

WELL COMPLETION REPORT

FORM 0124
Rev. 4/85

WELL PERMIT NO. _____

Owner S.F.W.M.D Address 3301 GUN CLUB RD City W.P.B State FL Zip 33416
 Contractor's Signature Hydro well License No. 9065 Completion Date 2-14-90 Casing Depth 92' Total Depth 116' Well # SLMWA22D
 Driller's Name D. Fletcher Registration No. _____

TYPE OF WORK: Construct () Repair () Abandon ()
 WELL USE: Domestic Well () Public (Monitor) Test ()
 Irrigation () Fire Well () Other _____
 METHOD: Rotary with MUD () or Air (), Cable Tool (), Jet ()
 Casing Driven (), Other Coring
 STATIC WATER LEVEL _____ Ft. below top of casing
 PUMPING WATER LEVEL _____ Ft. after _____ Hrs. at _____ GPM
 PUMP SIZE _____ H.P. CAPACITY _____ GPM
 PUMP TYPE _____ INTAKE DEPTH _____
From top of ground

LOCATION
 Located Near _____
 County St. Lucie
 NW SE 11 34 37
1/4 Section Township Range
27°32'13" - 80°36'21"
Latitude-Longitude

			X

LOCATE IN SECTION

Cuttings sent to District? () Yes
 () No

Note: PWS Wells attach a site map if well location is different from site location on permit application.

Grout Thickness & Depth	Casing & Screen Diameter & Depth	Depth (ft)		DRILL CUTTINGS LOG Examine cuttings every 20 ft. or at formation changes Give color, grain size, and type of material Note cavities, depth to producing zones.
		From	To	
		92	102	
2"		0	12'	alt. sand & green clay
		12'	26'	fine sand + shell frags.
		26'	40'	shell + sand, increasingly fine
		40'	50'	shell, sand, clay
		50'	75'	grn clay, fine sand + shell bits
		75'	92'	fine sand, 30% shell, some clay
	2"	92'	106'	50/50 mix of shell frags + sand, very permeable
		106'	116'	sticky green clay
Number of bags	116			
4				

Casing: Black Steel () Galv. (PVC) Fiberglass ()
 Screen: Type PVC Slot size .020
 Screened from 92 (ft.) to 102 (ft.)
 Type of grout with % additives _____
 Water: Clear () Colored () Sulphur () Salty () Iron ()
 Conductivity _____ Chlorides _____ mg/l

RIGHT OF ENTRY AGREEMENT/WELL CONSTRUCTION

The SOUTH FLORIDA WATER MANAGEMENT DISTRICT and/or the U.S. Geological Survey and the agents, employees or assigns of each, (Permittees) are hereby granted the right to enter upon property owned by B.E. GREENE Jr. (owner), and described herein, for the following purposes:

1. To construct water well(s) for the purpose of gathering lithologic data.
2. To conduct aquifer performance and step drawdown test(s) to determine water availability.
3. To collect geophysical logs on selected well(s). Attachment "A"
4. To periodically be allowed access to the well(s) for the purpose of monitoring water levels and/or water quality sampling.

Such equipment as may be needed to accomplish the above purposes may be brought upon, over and across the property, which is described as follows:

Sections 2, 3, 4, 10 and 11
Township 34 South
Range 37 East

The permittees, and each of them, warrant to the undersigned that upon completion of the above purposes, the property will be left in, or restored to, the same condition as it was when the permittees or their contractor(s) first entered upon the land to begin their work.

The permittees, and each of them, separately and severally, to the extent permitted by law, shall save and hold harmless the undersigned owner from claims for damages or injury caused by the permittees, their agents, servants, employees, or contractors, during the time this permit for access and use is in effect.

B.E. Greene Jr.
OWNER

Date: 9/11/89

Executed by owner in presence of:
Harriet H. Greene

COUNTERSIGNED BY PERMITTEE(s)

_____ for SFWMD

Date: _____

_____ for

Date: _____

**ATTACHMENT A
USE OF RADIOACTIVE MATERIALS IN TEST WELL**

1. Property owner authorizes use of sealed nuclear source for geophysical logging purposes in test well construction.
2. In the event the sealed source is lodged downhole, every effort at recovery of said source will be utilized.
3. If a decision is made to abandon the sealed source downhole, it will be done so in compliance with Florida Administrative Code Section 10D-91.1200, Control of Radiation Hazard Regulations.
4. In the event the said source is lost downhole, South Florida Water Management District will be responsible for the protection from any contamination of the well and surrounding formation water from said source.
5. The Radiation Safety Officer of this agency is responsible for compliance with the above-mentioned Department of Health and Rehabilitative Services regulations.


OWNER _____


DATE _____

SFWMD RADIATION SAFETY OFFICER

DATE _____

RIGHT OF ENTRY AGREEMENT/WELL CONSTRUCTION

The SOUTH FLORIDA WATER MANAGEMENT DISTRICT and/or the U. S. Geological Survey and the agents, employees or assigns of each, (Permittees) are hereby granted the right to enter upon property owned by Barney Greene (GREENE CROOK & RANCH LTD.) (owner), and described herein, for the following purposes:

1. To construct water well(s) for the purpose of gathering lithologic data.
2. To conduct aquifer performance and step drawdown test(s) to determine water availability.
3. To collect geophysical logs on selected well(s). SEE ATTACHMENT "A"
4. To periodically be allowed access to the well(s) for the purpose of monitoring water levels and/or water quality sampling.

Such equipment as may be needed to accomplish the above purposes may be brought upon, over and across the property, which is described as follows:

Township 34 South
Range 37 East
Sections 2, 3, 4, 10 and 11.

The permittees, and each of them, warrant to the undersigned that upon completion of the above purposes, the property will be left in, or restored to, the same condition as it was when the permittees or their contractor(s) first entered upon the land to begin their work.

The permittees, and each of them, separately and severally, to the extent permitted by law, shall save and hold harmless the undersigned owner from claims for damages or injury caused by the permittees, their agents, servants, employees, or contractors, during the time this permit for access and use is in effect.

Barney Greene Jr
OWNER

Date: Oct 26, 1989

Executed by owner in presence of:

Jennifer Barrett

COUNTERSIGNED BY PERMITTEE(S)

Richard [Signature]
for SFWMD

Date: 10/26/89

for

Date: _____

**ATTACHMENT A
USE OF RADIOACTIVE MATERIALS IN TEST WELL**

1. Property owner authorizes use of sealed nuclear source for geophysical logging purposes in test well construction.
2. In the event the sealed source is lodged downhole, every effort at recovery of said source will be utilized.
3. If a decision is made to abandon the sealed source downhole, it will be done so in compliance with Florida Administrative Code Section 10D-91.1200, Control of Radiation Hazard Regulations.
4. In the event the said source is lost downhole, South Florida Water Management District will be responsible for the protection from any contamination of the well and surrounding formation water from said source.
5. The Radiation Safety Officer of this agency is responsible for compliance with the above-mentioned Department of Health and Rehabilitative Services regulations.

Green Grove & Ranch LTD
B. E. Greene J.
OWNER

Oct 26 1989
DATE

[Signature]
SFWMD RADIATION SAFETY OFFICER

10/27/89
DATE

RE-ISSUE

DRAFT
Subject to Governing
Board Approval

B. E. GREENE, JR.
(REBUS GROVES)

APPLICATION NO.: NOT APPLICABLE

PERMIT NO.: 56-00596-W

LAST DATE FOR BOARD ACTION:

AUGUST 13, 1987

ST. LUCIE COUNTY

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

STAFF REPORT

AGRICULTURAL WATER USE

<u>INDEX</u>	<u>PAGE</u>
STAFF REPORT SUMMARY	2-3
RECOMMENDATIONS	4
WATER USE	
EVALUATION	5-6
LIMITING CONDITIONS	7-9

FINAL - adopted by Governing Board

7-28-87

STAFF REPORT SUMMARY



RE-ISSUE

NAME: B. E. GREENE, JR.
(REBUS GROVES)

APPLICATION NO. NOT APPLICABLE

PERMIT NO. 56-00596-W

ADDRESS: 4855 16TH ST.
VERO BEACH, FLA. 32960

LOCATION: ST. LUCIE COUNTY

SECTIONS 2-4, 10, 11, TOWNSHIP 34S, RANGE 37E

LAND USE CLASSIFICATION: AGRICULTURAL

TOTAL CONTIGUOUS ACREAGE: 1577

TOTAL IRRIGATED ACREAGE: 850 (850 ACRES OF CITRUS)

PERMIT STATUS:

WATER USE: PERMIT NO. 56-00596-W
SURFACE WATER MANAGEMENT: PERMIT NO. 56-00596-S
RIGHT-OF-WAY OCCUPANCY: NOT APPLICABLE

PROJECT STATUS:

PROJECT	(X)EXISTING	()PROPOSED	()BOTH
WATER USE	()EXISTING	(X)PROPOSED	()BOTH
IRRIGATED AREA	()EXISTING	(X)PROPOSED	()BOTH
WITHDRAWAL FACILITIES	()EXISTING	(X)PROPOSED	()BOTH

WITHDRAWAL SOURCE:

GROUNDWATER FROM THE FLORIDAN AQUIFER
SURFACE WATER FROM ON-SITE DRAINAGE CANALS

WITHDRAWAL FACILITIES:

PROPOSED:

-
- 4 - 10" X 900' X 1000 GPM FLOWING WELLS CASED TO 300 FEET
 - 6 - 6" X 50 HP X 600 GPM SURFACE WATER PUMPS

WATER USE EVALUATION

PURPOSE OF APPLICATION

THE PURPOSE OF THIS APPLICATION IS TO REISSUE AN EXISTING WATER USE PERMIT PURSUANT TO BASIN EXPIRATION. THE APPLICANT IS NOT REQUESTING ANY MODIFICATIONS TO THE EXISTING PERMITTED PROJECT AT THIS TIME.

LIMITING CONDITION COMPLIANCE

PERMITTEE IS IN COMPLIANCE WITH LIMITING CONDITIONS.

IMPACT ON EXISTING LEGAL USES

THE POTENTIAL FOR ADVERSE IMPACT ON EXISTING LEGAL USES AS A CONSEQUENCE OF THE WITHDRAWAL OF THE RECOMMENDED ALLOCATION IS MINIMAL.

ENVIRONMENTAL IMPACT

THE POTENTIAL FOR ADVERSE ENVIRONMENTAL IMPACT AS A RESULT OF THE WITHDRAWAL OF THE RECOMMENDED ALLOCATION IS CONSIDERED TO BE MINIMAL.

IMPACT ON OFF-SITE LAND USES

THE POTENTIAL FOR ADVERSE IMPACT ON EXISTING OFF-SITE LAND USES AS A RESULT OF THE WITHDRAWAL OF THE RECOMMENDED ALLOCATION IS CONSIDERED MINIMAL.

SALT-WATER INTRUSION

THE POTENTIAL FOR SALT-WATER INTRUSION AS A RESULT OF THE WITHDRAWAL OF THE RECOMMENDED ALLOCATION IS CONSIDERED MINIMAL.

ADDITIONAL DESCRIPTIVE INFORMATION

THIS PROJECT IS LOCATED WITHIN THE EASTERN OKEECHOBEE-NORTHWESTERN ST. LUCIE BASIN. ACCORDING TO SECTION 3.2.2.4.9.2 OF THE BASIS FOR REVIEW FOR WATER USE, PERMIT INFORMATION MANUAL, VOLUME III, JUNE, 1985, "WHEN THE PROJECT SITE IS LOCATED WITHIN THE EASTERN OKEECHOBEE-NORTHWESTERN ST. LUCIE BASIN, THE WITHDRAWALS FROM THE FLORIDAN AQUIFER ARE LIMITED TO 1.5" FOR THE MAXIMUM MONTH, WITH THE BALANCE OF THE WATER NEEDS BEING WITHDRAWN FROM OTHER SOURCES."

MAXIMUM MONTHLY WITHDRAWAL FROM THE FLORIDAN AQUIFER IS LIMITED TO 1.5 INCHES OVER THE TOTAL ACREAGE. THIS PERMIT IS FOR 1577 TOTAL ACRES WHICH WHEN MULTIPLIED BY 1.5 INCHES AND CONVERTED TO GALLONS YIELDS A MAXIMUM MONTHLY ALLOCATION FROM THE FLORIDAN AQUIFER OF 64.22 MG. THE BALANCE OF THE MAXIMUM MONTHLY ALLOCATION IS TO BE DERIVED FROM OTHER SOURCES.

THIS PROJECT RECEIVED A WATER USE PERMIT (56-00596-W) ON SEPTEMBER 11, 1986. THIS PROJECT IS STILL UNDER CONSTRUCTION AND NO WATER WITHDRAWAL FACILITIES ARE INSTALLED. NO MODIFICATION TO THE EXISTING PERMIT HAS BEEN REQUESTED.

RECOMMENDED ALLOCATION

PROJECTS LOCATED IN THE ST. LUCIE SERVICE AREA, WHICH ARE NOT IN A REDUCED THRESHOLD AREA (RTA), ARE GIVEN BOTH A MAXIMUM MONTHLY ALLOCATION AND A MAXIMUM ANNUAL ALLOCATION.

SUPPLEMENTAL CROP REQUIREMENTS

CURRENT DISTRICT CRITERIA PROVIDES ALL CITRUS PROJECTS WITH A MAXIMUM MONTHLY SUPPLEMENTAL CROP REQUIREMENT OF 5.30 INCHES AND AN AVERAGE ANNUAL SUPPLEMENTAL REQUIREMENT OF 14.40 INCHES, PROVIDED THAT THIS AMOUNT OF WATER IS AVAILABLE.

R 37 E

I N D I A N



PROJECT
LOCATION



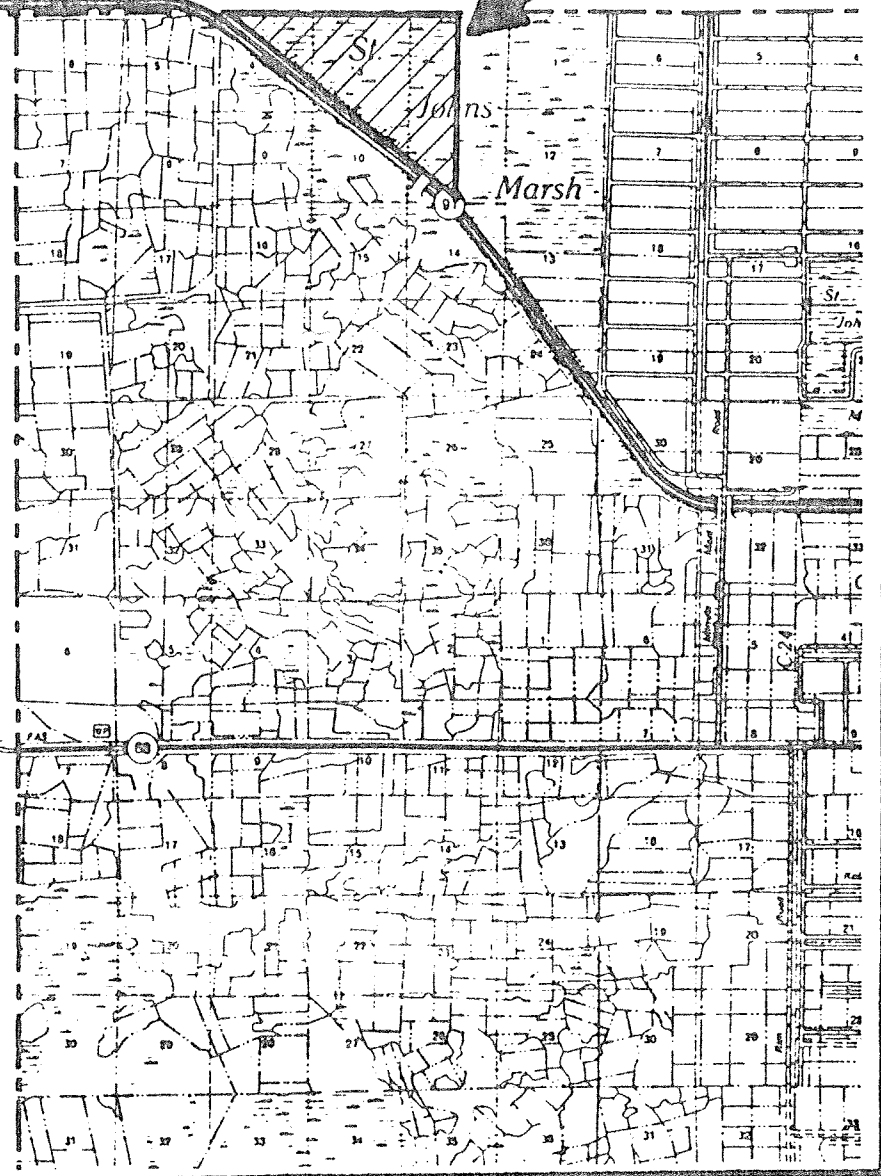
TO STATE

C
O
U
N
T
Y

TO SR 10

T 34 S

T 35 S



SCALE: 1 inch = 2 miles
DATE: April 1986

Murray-Milleson Inc.

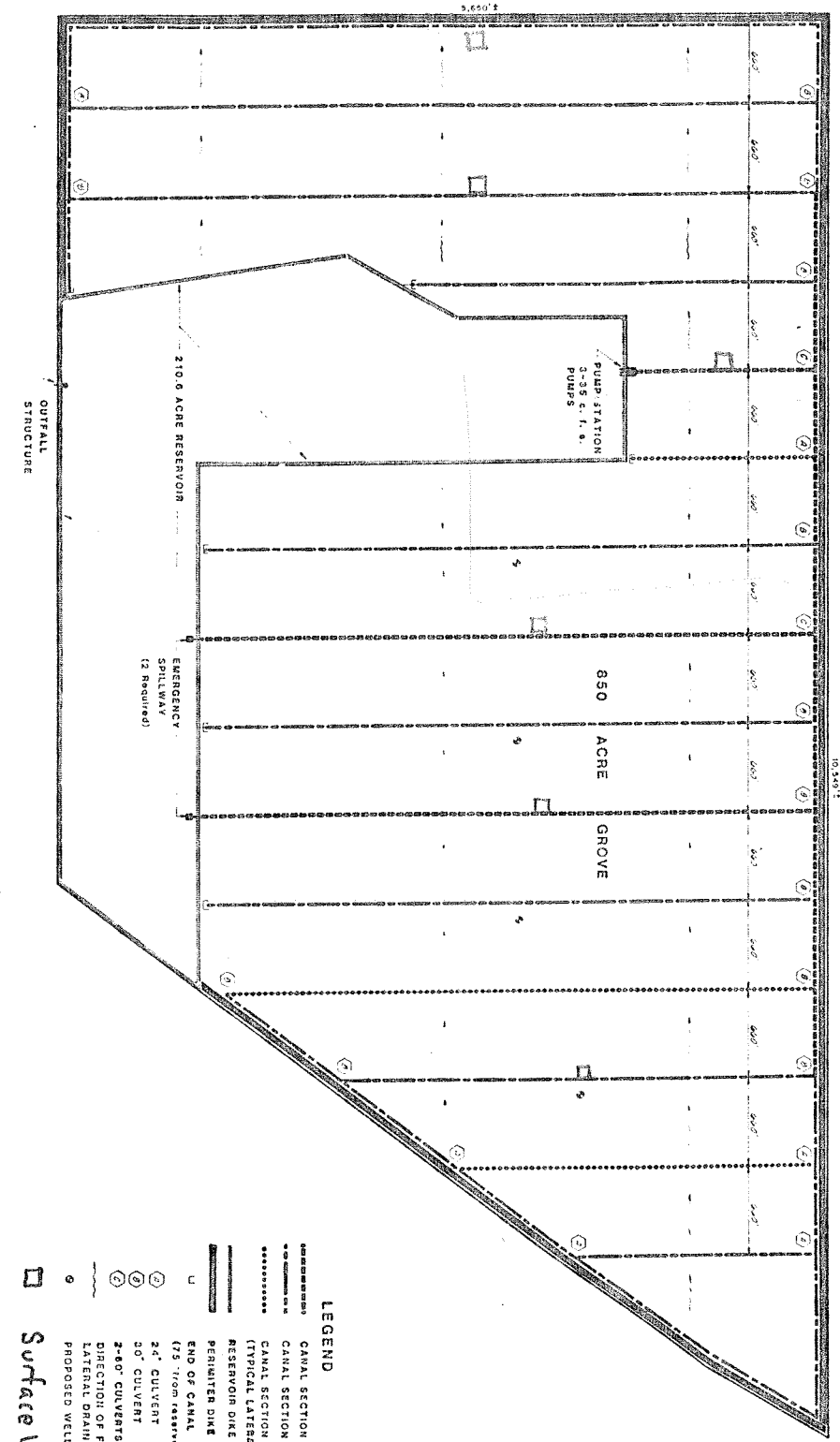
EXHIBIT 4

REBUS GROVES

GRADING & DRAINAGE PLAN

DATE	BY	REVISION
10/20/88	J.M.A.	1. INITIAL DESIGN
11/15/88	J.M.A.	2. REVISIONS TO PERMITS
01/15/89	J.M.A.	3. REVISIONS TO PERMITS
03/15/89	J.M.A.	4. REVISIONS TO PERMITS
05/15/89	J.M.A.	5. REVISIONS TO PERMITS
07/15/89	J.M.A.	6. REVISIONS TO PERMITS
09/15/89	J.M.A.	7. REVISIONS TO PERMITS
11/15/89	J.M.A.	8. REVISIONS TO PERMITS
01/15/90	J.M.A.	9. REVISIONS TO PERMITS
03/15/90	J.M.A.	10. REVISIONS TO PERMITS
05/15/90	J.M.A.	11. REVISIONS TO PERMITS
07/15/90	J.M.A.	12. REVISIONS TO PERMITS
09/15/90	J.M.A.	13. REVISIONS TO PERMITS
11/15/90	J.M.A.	14. REVISIONS TO PERMITS
01/15/91	J.M.A.	15. REVISIONS TO PERMITS
03/15/91	J.M.A.	16. REVISIONS TO PERMITS
05/15/91	J.M.A.	17. REVISIONS TO PERMITS
07/15/91	J.M.A.	18. REVISIONS TO PERMITS
09/15/91	J.M.A.	19. REVISIONS TO PERMITS
11/15/91	J.M.A.	20. REVISIONS TO PERMITS

NOTE: ELEVATIONS ARE TO BE CONFORMED TO EAST WEST LATERAL ELEVATIONS WITH THE INVERTS AT THE OTHER ELEVATION.



LEGEND

- CANAL SECTION 1
- CANAL SECTION 2
- CANAL SECTION 3 (TYPICAL LATERAL SECTION)
- RESERVOIR DIKE
- PERIMETER DIKE
- END OF CANAL (75' from reservoir dike top)
- 24" CULVERT
- 30" CULVERT
- 2-40" CULVERTS
- DIRECTION OF FALL IN LATERAL DRAINAGE SWALES
- PROPOSED WELL LOCATIONS
- Surface Water Pumps

EXHIBIT 5



10/20/88
J.M.A.
10/20/88

TABLE A
DESCRIPTION OF WELLS

WELL NO.	W1 - W4			
Map Designation				
Existing or Proposed	P			
Diameter (Inches)	10"			
Total Depth	900'			
Cased Depth	300'			
Screened Interval	-			
Pumped or Flowing	FLOWING			
Working Valve if Artesian (Yes or No)	YES			
Pump Manufacturer and Model No.	-			
Pump Type (Centrifugal, Turbine, etc)	-			
Intake Depth (NGVD)	-			
Pump Capacity (GPM)	1000 GPM (est.)			
Active (Yes or No)	-			
Year Drilled	-			
Type of Meter	-			
Florida State Plane Coordinates	Will be determined after installation of wells			

EXHIBIT 6

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	ONSITE AND SET UP
	12:16 BEGIN SPLIT SPOON
	SPOON 1 0-2 FT
	Medium coarse to fine sand with some silt & organics. Soft, easy to spoon few hits. Permeable. Color ranges from dark grey to light brown
	Green clay near bottom. Clay impermeable
	Spoon 2 2-4 FT
	2.0 - 3.8 Green clay with some sand
	Impermeable; semi consolidated. Clay is tight & very stick came out in one piece
	3.8 - 4.0 Black & brown quartz sand. Some organics.
	Spoon 3 4-6 FT
	4-5 FT Mostly quartz sand medium coarser. Some fine sand, silt, and organics present. This interval wet; WT at 4 FT.
	Sand brown & black in color
	5-6 FT The sand grades into a tight green clay. Some sand and L.S. present. Impermeable.
	Spoon 4 6-8 FT
	6-7 FT Brown sugar sand, more fine particles than sand above.
	7-8. The sand grades into a clay interval with sand surrounded by clay. Then sharp grade into a dark grey sand
	Then it sharp grades into a clay with L.S. pieces. Three bags for 7-8 FT interval

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT Greene WELL NO. C-1 DATE Wed 2-7-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	<p>8 Spoon 10 8-10 FT</p>
	<p>8-9.5 Clay become less limy and grades into A brown grey medium coarse SAND with some fines.</p>
	<p>9.5-10.0 Green limy clay Contractor says 0-16 FT very soft east to drive spoon.</p>
	<p>Run 6 10-12 FT 10.0 to 10.5 light tan med coarse to fine white sand.</p>
	<p>10.5-12.0 The sand grades into a green limy clay. Some soft L.S. in clay. Sand content decreases with depth.</p>
	<p>Run 7 12-14 Very shelly quartz sand at top Sharp change to limy green clay with sand & L.S. Sharp change to another shell layer then again green clay with shells. This interval much tougher to spoon many blows.</p>
	<p>Run 8 14-16 Mixture of shell fragments with quartz sand. Sand mostly medium coarse. Very little fines. Per Permeable. This interval very hard.</p>

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

14-25 P.M.

PROJECT GREENE WELL NO. C1 DATE Wed 2-7-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	16-18 Q Mixture of sand + shell. Here sand more pre dominant. Look less permeable and more dense than run 8.
	1:50 Mixed Mud. Reamed hole with 4 inch drag bits. 3 bags of quick gel, 1 qt of polymer. Conditioned hole.
	Run 10 18-20 Shell Unconsolidated mixture of shell, quartz sand + mud. Shells more prevail predominant. Mud content decreases with depth. Permeable. 50 blows to drive 2 ft
	Run 11 20-22 Unconsolidated mixture of shell fragments and quartz sand + mud. Permeable. Sand + fines increase with depth.
	Run 12 22-24 Unconsolidated mixture of mostly shells; with quartz sand and fines. More quartz sand and fines than above. Lower permeability. Last 6 inches harder harder to drive.
	Run 13 24-26 24-25 Similar to above. More sands and fines. 25-26 Medium coarse to fine sand with silt/clay and fine shell fragments. Finer grained sand and silt/clay content increase with depth. Very low permeability.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Wednesday

14-30 perm

PROJECT Green Site

WELL NO. C-1

DATE 2-7-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	3:30 Wash hole with 4 inch drag bit.
	3:47 STOP washing. Hole took 50 gallons.
	Run 14 26-28
	1 inch shell bed (large shells)
	1 in sand layer with fine fine shells
	Remainder unconsolidated mixture of shells (predominant), sand, and mud. This was compact and most 30% of spoon empty. Therefore I believe hammering reduced intergranular porosity. I believe this interval is permeable.
	Run 15 28-30
	28 to 28.5 Layer of large shell fragments. Either permeable or contamination. Didn't look like bottom of last run.
	28.5 to 30 Unconsolidated mixture of shell fragment (slightly predominant), sand & fines. Sand & fines increase with depth. Possibly low permeability.
	30-32 Unconsolidated mixture of small shell fragments and sand and fines. 50% shells, 50% sand & fines. Possibly low to medium permeability.
★	One hour stand by time 7:30 to 8:30 talking Don & Marty.

14-33 perm

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Wednesday

4:50 WASH

PROJECT Greene

WELL NO. C-1

DATE 2-7-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	Run 17 32-34 FT
	32-33 FT Unconsolidated mixture of shell fragments, sand and fines. Shells slightly pre dominant. Medium to low permeability.
	33-34 The above grades into a mixture of green grey fine sand, silt/mud and shell fragments. Impermeable. The gradation is sharp.
	Run 18 34-36
	34-35 Unconsolidated mixture of shell, sand, & fines. Possible contamination
	35-36. Green grey clay and fine sand mixture with shell fragments. Impermeable.
	Run 19 Green grey clay & fine sand with shell fragments. Impermeable. This is 36 to 38 FT. Some phosphate pieces
	Run 20 38-40 FT
	Green grey clay with sand & shell fragments. Quartz sand gets coarser with depth.
	4:50 to 5:11 Wash Wash and beam hole to 40 FT. Hole took 50 to 75 gallons
	5:18 Begin Spooning

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT Greens WELL NO. C-1 DATE Well 2-7-96

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	Run 21 Few blows Took 2 minutes
	Run 21 40-42 FT
	Unconsolidated mixture of quartz sand (coarse to fine), shell fragments (large to small), and green clay Impermeable. Phosphatic
	Run 22 42-44 FT
	Unconsolidated mixture of quartz sand (coarse to fine), mud, and shell fragments. Coarse quartz predominant. Shell & mud decrease with depth. Phosphatic
	Run 23 44-46 FT
	Unconsolidated mixture of quartz sand AS ABOVE. Medium to low perm - Phosphatic
	Run 24 46-48
	Unconsolidated mixture of quartz sand, * mud, & phosphate similar to above, with less shell.
	Run 25
	Unconsolidated mixture of quartz sand, (coarse to fine) mud, phosphate and shell fragments. Lower permeability than above. More compact. A piece of green, clayey, sandy, phosphatic L.S. was in here
	OFF SITE 6:15

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Thursday

2:13

PROJECT Greene WELL NO. C1 DATE 2-8-90

15-25 best producer

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	ONSET WASH HOLE
	11:35 START CORE RUN 1 CUT 5 FT 50-55
	11:47 STOP RUN 1 3 FT Recovered 60% BOX 1
	This interval consists of a green grey clay with fine sand and shell fragments. Impermeable. Semi consolidated. Clay very cohesive (sticks together). Clay is phosphatic. Looks like Hawthorn. Some large shells near base of run.
	12:00 TO 1:58 Wash and ream hole with 6 inch bit to 55 FT.
	Mixed Mud. 4 Bags of quick gel used total. 1 QT of polymer polymer used. Totals 4 Bags of quick gel and 7 quarts of polymer.
	It took a while to wash, ream, and condition hole because of the unconsolidated sediment that caved in.
	2:00 PM TRIP IN WITH CORE BARREL
	2:13 START RUN 2 CUT 10 FT ⁵⁵⁻⁶⁵ 55-65
	2:30 STOP RUN 3.5 FT Recovered 20% 30%
	This interval consists primarily of green clay. At the top there is more sand. The sand is coarser than above. The interval becomes more clayey with depth. There are some sand lenses not surrounded by clay in middle.
	This interval is greener than above. Impermeable

☆
☆

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT GREENE WELL NO. C-1 DATE Thursday 2-9-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	2:44 PM START RUN 3 CUT 10 FT 65 TO 75 FT
	3:20 PM STOP RUN 3 6.5 FT BACK 65 FT
	Green clay. Very few less shells near
	Very hard to get out of barrel.
	Box 2
	Green clay at top. Less shells than
	above. Then Tremendous increase in shells
	in bottom 3 FT, mixed in with the clay.
	Impermeable 65 TO 75 FT
	There was 10 FT in core barrel but
	it was very difficult to remove, even
	when barrel was taken apart.
	After consulting with his boss, the
	contractor attempted to dig material
	out of barrel. This proved to be a
	slow process. So We agreed to
	try to jet it out. We stopped at
	home and they had jet sprayer.
	The bottom 5.5 FT removed by sprayer.
	Some of the material removed by
	digging was placed in sample bag.
	Unfortunately 3.5 FT got washed away
	by sprayer
	OFFSITE 5:50 PM

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT GREENE WELL NO. C-1 DATE Friday 2-9-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
	ONSITE. Attempted to call Marty several times but phone didn't work right. Went to farm house to call. Returned to site
	Tripped in hole with 6 inch bit. Cable line broke while washing and reaming hole. Fixed cable. Continue to wash and ream to 75 FT
	11:00 Begin tripping out of hole.
	11:06 Begin setting 4 inch iron casing.
	11:16 Finish setting iron casing.
	Used 3 - 21 FT pieces and 1 - 10 FT piece 73 FT.
	- 12:00 OFF SITE. Contractor back hurting is reason we left early.
	11:16 To 12:00 Clean and pack up. Also I went over paper work with Contractor



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PROJECT Greene Citrus WELL NO. C1 DATE 2-12-90

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
1300	Arrived @ site Driller filled water from nearby canal
	stop @ 1325
1330	Drove to Drill site; Began unloading equipment & materials
1345	Began circulating & mixing additional 1 qt E-2 mud (polymer); 1/2 bag of Quik-mud
1400	Reamed bore hole & circulated mud to blow-out caved materials
1500	Started Run #4 (starting Depth 75')
	Stopped Drilling @ 85' (20% recovery)
	Top of core consisted of fine to silty sands w/ rubble material (recrystallized mollusk shell fragments) @
	mid core - consisted of tight green clay w/ 5 to 10% fossil fragments also minor amounts of fine sand
	Bottom of core - contained fine to medium size shell fragments w/ 20 to 30% fine sand to clay material interspersed.
	(fine shell hash - Low permeability)
1535	stopped Run #4 began to remove drill stem.
1550	started Run #5 (starting Depth 85').
	90-91' Drill rate increased slightly
	stopped @ 92.5' (20% recovery)
	Core consisted of green to gray densely packed fine to very fine sand containing whole bivalve shell fragments (Low energy environment) minor amount of very fine phosphate grains, increasing amounts of shells & shell fragment @ the base of core - The entire section of core contained about 30% shell material. Material may have been deposited in low energy, lagoonal, slightly reducing environment. moderate sorting, low permeability, dense material
1640	stopped Run #5
1700	start Run #5.5 to reach depth of 95 ft & to see if shorter core takes would increase recovery
1730	holed core barrel recovery 2.5 of core - this portion of the core consisted of gray-fine sand w/ 30% shell fragment

Total % recovery for 85-95% section is about 45%
Left Drill site

1745 -

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

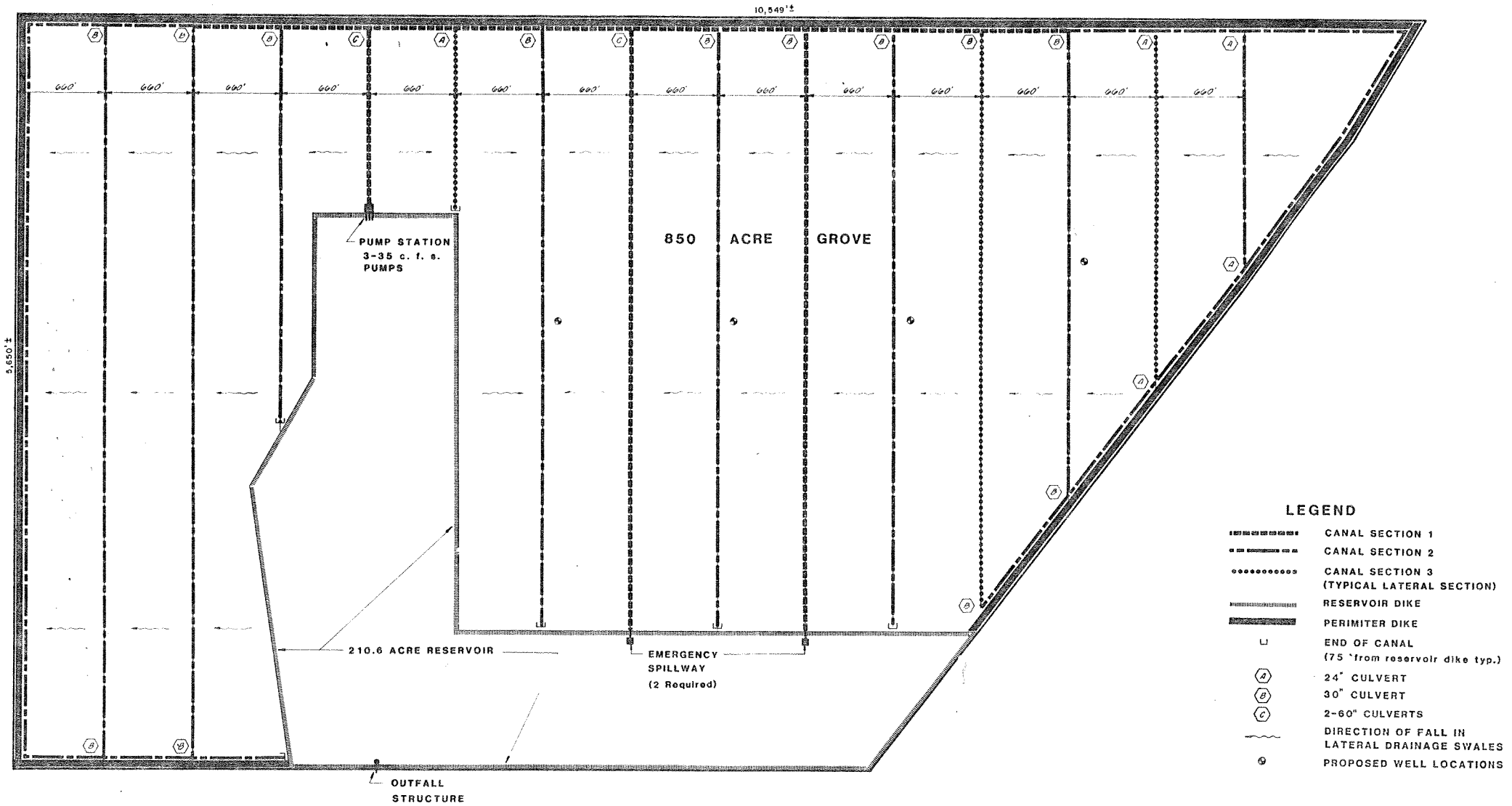
PROJECT Greene Citrus WELL NO. C1 DATE 2-14-70

DEPTH	DESCRIPTION - ROCK TYPE, COLOR, HARDNESS, OTHER
0815	met drillers at site. Cleaned out casing. (re-circulated mud down bore core.) Added approx. 1 qt polymer
1000	Inserted core barrel + drill stem. Found that the casing slipped about 2ft sometime this AM. Bottom of casing now at 104ft. Core barrel at ~106ft. About 150 gal. of mud lost down borehole.
1030	START RUN #8
1050	END RUN #7. 106-116 ft. 10ft. in 20 minutes
	<u>40% recovery</u> Dense green clay, very sticky ⇒ Hawthorne Fm.
1140	Set 2" screen (0.020 slot) casing for deep monitoring well ↑ 3' casing, 11' blank, 10' screen, 100' casing. } Bottom to top Screened interval - 92' to 102' - Pulled 105' of 4" steel casing
1230	Set 2" shallow monitoring well beside deep monitoring well (same bore hole) Screened interval at 40-50 ft (0.020 slot) 45' blank casing (+5 to -40 ft)
1255	Ran in 1" tremie pipe to 75ft
1325	Mixing cement. Added some polymer to keep grout from dropping down to deep monitoring well screen.
1340	Grouting. Got about 3ft ³ down annulus. Removed 20' of tremie, then dropped 60 ft of tremie down hole. Did not recover it. Total bags of cement used = 4.
	Tapped grout with cuttings
1500	OB & MB left site. Drill crew still rigging down

#8



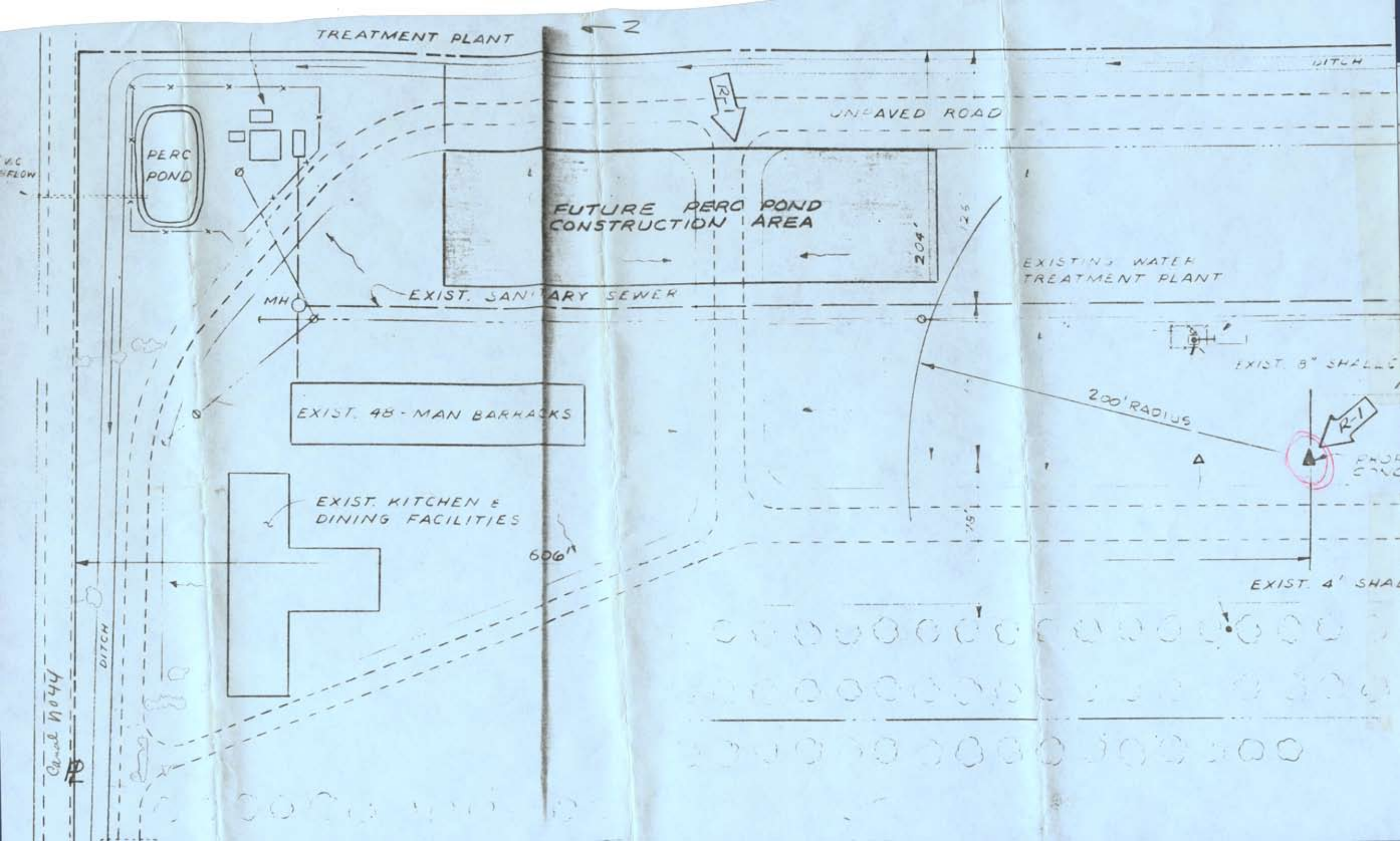
SCALE 1" = 400'
0 200 400 800



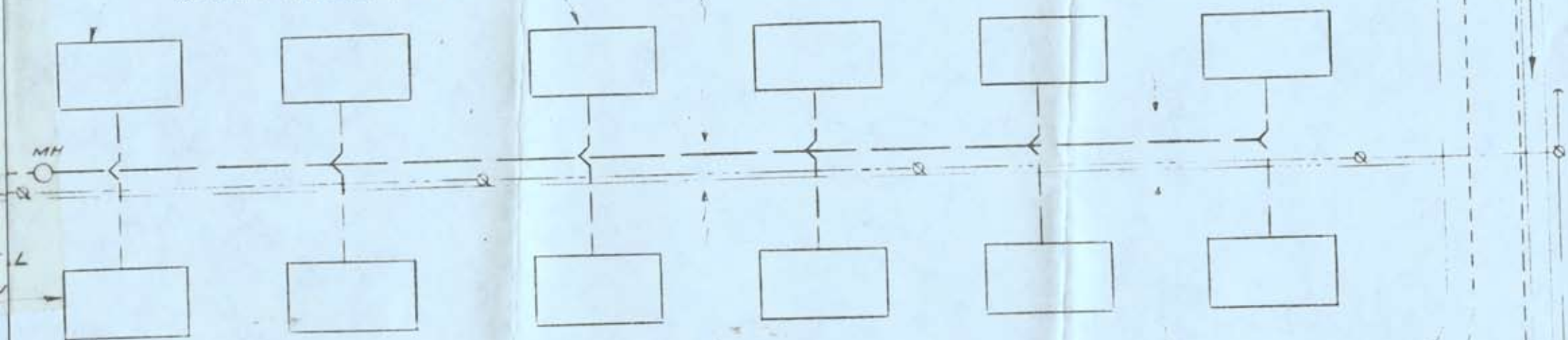
NOTE: CULVERTS ARE TO BE CONSTRUCTED IN EAST WEST LATERAL DITCHES WITH THE INVERTS AT THE DITCH BOTTOM.

EXHIBIT

1/2 E. BROWN, P.E.
1957



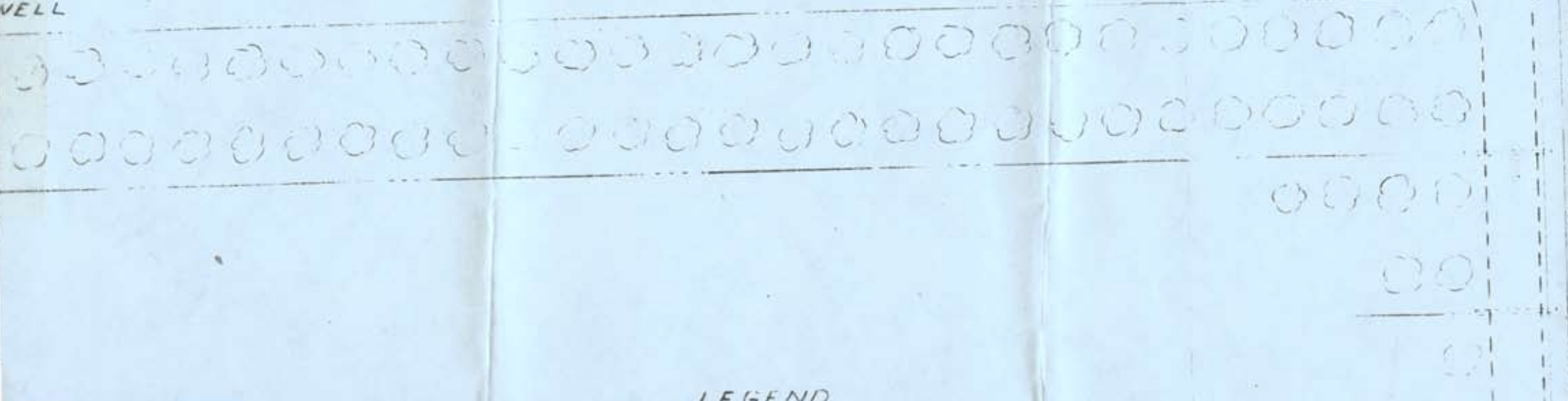
EXISTING SINGLE-FAMILY RESIDENCES



2' HOLLOW WELL AT TOP OF WELLHEAD
2' ABOVE EXIST. GRADE.

UNPAVED ROAD

WELL



LEGEND

1"=50'

R

DITCH