

# TOWNGATE - VILLAGE 10

## CITY OF PEMBROKE PINES, BROWARD COUNTY, FLORIDA

### TOWNGATE LIMITED PARTNERSHIP

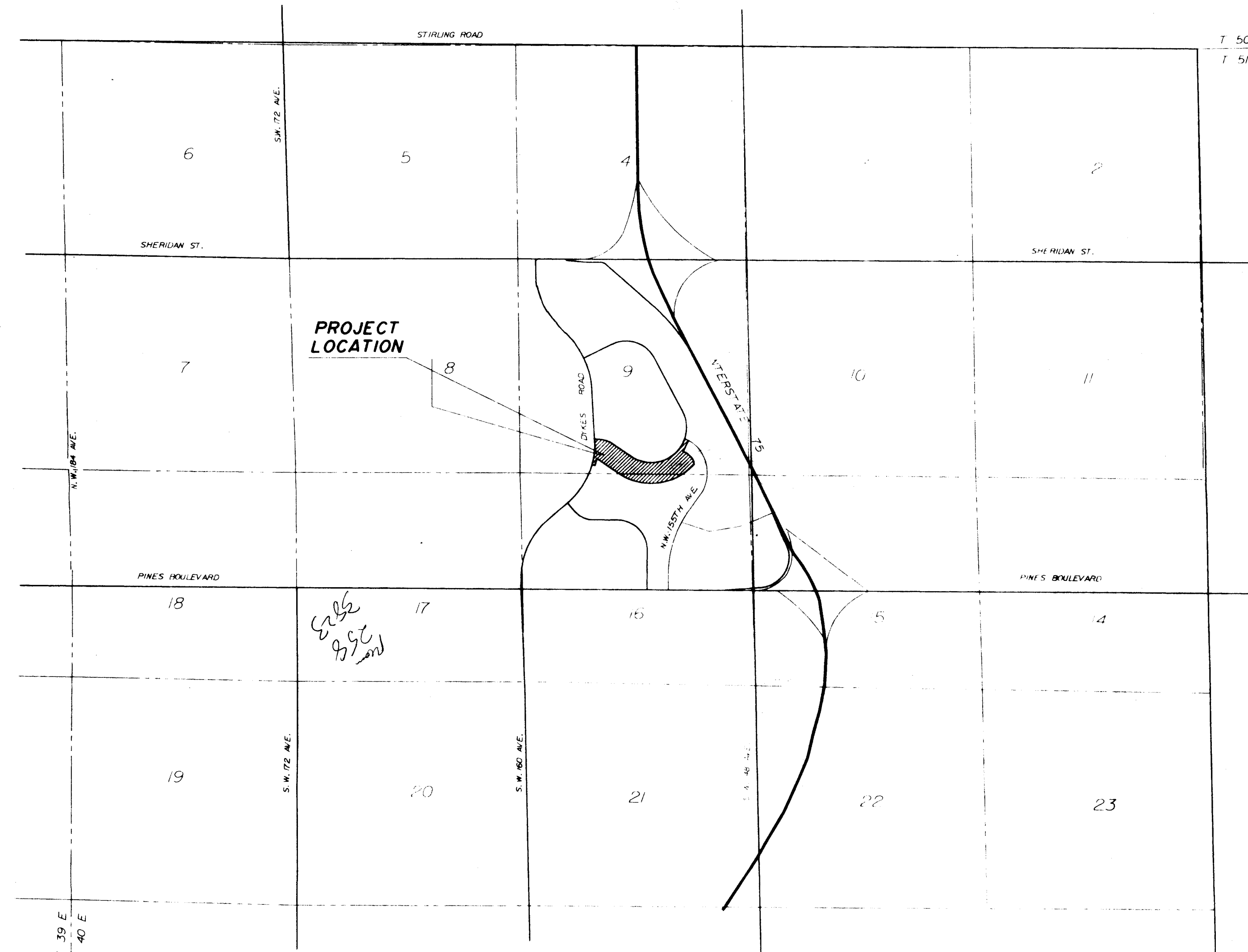
### MINTO COMMUNITIES (PEMBROKE), INC.

#### DESCRIPTION

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

COMMENCING at the intersection of the centerline of Dykes Road and the centerline of NW 12th Street, as shown on said plat of TOWNGATE; thence North 86°24'35" East (bearing based on the record plat), this and the following described course being along the centerline of NW 12th Street for 822.2 feet to a point of curvature, thence southeasterly along the arc of a curve to the right, having a radius of 660.00 feet and a central angle of 33°51'41", for 390.05 feet, thence South 30°16'16" West, on a line radial to the last described curve, for 30.00 feet to the POINT OF BEGINNING, thence South 59°43'44" East for 575.24 feet to a point of curvature, thence southeasterly, easterly and northeasterly along the arc of a curve to the left, having a radius of 856.00 feet and a central angle of 99°16'57", for 1483.28 feet to a point of reverse curvature, thence northeasterly along the arc of a curve to the right, having a radius of 25.00 feet and a central angle of 45°38'28", for 19.91 feet, thence South 23°22'13" East, on a line radial to the last and next described curves, for 86.53 feet to a point on a curve, thence southwesterly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 41°28'45", for 23.34 feet to a point of reverse curvature, thence southwesterly along the arc of a curve to the right, having a radius of 916.00 feet and a central angle of 26°19'17", for 420.80 feet to a point of reverse curvature, thence southwesterly and southeasterly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 102°21'37", for 67.42 feet to a point of reverse curvature, thence southeasterly along the arc of a curve to the right, having a radius of 200.00 feet and a central angle of 29°41'19", for 103.63 feet to a point of tangency, thence South 29°11'59" East for 150.15 feet to a point of curvature, thence southeasterly, southerly and southwesterly along the arc of a curve to the right, having a radius of 200.00 feet and a central angle of 92°22'34", for 322.45 feet to a point of compound curvature, thence southwesterly and westerly along the arc of a curve to the right, having a radius of 1406.00 feet and a central angle of 37°40'32", for 924.53 feet to a point of reverse curvature, thence westerly along the arc of a curve to the left, having a radius of 50.00 feet and a central angle of 47°56'45", for 41.84 feet to a point of reverse curvature, thence westerly along the arc of a curve to the right, having a radius of 50.00 feet and a central angle of 51°00'21", for 44.51 feet to a point of tangency, thence North 73°42'09" West for 119.97 feet to a point of curvature, thence northwesterly along the arc of a curve to the left, having a radius of 50.00 feet and a central angle of 47°56'45", for 41.84 feet to a point of reverse curvature, thence northwesterly along the arc of a curve to the right, having a radius of 1406.00 feet and a central angle of 08°31'40", for 209.27 feet to a point of tangency, thence North 59°43'44" West for 633.76 feet to a point of curvature, thence westerly and southerly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 106°14'56", for 64.90 feet to a point of reverse curvature, thence southerly along the arc of a curve to the right, having a radius of 1915.00 feet and a central angle of 00°51'08", for 28.49 feet, thence North 75°07'32" West, on a line radial to the last and next described curves, for 60.00 feet, thence northerly along the arc of a curve to the left, having a radius of 1855.00 feet and a central angle of 06°55'45", for 224.34 feet, thence North 13°16'25" East to a point on a curve, at which a radial line bears North 85°07'25" West, thence northerly along the arc of a curve to the left, having a radius of 1867.00 feet and a central angle of 06°08'16", for 200.00 feet, thence North 43°28'26" East for 49.27 feet to a point on a curve, at which a radial line bears South 01°47'26" East, thence easterly along the arc of a curve to the right, having a radius of 618.00 feet and a central angle of 18°22'59", for 198.28 feet, thence South 75°32'06" East for 101.57 feet to a point on a curve, at which a radial line bears South 25°51'49" West, thence easterly along the arc of a curve to the right, having a radius of 04°24'27", for 48.46 feet to the POINT OF BEGINNING.

Said lands situate, lying and being in the City of Pembroke Pines, Broward County, Florida, and contain 27.749 acres, more or less.



LOCATION MAP

## PAVING & DRAINAGE SYSTEM

## WATER DISTRIBUTION SYSTEM

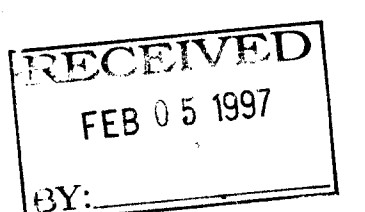
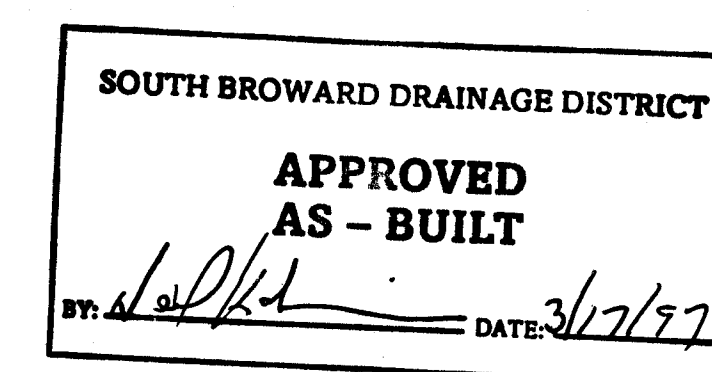
## SEWAGE COLLECTION SYSTEM

## TRAFFIC MARKINGS

#### INDEX TO SHEETS

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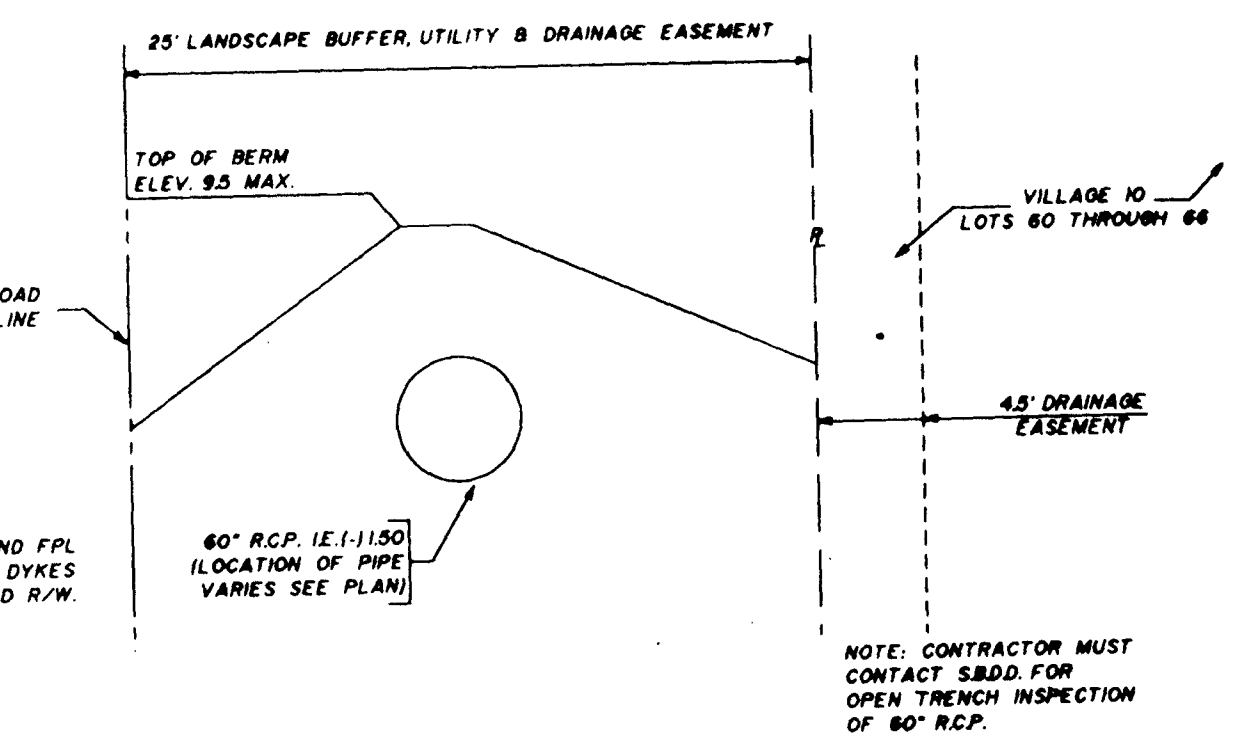
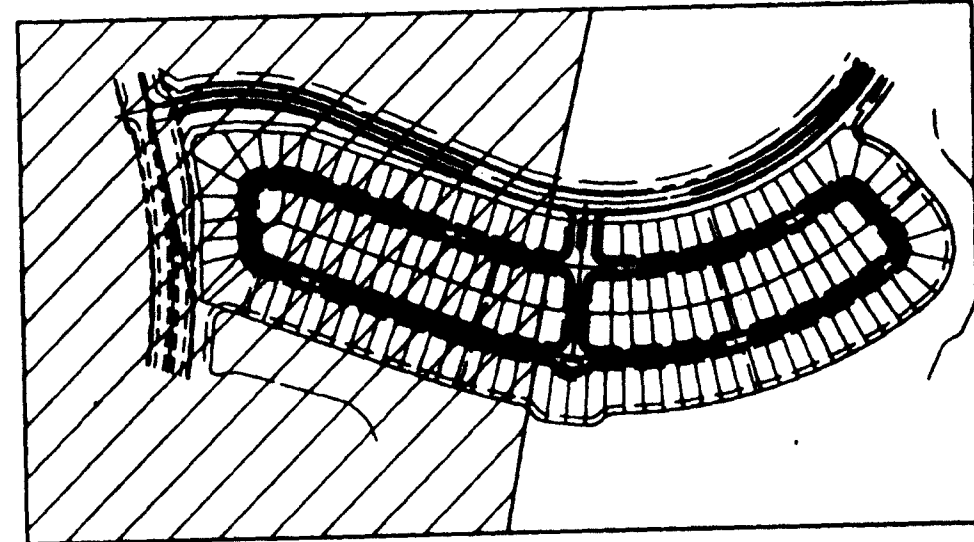
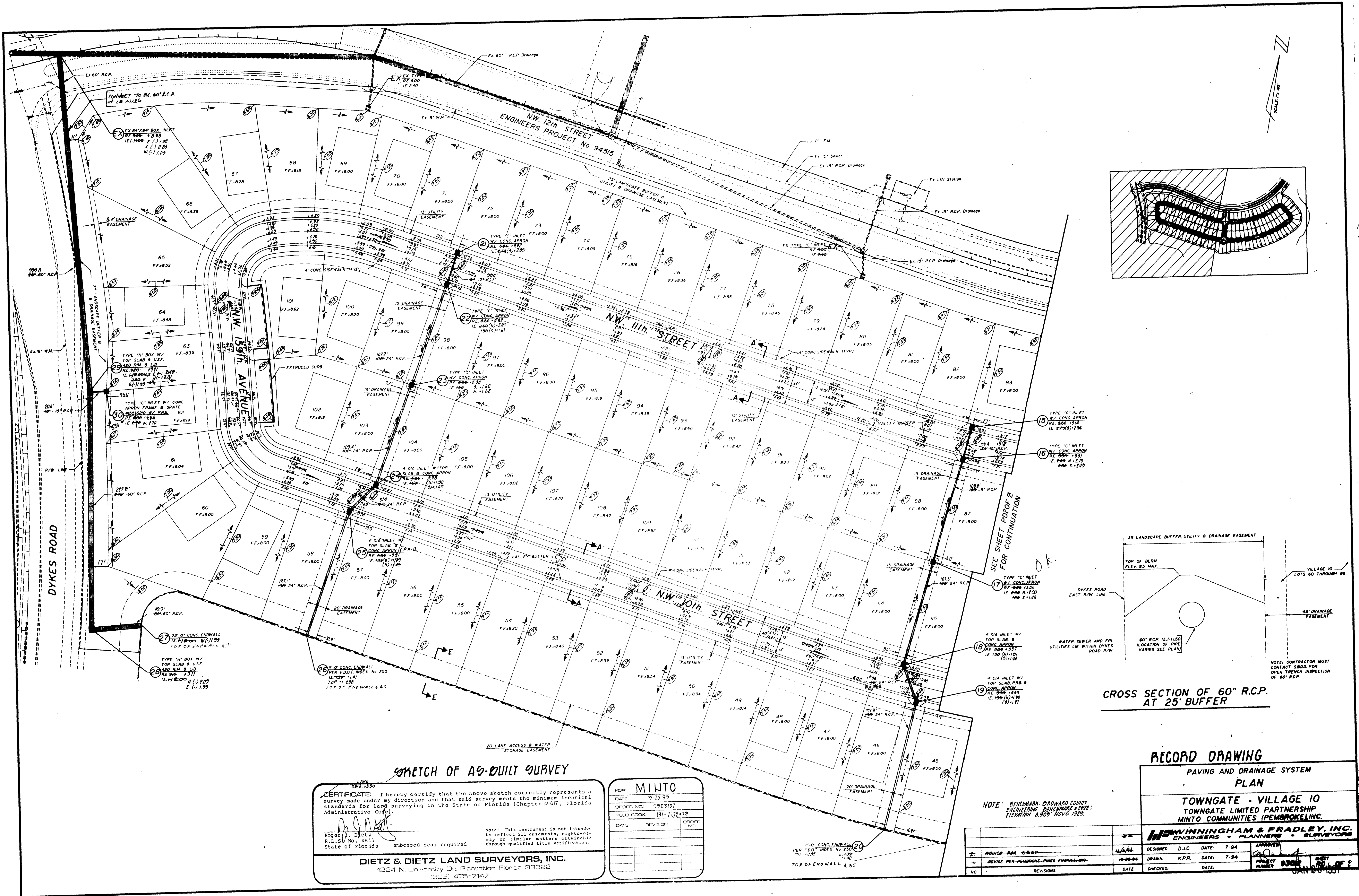
LEGEND	
	SANITARY STRUCTURE DESIGNATION
	LENGTH, SIZE, TYPE, AND SLOPE OF PIPE
	FIRE HYDRANT WITH GATE VALVE & B.R.
	BACTERIOLOGICAL SAMPLING POINT
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	FORCE MAIN
	BLUE REFLECTOR
	PAVEMENT RESTORATION
	PAVEMENT AND/OR ROCK REMOVAL
	SIDEWALK OR GUTTER REMOVAL



WINNINGHAM & FRADLEY, INC.  
ENGINEERS - PLANNERS - SURVEYORS

APPROVED: PROJECT NUMBER 93912 DATE JUNE 94

JAN 28 1997



CROSS SECTION OF 60" R.C.P. AT 25' BUFFER

**SKETCH OF AS-BUILT SURVEY**

**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 461, Florida Administrative Code).

Roger J. Dietz  
R.L.S. No. 4611  
State of Florida

embossed seal required

Note: This instrument is not intended to reflect all easements, right-of-way or similar matters obtainable through qualified title verification.

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

FOR: MINTO	
DATE:	7-20-99
ORDER NO.:	9907107
FIELD BOOK:	191-7172479
DATE:	REVISION:
	ORDER NO.:

NOTE: BENCHMARK: ORDNANCE COUNTY ENGINEERING BENCHMARK #1222; ELEVATION 8.90' NGVD 1929.

2. REVISED PER GRAD.		10/6/99	DESIGNED: D.J.C.	DATE: 7-94	APPROVED: [Signature]
4. REVISED PER PEMBROKE PINES ENGINEERING.		10-28-94	DRAWN: K.P.R.	DATE: 7-94	
NO. REVISIONS		DATE	CHECKED:	DATE:	PROJECT NUMBER: 9907107

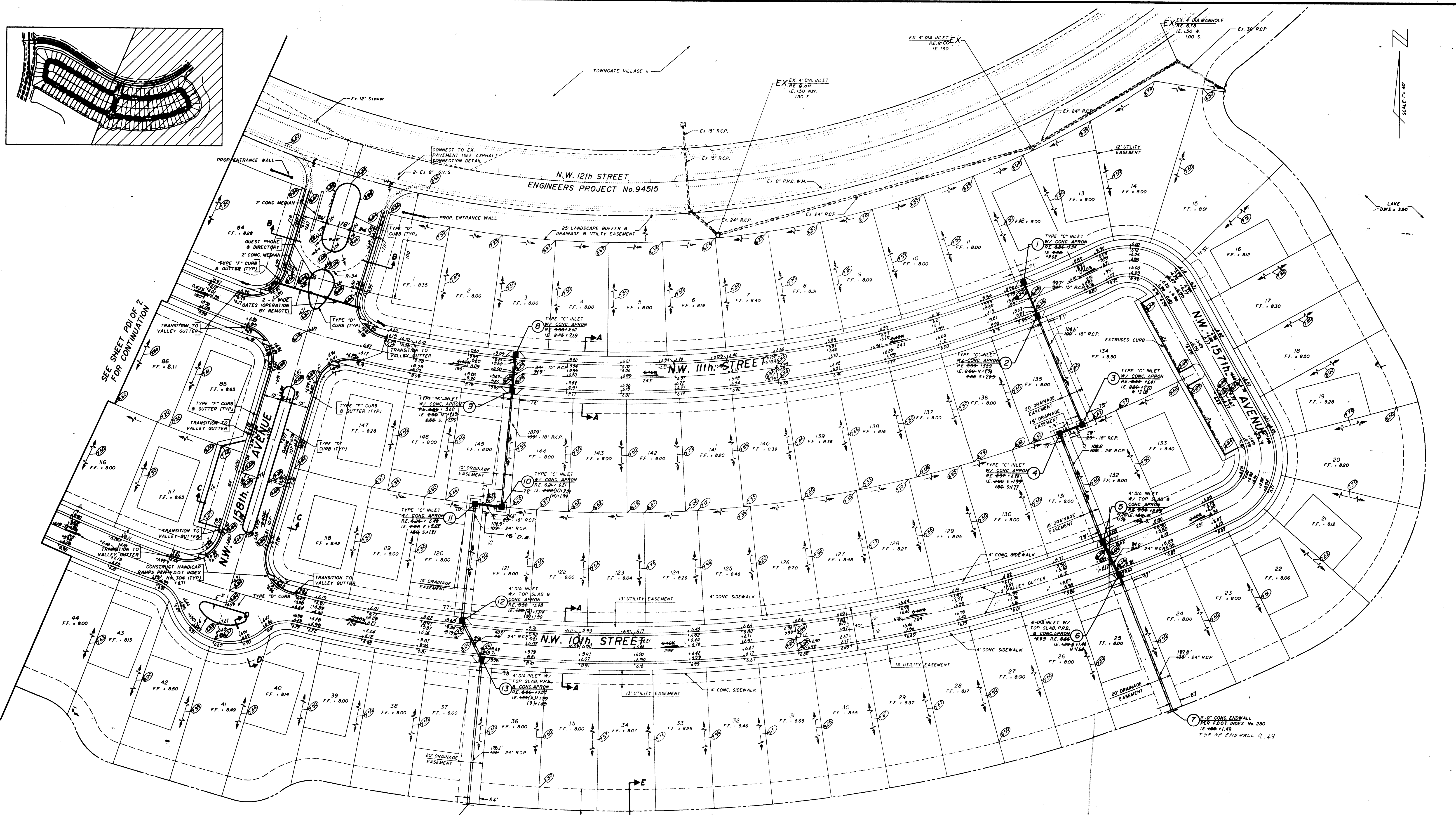
**RECORD DRAWING**

PAVING AND DRAINAGE SYSTEM  
PLAN

**TOWNGATE - VILLAGE 10**  
TOWNGATE LIMITED PARTNERSHIP  
MINTO COMMUNITIES (PEMBROKE PINES)

**WINNINGHAM & FRADLEY, INC.**  
ENGINEERS - PLANNERS - SURVEYORS





Roger J. Dietz  
R.L.S. No. 4611  
State of Florida      embossed seal required

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Note: This instrument is not intended to reflect all easements, rights-of-way or similar matters obtainable through qualified title verification.

FOR:	MINTO
DATE:	7-20-95
ORDER NO:	9903107
FIELD BOOK:	191-71.72+72

DATE	REVISION	OR N


NOTE: BENCHMARK: DORWARD COUNTY  
ENGINEERING BENCHMARK #1922;  
ELEVATION 8.909' MVD 1929.

RECORD DRAWING

### PAVING AND DRAINAGE SYSTEM PLAN

**TOWNGATE - VILLAGE 10**  
TOWNGATE LIMITED PARTNERSHIP  
MINTO COMMUNITIES (PEMBROKE), INC.

**WF WINNINGHAM & FRADLEY, INC.**  
ENGINEERS • PLANNERS • SURVEYORS

DESIGNED: D.J.C.	DATE: 7-94	APPROVED:	
DRAWN: K.P.R.	DATE: 7-94	 PROJECT NUMBER 935/2	SHEET RD205 ?
CHECKED:	DATE:		

JAN 28 1997

file copy

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### TOWNGATE LIMITED PARTNERSHIP

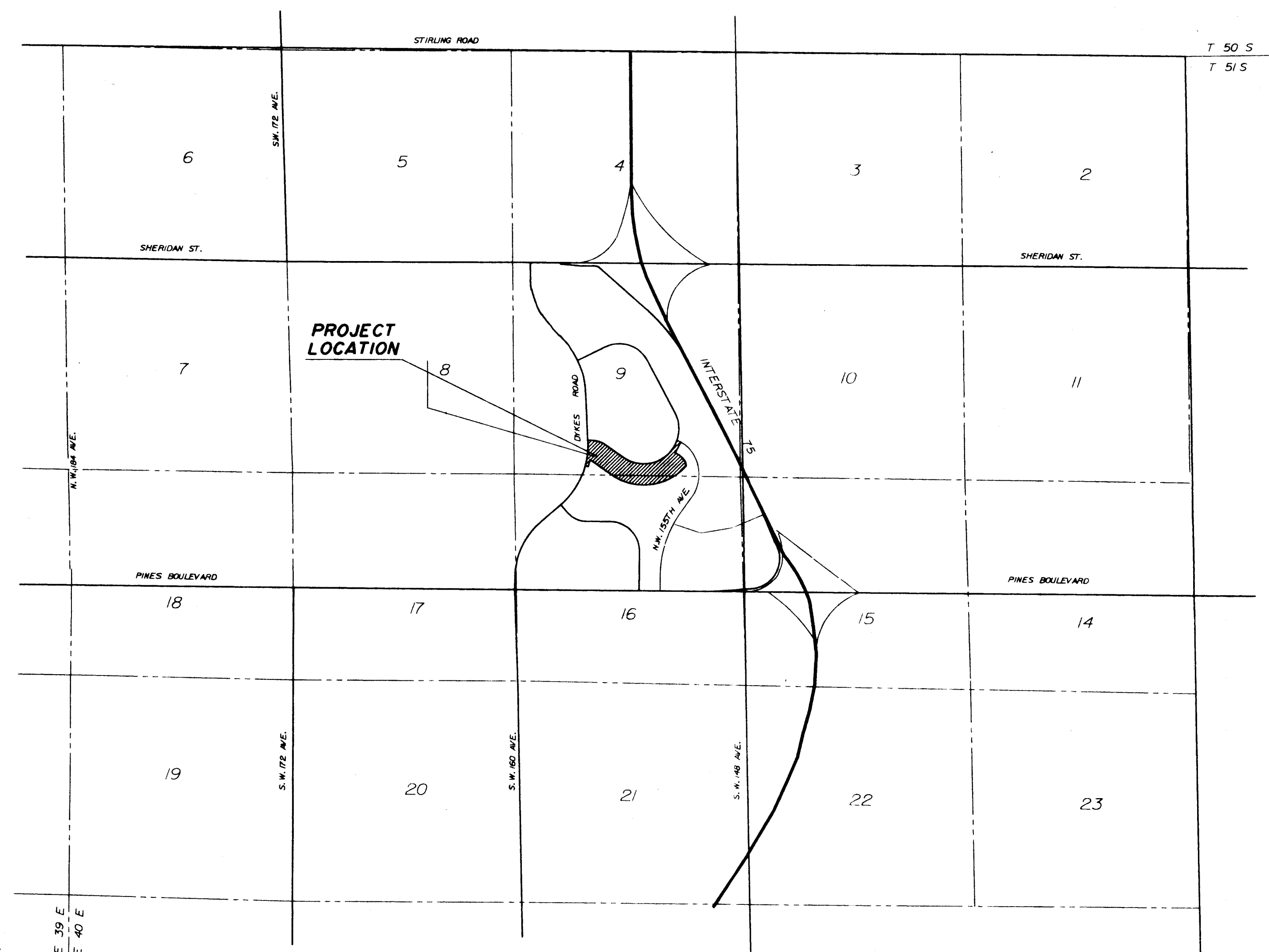
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LOCATION MAP

## PAVING & DRAINAGE SYSTEM

## WATER DISTRIBUTION SYSTEM

## SEWAGE COLLECTION SYSTEM

## TRAFFIC MARKINGS

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	WATER MAIN
	FORCE MAIN
	BLUE REFLECTOR
	PAVEMENT RESTORATION
	PAVEMENT AND/OR ROCK REMOVAL
	SIDEWALK AND/OR ROCK REMOVAL

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

South Broward Drainage District Date

FILE COPY

DEC 08 1994

5th submitted



GENERAL NOTES FOR WATER DISTRIBUTION AND SEWAGE COLLECTION SYSTEMS

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.
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, BOTH PIPES SHALL BE 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 PLACED IN THE CENTER OF THE DRIVING LANE ADJACENT TO FIRE HYDRANTS (BLUE REFLECTOR), AND VALVES OR M.H.S. OUTSIDE PAVEMENT AREAS ORANGE RPM'S FOR MANHOLES, WHITE RPM'S FOR GATE VALVES, AND GREEN RPM'S FOR FORCE MAIN VALVES.
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 PUBLIC HEALTH UNIT  
BROWARD COUNTY DEPARTMENT OF NATURAL RESOURCE PROTECTION.
- 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".
20. THE MINIMUM FOOT VALVE SIZE ON FIRE HYDRANTS SHALL BE 5 1/4".

GENERAL NOTES FOR SEWAGE COLLECTION SYSTEM & DRAINAGE SYSTEM

1. PRECAST STRUCTURES SHALL CONFORM TO ASTM C-478 AND 647. PRECAST STRUCTURE MUST BE CERTIFIED BY AN INDEPENDANT ENGINEERING TESTING LABATORY. 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 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 4,000 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 FDOT 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.
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 EMBECO 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 BETWELLS. 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. DAE 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.

PRESSURE MAIN SYSTEM NOTES

1. ALL PRESSURE 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 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.
- $Q = \frac{S \cdot D \cdot \sqrt{P}}{133,200}$
- 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
11. THE MINIMUM DEPTH OF COVER OVER WATER MAINS SHALL BE 36 INCHES.
12. DISINFECTION OF MAINS SHALL COMPLY WITH AWWA C 651-92 SPECIFICATIONS. STANDARD BACTERIOLOGICAL SAMPLING POINTS SHALL BE DESIGNATED ON THE ENGINEERING PLANS. FORCE MAIN SHALL NOT BE DISINFECTED.
13. MINIMUM VALVE SPACING SHALL BE AS PER SECTION 82 OF THE TEN STATES STANDARDS.
14. WHEN PVC IS USED FOR PRESSURE MAIN, A 3" STRIP OF METALLIC TAPE SHALL BE INSTALLED THE LENGTH OF THE PIPE 18" ABOVE THE PIPE WITH THE WORDS "WATER (OR FORCE) MAIN BURIED BELOW" FACING UPWARD. NON-METALLIC TAPE SHALL BE USED ON DIP.
15. ALL DIP PRESSURE 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.
16. PLUG VALVES SHALL BE DUCTILE IRON MANUFACTURED BY CLOW OR EQUAL.

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 C76-85g.
5. MINIMUM COVER FOR ALL PIPE CULVERTS SHALL MEET THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (INDEX NO. 205).
6. ALL UNDERGROUND FACILITIES SHALL BE INSTALLED PRIOR TO PLACING THE LIMEROCK BASE MATERIAL.
7. 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 1992.  
D. U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, MARCH 1988.

8. 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
9. DENSITY TESTS FOR SUBGRADE MUST BE SUBMITTED TO AND APPROVED BY THE CITY OF PEMBROKE PINES.
10. 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.

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 WILL INFORM THE OWNER AND THE CONTRACTOR OF ANY ADDITIONAL REQUIREMENTS OF THE SOUTH BROWARD DRAINAGE DISTRICT.
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 AM TO 4:30 PM.
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.
6. WHEN CONSTRUCTION IS IN PROGRESS, THE DISTRICT'S INSPECTOR WILL INSPECT THE INSTALLATION OF DRAINAGE WORKS, ACCORDING TO AN INSPECTION SCHEDULE ESTABLISHED BY THE DISTRICT. 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.
7. CERTIFIED "AS-BUILT" PLANS FROM THE ENGINEER OF RECORD WHICH ARE ACCEPTED AND APPROVED BY THE DISTRICT'S ENGINEERS AND MANAGER WILL BE REQUIRED BEFORE RELEASE OF THE BOND OR LETTER OF CREDIT. AS-BUILTS SHALL BE PROVIDED AS AN OVERLAY ON THE APPROVED CONSTRUCTION DRAWINGS AT THE SAME SCALE FOR COMPARISON PURPOSES. AS-BUILT SUBMITTAL SHALL FOLLOW THE SAME FORMAT OF GENERAL REVIEW AS OUTLINED IN SECTION 32 OF SOUTH BROWARD DRAINAGE DISTRICT'S CRITERIA AND PERMIT MANUAL.
8. LAKE AND CANAL AS-BUILTS SHALL BE CROSS SECTIONED SHOWING THE DESIGNED SECTION AS DASHED, AS-BUILT SECTION AS SOLID AND HAVE THE TOP OF BANK REFERENCED TO THE LAKE/CANAL MAINTENANCE EASEMENT AND PROPERTY LINES. SPACING BETWEEN EACH CROSS-SECTION SHALL BE SUCH AS TO PROVIDE ENOUGH DATA TO DETERMINE IF THE LAKE/CANAL WAS CONSTRUCTED AS DESIGNED, BUT NO GREATER THAN ONE HUNDRED (100) FEET BETWEEN CROSS-SECTIONS, UNLESS APPROVED BY DISTRICT'S ENGINEER. PLAN VIEW OF ACTUAL LOCATION OF THE TOP OF BANK AND DEEP-CUT LINE SHALL BE PROVIDED WITH CROSS-SECTIONS.
9. UPON SUCCESSFUL COMPLETION OF THE CONSTRUCTION AND ACCEPTANCE OF "AS-BUILTS", THE BOND OR LETTER OF CREDIT MAY BE RELEASED FOLLOWING PAYMENT TO THE DISTRICT FOR ALL EXPENSES AND COSTS INCURRED BY THE DISTRICT WHICH ARE REQUIRED TO BE PAID BY THE DEVELOPER.
10. THE CONTRACTOR CONSTRUCTING OR EXCAVATING LAKES OR OTHER WATER BODIES SHALL EXERCISE EXTREME CAUTION TO ENSURE THAT THE BANK SLOPES AND DEEP-CUT LINES ARE CONSTRUCTED IN ACCORDANCE WITH APPROVED PLANS FOR THE DEVELOPMENT. THE CONTRACTOR OR OWNER SHALL PERIODICALLY OR AS REQUESTED BY THE DISTRICT OBTAIN A SURVEY FROM A FLORIDA REGISTERED SURVEYOR OF THE LOCATION OF THE DEEP CUT LINES PRIOR TO FORMING THE BANK SLOPES. THIS SURVEY SHALL BE TAKEN PRIOR TO THE OWNER/CONTRACTOR BEGINNING CONSTRUCTION OF THE BUILDING PAD ADJACENT TO THE WATER BODY. IN THE EVENT THE CONTRACTOR/OWNER OVERCUTS OR OVERDIGS THE WATER BODY, THE CONTRACTOR/OWNER SHALL SUBMIT TO THE DISTRICT ITS RECOMMENDED SOLUTION TO CORRECT THE OVER DIGGING. ANY SUGGESTED REMEDY OR CORRECTION MUST BE APPROVED BY THE DISTRICT BEFORE THE CONTRACTOR/OWNER COMMENCES CONSTRUCTION OF THE PROPOSED CORRECTION/REMEDY.

GENERAL NOTES

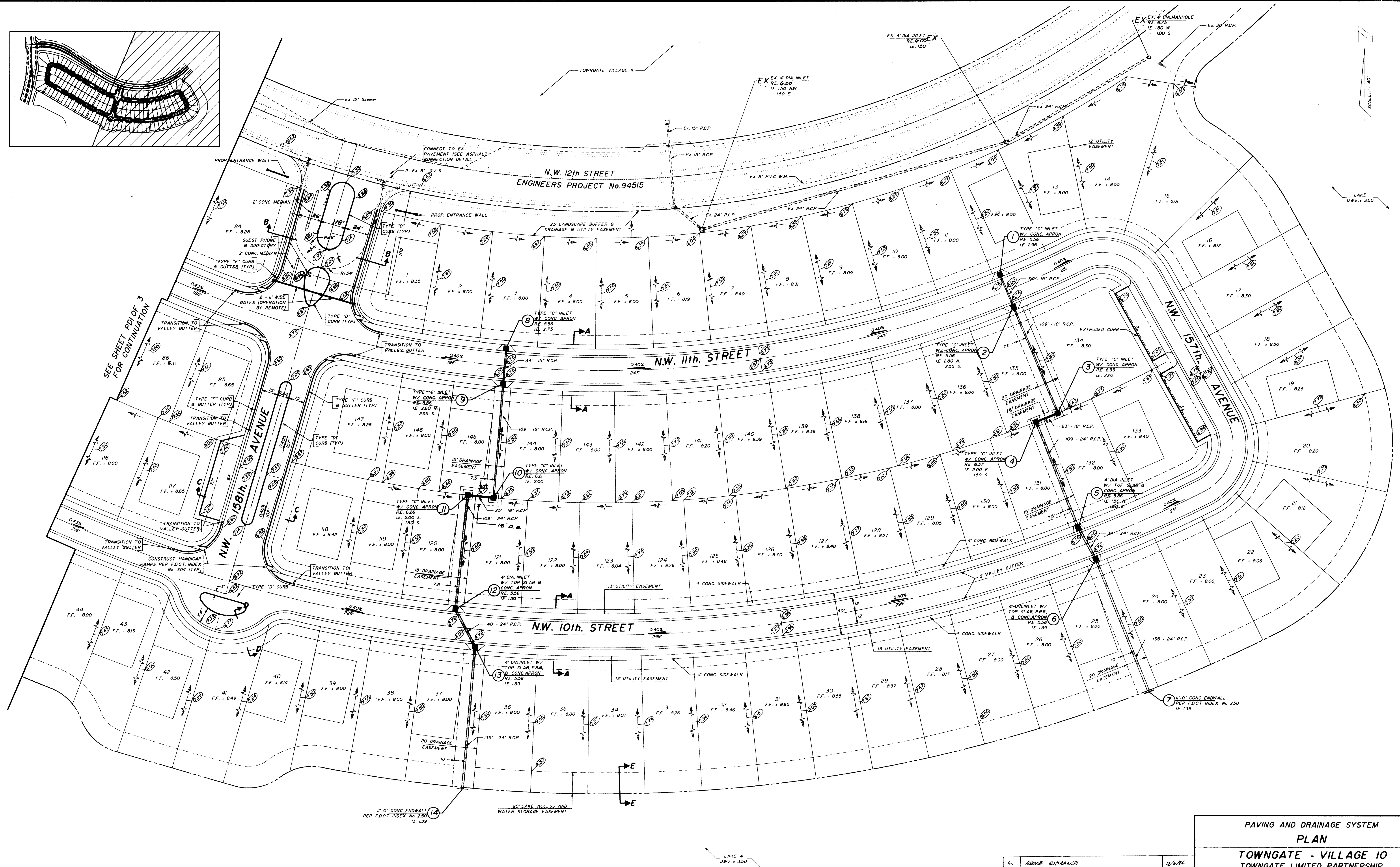
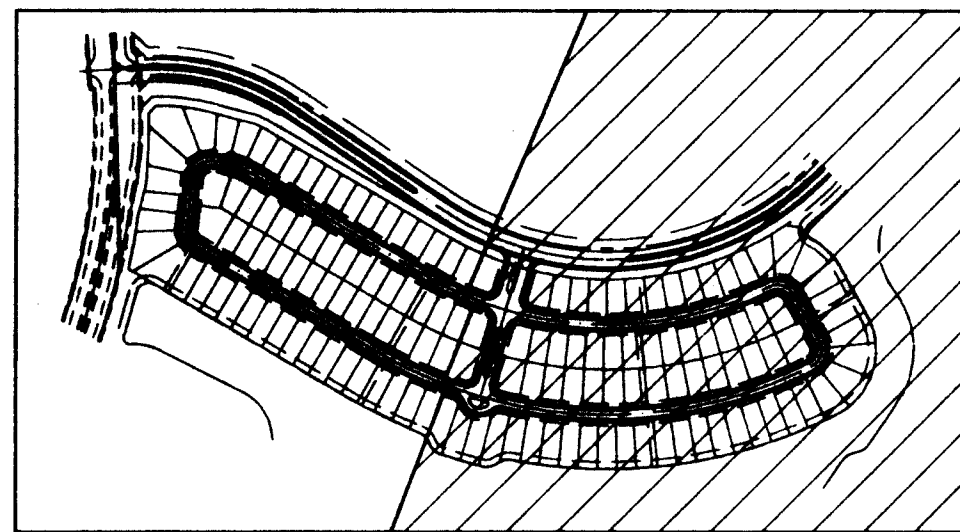
TOWNGATE - VILLAGE 10  
TOWNGATE LIMITED PARTNERSHIP  
MINTO COMMUNITIES (PEMBROKE), INC.

WINNINGHAM & FRADLEY, INC.  
ENGINEERS - PLANNERS - SURVEYORS

3	REVISE PER S.D.D.	10/24/94	DESIGNED: WBF	DATE: 9/94	APPROVED:
2	REVISE GENERAL WBS NOTE 16	9-21-94	DRAWN: WBF	DATE: 9/94	
1	REVISE PER CITY OF PEMBROKE PINES UTILITIES	9-12-94	CHECKED:	DATE:	
NO	REVISIONS	DATE			

DEC 08 1994





PAVING AND DRAINAGE SYSTEM  
PLAN

TOWNGATE - VILLAGE 10  
TOWNGATE LIMITED PARTNERSHIP  
MINTO COMMUNITIES (PEMBROKE), INC.

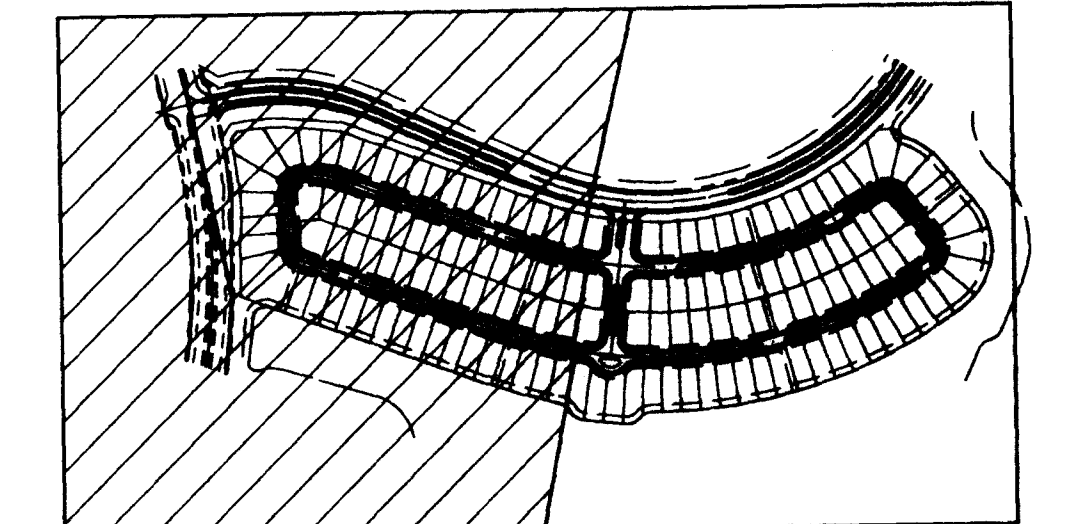
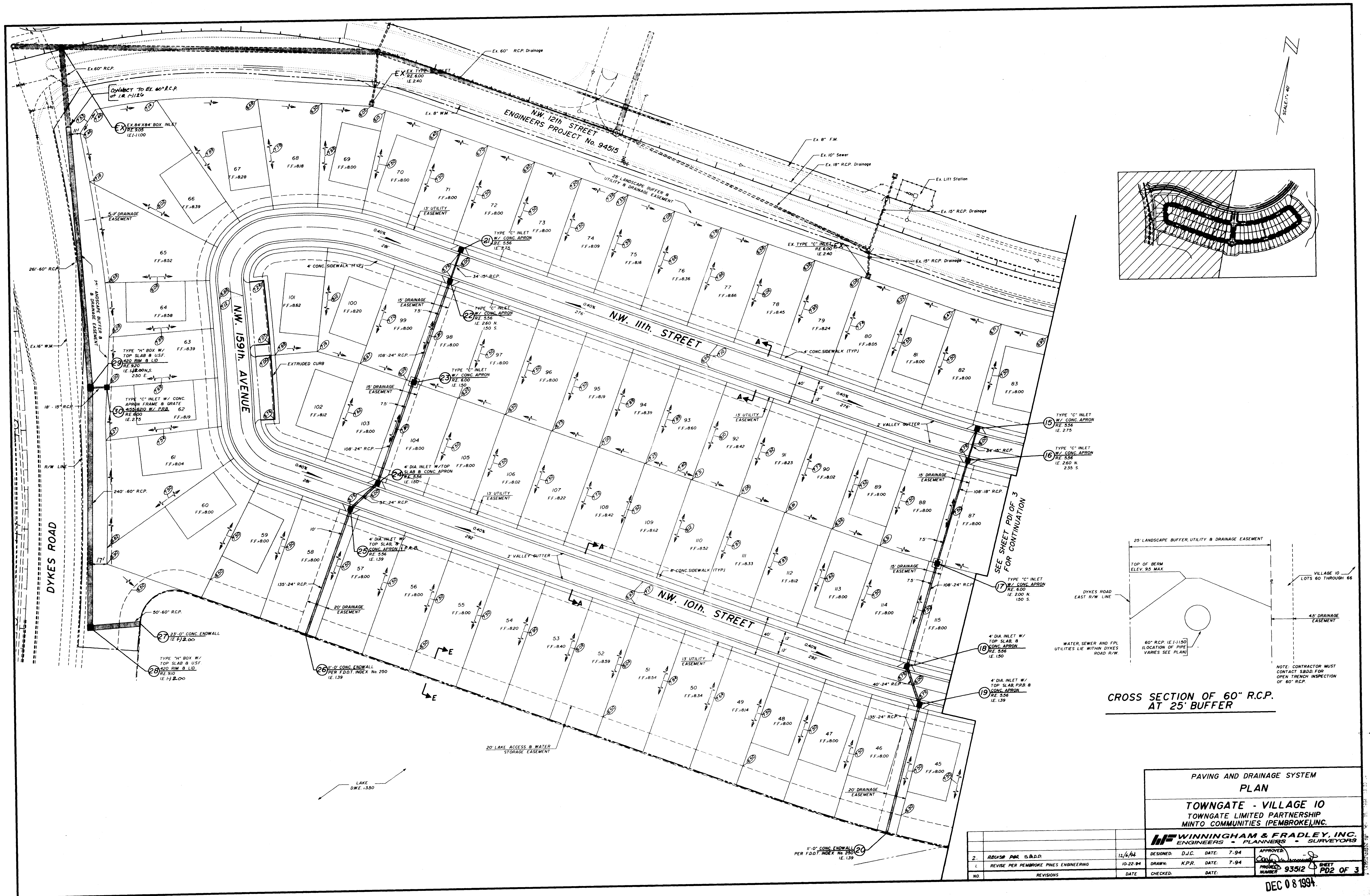
**W.F. WINNINGHAM & FRADLEY, INC.**  
ENGINEERS - PLANNERS - SURVEYORS

6.	REVISE ENTRANCE	12/4/94
5.	REVISE PER S.B.D.D.	12/4/94
4.	REVISE ALIGNMENT LOT 41 & 42 PER R.P. EX.	4/11/94
3.	REVISE ENTRANCE	11/3/94
2.	REVISE PER SOUTH BROWARD DRAINAGE DISTRICT	10-22-94
1.	REVISE PER CITY OF PEMBROKE PINES ENGINEERING	10-22-94
NO.	REVISIONS	DATE

DESIGNED: D.J.C.	DATE: 7-94	APPROVED: [Signature]
DRAWN: K.P.R.	DATE: 7-94	PROJECT NUMBER: 93512
CHECKED:	DATE:	SHEET: PDI OF 3

DEC 08 1994

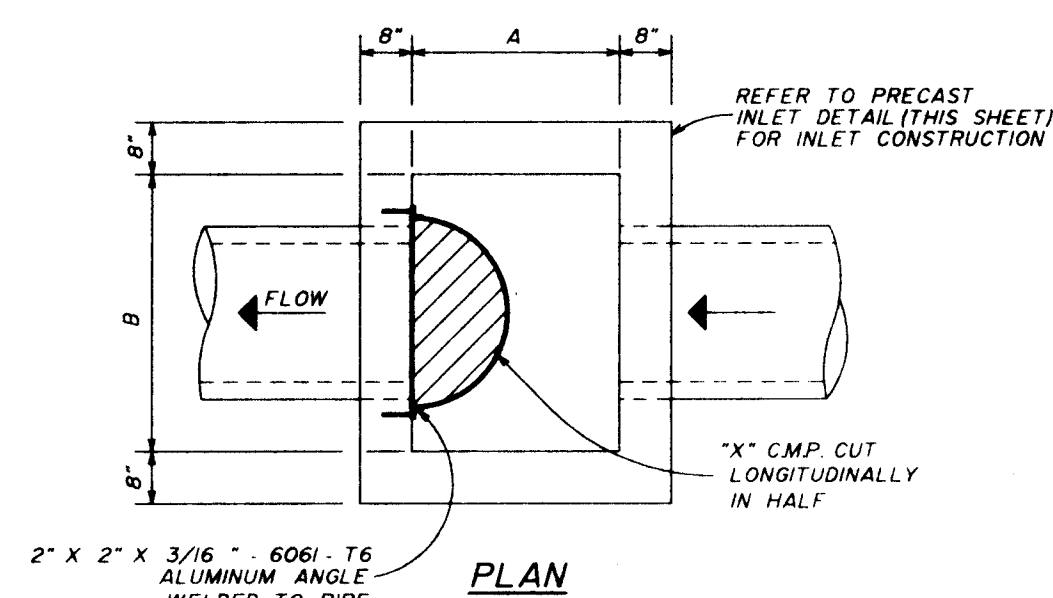




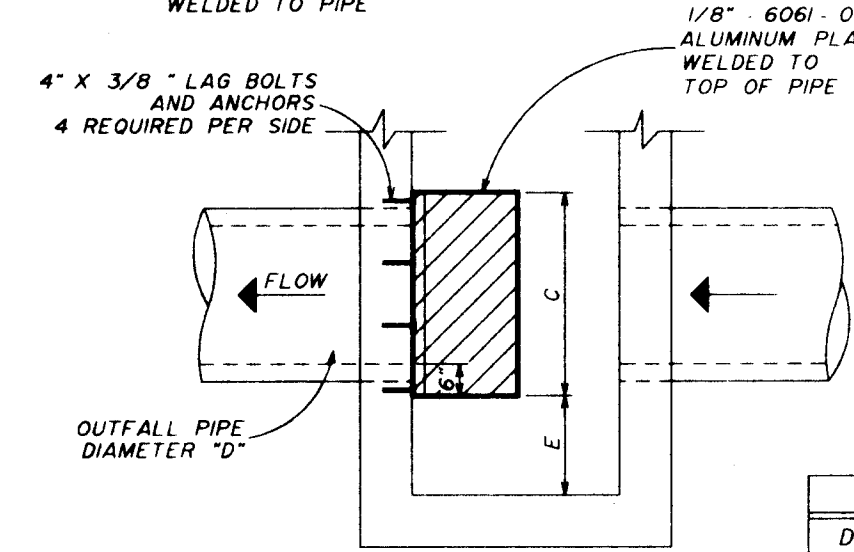
CROSS SECTION OF 60" R.C.P.  
AT 25' BUFFER

PAVING AND DRAINAGE SYSTEM PLAN			
TOWNGATE - VILLAGE 10 TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE), INC.			
WINNINGHAM & FRADLEY, INC. ENGINEERS - PLANNERS - SURVEYORS		APPROVED: [Signature]	
DESIGNED: D.J.C.	DATE: 7-94	DRAWN: K.P.R.	DATE: 7-94
REVISIONS	DATE	CHECKED: [Signature]	DATE: 10-22-94
2. REVISE PER S.B.D.	12/6/94	PRODUCED: 93512	SHEET: P02 OF 3
1. REVISE PER PEMBROKE PINES ENGINEERING	10-22-94		

DEC 08 1994



PLAN

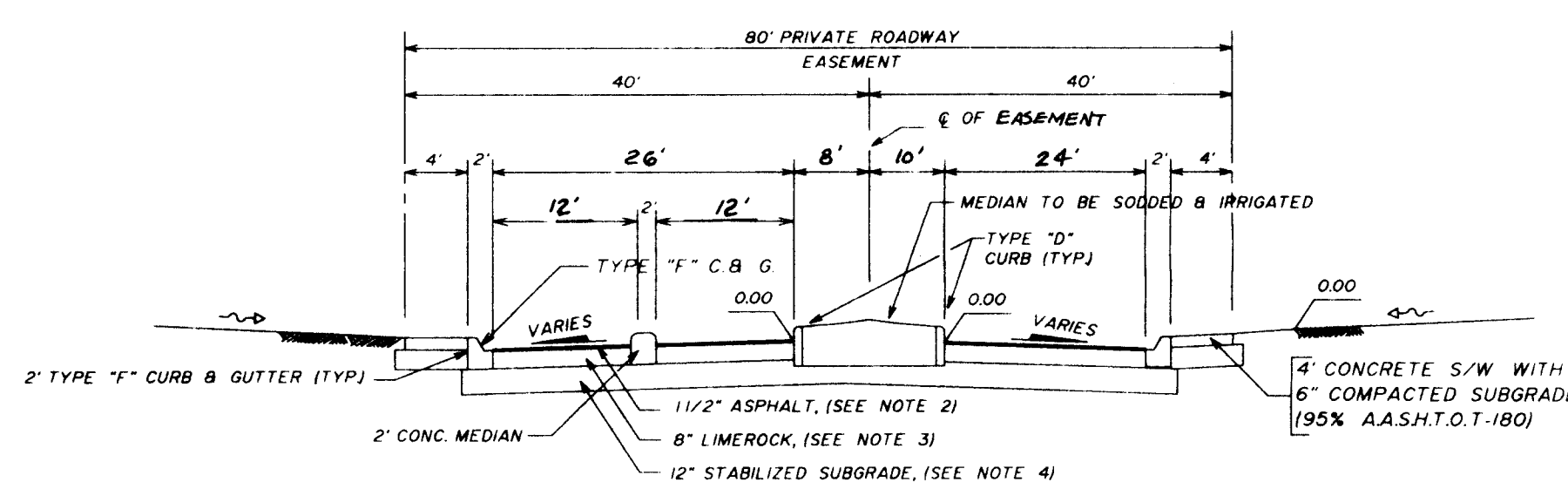


SECTION

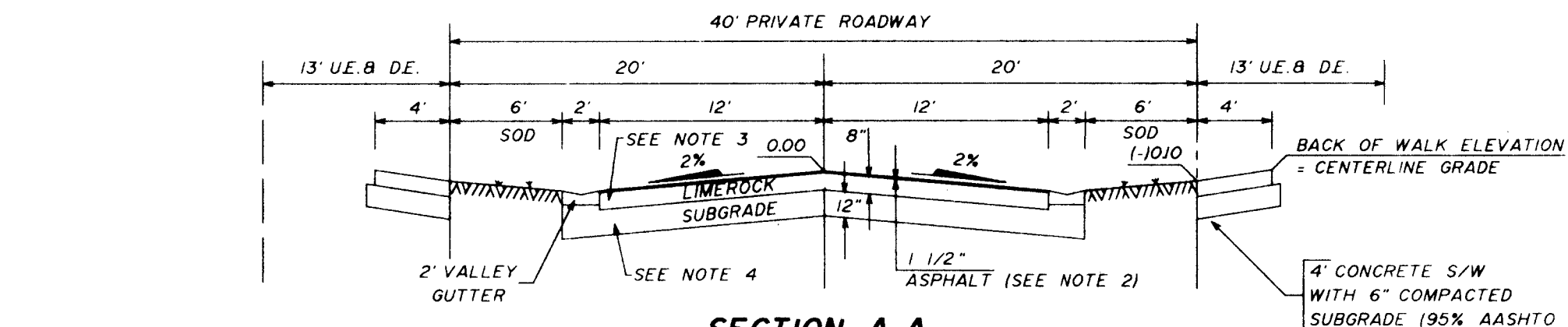
RECTANGULAR STRUCTURE

BAFFLE SCHEDULE					
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"

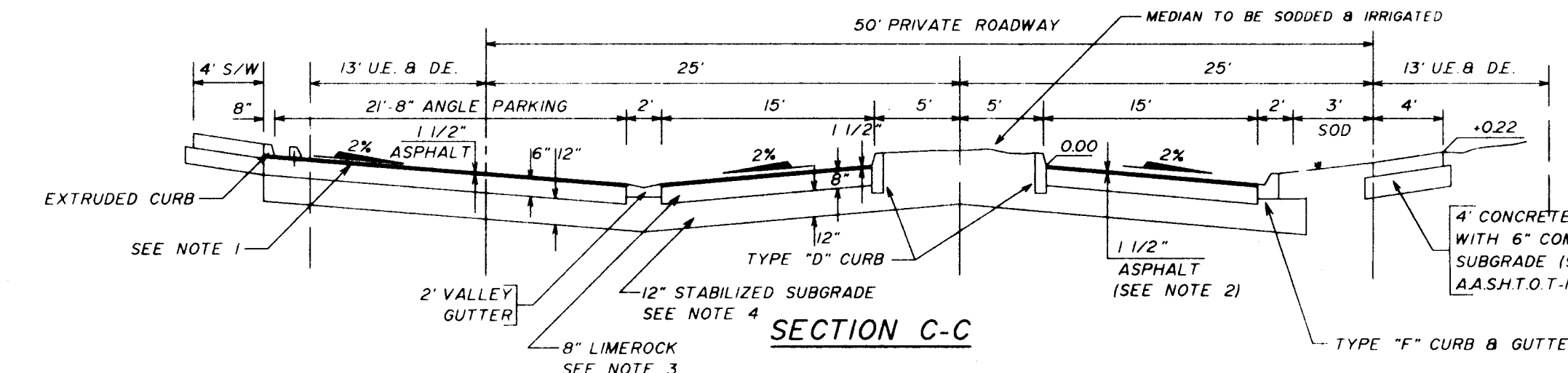
POLLUTION RETARDANT  
BASIN DETAIL



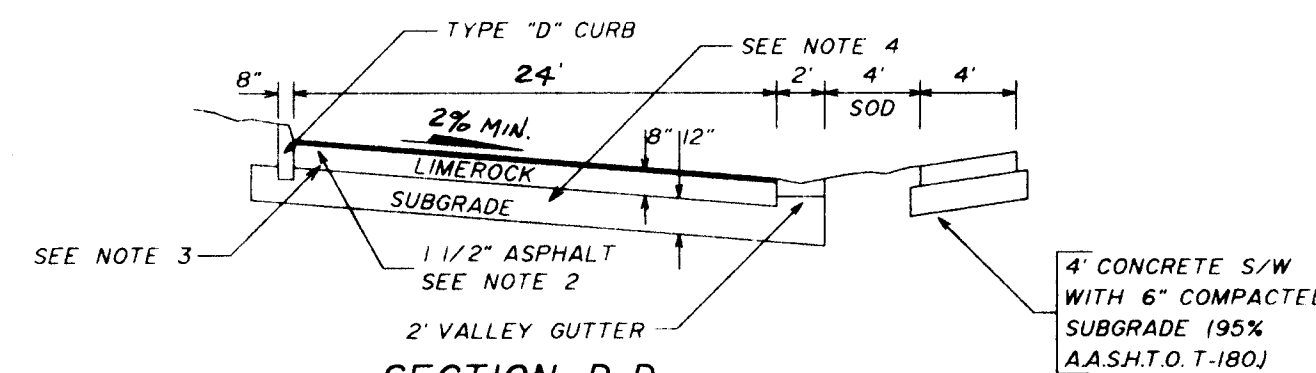
SECTION B-B



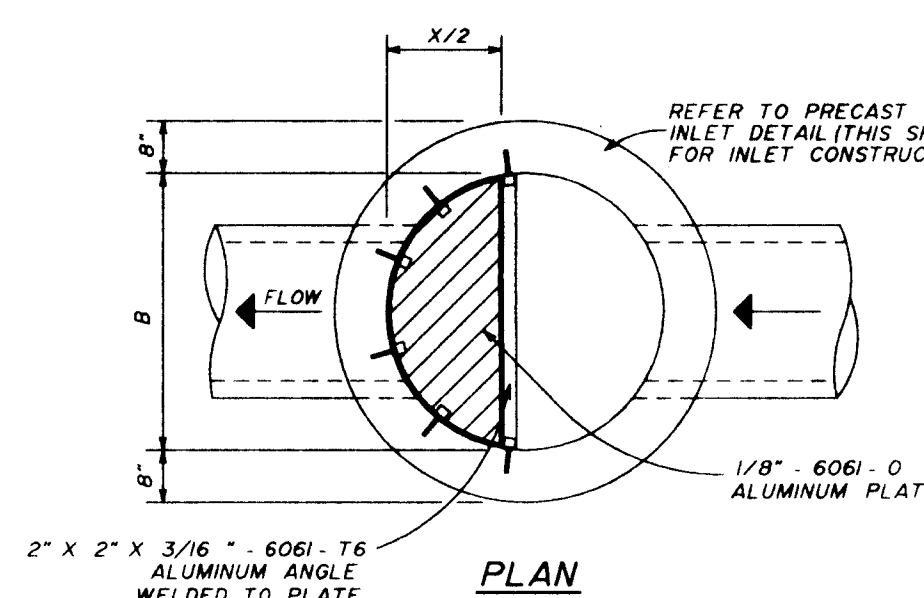
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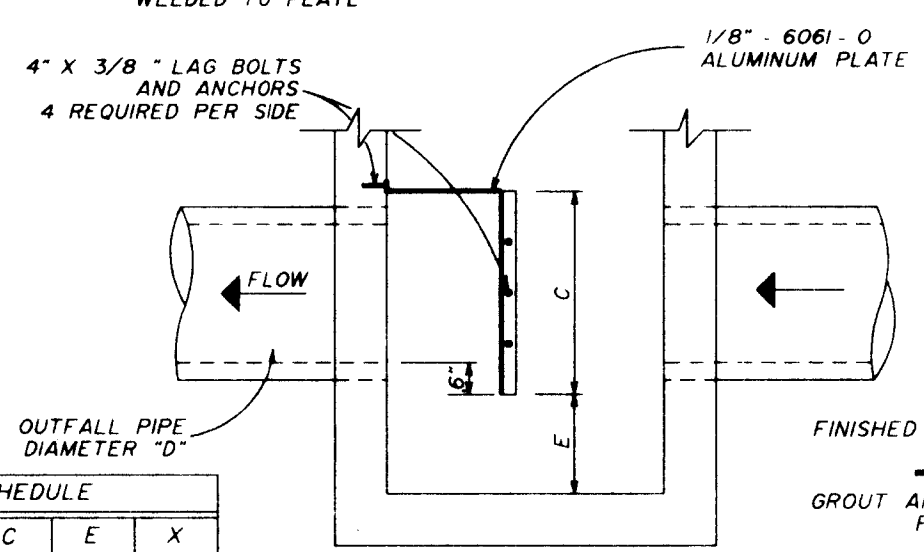
SECTION C-C



SECTION D-D

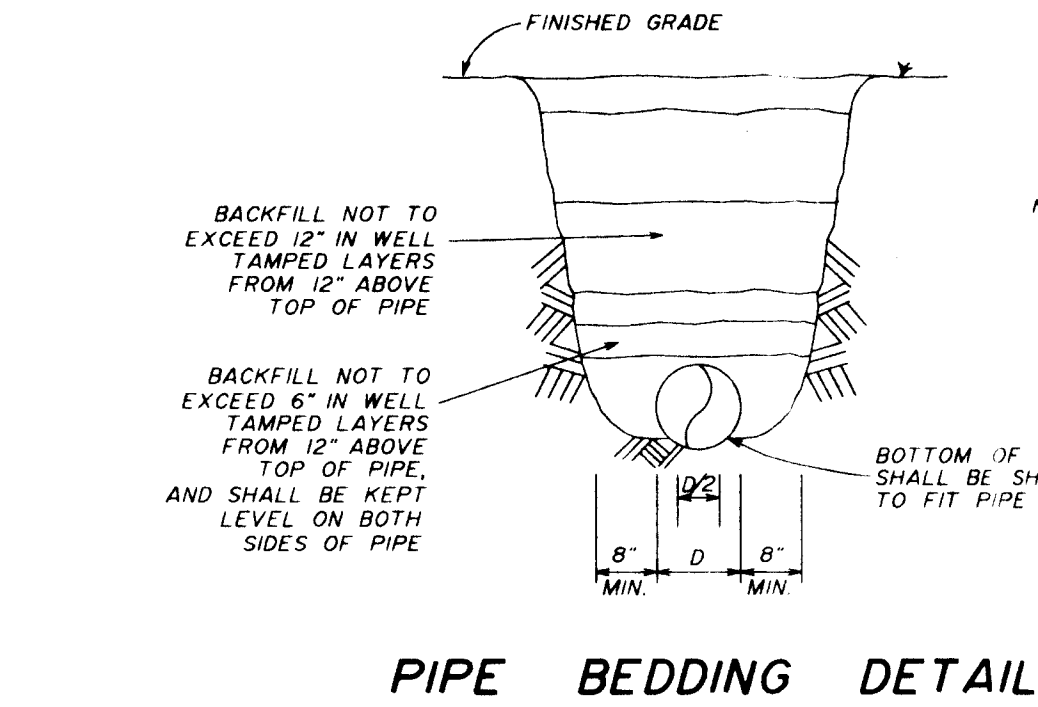


PLAN

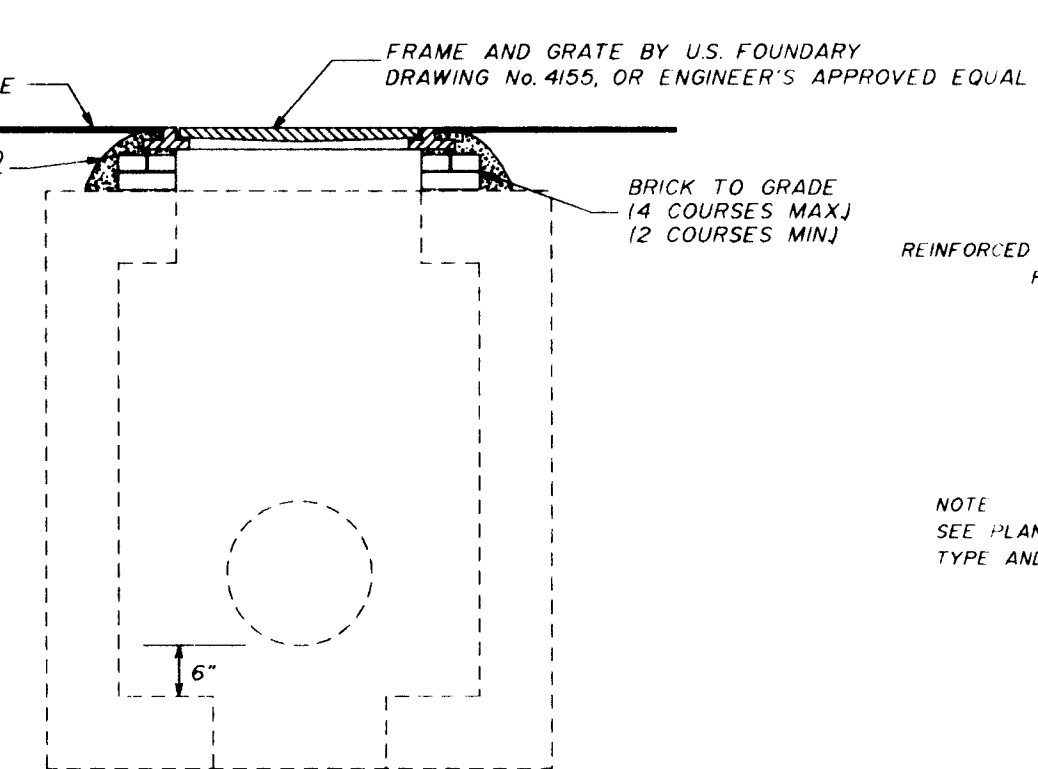


SECTION

CIRCULAR STRUCTURE

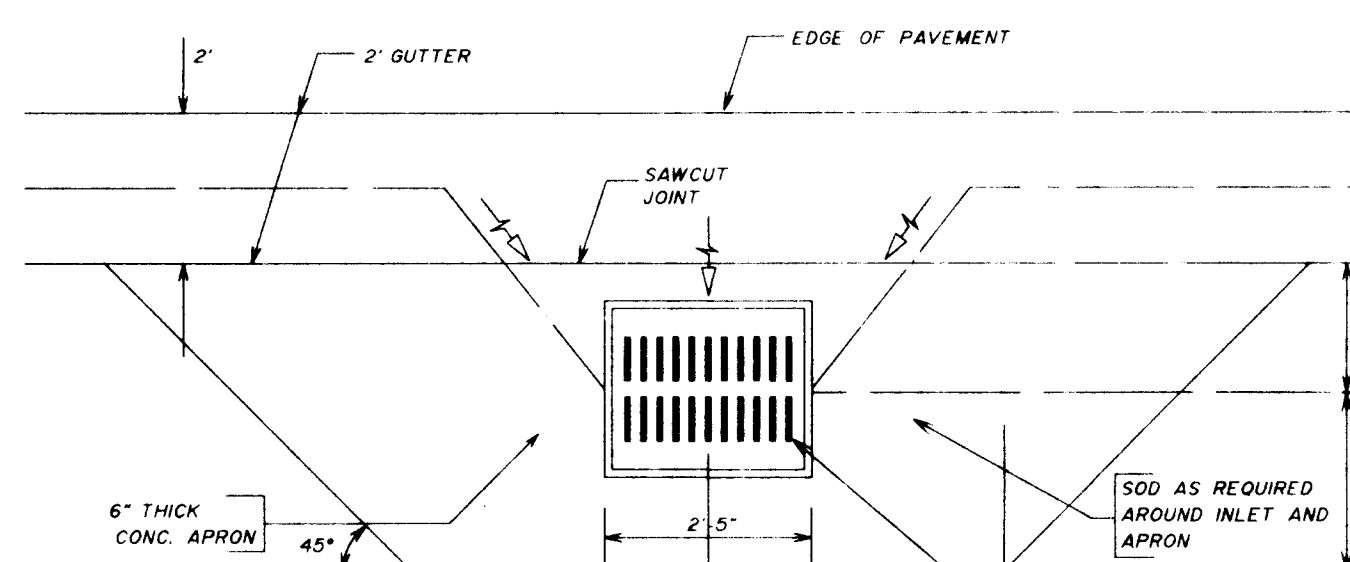


PIPE BEDDING DETAIL

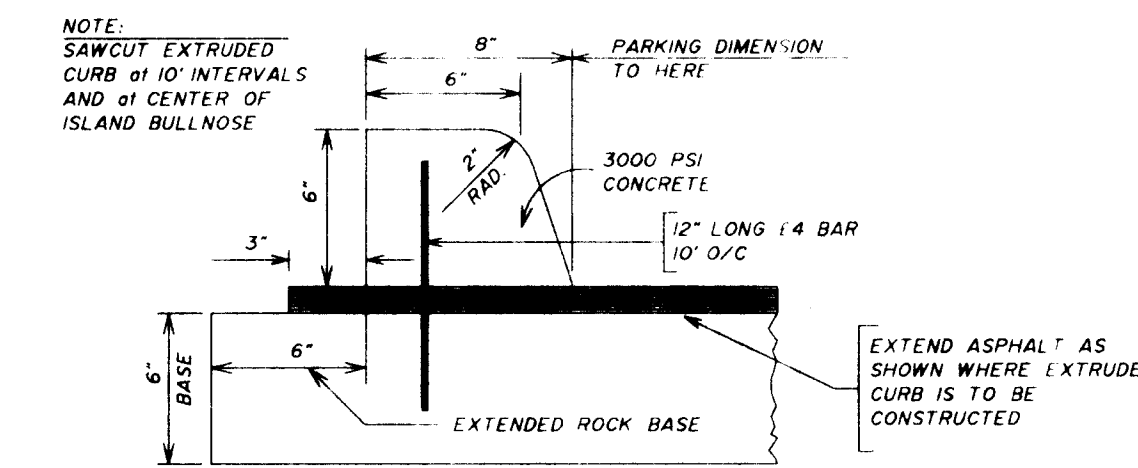


PRECAST INLET DETAIL

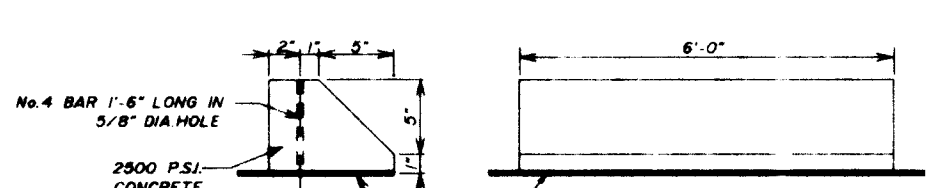
NOTE: SEE CONSTRUCTION PLANS FOR BASIN TYPE B FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS. LATEST REVISION FOR DETAILS



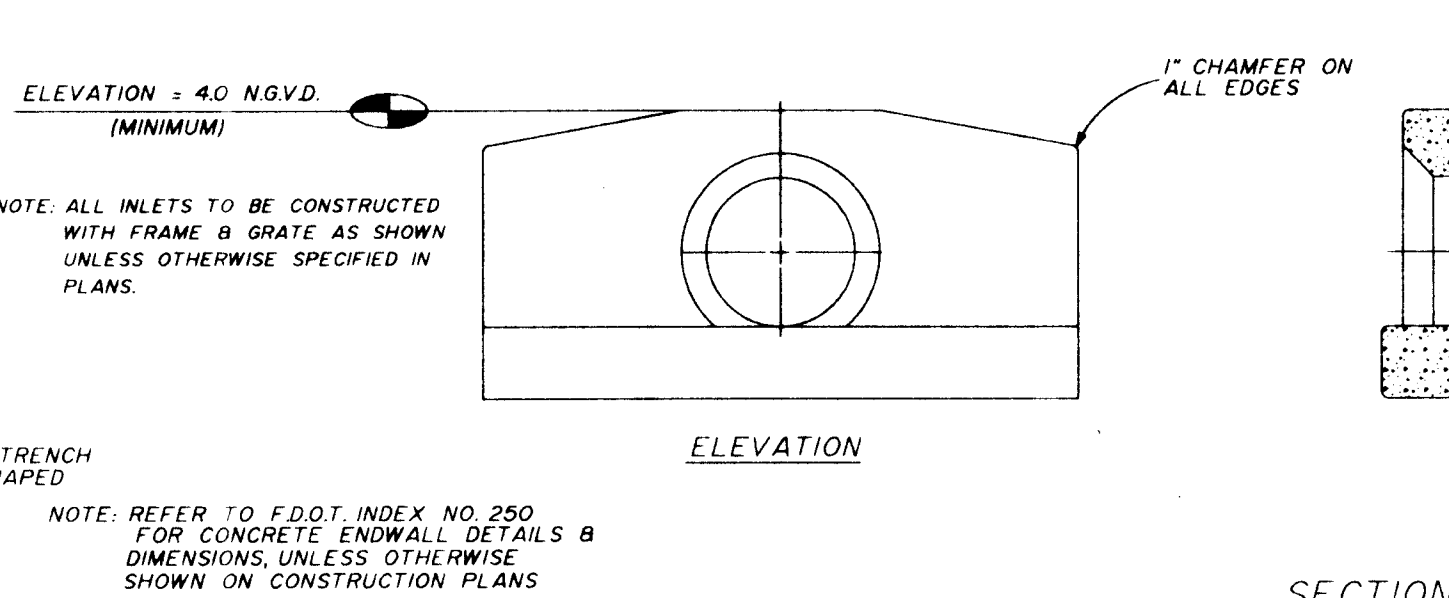
GUTTER INLET DETAIL



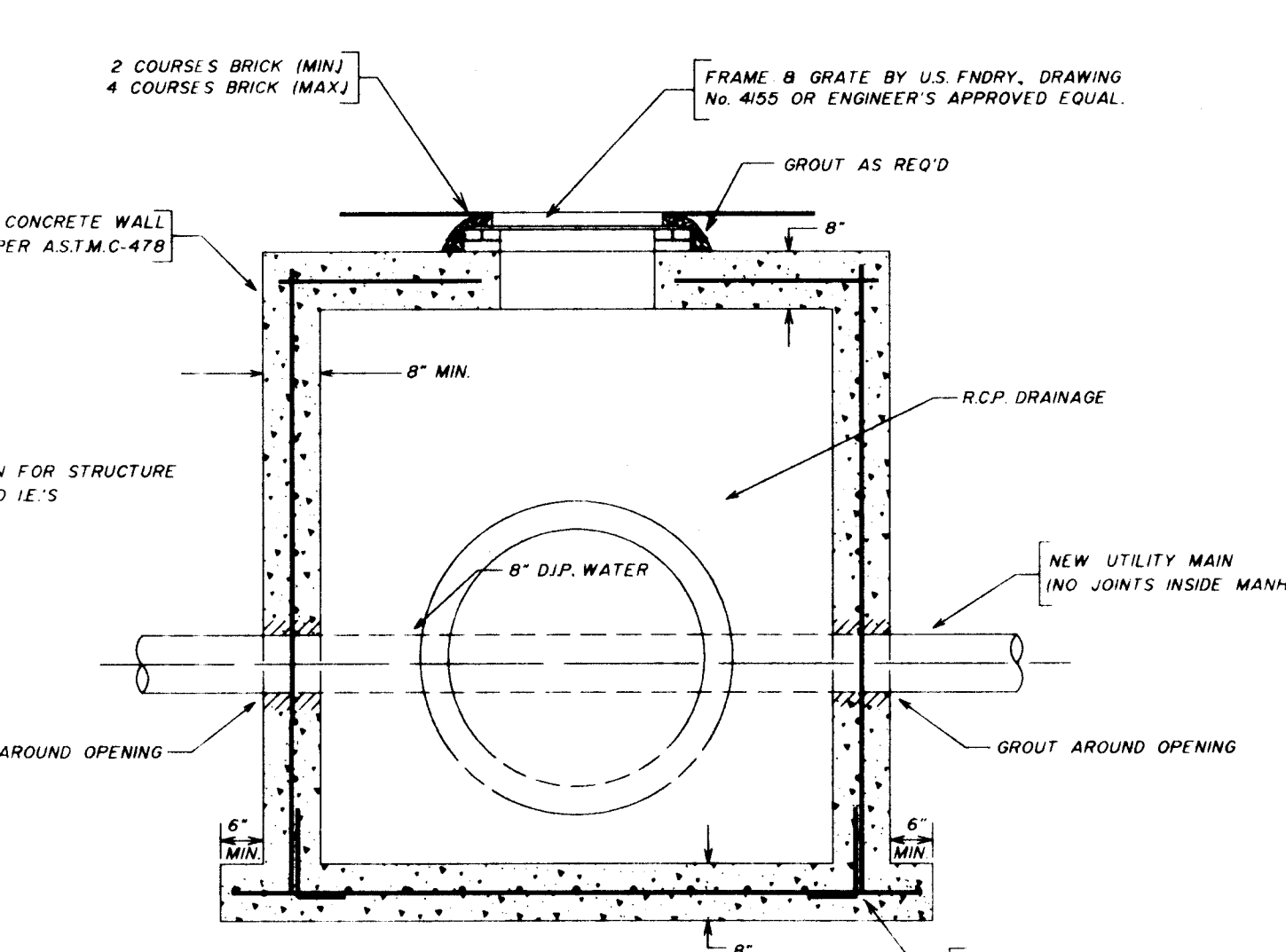
EXTRUDED CURB DETAIL



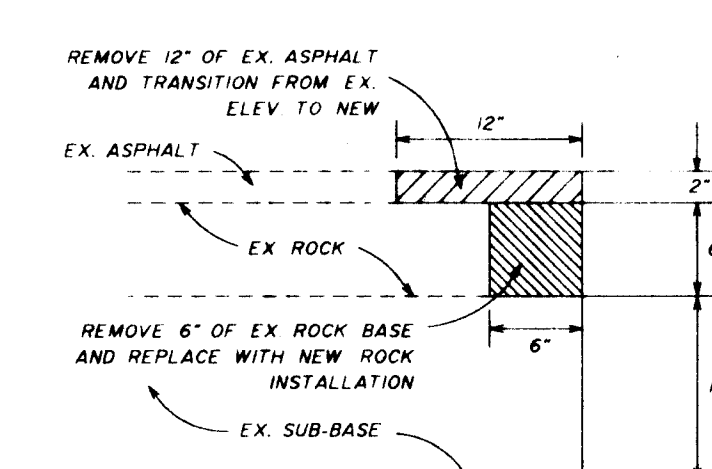
WHEEL STOP DETAIL



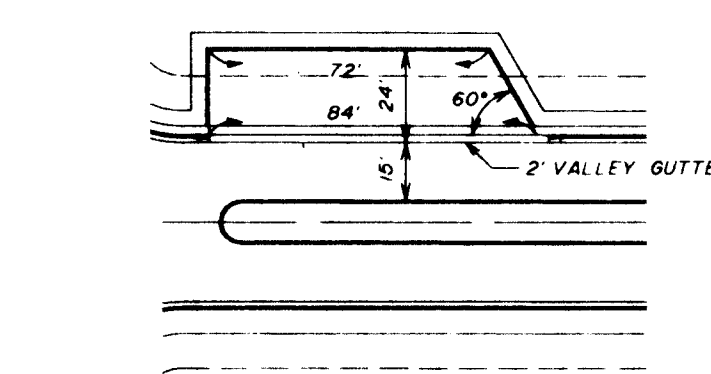
PRECAST CONCRETE ENDWALL DETAIL



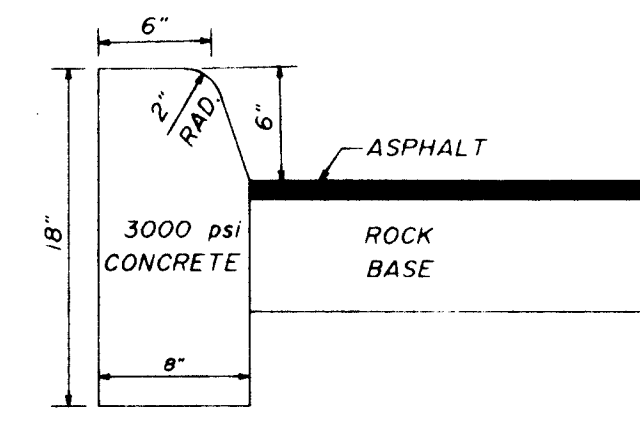
CONFLICT MANHOLE DETAIL



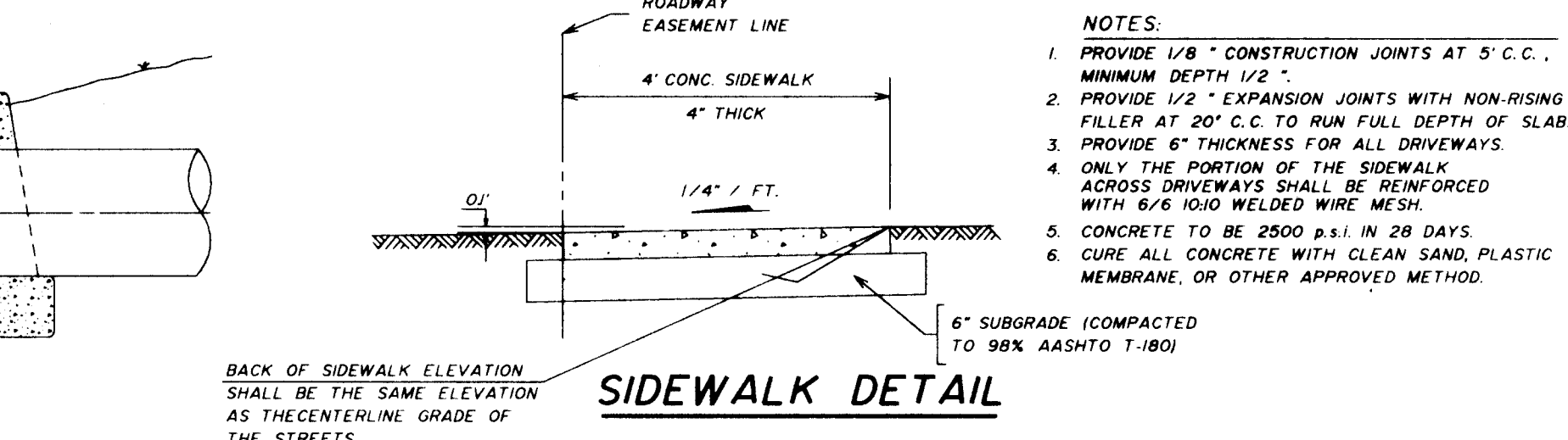
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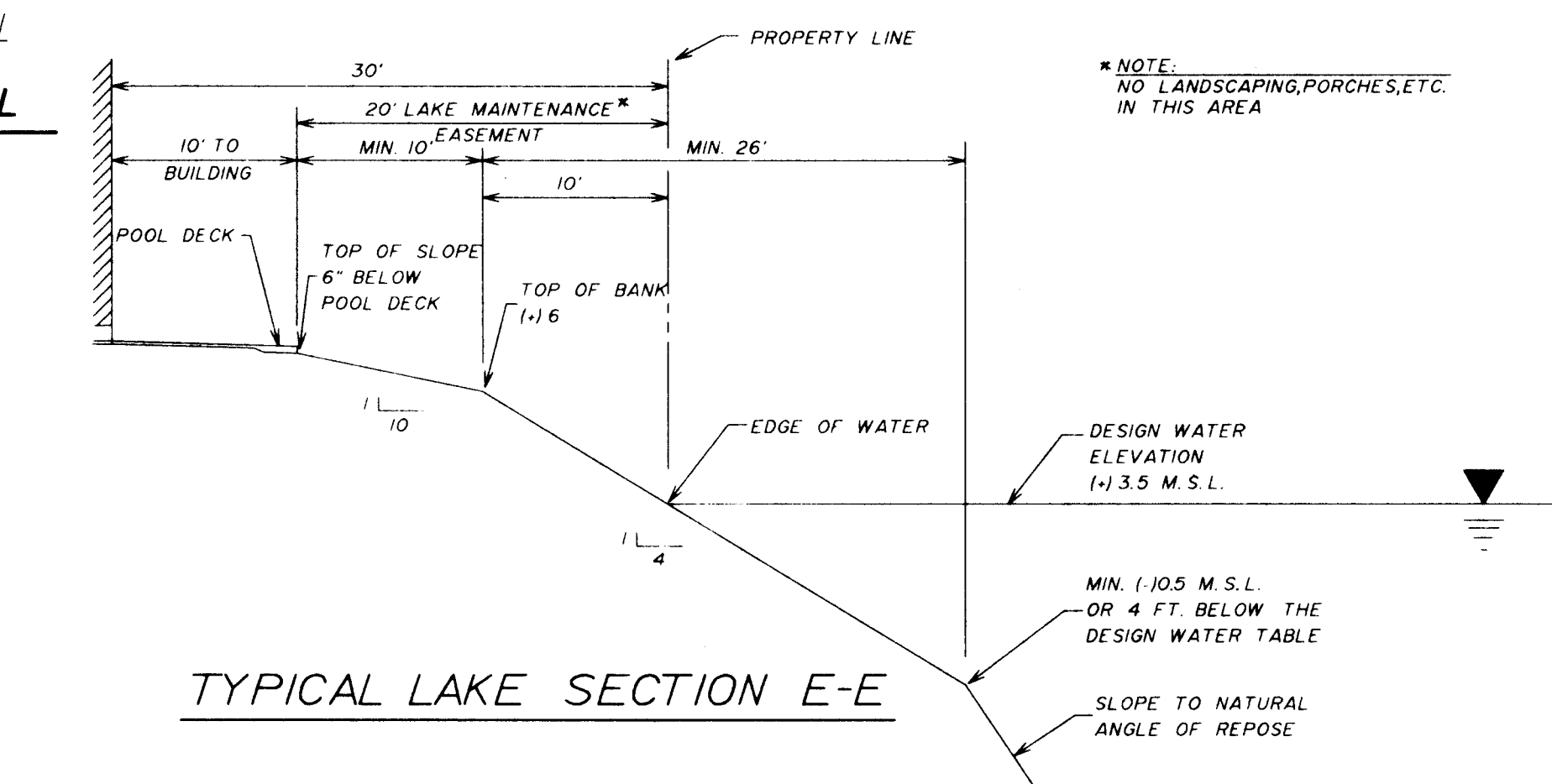
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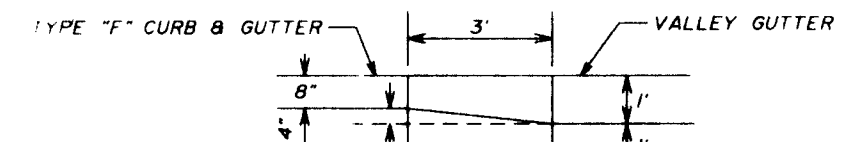
TYPE "D" CURB DETAIL



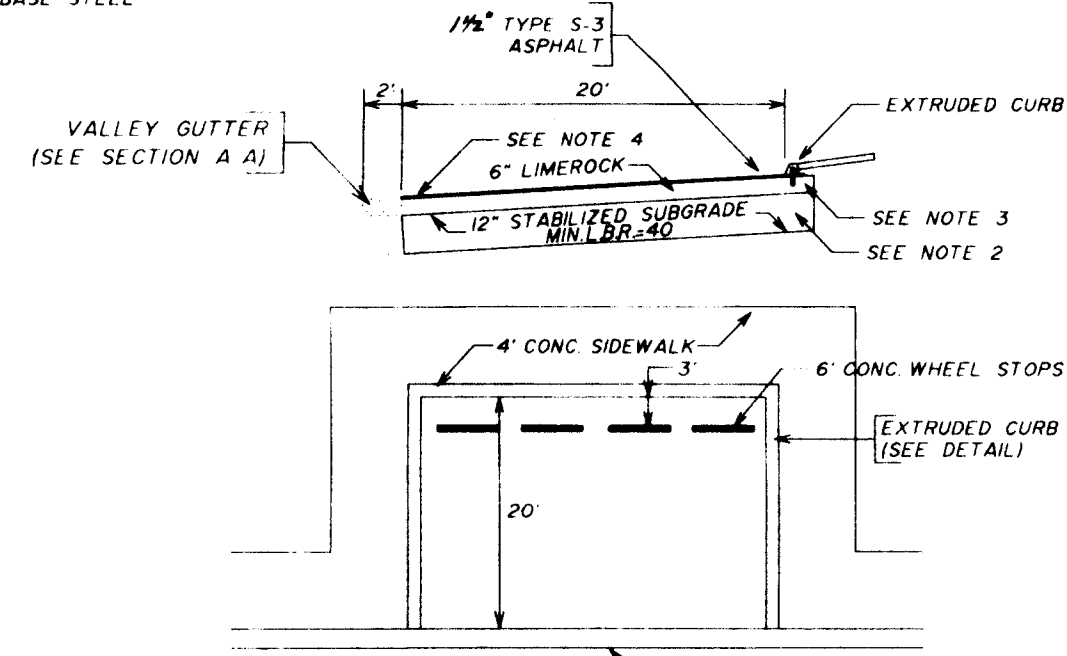
SIDEWALK DETAIL



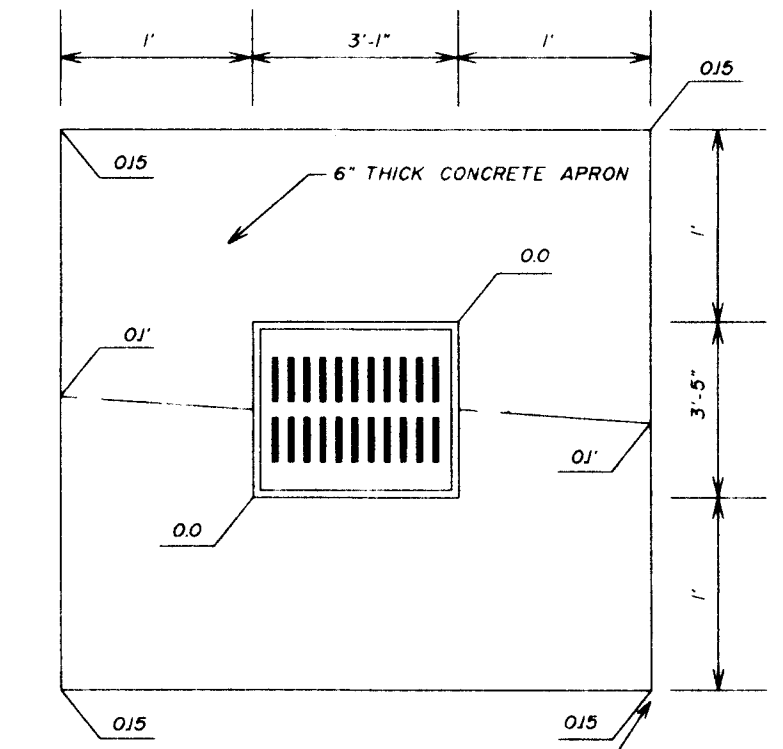
TYPICAL LAKE SECTION E-E



CURB TRANSITION DETAIL

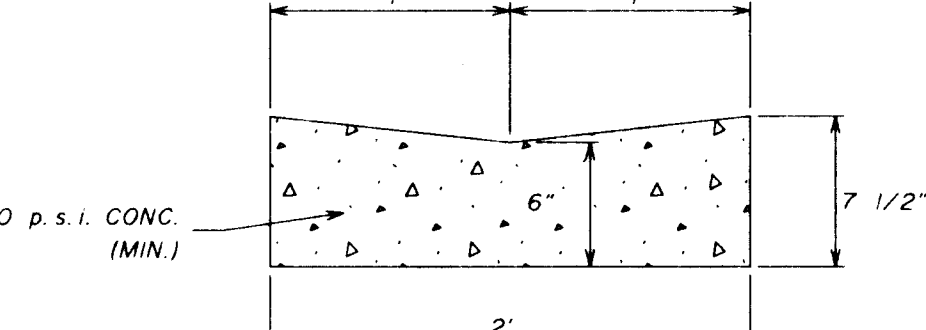


GUEST PARKING DETAIL



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.



2' CONCRETE VALLEY GUTTER

PAVEMENT NOTES: (ON SITE)

1. THE WEARING SURFACE OVER PARKING AREAS SHALL BE 1 1/2" OF TYPE S-3 ASPHALTIC CONCRETE INSTALLED IN TWO 3/4" LIFTS 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-3 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 MATERIAL 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 FDOT 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 10  
TOWNGATE LIMITED PARTNERSHIP  
MINTO COMMUNITIES (PEMBROKE), INC.

HFWINNINGHAM & FRADLEY, INC. Consulting Engineers • Land Surveyors	
DESIGNED: N/A DATE: 9/93	APPROVED: [Signature] DATE: 11/11/94
DRAWN: D.D. DATE: 9/93	CHECKED: [Signature] DATE: 10/25/94
PROJECT NUMBER: 93512	SHEET: PD3 OF 3

DEC 08 1994