



TYPE "C" INLET
485 FRAME & GRATE
W/ CONC. APRON
RE: 8.22-1.540
IE: 1.1000 E (-1.011)
200 W. 12.79

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SOUTH BROWARD DRAINAGE DISTRICT
APPROVED AS-BUILT
BY: *Tony P...* DATE: 8-27-99

RECEIVED
MAY 06 1996
BY: *[Signature]*

BENCHMARK: BROWARD COUNTY ENGINEERING BENCHMARK 12722
ELEVATION 6907' NGVD 1929

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 61617, Florida Administrative Code).

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

Note: This instrument is not intended to provide all, or part, of any or other matters, matters through which this instrument is intended.

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

MINTO		
FOR:	MINTO	
DATE:	6-90-99	
ORDER NO.:	9907089	
FIELD BOOK:	199-07.79	
DATE	REVISION	ORDER NO.

RECORD DRAWING

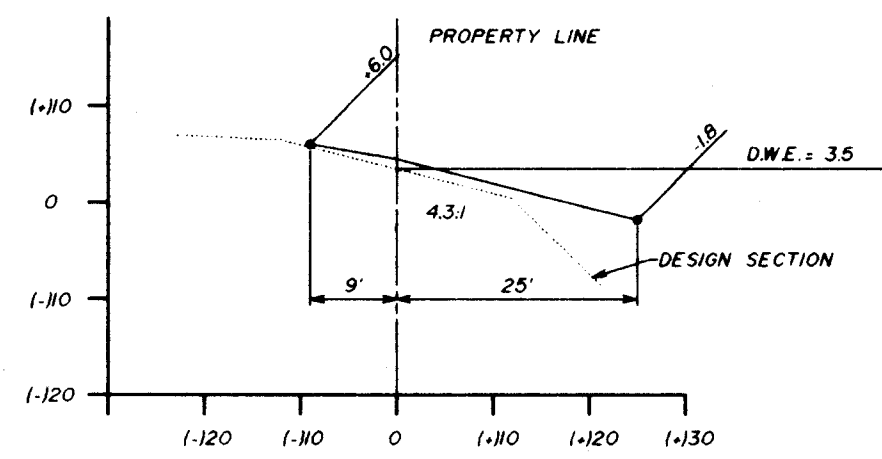
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5.	REVISE PER PEMBROKE PINES ENG.	4/14/95
4.	REVISE IE STRUCTURE NO. 8 & NO. 9 NORTH	4/16/95
3.	REVISE PER PEMBROKE PINES ENG.	4/16/95
2.	REVISE PER PEMBROKE PINES ENG.	3/27/95
1.	REVISE PER S.B.D.	3/7/95
NO.	REVISIONS	DATE

PAVING & DRAINAGE SYSTEM
PLAN

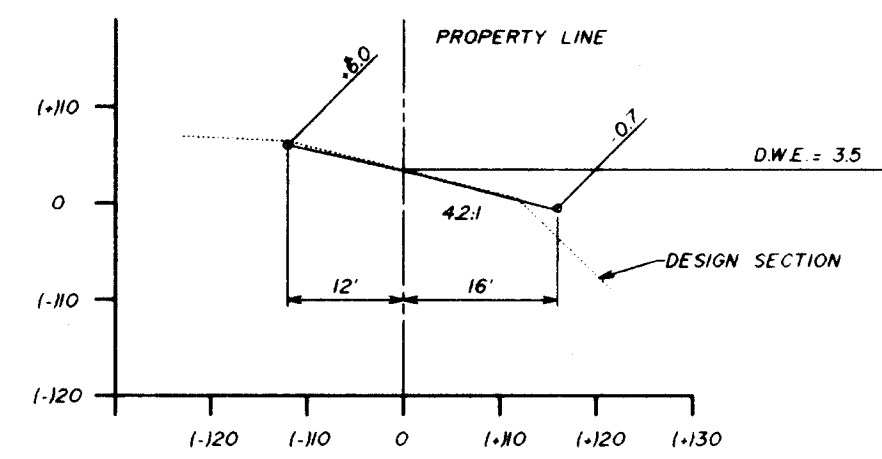
TOWNGATE - VILLAGE 8
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES, (PEMBROKE) INC.

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

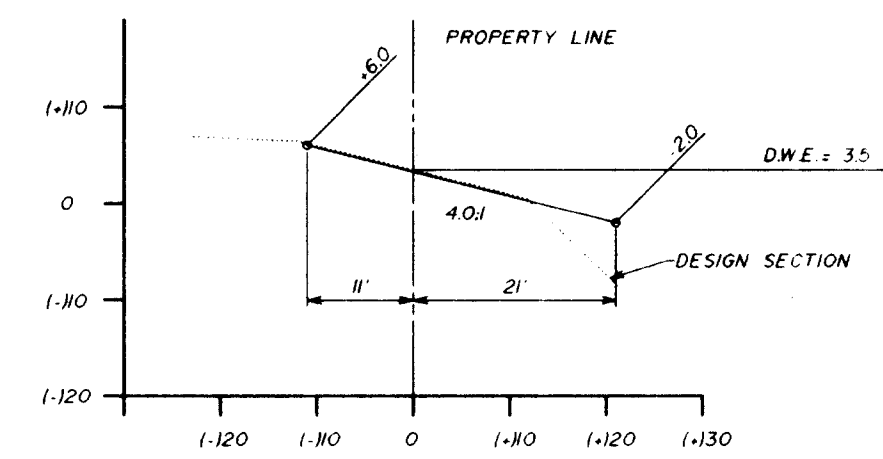
DESIGNED: C.D.W.	DATE: 1/95	APPROVED:
DRAWN: D.O.J.	DATE: 1/95	PROJECT NUMBER: 94542
CHECKED:	DATE:	SHEET: PDI OF 2



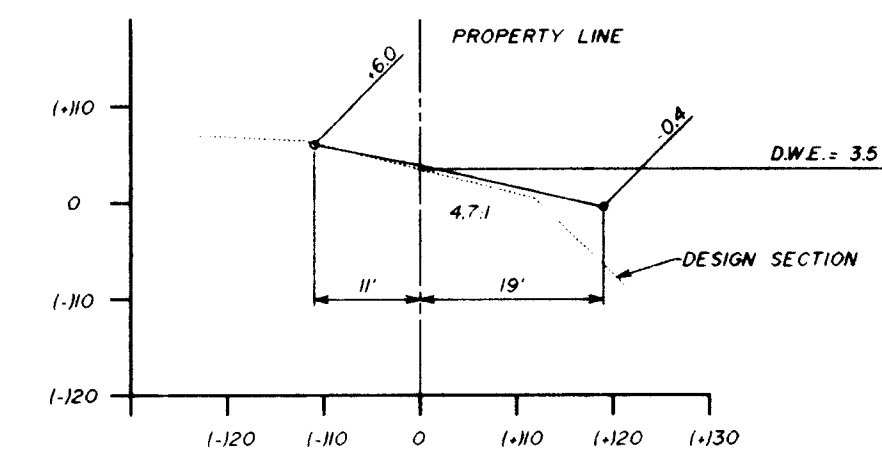
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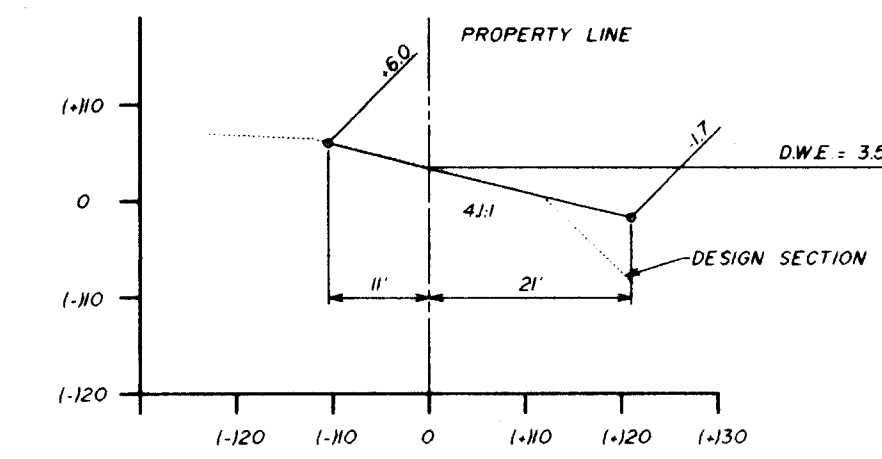
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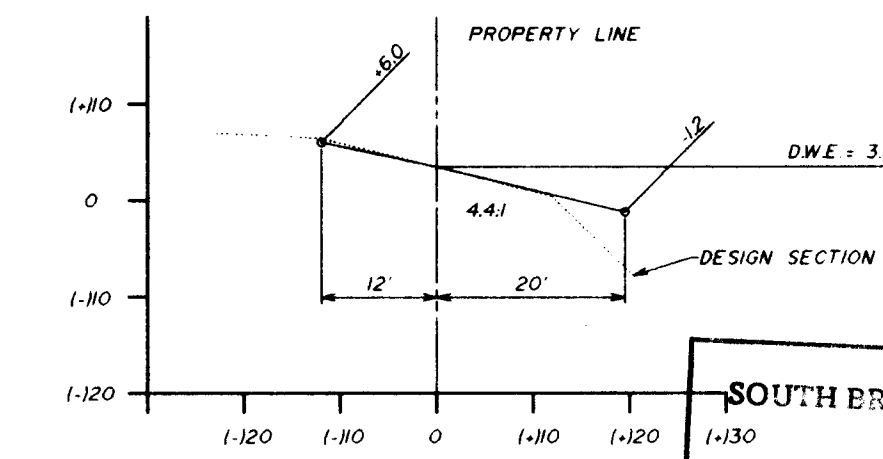
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SECTION 4

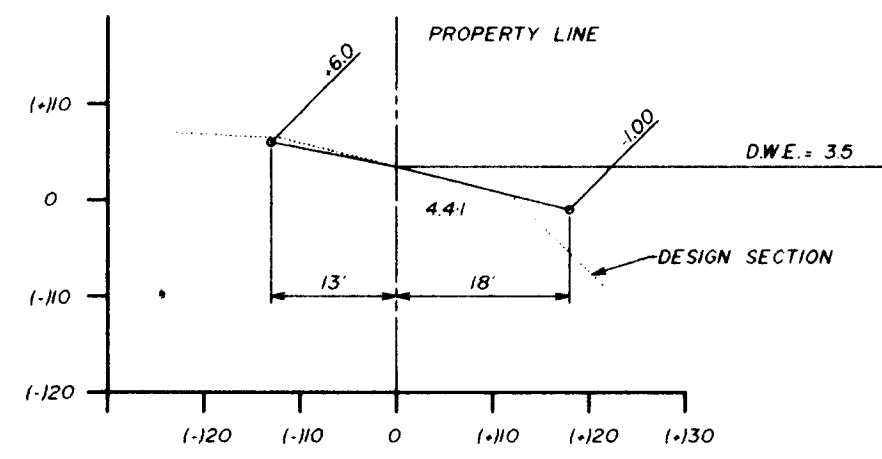


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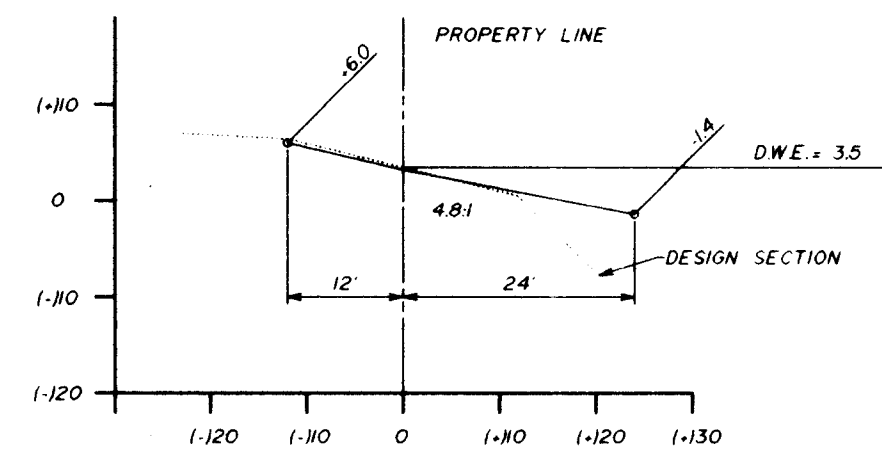


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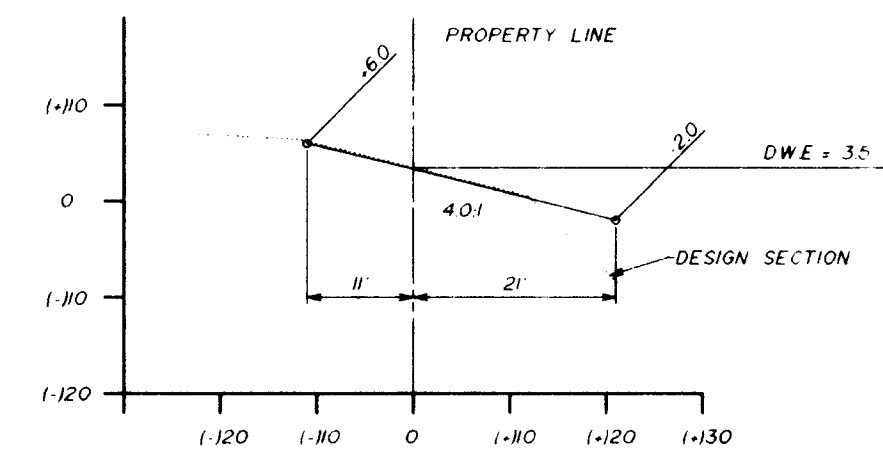
SOUTH BROWARD DRAINAGE DISTRICT
APPROVED
AS BUILT
BY: *[Signature]* DATE: 3/5/99



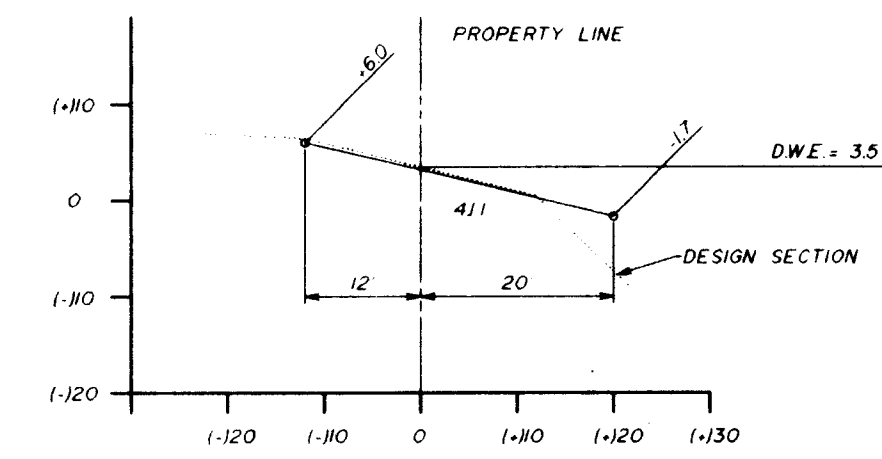
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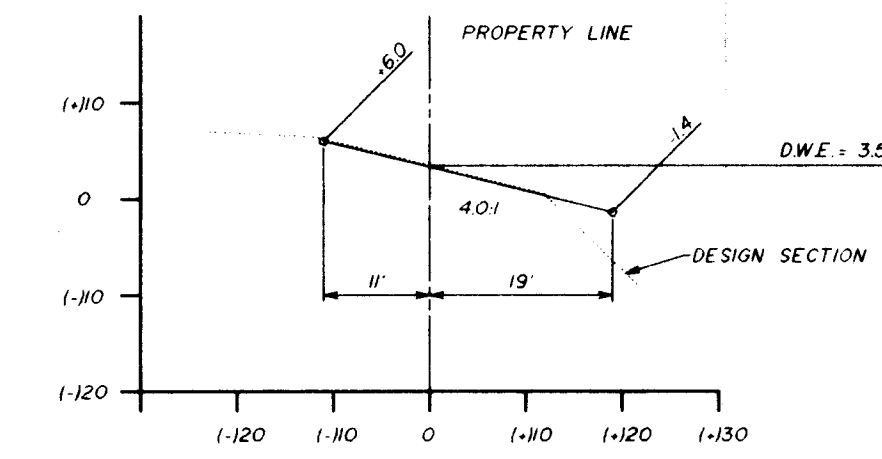
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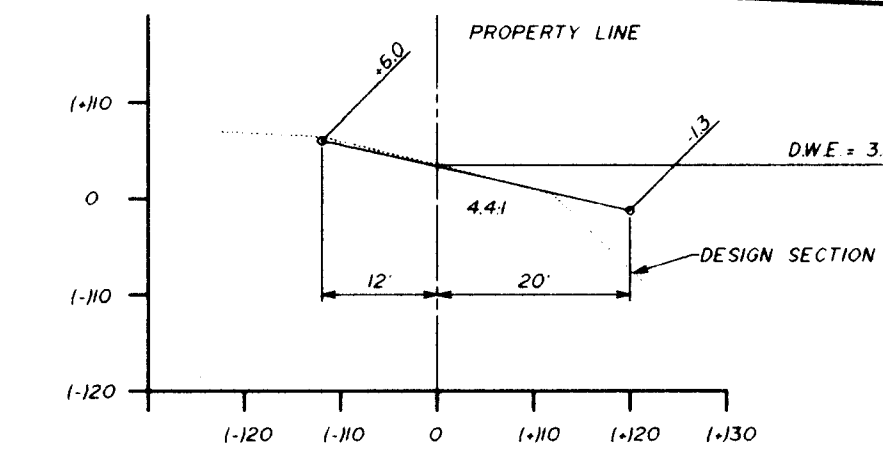
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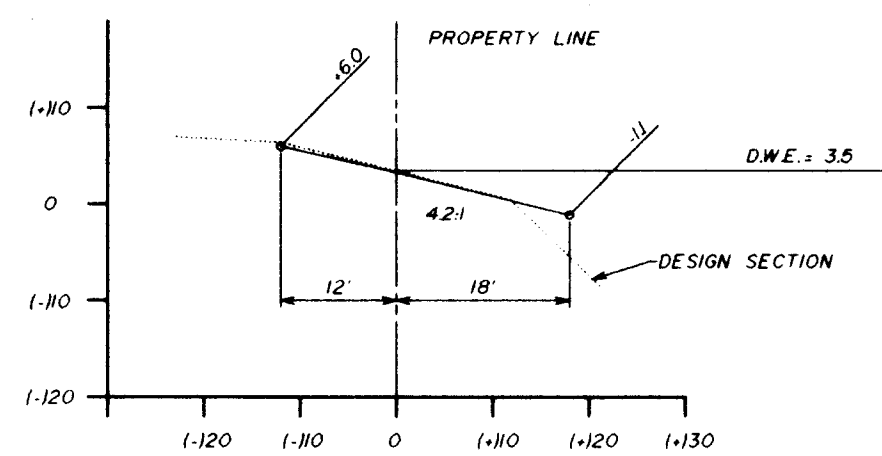
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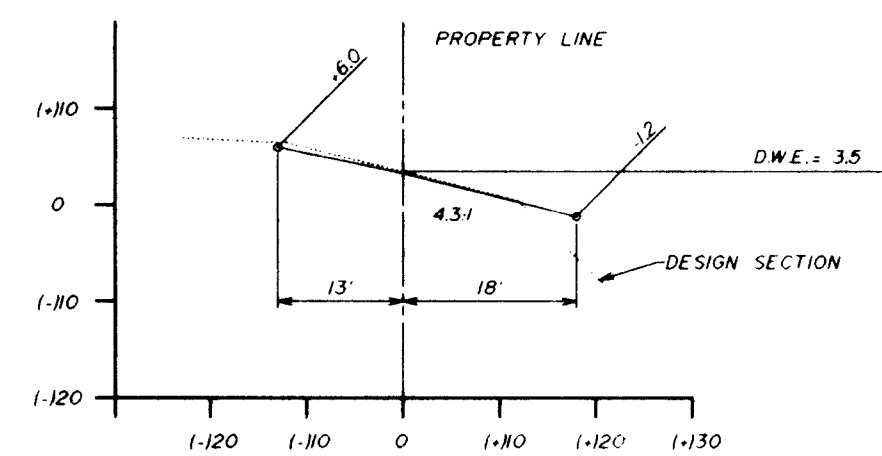
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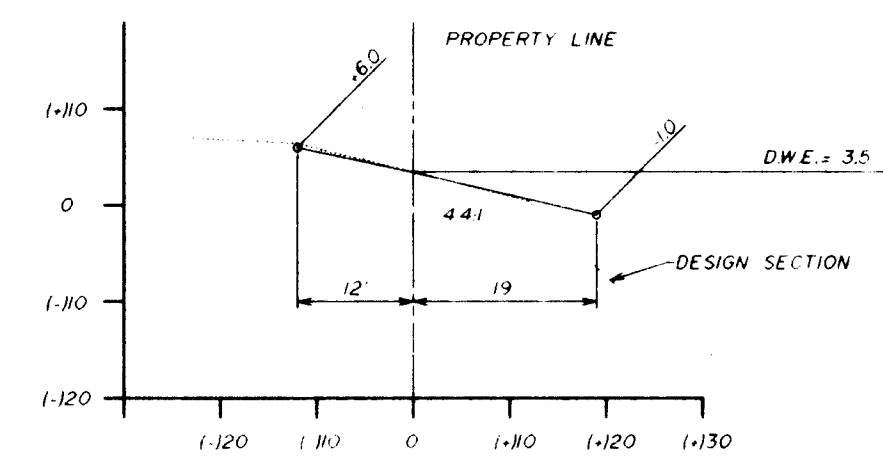
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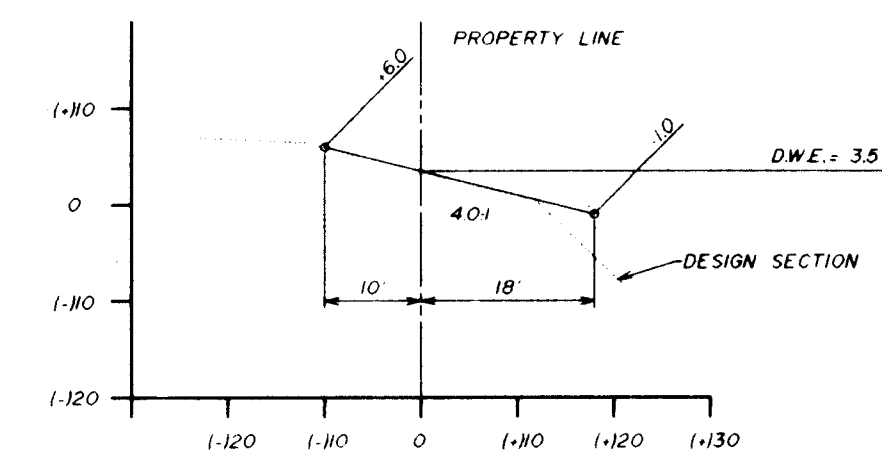
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SECTION 14



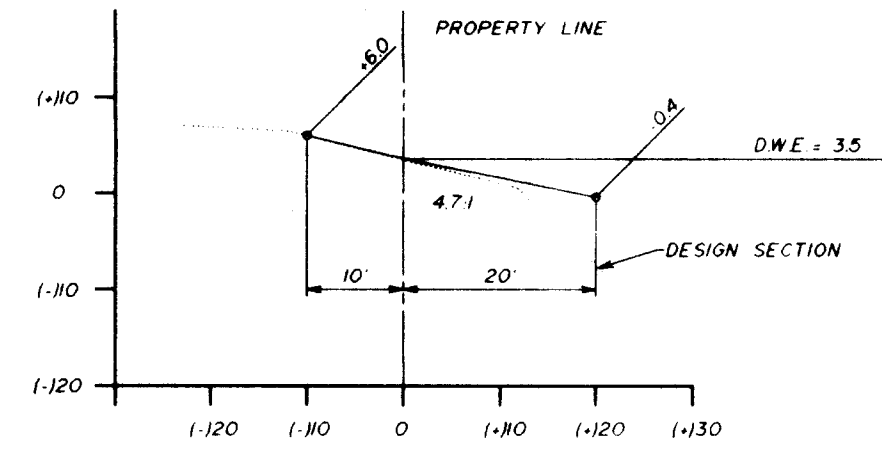
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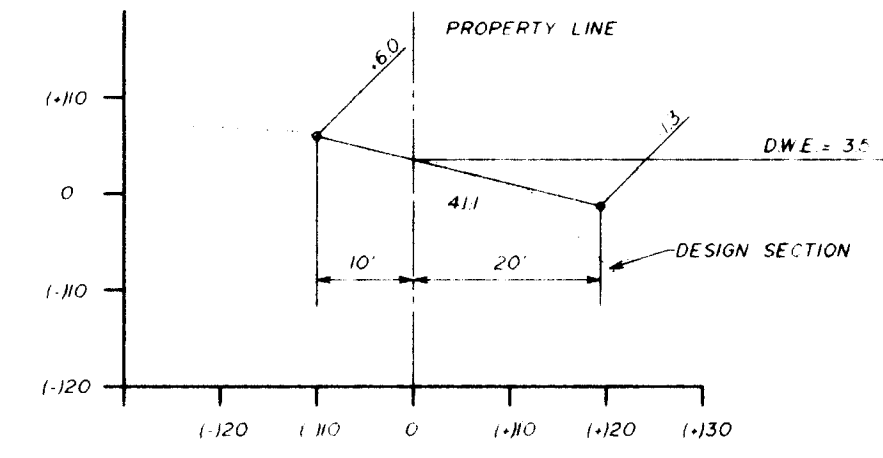
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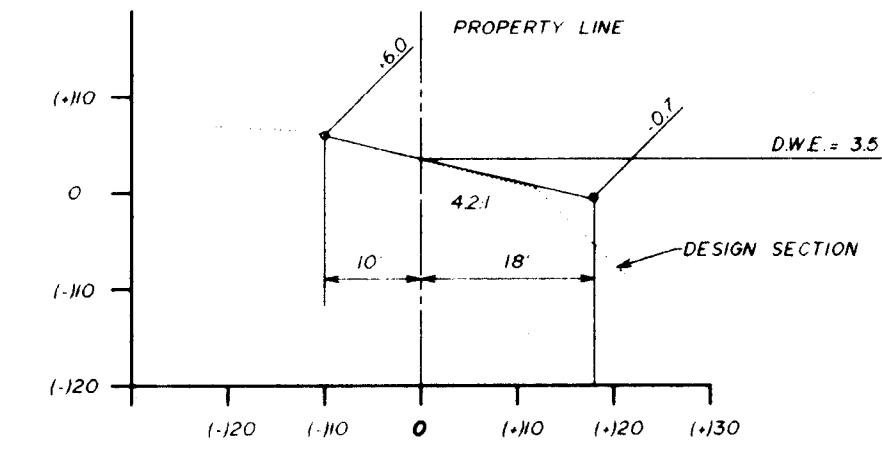
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SECTION 18



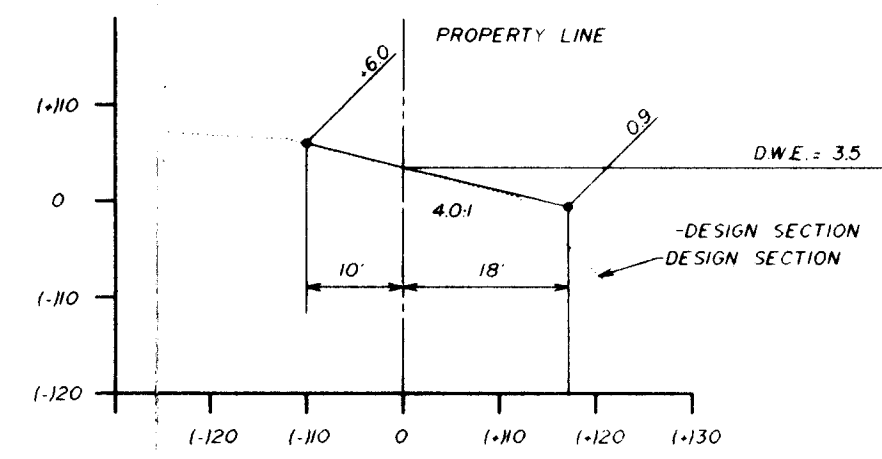
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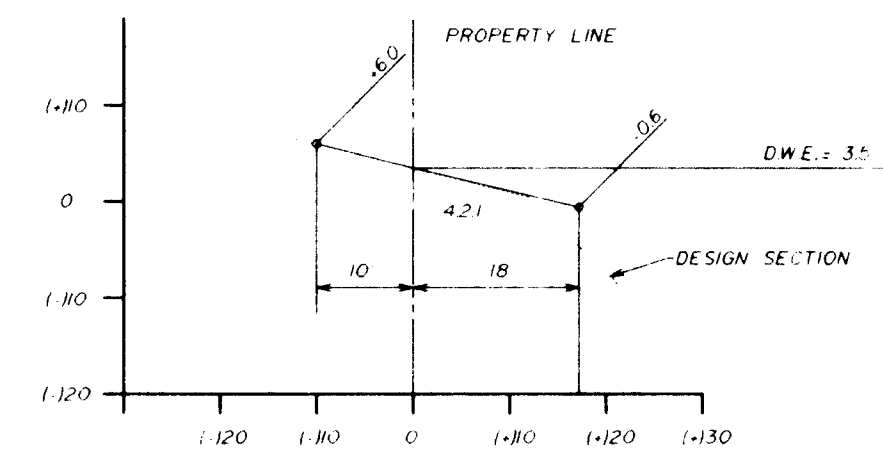
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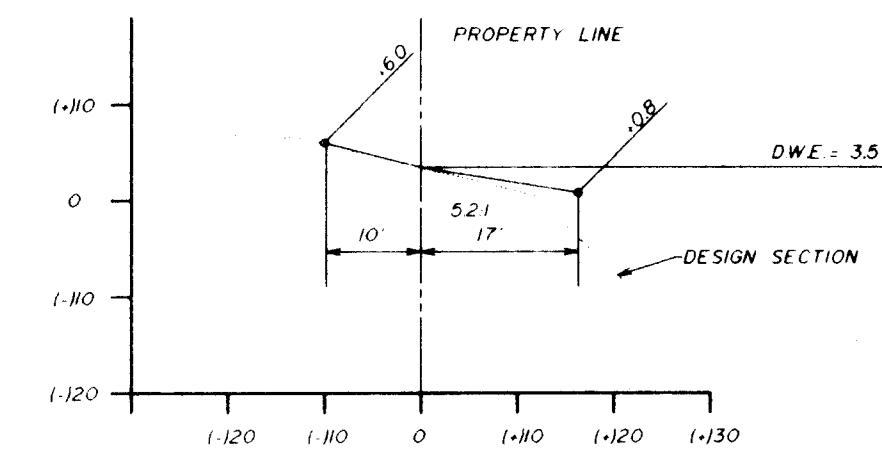
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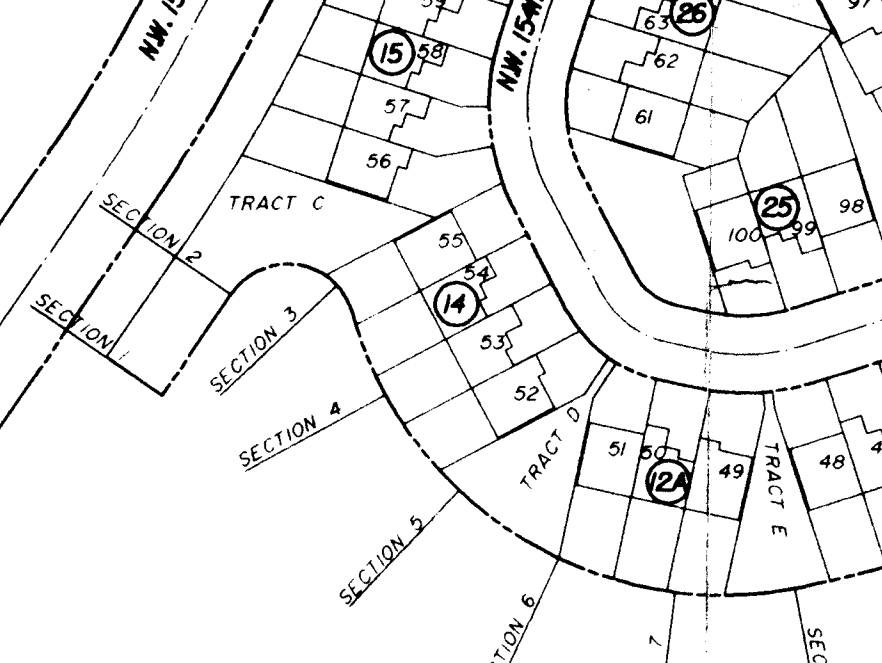
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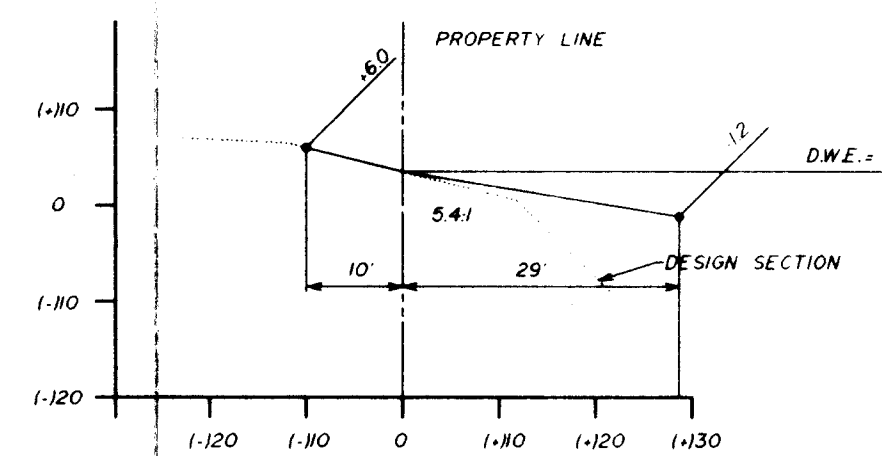
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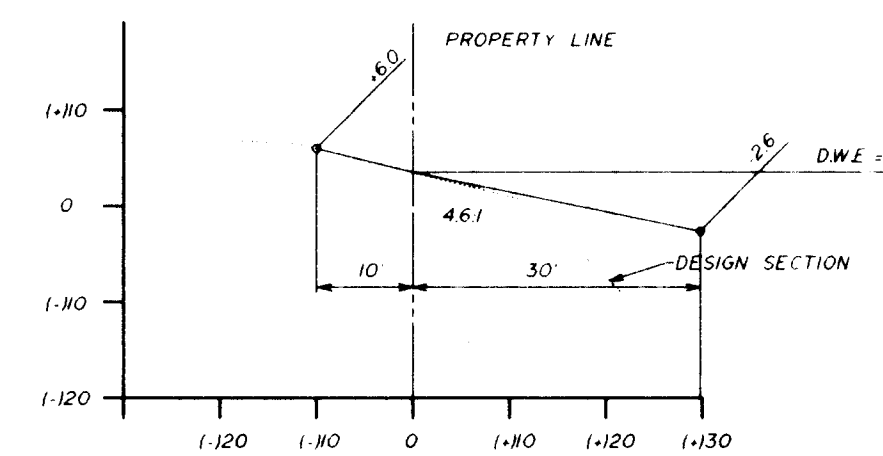
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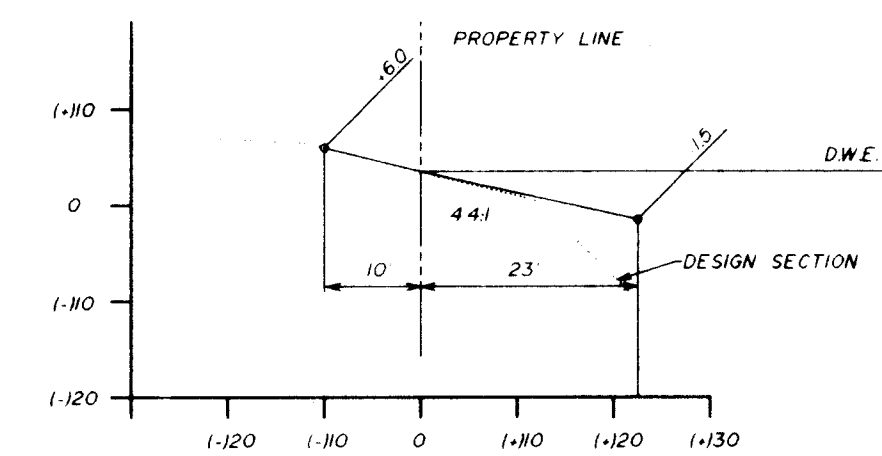
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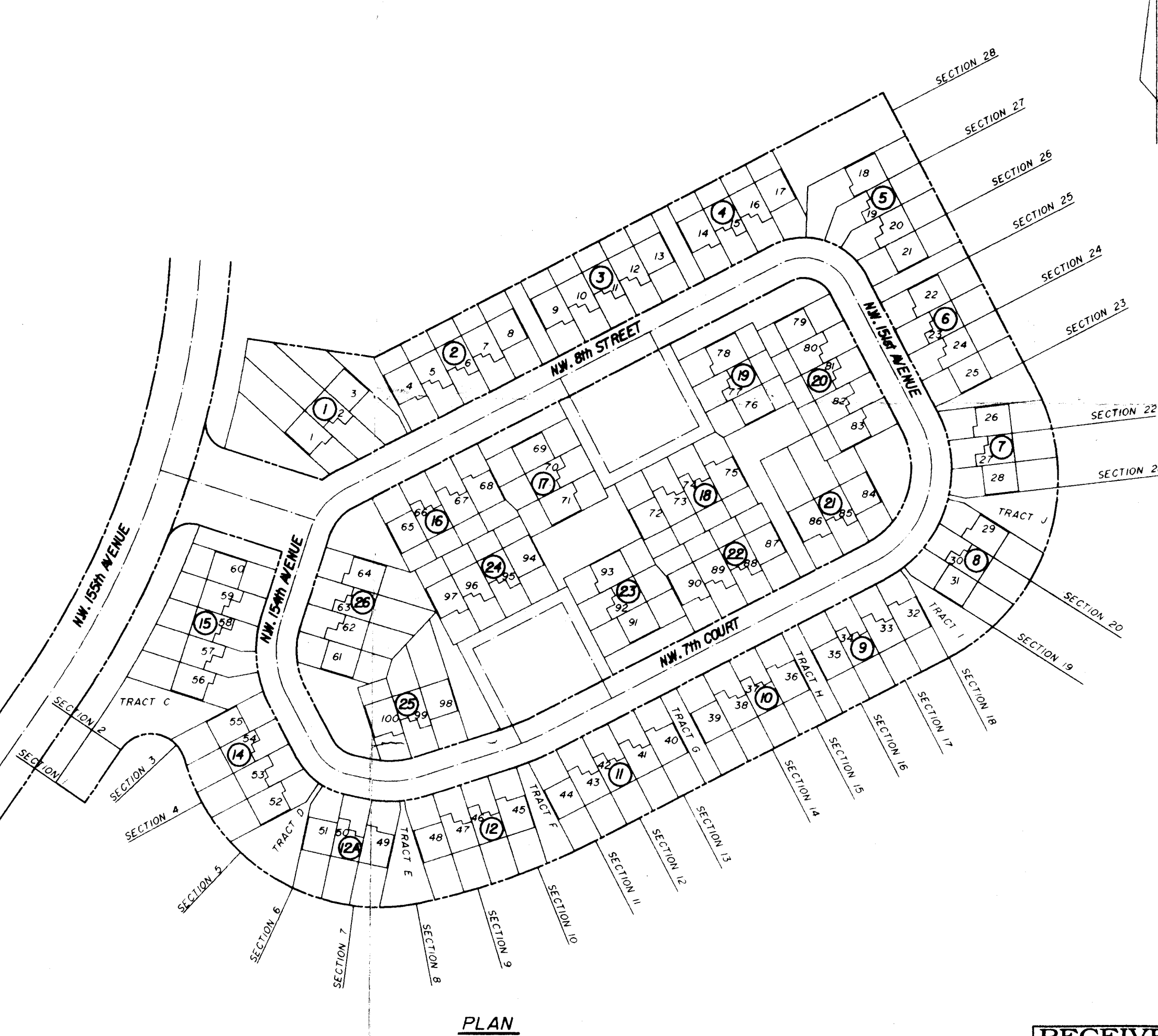
SECTION 26



SECTION 27



SECTION 28



PLAN

SCALE HORIZONTAL 1"=20'
VERTICAL 1"=20'

RECEIVED
NOV 10 1997
BY: _____

LAKE BANK
RECORD DRAWING
TOWNGATE - VILLAGE 8
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE), INC.
WINNINGHAM & FRADLEY, INC.
ENGINEERS • PLANNERS • SURVEYORS

DESIGNED K.P.R. DATE 4/97
DRAWN K.P.R. DATE 4/97
CHECKED DATE
APPROVED *[Signature]*
PROJECT NUMBER 94542
SHEET 1 OF 1

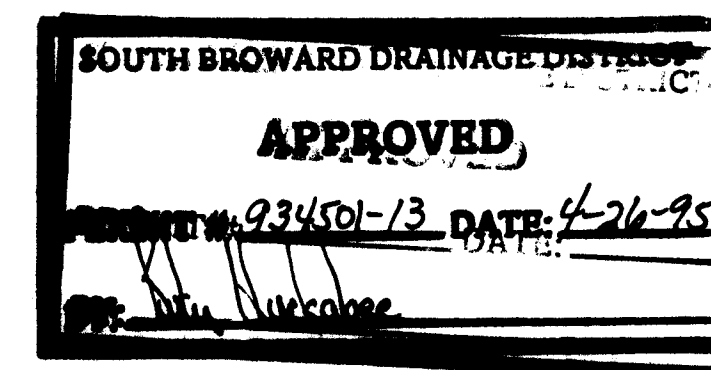
OCT 30 1997

TOWNGATE-VILLAGE 8

CITY OF PEMBROKE PINES, BROWARD COUNTY, FLORIDA

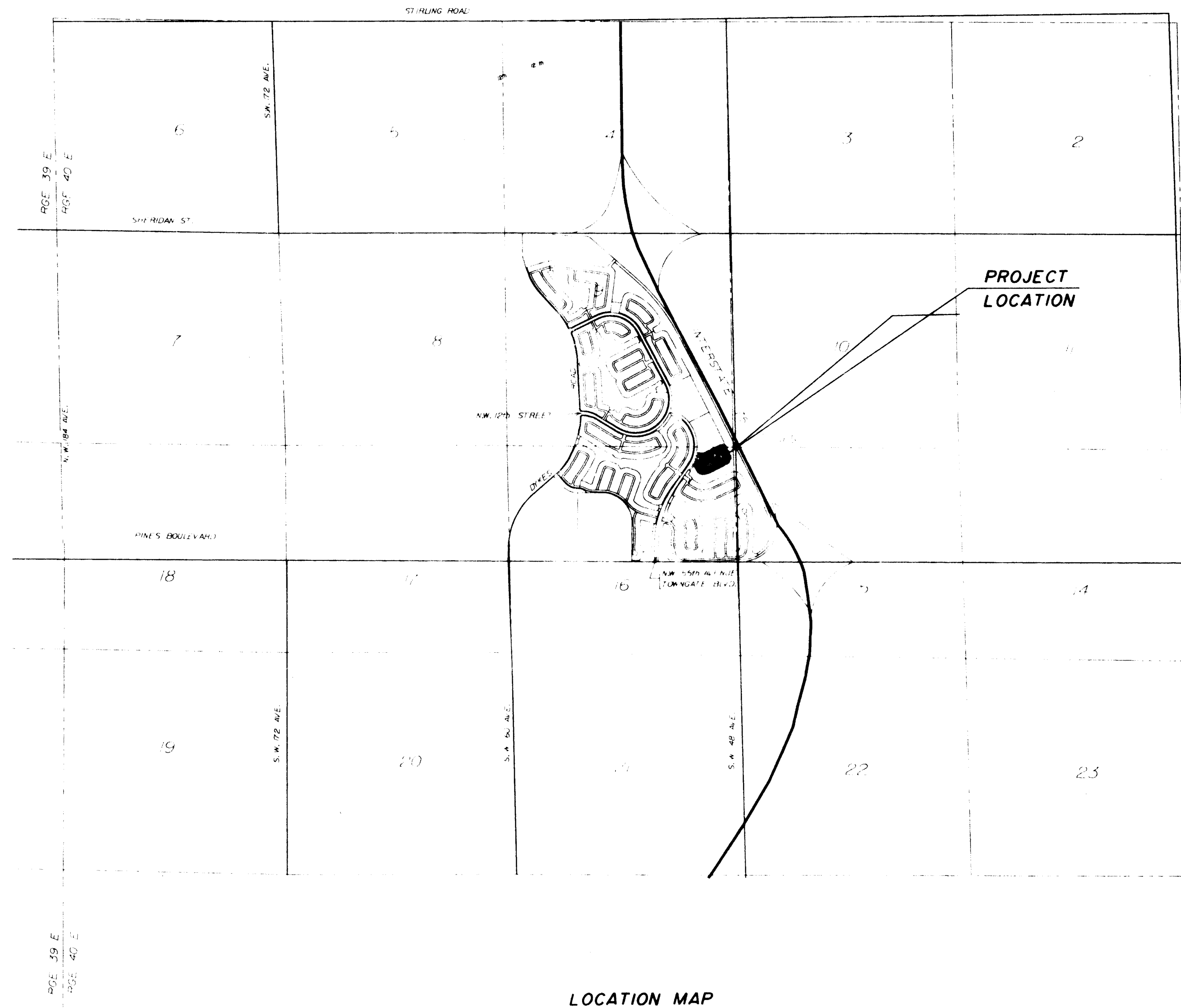
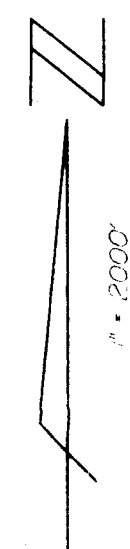
TOWNGATE LIMITED PARTNERSHIP

MINTO COMMUNITIES (PEMBROKE), INC.



Replaces original
approved plans

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, TYPE, AND SLOPE OF PIPE
	FLOW OR WARP LINE
	RIDGE LINE
	PAVEMENT SLOPE AND DIRECTION
	DIRECTION OF OVERLAND FLOW
	POLLUTION RETARDANT HAFFLE
	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
	SIDEWALK OR GUTTER REMOVAL



INDEX TO SHEETS	
DESCRIPTION	SHEET NUMBER
GENERAL NOTES	GNI OF 1
PAVING AND DRAINAGE SYSTEM - PLAN	PDI OF 2
PAVING AND DRAINAGE SYSTEM - DETAILS	PD2 OF 2
TRAFFIC MARKINGS - PLAN	TMI OF 1
WATER DISTRIBUTION AND SEWAGE COLLECTION SYSTEM - PLAN	WSI OF 4
SEWAGE COLLECTION SYSTEM - PROFILES	WS2 OF 4
WATER DISTRIBUTION SYSTEM - DETAILS	WS3 OF 4
SEWAGE COLLECTION SYSTEM - DETAILS	WS4 OF 4

LEGAL DESCRIPTION:

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 said Parcel "B", TOWNGATE; thence North 45°34'58" West, bearing based on the record plat for 4950 feet; thence North 00°34'58" West, this and the following four described courses being along the East right-of-way line of NW 155th Avenue, for 3000 feet to a point of curvature; thence northeasterly along the arc of a curve to the right, having a radius of 2604.00 feet and a central angle of 28°24'21", for 1291.00 feet to a point of tangency; thence North 27°49'23" East for 2541.2 feet; thence North 141°25'02" East for 544.75 feet to a point of curvature; thence northeasterly along the arc of a curve to the left, having a radius of 880.00 feet and a central angle of 12°19'51", for 189.39 feet to the POINT OF BEGINNING; thence continue northeasterly along the arc of a curve to the left, having a radius of 880.00 feet and a central angle of 08°14'15", for 126.52 feet to a point of cusp; thence a common tangent bears North 13°50'57" East; thence southeasterly along the arc of a curve to the left, having a radius of 25.00 feet and a central angle of 85°52'53", for 37.47 feet to a point of tangency; thence South 72°01'56" East for 1.45 feet to a point on a curve, at which a radial line bears North 74°33'56" West; thence northerly along the arc of a curve to the left, having a radius of 905.00 feet and a central angle of 07°04'55", for 118.86 feet; thence North 81°18'51" East, on a line radial to the last described curve, (this and the next described course being on the South line of Parcel "E" and the northeasterly extension thereof) for 127.38 feet; thence North 62°33'51" East for 567.92 feet; thence South 27°26'09" East for 327.00 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 90°00'00", for 314.16 feet to a point of tangency; thence South 62°33'51" West for 394.50 feet to a point of curvature; thence southwesterly along the arc of a curve to the right, having a radius of 675.00 feet and a central angle of 15°46'37", for 185.87 feet to a point of compound curvature; thence southwesterly, westerly and northwesterly along the arc of a curve to the right, having a radius of 200.00 feet and a central angle of 86°12'35", for 300.93 feet to a point of reverse curvature; thence northwesterly, westerly and southwesterly along the arc of a curve to the left, having a radius of 35.00 feet and a central angle of 130°08'01", for 79.49 feet; thence North 55°34'58" West, along a line radial to the last described curve, for 35.00 feet; thence North 34°25'02" East for 91.8 feet to a point of curvature; thence northeasterly along the arc of a curve to the left, having a radius of 905.00 feet and a central angle of 13°54'58", for 219.81 feet; thence North 72°01'56" West for 1.45 feet to a point of curvature; thence southwesterly along the arc of a curve to the left, having a radius of 25.00 feet and a central angle of 85°52'53", for 37.47 feet to the POINT OF BEGINNING.

Said lands situate, lying and being in the City of Pembroke Pines, Broward County, Florida and contain 10.544 acres, more or less.

PAVING AND DRAINAGE SYSTEM

TRAFFIC MARKINGS

WATER DISTRIBUTION SYSTEM

SEWAGE COLLECTION SYSTEM

GENERAL NOTES FOR WATER DISTRIBUTION AND SEWAGE COLLECTION SYSTEMS

- 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.
- 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 SUNSHINE STATE (PH: 1-800-432-4770) 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 ADOPTED 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 SANITARY SEWER MAINS CROSS ABOVE WATER MAINS, 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.
- 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 PLACED IN THE CENTER OF THE DRIVING LANE ADJACENT TO, FIRE HYDRANTS (BLUE REFLECTOR), AND VALVES OR MHS. OUTSIDE PAVEMENT AREAS ORANGE RPM'S FOR MANHOLES, WHITE RPM'S FOR GATE VALVES, AND GREEN RPM'S FOR FORCE MAIN VALVES.
- 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 PUBLIC HEALTH UNIT, BROWARD COUNTY DEPARTMENT OF NATURAL RESOURCE PROTECTION.
 - 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". FIRE HYDRANTS MUST HAVE A 7'-5" CLEAR RADIUS OF ALL OBSTRUCTIONS, POLES, BOXES, PLANTINGS, ETC.
- THE MINIMUM FOOT VALVE SIZE ON FIRE HYDRANTS SHALL BE 5 1/4".
- AT PROJECT COMPLETION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING EXCESS DEBRIS FROM THE CONSTRUCTION SITE.

GENERAL NOTES FOR SEWAGE COLLECTION SYSTEM & DRAINAGE SYSTEM

- PRECAST STRUCTURES SHALL CONFORM TO ASTM C-478 AND 647. PRECAST STRUCTURE MUST BE CERTIFIED BY AN INDEPENDANT 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 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 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.
- 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.
- 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 EMBECCO MORTAR (NON-METALLIC) OR BONSAL (NON-SHRINKING).
- TWO COATS OF KOPFER'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. USE 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. ALL FORCE MAINS SHALL BE LINED WITH A VIRGIN POLYETHYLENE LINER COMPLYING WITH ASTM D-1248 COMPOUNDED WITH SUFFICIENT ADDITIVES TO RESIST ULTRAVIOLET RAYS DURING ABOVE GROUND STORAGE OF THE PIPE. THE POLYETHYLENE SHALL BE FUSED TO THE INTERIOR OF THE PIPE BY HEAT FORMING. A TIGHTLY BONDED LINING APPROXIMATELY 40 MILS THICK EXTENDING FROM SPIGOT END TO THE BARREL SOCKET.
- 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. OWNER / CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DEFICIENCIES PRIOR TO THE CITY'S CERTIFICATION OF COMPLETION TO ANY AGENCY.
- ALL PROBLEMS/DEFECTS ASSOCIATED WITH THE SANITARY SEWER SYSTEM SHALL BE PROPERLY ADDRESSED PRIOR TO CITY CERTIFICATION TO ANY AGENCY.
- SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER AND THE CITY OF PEMBROKE PINES FOR APPROVAL PRIOR TO ORDERING MATERIALS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISED OR UNACCEPTABLE MATERIALS INSTALLED OR ORDERED WITHOUT AN APPROVED SHOP DRAWING. FOUR COPIES OF THE SHOP DRAWINGS SHALL BE SUBMITTED.

WATER DISTRIBUTION SYSTEM NOTES

- ALL WATER MAIN SHALL BE PVC CONFORMING TO ANSII/AWWA SPECIFICATION C-900 89 DR18.
- FITTINGS SHALL BE DUCTILE IRON CLASS 50 MEETING AWWA/ANSI C153/A215.3 HR SPECIFICATIONS. FITTINGS MUST BE CEMENT LINED AND SEAL COATED PER AWWA/ANSI C104/A214.4-90.
- GATE VALVES 4" AND LARGER SHALL MEET AWWA C-600 BY SPECIFICATION. VALVES MUST BE MUELLER CO. OR APPROVED EQUAL MECHANICAL JOINT, RESILIENT SEATED.
- WATER SERVICE PIPING, FITTINGS, AND SERVICE TUBING SHALL BE POLYBUTYLENE CONFORMING TO AWWA SPECIFICATION C-902 88 SDR 9, 200 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 HHSCERTIFIED 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 PSI OR A MINIMUM TEST OF 2 HOURS AND SHALL NOT EXCEED THE LEAKAGE REQUIREMENTS AS PER AWWA/ANSI SPECIFICATIONS OF C600-93 LEAKAGE FORMULA.

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 PVC WATER MAINS SHALL BE 36 INCHES. A OVER DIP SHALL BE 30 INCHES.
- DISINFECTING OF MAINS SHALL COMPLY WITH AWWA C-650-92 SPECIFICATIONS STANDARD BACTERIOLOGICAL SAMPLING POINTS SHALL BE DESIGNATED ON THE ENGINEERING PLANS. IF OTHER MAINS SHALL NOT BE DISINFECTED.
- MINIMUM VALVE SPACING SHALL BE AS PER SECTION B2 OF THE TEN STATES STANDARDS.
- WHEN PVC IS USED FOR WATER MAIN, A STRIP OF METALLIC TAPE SHALL BE INSTALLED THE LENGTH OF THE PIPE 18" ABOVE THE PIPE WITH THE WORDS "WATERPROOF FOR FIRM BOND BELOW" FACING UPWARD. NON METALLIC TAPE SHALL BE USED ON DIP.
- ALL DIP WATER MAIN SHALL BE CLASS 150 CONFORMING TO ANSII/AWWA SPECIFICATION C153/A214.4-90 AND BE CEMENT MORTAR LINED AND SEAL COATED PER AWWA SPECIFICATION C104/A214.4-90.
- PLUG VALVES SHALL BE DUCTILE IRON MANUFACTURED BY CLOW OR EQUAL.
- A TEMPORARY METER SHALL BE INSTALLED BY THE CONTRACTOR FOR ANY TEMPORARY SERVICES.
- SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER AND THE CITY OF PEMBROKE PINES FOR APPROVAL PRIOR TO ORDERING MATERIALS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISED OR UNACCEPTABLE MATERIALS INSTALLED OR ORDERED WITHOUT AN APPROVED SHOP DRAWING. FOUR COPIES OF THE SHOP DRAWINGS SHALL BE SUBMITTED.

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 C76-85a.
- MINIMUM COVER FOR ALL PIPE CULVERTS SHALL MEET THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (INDEX NO. 08).
- ALL UNDERGROUND FACILITIES SHALL BE INSTALLED PRIOR TO PLACING THE LIME ROCK 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 DRAIN 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 1992.
 - FLORIDA 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 SUBGRADE MUST BE SUBMITTED TO AND APPROVED BY THE CITY OF PEMBROKE PINES.
- DENSITY TESTS AND AS-BUILTS FOR LIME ROCK 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

- 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.
- LIME ROCK 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 A.M. TO 4:30 P.M.
- 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 COMPLETED WITH:
 - BOND (CASH OR SURETY) OR LETTER OF CREDIT IN THE DISTRICT'S FAVOR MUST BE POSTED IN THE AGENCY STATED IN SECTION 410F 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.
- 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.
- 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.

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 ANSII/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 8
TOWNGATE LIMITED PARTNERSHIP
MINTO COMMUNITIES (PEMBROKE), INC.

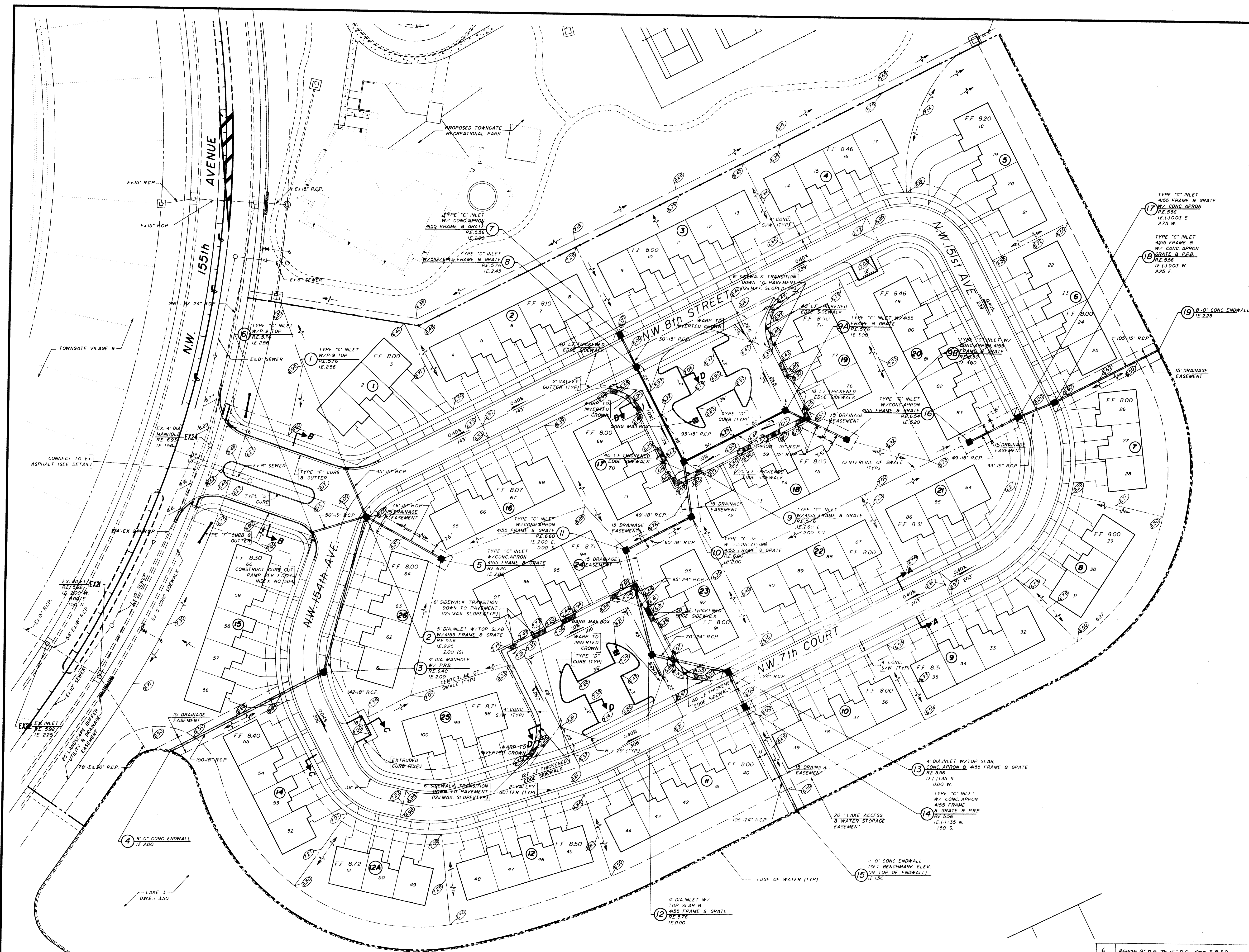
WINNINGHAM & FRADLEY, INC. ENGINEERS - PLANNERS - SURVEYORS			
DESIGNED	WBF	DATE:	12/94
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PROJECT NUMBER: 94542
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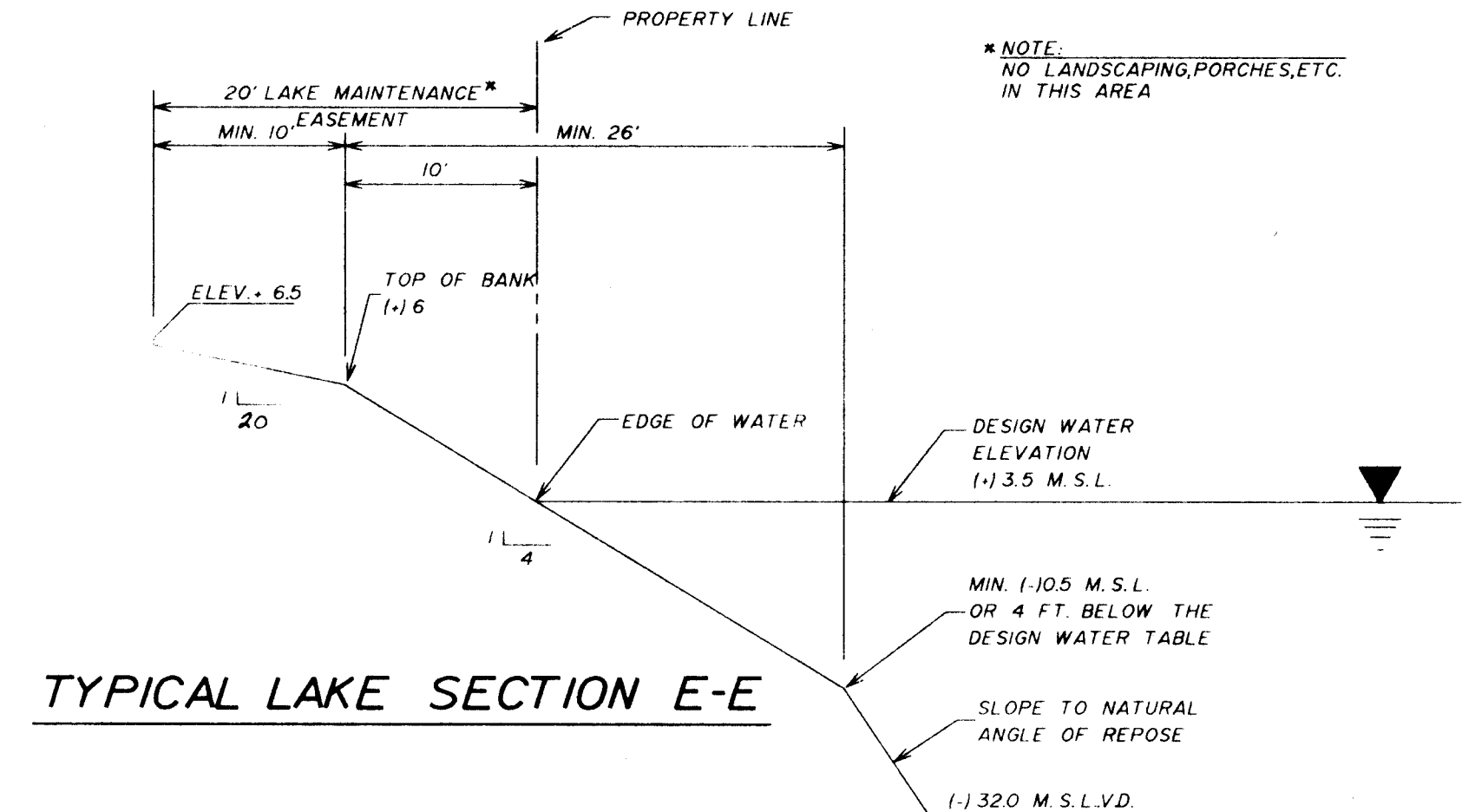
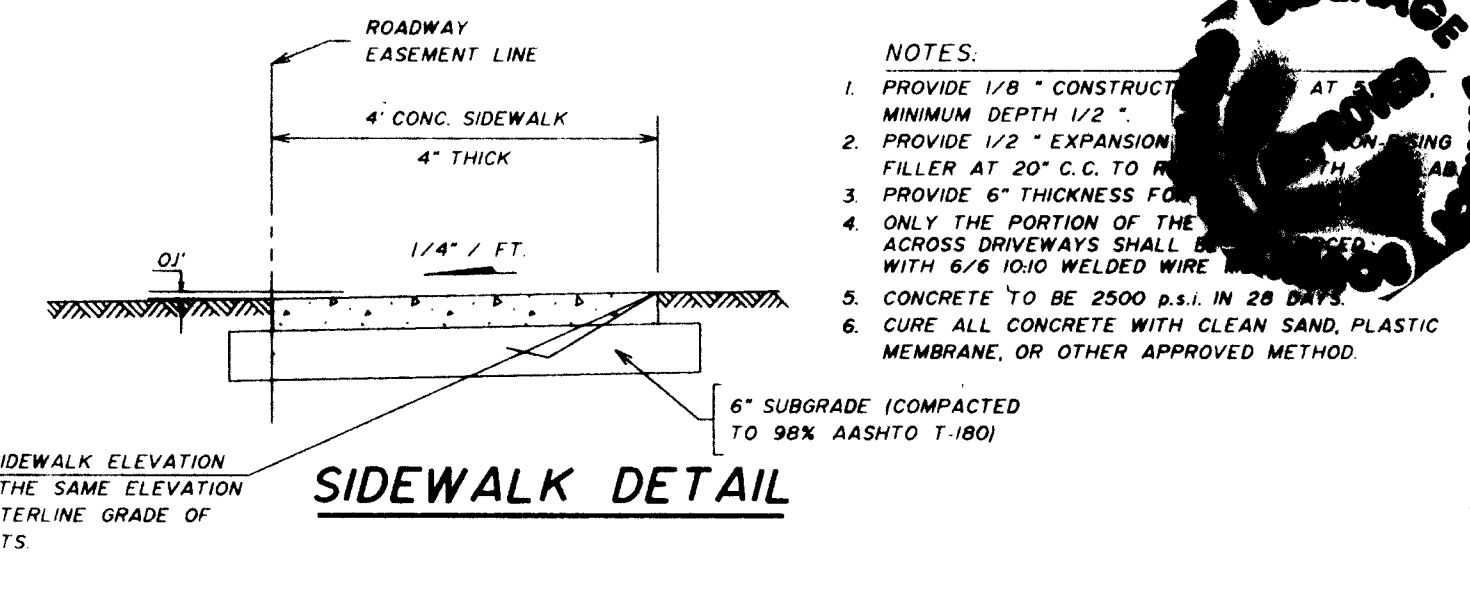
SCALE 1" = 40'



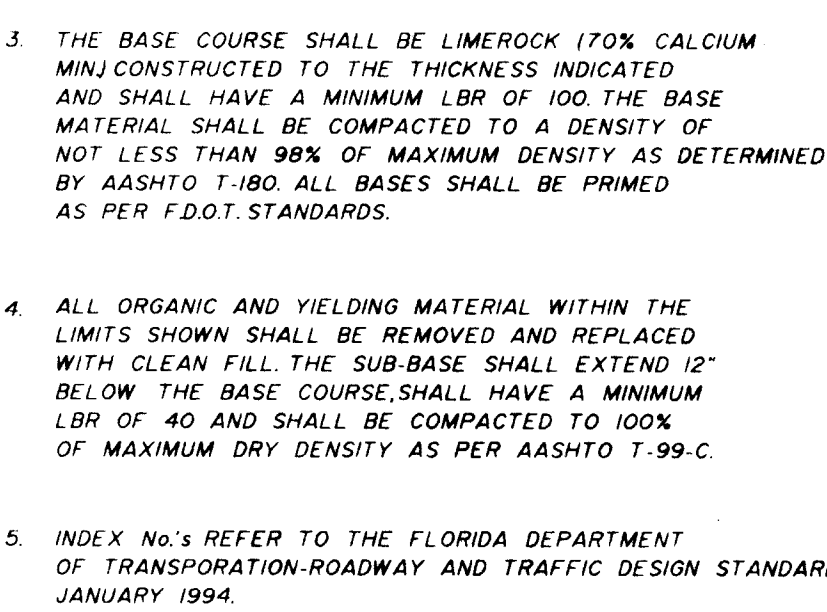
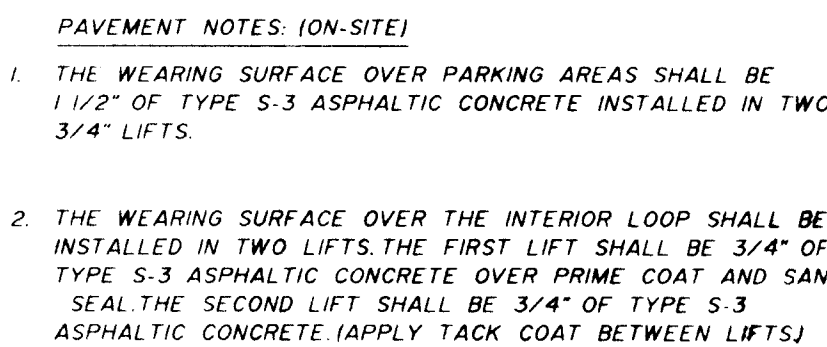
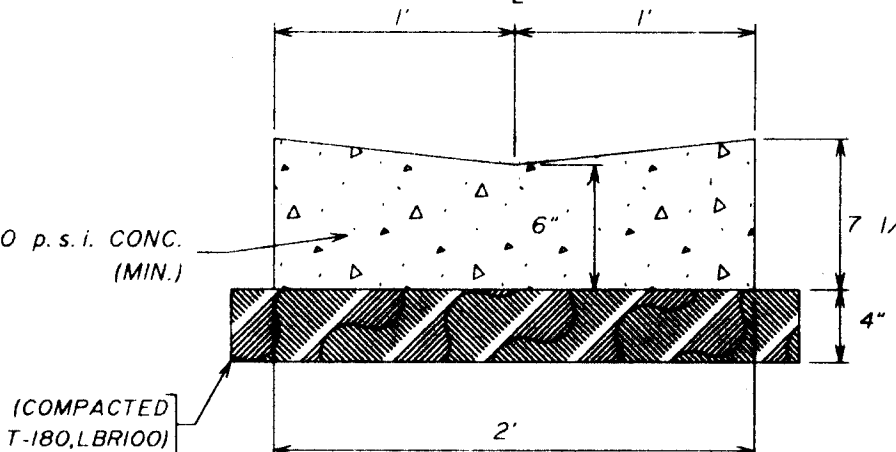
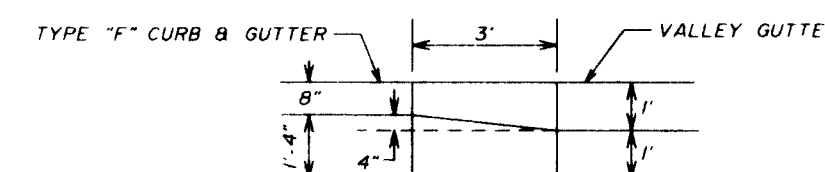
PAVING & DRAINAGE SYSTEM PLAN		
TOWNGATE - VILLAGE 8 TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES (PEMBROKE) INC.		
WINNINGHAM & FRADLEY, INC. ENGINEERS - PLANNERS - SURVEYORS		
DESIGNED: CDW.	DATE: 1/95	APPROVED: [Signature]
DRAWN: D.O.I.	DATE: 1/95	PROJECT NUMBER: 94542
CHECKED: [Signature]	DATE: [Blank]	SHEET: PD1 OF 2

6.	REVISE 9' DIA. TO 15' D.E. PER S.B.D.D.	4/24/95
5.	REVISE PER PEMBROKE PINES ENG.	4/14/95
4.	REVISE IE STRUCTURE NO. 8 B NO. 9 NORTH	4/11/95
3.	REVISE PER PEMBROKE PINES ENG.	4/6/95
2.	REVISE PER PEMBROKE PINES ENG.	3/27/95
1.	REVISE PER S.B.D.D.	3/7/95
NO.	REVISIONS	DATE

APR 24 1995



POLLUTION RETARDANT
BASIN DETAIL



PAVING AND DRAINAGE SYSTEM DETAILS

TOWNGATE - VILLAGE 8

TOWNGATE LIMITED PARTNERSHIP MINTO COMMUNITIES, (PEMBROKE) INC.