

DRAINAGE CALCULATIONS

Note: Drainage calculations based on pavement being 100% impervious and that all required storage be in exfiltration trenches as per SFWMD comments.

- TOTAL AREA OF PROPERTY = 4.28± ac
- A. Impervious = 3.17 ac
- B. Pervious = 1.11 ac
- PERCENT IMPERVIOUS = 74%
- 3 YEAR - 1 HOUR INTENSITY = I = 2.5 in = 0.208 ft
- DEVELOPED RUNOFF:

A (ac)	C _d	AC _d (ac)
A. Impervious = 3.17	0.9	2.85
B. Pervious = 1.11	0.2	0.22

Coefficient = C_d = AC_d / A = 3.07 / 4.28
 C_d = 0.72
 Volume = V_d = Area (ac) x I (ft) x C_d
 V_d = 4.28 x 0.208 x 0.72 = 0.64 ac ft
 V_d = 27,880 cf
 OR
 1 in. runoff from developed site V_d = 4.28 ac x 1 in / 12 = 0.36 ac ft
 V_d = 15,680 cf
 MUST RETAIN 50% OF THE GREATER AMOUNT

- REQUIRED STORAGE VOLUME FOR DRY RETENTION = 1/2 V_d = 1/2 (27,880 cf) = 13,940 cf
- STORAGE VOLUME PROVIDED = (2,100' of exfiltration trench) x (6.64 cf/ft) = 13,944 cf

SITE DATA

PROJECT AREA: 4.28 ac
 BUILDING AREA: 0.72 ac
 UTILITY BLDG., POOL & DECK AREA: 0.08 ac
 ROAD & PARKING AREA: 2.37 ac
 GRASSED AREA: 1.11 ac

Road and parking areas shall be surfaced with porous asphalt pavement. SFWMD allows 50% of porous asphalt pavement to count as a pervious surface when determining if a project is exempt from SFWMD permitting.

Equivalent impervious area = 0.72 + 0.08 + (2.37/2) = 1.985 acres

High water table was found at approximately two (2) feet below the existing ground on September 1, 1985 just before a heavy rain due to the tropic hurricane Elena. Thus wet-season high water table is equivalent to approximately two (2) feet elevation as it relates to U.S.C. & G. Bench Mark G-251 & RM-6, used by the Florida registered surveyor, Mr. Walter A. Faxton, Jr.

SPECIFICATIONS

ROAD AND PARKING AREA

I. Subgrade Preparation
 A. The subgrade shall be undisturbed earth wherever possible. Where muck, rock, clay or other unsuitable material is encountered, the contractor shall excavate such material and backfill with suitable material. Any material used for filling or leveling of the subgrade shall be free of organic materials, muck, clay, rock or other debris. Fill material shall be compacted to a density equal to the undisturbed subgrade. Traffic over subgrade shall be kept at a minimum so as not to cause undue subgrade compaction.

II. Pavement Base Materials & Construction
 A. The pavement base shall consist of graded stone or graded crushed stone as specified herein, and shall be constructed as specified herein.
 B. The pavement base shall be applied in two layers, as follows: The lower layer shall be FDOT No. 4 stone and shall be six (6) inches in thickness; the upper layer shall be of FDOT No. 57 stone and shall be six (6) inches in thickness. The total pavement base thickness shall be twelve (12) inches.
 C. The pavement base shall not be compacted, rolled, or tamped by hand or machine.

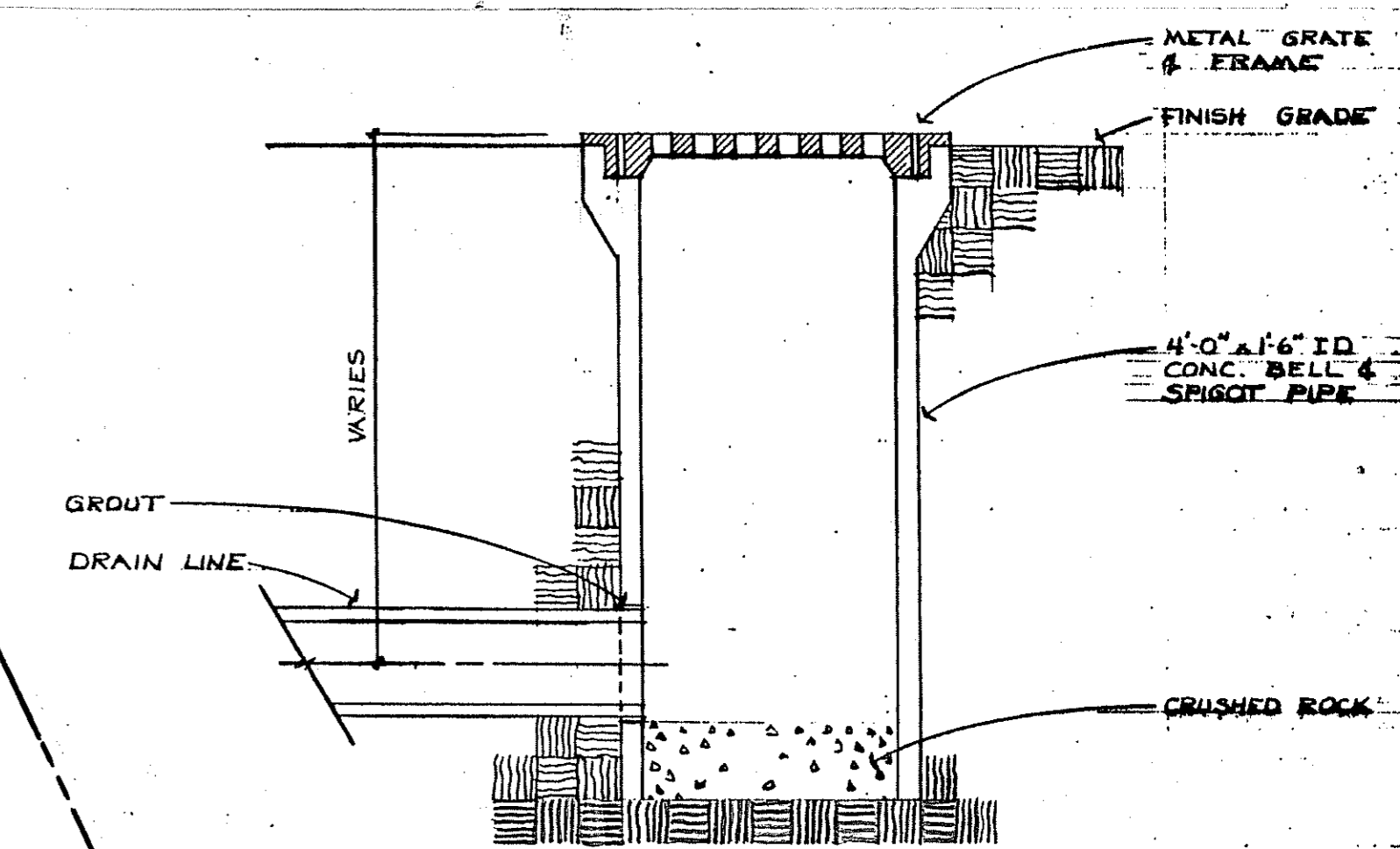
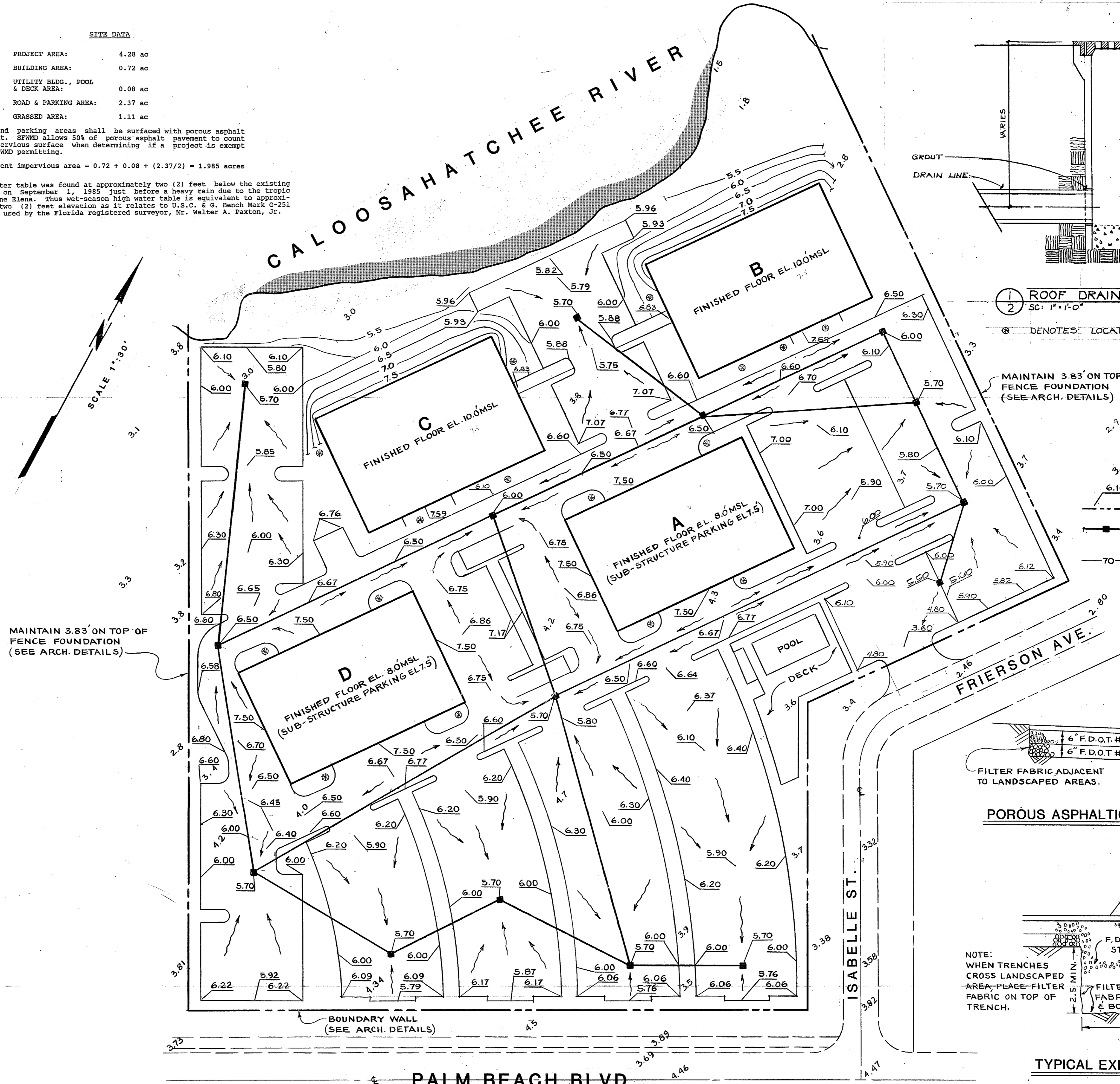
III. Porous Asphalt Pavement Mix
 A. The porous asphalt pavement shall be constructed wholly of porous asphalt concrete mix as specified in C below. No materials other than this mix shall be applied upon the pavement base or upon the porous asphalt pavement.
 B. The materials used in the mix shall be as follows: FDOT No. 16 stone, FDOT concrete sand, FDOT AC-30, and FDOT antistripping agent.
 C. The mix shall meet the following master gradation of combined aggregates and asphalt cement range:

Sieve	Percent passing
3/8"	90-100
No. 4	35-50
No. 8	15-32
No. 16	00-15
No. 200	00-03

Asphalt cement 5.0 to 6.5 percent of dry aggregate weight.

IV. Plant, Methods, and Equipment
 A. The operation of the plant producing the porous asphalt concrete mix, and of the equipment transporting the mix and the equipment used to construct the porous asphalt pavement, shall be in accordance with the currently applicable section of the latest FDOT Standard Specifications.

V. Pavement Construction
 A. Upon completion of the pavement base construction, the base surface shall be completely covered by a light coating of the porous asphalt concrete mix, which shall be applied either by hand with shovel and asphalt hand-screed, or by a sand truck.
 B. Immediately following application of the initial mix coating, the remainder of the porous asphalt pavement shall be constructed by a single pass of a standard paving machine. The total thickness of the porous asphalt pavement shall be two and one-half (2½) inches.
 C. Compaction shall follow pavement application as soon as possible, to prevent rapid cooling and breaking of the bond of asphalt between aggregate particles. Compaction shall be accomplished by not more than two (2) coverages with a steel-wheeled roller weighing not more than 10 tons.
 D. Following compaction, the contractor shall erect and maintain such barriers as necessary to insure that no vehicular traffic of any kind will contact the pavement for six (6) hours. No work will be allowed, nor any other activity, upon the pavement surface during this period.
 E. All work in pavement construction shall be expertly done, and without staining or injury to any other permanent work. Transition between new work and existing pavement shall be neat and finished. Finished pavement shall be to line and grade as shown on the plans and shall be even, without pockets.

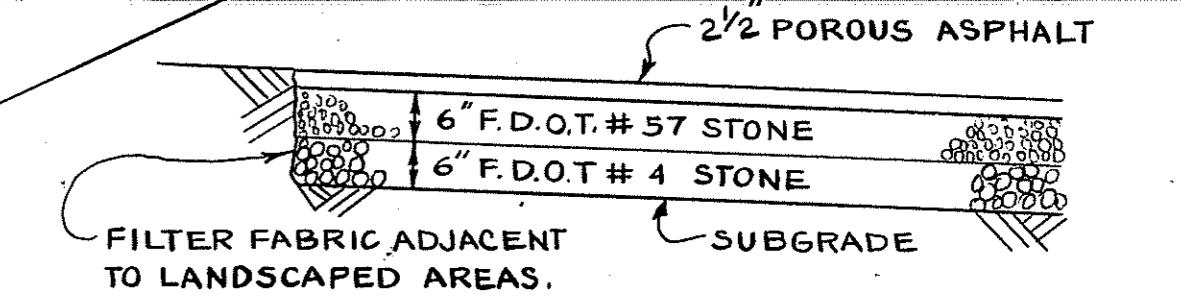


① ROOF DRAIN BUBBLE-UP
 ② SC: 1"=1'-0"
 Ⓞ DENOTES LOCATION OF BUBBLE-UP ON PLAN

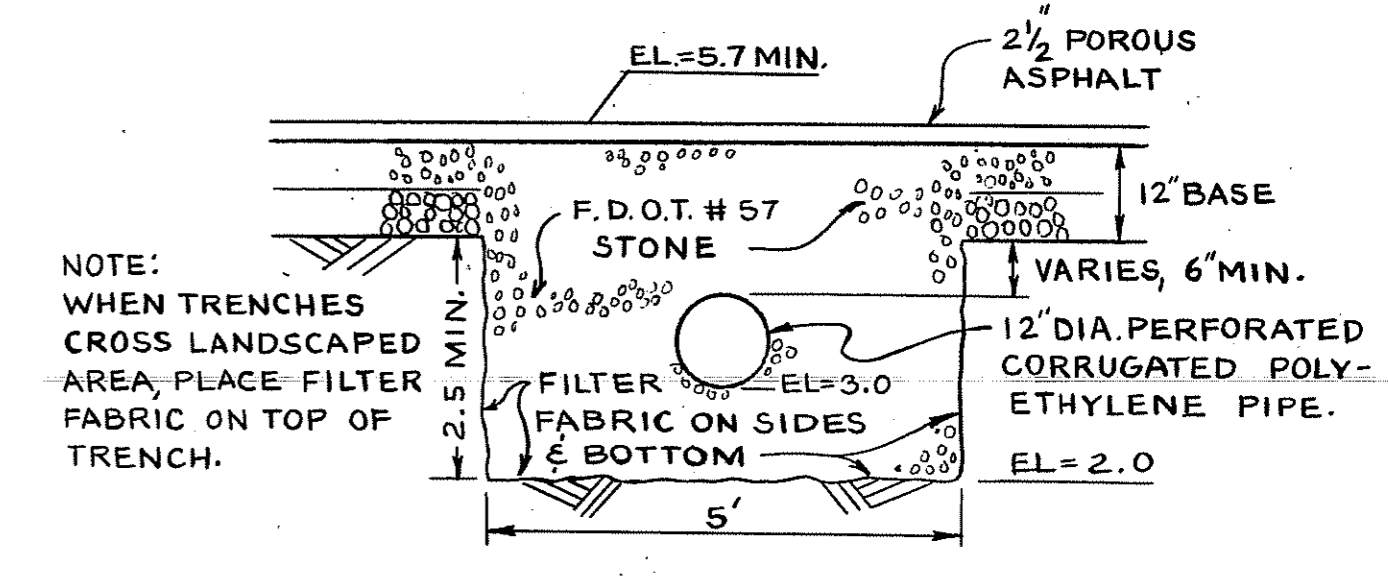
MAINTAIN 3.83' ON TOP OF FENCE FOUNDATION (SEE ARCH. DETAILS)

LEGEND

- EXIST. GD. EL.
- PROPOSED GD. EL.
- PROPERTY BOUNDARY
- F.D.O.T. TYPE 'C' INLETS/W EXFILTRATION TRENCH
- CONTOUR GRD. EL.



POROUS ASPHALTIC PAVEMENT SECTION
 N.T.S.



TYPICAL EXFILTRATION TRENCH
 N.T.S.

Superseded 9/86

NO:	DATE:	REVISION:	BY:	CH:
Anchor Engineering , CIVIL ENGINEERS-PLANNERS 2665 CLEVELAND AVE., SUITE 208 FT. MYERS, FLA. 33901 813-337-2000				

EDWARD HILLSTROM ARCHITECT
PALM BEACH LANDINGS
190 UNIT CONDOMINIUM
 CALOOSAHATCHEE AT BILLY'S CREEK FT. MYERS
DRAINAGE PLAN
 11/7/85
 4/14/86