBBER GASKET JOINTS. DUCTILE IRON GRAVITY PIPE SHALL CONFORM TO THE SPECIFICATION FOR FORCE MAIN.
- CONNECTING TO THE EXISTING SYSTEM. ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE UNDER THE DIRECTION OF THE CITY UTILITIES DEPARTMENT. VALVES THAT SEPARATE THE MAINS BEING INSTALLED FROM THE EXISTING MAINS SHALL BE OPERATED BY OR UNDER THE DIRECTION OF THE CITY UTILITIES DEPARTMENT REPRESENTATIVE ONLY.
- THE CONTRACTOR SHALL TEST THE COMPLETED SEWER LINE TO DETERMINE THE ALIGNMENT AND TIGHTNESS OF THE JOINTS. GRAVITY SEWER MAINS SHALL BE LAMPED AND MUST SHOW A FULL CIRCLE OF LIGHT. INFILTRATION AND EXFILTRATION TESTING SHALL BE CONDUCTED. LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH DIAMETER PER MILE PER DAY. NO VISIBLE INFILTRATION SHALL BE ALLOWED.
- A READ STAKE SHALL BE INSTALLED AT EVERY SEWER SERVICE LOCATION.
- SANITARY SEWER SHALL BE TELEVIEWED AT OWNERS EXPENSE.

WATER DISTRIBUTION SYSTEM NOTES

- ALL WATER MAIN SHALL BE PVC CONFORMING TO ANSI/AWWA SPECIFICATION C-900-89-DR18.
- FITTINGS SHALL BE DUCTILE IRON, CLASS 350 MEETING AWWA/ANSI C153/A21.53-88 SPECIFICATIONS. FITTINGS MUST BE CEMENT LINED AND SEAL COATED PER AWWA/ANSI C104/A21.4-90.
- GATE VALVES 4" AND LARGER SHALL MEET AWWA C-509-87 SPECIFICATION. VALVES MUST BE MUELLER CO. OR APPROVED EQUAL. MECHANICAL JOINT, RESILIENT SEATED.
- WATER SERVICE PIPING, FITTINGS, AND SERVICE TUBING SHALL BE POLYBUTYLENE (PB) CONFORMING TO AWWA SPECIFICATION C-902-88 SDR 9, 250 PSI RATING.
- ALL METER SERVICE CONNECTIONS SHALL BE BRONZE FROM PLUG VALVE TO PLUG VALVE. NO GATE VALVES ARE TO BE USED (2" OR LESS) 90° ANGLE LOCK WING.
- PAVEMENT RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
- ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING AND DISINFECTING MUST COMPLY WITH THE CITY OF PEMBROKE PINES UTILITIES WATER AND WASTEWATER MINIMUM CONSTRUCTION REQUIREMENTS.
- THE ENGINEER WILL TAKE ALL BACTERIOLOGICAL SAMPLES TO AN HRS. CERTIFIED LABORATORY AND SUBMIT RESULTS TO THE CITY OF PEMBROKE PINES UTILITIES.
- ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE UNDER THE DIRECTION OF THE CITY OF PEMBROKE PINES UTILITIES DEPARTMENT.
- ALL PIPE, ETC. SHALL BE TESTED UNDER A CONSTANT PRESSURE OF 150 PSIFOR A MINIMUM TEST OF 2 HOURS AND SHALL NOT EXCEED THE LEAKAGE REQUIREMENTS AS PER AWWA/ANSI SPECIFICATIONS OF C600-93 LEAKAGE FORMULA:
$$Q = \frac{S \cdot D \cdot P}{133,200}$$

Q = ALLOWABLE LEAKAGE IN GALLONS PER HOUR
S = TOTAL LENGTH OF PIPE TESTED IN FEET
D = DIAMETER OF THE PIPE TESTED IN INCHES
P = AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH
- THE MINIMUM DEPTH OF COVER OVER WATER MAINS SHALL BE 36 INCHES.
- DISINFECTING OF MAINS SHALL COMPLY WITH AWWA C-651-92 SPECIFICATIONS. STANDARD BACTERIOLOGICAL SAMPLING POINTS SHALL BE DESIGNATED ON THE ENGINEERING PLANS.
- MINIMUM VALVE SPACING SHALL BE AS PER SECTION 8.2 OF THE TEN STATES STANDARDS.
- WHEN PVC IS USED FOR WATER MAIN, A 3" STRIP OF METALLIC TAPE SHALL BE INSTALLED THE LENGTH OF THE PIPE 18" ABOVE THE PIPE WITH THE WORDS "WATER MAIN BURIED BELOW" FACING UPWARD. NON-METALLIC TAPE SHALL BE USED ON DIP.
- ALL DIP WATER MAIN SHALL BE CLASS 350, CONFORMING TO ANSI/AWWA SPECIFICATION C153/A21.4-91 AND BE CEMENT MORTAR LINED AND SEAL COATED PER ANSI/AWWA SPECIFICATION C104/A21.4-90.

PAVING AND DRAINAGE SYSTEM NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PEMBROKE PINES ENGINEERING DEPARTMENT, THE SOUTH BROWARD DRAINAGE DISTRICT, AND THE FLORIDA DEPARTMENT OF TRANSPORTATION.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL GIVE TIMELY NOTIFICATION TO ALL UTILITY COMPANIES WITH FACILITIES IN THE AREA.
- THE LOCATIONS OF EXISTING FACILITIES WERE PLOTTED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SAFEGUARD ALL EXISTING STRUCTURES, UTILITIES AND SURVEY MARKERS.
- ALL DRAINAGE PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) MEETING THE REQUIREMENTS OF ASTM SPECIFICATION C76-89, OR HELICAL CORRUGATED ALUMINUM PIPE (CMP) MEETING THE REQUIREMENTS OF ASTM B209 AND AASHTO M196.
- THE DRAINAGE SYSTEM HAS BEEN DESIGNED FOR THE USE OF RCP. THE INVERT ELEVATIONS SHOWN ON THE PLANS ARE FOR RCP. IF CMP IS USED, THE CROWN OF THE CMP IS TO BE EQUAL TO THE CROWN OF THE RCP. TYPE OF PIPE TO BE USED SHALL BE DETERMINED ONCE A CONTRACTOR IS HIRED.
- MINIMUM COVER FOR ALL PIPE CULVERTS SHALL MEET THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (INDEX NO. 205).
- ALL UNDERGROUND FACILITIES SHALL BE INSTALLED PRIOR TO PLACING THE LIMEROCK BASE MATERIAL.
- THE CONTRACTOR AND/OR HIS SUPERINTENDENT SHALL HAVE AT LEAST ONE COPY OF EACH OF THE FOLLOWING PUBLICATIONS ON THE JOB SITE DURING CONSTRUCTION OF THIS PROJECT:
 - CITY OF PEMBROKE PINES ENGINEERING DEPARTMENT STANDARD DETAILS SPECIFICATIONS & PROCEDURAL MANUAL, JANUARY 1990.
 - FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
 - FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, JANUARY 1990.
 - U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, MARCH 1988.

- THE FOLLOWING INSPECTIONS ARE REQUIRED BY THE CITY OF PEMBROKE PINES ENGINEERING DEPT. PLEASE CALL 435-6512 48 HRS PRIOR TO THE TIME THE INSPECTION IS NEEDED.
 - CLEARING AND FILLING
 - STORM DRAINS/UTILITIES
 - SUBGRADE
 - ROCK BASE
 - PRIME COAT
 - ASPHALT
 - FINAL
 - PAVEMENT MARKINGS

- DENSITY TESTS FOR SUBGRADES MUST BE SUBMITTED TO AND APPROVED BY THE CITY OF PEMBROKE PINES.
- DENSITY TESTS AND AS-BUILTS FOR LIMEROCK BASE MUST BE SUBMITTED AND APPROVED BY THE CITY OF PEMBROKE PINES PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- A PRECONSTRUCTION MEETING IS TO BE HELD IN THE ENGINEERING DEPARTMENT AND ATTENDED BY THE OWNER, ENGINEER-OF-RECORD, CONTRACTOR AND INTERESTED PARTIES PRIOR TO THE ISSUANCE OF PAVING & DRAINAGE CONSTRUCTION PERMITS.

**SOUTH BROWARD DRAINAGE DISTRICT
GENERAL NOTES**

- THE FOLLOWING GENERAL NOTES ARE REQUIRED BY SOUTH BROWARD DRAINAGE DISTRICT. THEY ARE NOT MEANT TO BE AN INCLUSIVE AND IT IS THE ENGINEER'S RESPONSIBILITY TO ADD ANY NOTES WHICH WILL INFORM THE OWNER AND THE CONTRACTOR OF ANY ADDITIONAL REQUIREMENTS OF THE SOUTH BROWARD DRAINAGE DISTRICT.
- LIMEROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 910 OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS EXCEPT THE MINIMUM PERCENTAGE OF CARBONATE OF CALCIUM AND MAGNESIUM SHALL BE SIXTY PERCENT (60%).
- THE CONTRACTOR SHALL CALL THE SOUTH BROWARD DRAINAGE DISTRICT 24 HOURS PRIOR TO BACK-FILLING OF DRAINAGE TRENCHES, PLACEMENT OF ASPHALT, SHAPING OF CANAL OR LAKE BANKS FROM THE DEEP CUT LINE AND AS REQUIRED BY DISTRICT CALL (305) 681-3337 OR (305) 681-3338. THE SOUTH BROWARD DRAINAGE DISTRICT'S WORKING HOURS ARE FROM 8:00 AM TO 4:30 PM.
- ANY REVISIONS TO THESE PLANS MUST BE APPROVED BY SOUTH BROWARD DRAINAGE DISTRICT PRIOR TO CONSTRUCTION.
- BONDS AND INSPECTIONS
UPON DISTRICT BOARD OF SUPERVISORS APPROVAL OF PLANS, BUT BEFORE CONSTRUCTION CAN COMMENCE, THE FOLLOWING ITEMS MUST BE COMPLIED WITH:
 - BOND (CASH OR SURETY) OR LETTER OF CREDIT, IN THE DISTRICT'S FAVOR, MUST BE POSTED IN THE AMOUNT STATED IN SECTION 4.10 OF THE DISTRICT'S DESIGN CRITERIA MANUAL.
 - ALL EASEMENTS, DEED RESTRICTIONS, INDEMNIFICATION AGREEMENTS, MAINTENANCE AGREEMENTS AND DEEDS AS REQUIRED BY THE DISTRICT SHALL BE PRESENTED TO THE DISTRICT MANAGER AND ATTORNEY FOR APPROVAL BEFORE RECORDATION. ALL COSTS OF RECORDING THE APPLICABLE INSTRUMENT WILL BE BORNE BY THE DEVELOPER.
 - UPON COMPLIANCE WITH THE CONDITIONS REQUIRED BY THE DISTRICT FOR APPROVAL AND RECEIPT OF APPROVED PLANS FROM THE DISTRICT'S ENGINEER, THE DISTRICT'S MANAGER WILL MARK THE PLANS "APPROVED" AND SIGN SAME AND DISTRIBUTE THE APPROVED PLANS TO THE DEVELOPER AND THE DISTRICT FILES.
 - BONDS SHALL BE PROVIDED BY THE PRINCIPALS OF DEVELOPMENTS ONLY. CONTRACTOR OR SUB-CONTRACTOR BONDS ARE NOT ACCEPTABLE.
 - IF REQUIRED BY DISTRICT, A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.

- THE CONTRACTOR SHALL MAINTAIN ACCURATE AND COMPLETE RECORDS OF WORK ITEMS COMPLETED.
- 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.
- UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD ONE COMPLETE SET OF "AS-BUILT" CONSTRUCTION CHANGES AND DIMENSIONED LOCATIONS AND ELEVATIONS OF ALL IMPROVEMENTS AND SHALL BE SIGNED BY THE CONTRACTOR.
- ALL "AS-BUILT" INFORMATION ON ELEVATIONS OF SANITARY SEWAGE, PAVING AND DRAINAGE SHALL BE CERTIFIED BY A REGISTERED LAND SURVEYOR.
- AS-BUILT INFORMATION ON THE WATER SYSTEM SHALL INCLUDE, BUT NOT LIMITED TO, LOCATION OF ALL VALVES, FITTINGS, FIRE HYDRANTS, AND WATER SERVICES AND TOP-OF-PIPE ELEVATION ON 100-FOOT INTERVALS AT A MINIMUM.
- PRIOR TO A FINAL INSPECTION BY THE CITY OF PEMBROKE PINES, THE ENGINEER SHALL SUBMIT TWO (2) SETS OF BLUEPRINTS OF "AS-BUILT" CONSTRUCTION DRAWINGS.
- UPON A FINAL INSPECTION BY THE CITY OF PEMBROKE PINES, THE ENGINEER SHALL SUBMIT TO THE CITY ONE (1) COMPLETE SET OF REPRODUCIBLE MYLARS AND 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.

FIRE HYDRANTS

FIRE HYDRANTS SHALL HAVE A MINIMUM 1 1/4" VALVE OPENING AND SHALL OPEN AGAINST THE PRESSURE AND CLOSING WITH THE FLOW. HYDRANTS SHALL BE MUELLER CENTURION, MODEL NUMBER A-423 OR EQUAL. HYDRANTS SHALL MEET OR EXCEED ANSI/AWWA C502-83, C503-88 OR LATEST REVISION, AND SHALL COMPLY WITH FACTORY MUTUAL RESEARCH CORPORATION AND UNDERWRITERS LABORATORIES UL246 STANDARD.

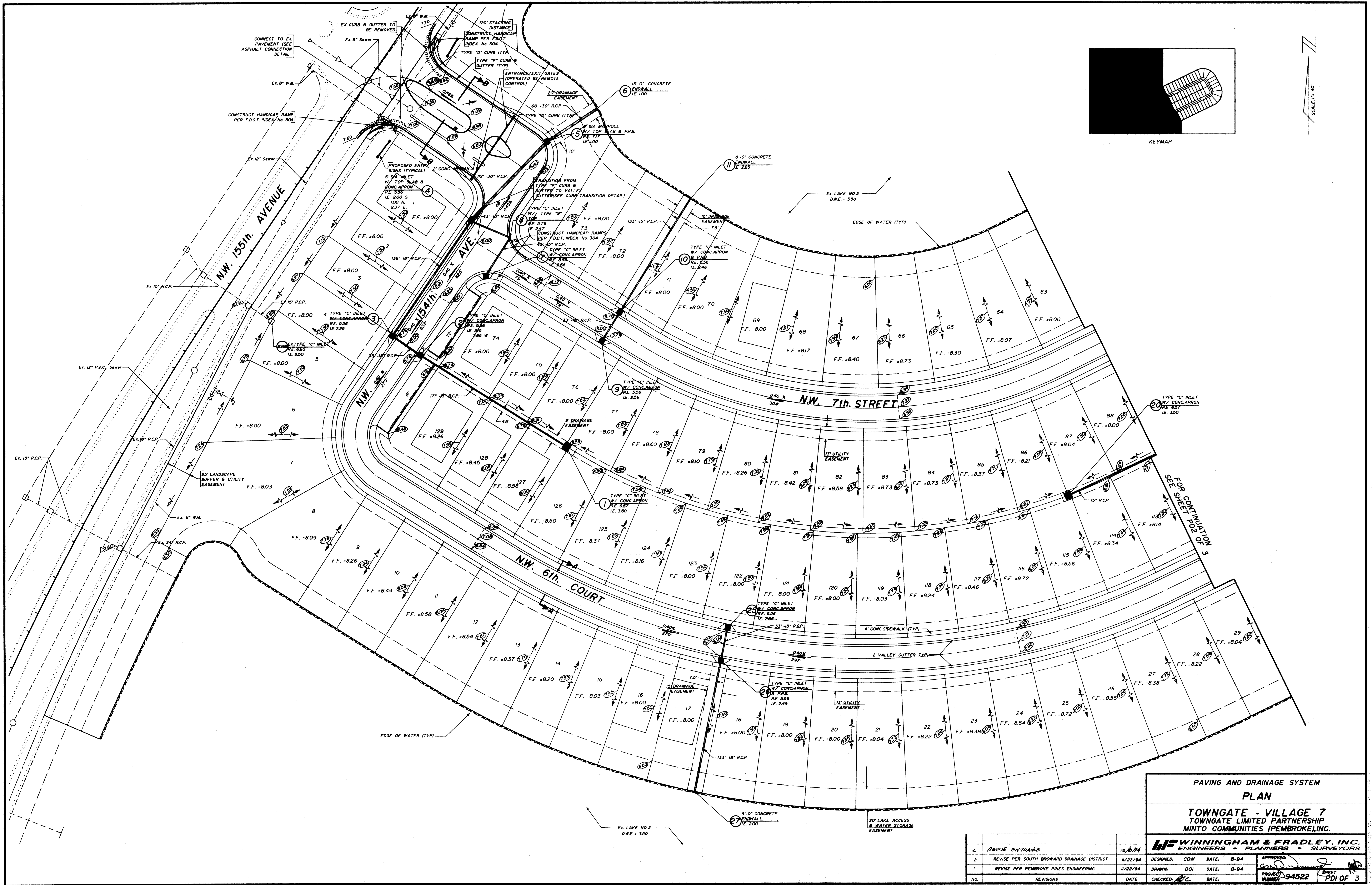
GENERAL NOTES

TOWNGATE - VILLAGE 7
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE) INC.

WINNINGHAM & FRADLEY, INC.
ENGINEERS - PLANNERS

DESIGNED: WBF DATE: 9/94
DRAWN: WBF DATE: 9/94
CHECKED: WBF DATE: 9/94
PROJECT NUMBER: 94522

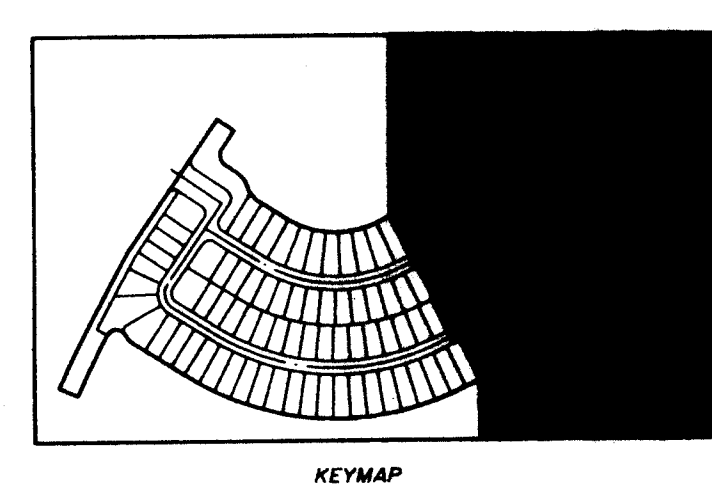
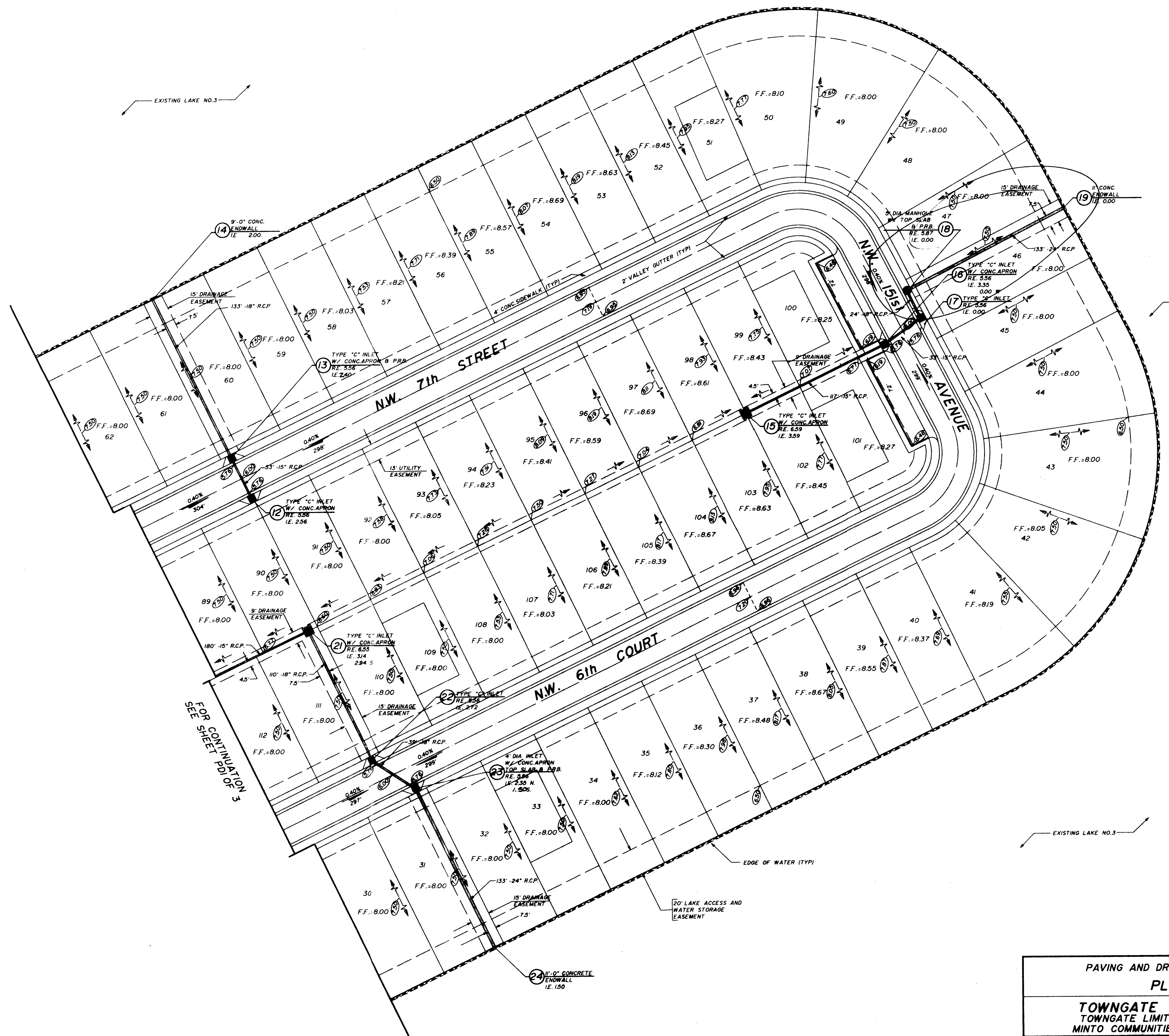
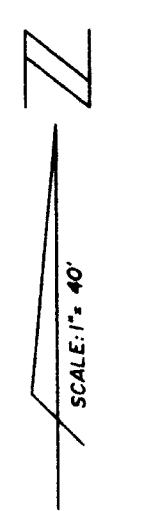
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PAVING AND DRAINAGE SYSTEM PLAN			
TOWNGATE - VILLAGE 7 TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE), INC.			
HFWINNINGHAM & FRADLEY, INC. ENGINEERS • PLANNERS • SURVEYORS		DESIGNED: CDW DATE: 8-94 DRAWN: DQI DATE: 8-94 CHECKED: [Signature] DATE: 11/22/94 PROJECT: 94522 SHEET: PDI OF 3	

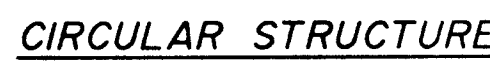
NO.	REVISIONS	DATE
1.	REVISE ENTRANCE	11/22/94
2.	REVISE PER SOUTH BROWARD DRAINAGE DISTRICT	11/22/94
3.	REVISE PER PEMBROKE PINES ENGINEERING	11/22/94

DEC 12 1994

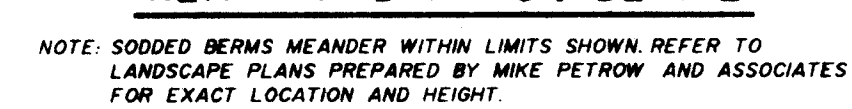
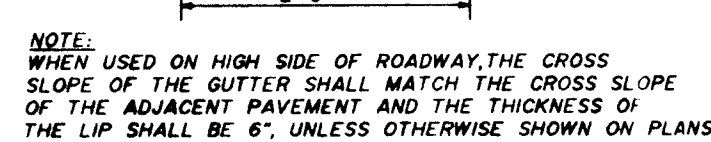
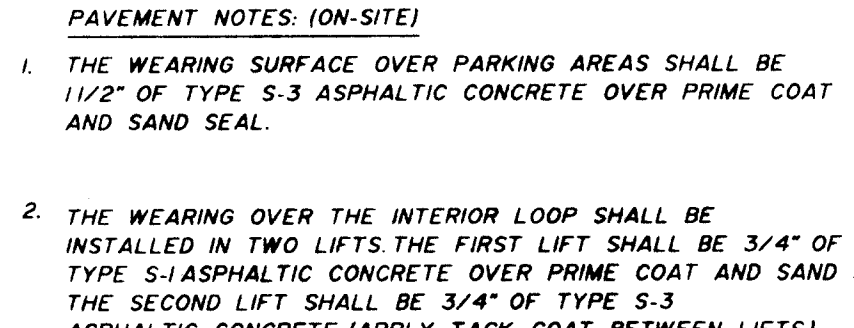


PAVING AND DRAINAGE SYSTEM PLAN			
TOWNGATE - VILLAGE 7 TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE), INC.			
WINNINGHAM & FRADLEY, INC. ENGINEERS • PLANNERS • SURVEYORS			
DESIGNED: CDW	DATE: 8-94	APPROVED: <i>[Signature]</i>	
DRAWN: DOI	DATE: 8-94	PROJECT NUMBER: 94522	
CHECKED: <i>[Signature]</i>	DATE:	SHEET NUMBER: PD2 OF 3	

NO.	REVISIONS	DATE
1.	REVISE PER PEMBROKE PINES ENGINEERING	11/22/94



POLLUTION RETARDANT



TOWNGATE - VILLAGE 7
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE), INC.

WF WINNINGHAM & FRADLEY, INC.
Consulting Engineers • Land Surveyors

12 1994

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