

# ABALONE COVE SEWER SYSTEM



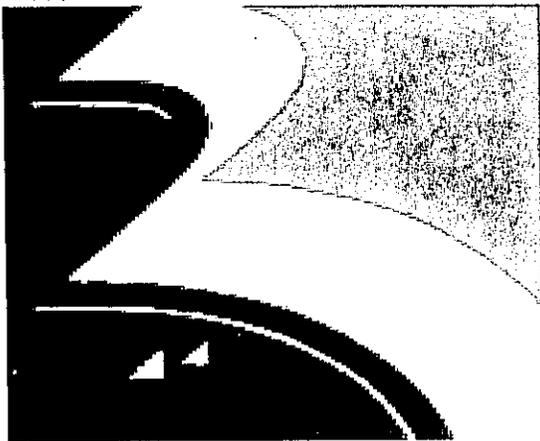
LEGEND	
	FORCE MAIN
	GRAVITY
	LOW PRESSURE
	GRINDER PUMP STATION
	MANHOLE
	AIR RELEASE VACUUM RELIEF VALVE
	CLEANOUT
	FLEXIBLE JOINT
	SEWAGE PUMP STATION
	FLOW DIRECTION

ABALONE COVE PARK

BEACH HOUSE PROPERTY

L.A. COUNTY SEWER

# **ABALONE COVE SEWER MAINTENANCE MANUAL**



**CITY OF RANCHO PALOS VERDES**

# Sewer Maintenance Program – Activities

## Mainline Sewer – Low Pressure / Force Main

Manual reflects the following: *Advanced Sewer technologies*

- Quarterly Inspection
- Quarterly Maintenance
- Emergency Response

**Quarterly Inspection -** All mainline above ground sewer pipe, flex hose, backflow valves and above ground lateral connections should be visually inspected by Advanced Sewer Technologies on a quarterly basis.

Visual inspection should focus on the following:

- Leak detection on both low pressure and above ground force main
- Leak detection on grinder pump discharge lateral connections
- Signs of saturated soils in the vicinity of the above ground pipe
- Erosion of the soils that are supporting the placement of the above ground pipe
- Rust build-up on the above ground pipe connections on the mainline and at lateral connections
- Signs of tampering to the sewer system
- Ensure that all valves are open properly
- Ensure that all backflow valves on above ground laterals are in proper working order
- Check all above ground steel flex hose for damage
- Visually inspect cleanouts that are located on sewer system
- Visually inspect all air relief valves and their red wood box housings

*Above Ground*

*1.5-2" Galva*

*1.5-2" HDPE*

*Force Main*

*2" PVC*

*2" DIP*

*4" DIP*

*6" DIP*

**Quarterly Maintenance** - All mainline, shut-off ball valves, backflow valves should be inspected and maintained on a quarterly basis. The maintenance should include the following:

- All valves should be exercised & lubricated
- All man holes must be cleaned free of any deposits that could potentially block the sewer system
- All man holes should be pressure-washed as needed to remove grease, etc.
- All boxes for backflow valves should be kept clear of debris
- If rust builds up around any lateral connection on above ground sewer line, the rust must be removed by means of a wire brush and epoxy coating should be applied to prevent any future rusting

### **Gravity Mainline Sewer Pipe - 8" PVC**

**Annual Maintenance** - All underground gravity mainline should be pressure cleaned with high pressure cleaning equipment and inspected by means of CCTV once a year for any roots, cracks, blockage or any other potential problems.

**Emergency Situation** - All Mainline Sewer – Low Pressure / Force Main Emergency repairs will be performed by Advance Sewer Technologies. All problems will need to be directed to Advance Sewer Technologies in order for prompt response and to determine what is going to be needed in order to make repairs.

## Mainline Sewer Lift Stations

Multi W (mechanical)

Manual reflects the following:

- Monthly Inspection
- Monthly Cleaning
- Monthly Operation of Generator
- Quarterly Maintenance
- Emergency Response

## Main Line / Lift Stations

The Abalone Cove Sewer System includes 4 mainline lift stations that are located and numbered as follows:

- #1 – Palos Verdes Drive South
- #2 – Thyme Place
- #3 – Sweetbay / Altimira
- #4 – Sweetbay East

Regular preventative maintenance will ensure longer pump life and reliable operation. The City requires that the lift stations are visually inspected on a monthly basis and serviced on a quarterly basis. The following is a listing of required inspection and maintenance activities.

### **Monthly Inspection -**

Monthly inspection services will be performed by Multi W. The following is a listing of required inspection activities.

- Cable Entry Flange
- Strain Relief Clamp
- Cables for pump removal
- External parts on pumps
- Debris in wet well
- Condition of floats
- All wiring that is supplied for the pumps
- Check for rusted and corroded materials such as the guide rails for the pumps, clamps that support the guide rails.
- Verify that the pumps in the lift station are alternating when cycling

mechanical

*cleaning  
maintenance*

**Monthly Cleaning -**

Monthly cleaning services will be performed by Advanced Sewer Technologies. The following is a listing of required cleaning items.

- Remove all grease build up that has accumulated on the float system
- Remove all debris that has collected on the invert of the wet well that may stop the pumps from cycling
- Clean the guide rail system
- Clean the external surface of the pumps
- Clean all wet well walls

**Monthly Operation of Generator – City of RPV Maintenance Staff**

The operation of the auxiliary hook up and generator shall be performed on a monthly basis.

**Quarterly Maintenance -** Quarterly maintenance will be performed by Multi W. The activities will consist of the following activities:

- **Cable Entry**

Make sure that the cables entry flange and strain relief clamp are tight. If the cable entry is showing signs of leakage remove cable from entry, remove grommet, cut a piece of cable off so that the grommet seats on a new portion of the cable, replace grommet, and reinstall cable assembly, into the top of motor.

Note: Explosion proof cables are sealed with a Factory Mutual Approved potting compound. Please consult factory for instruction.

- **Cables**

Inspect the cable for cuts, scrapes or sharp bends. If the outer jacket is damaged, replace the cable. Do not attempt splices within wet wells.

- **Motor Insulation resistance**

Megger the insulation between the phases and between any phase and ground. Resistance values should be greater than 1 M ohm. If abnormal readings are obtained contact authorized service center immediately.

- **External Parts on Pump**

Make sure that all screws, bolts and nuts are tight. Check the condition of pump lifting eyes and replace if damaged or worn, replace any external part that appears worn or damaged.

- **Seal Chamber Oil**

Check the condition of the oil to see if any water leakage has occurred. Remove the oil fill plug. Drain the oil from the seal chamber into a transparent container. Check for impurities and emulsification (oil is cream like). If water intrusion has occurred check lower mechanical seal and replace if necessary. Refill seal chamber with fresh oil. Refer to shop manual for type and quantity of oil.

- **Impeller**

Periodically inspect impeller by turning the pump on its side, remove suction strainer nuts and strainer to expose impeller and relocate position of adjusting plate (suction cover) as needed. Replace the impeller if it is damaged or severely worn.

- **Control Panels**

Control panels for the lift stations should be inspected and verified that all of the components are working properly.

**Emergency Situation -** All Mainline Lift Station Emergency repairs will be performed by Multi W. City should refer to emergency flow chart if any emergencies occur.

NOTE: Reference the O&M portion of this manual to help "Trouble Shoot" problems for Lift Station Pumps

## **Grinder Pumps**

**Section reflects the following:**

- **Quarterly Inspection**
- **Quarterly Maintenance**
- **Emergency Response**

### **Quarterly Inspection and Maintenance –**

All quarterly inspections and maintenance of the grinder pumps that are located on the sewer system will be performed by Liquid Handling. Inspection and maintenance services should focus on the following:

- Leak detection on any above ground discharge pipe from grinder pumps
- Verifying that the vent cover is free from debris or vegetation
- Signs of saturated soils in the vicinity of the grinder pump
- Ensure that the weather stripping in the control panels are not damaged
- Ensure that control panels are free from rust
- Performing verification of amperage that is feeding the control panels
- Verifying that high flow alarm light bulb is not burn out
- Verifying that the high level alarm is still operating
- Removing grinder pumps and verifying that the intake manifolds are free from debris
- Verifying that the container or holding tank is free from large objects and debris
- Inspecting all electrical cables in grinder pump container
- Ensure that all gaskets for discharge piping from the grinder pump into the discharge lateral are not damaged or leaking
- Servicing of grinder pump if needed / and replacing grinder pump with spare from City yard
- Perform grinder pump maintenance on spare cores that are located at City yard
- Verifying that spare cores are free of rust or corrosion

### **Emergency Situation -**

All Grinder Pump Emergency repairs will be performed by Liquid Handling. City should refer to emergency flow chart if any emergencies occur.

All Grinder Pump Discharge Lateral Emergency repairs will be performed by Advance Sewer Technologies. City should refer to emergency flow chart if any emergencies occur.

**SEWER SYSTEM**

**PROBLEM**

**ACTION**

**PROBLEM**

**SEWER SYSTEM**

City of Rancho Palos Verdes Receives Telephone Call (Larry Still)

Regular Working Hours

Dispatch City crew to location to determine problem and crew reports back to City (Larry)

Grinder Pumps

Laterals

Mainline  
Low Pressure  
Force Main  
Gravity  
Sewer Lines

After Hours

Grinder Pumps

Laterals

Mainline  
Low Pressure  
Force Main  
Gravity  
Sewer Lines

Grinder Pumps

Grinder Pump System  
(Grinder Pump to Street)

Grinder Pump System  
(House to Grinder Pump)

Gravity Lateral System

Above Ground

Below Ground

Liquid Handling

Advance Sewer Technologies

Home Owner

Home Owner

Advance Sewer Technologies

Grinder Pumps

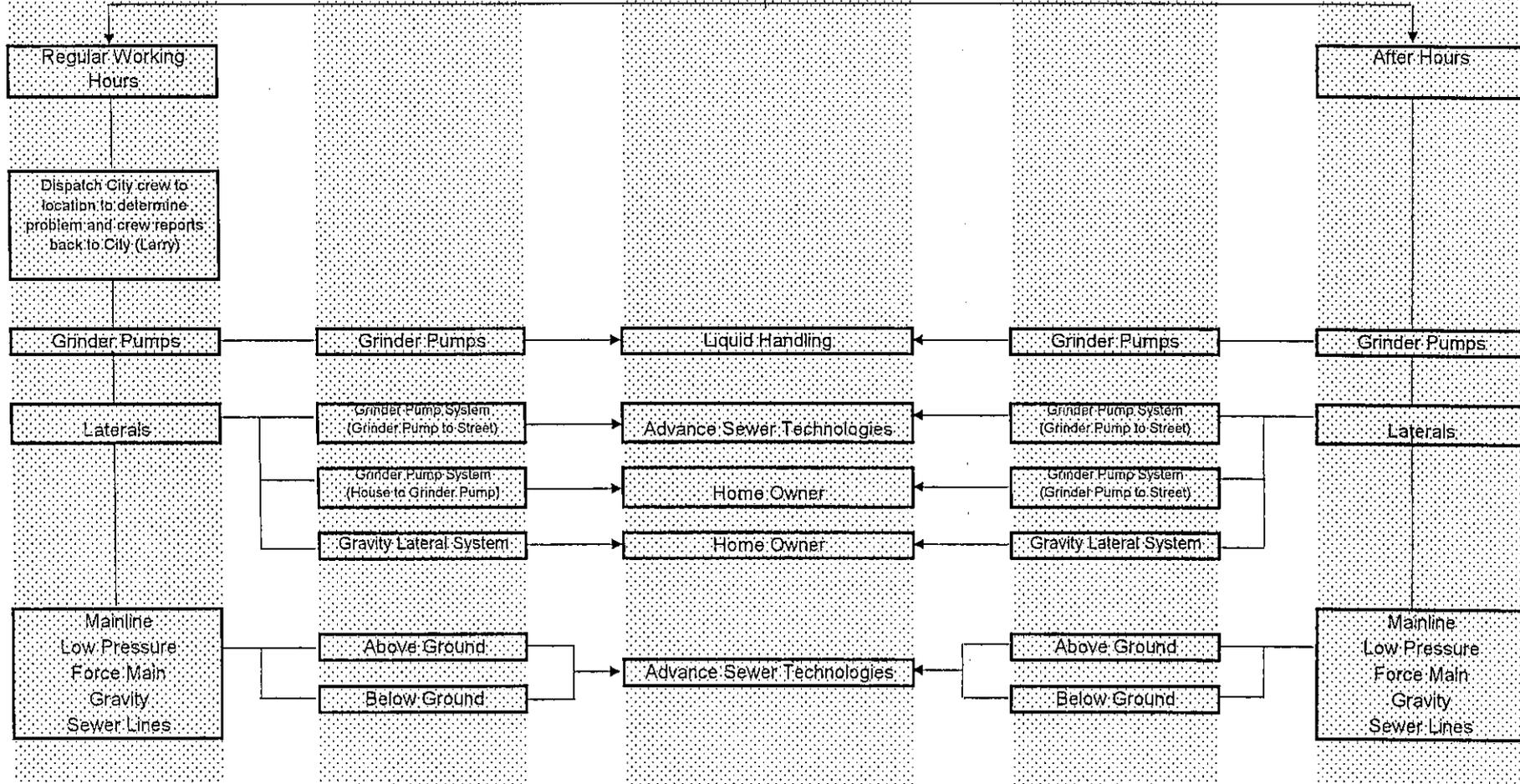
Grinder Pump System  
(Grinder Pump to Street)

Grinder Pump System  
(Grinder Pump to Street)

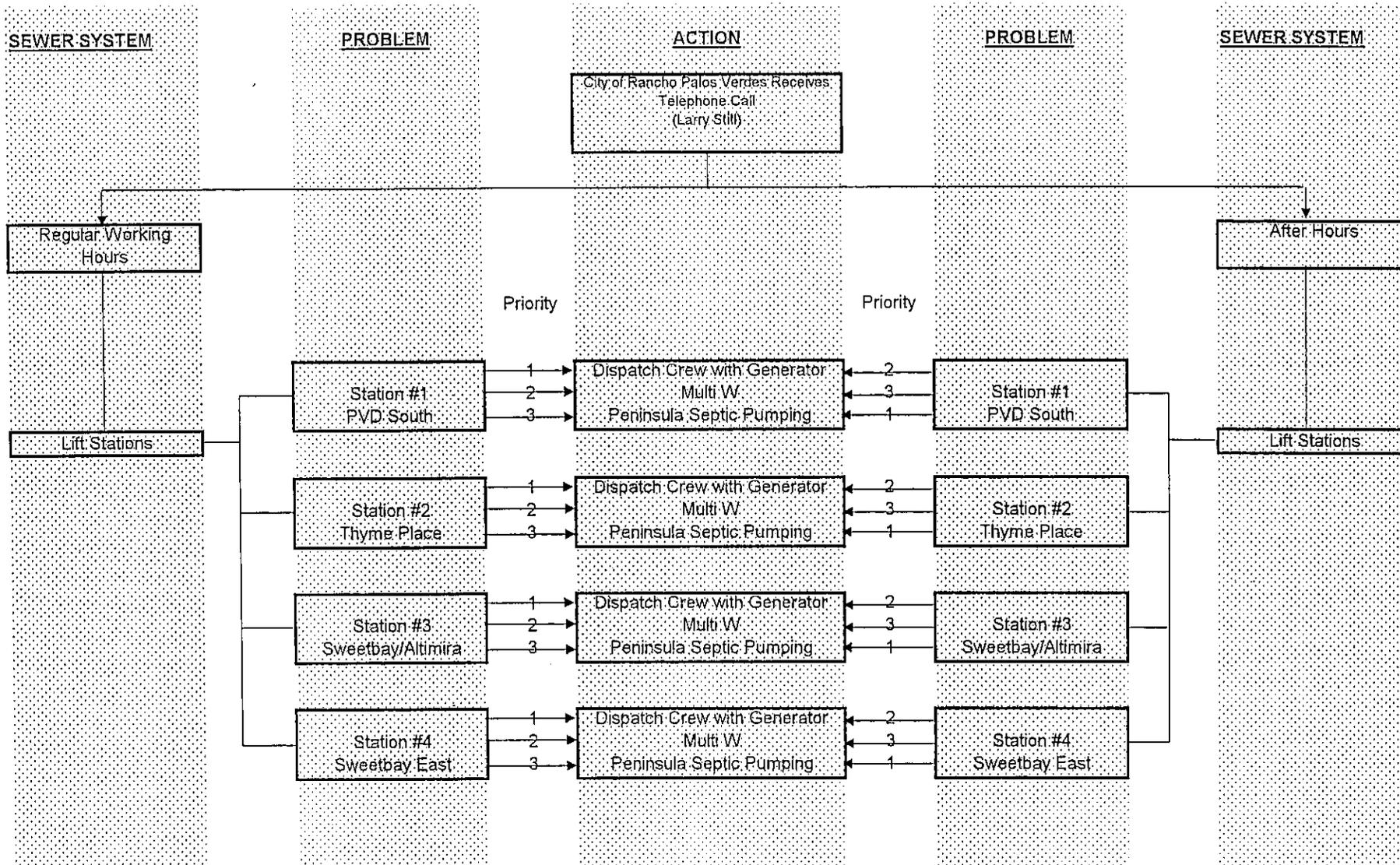
Gravity Lateral System

Above Ground

Below Ground



# Pump Station / Lift Station



City of Rancho Palos Verdes  
 Larry Still  
 Office Number - (310) 544-5252  
 Cell Number - (310) 809-1599

Liquid Handling  
 Mike Bentzer  
 Office Number - (714) 558-2500  
 Cell Number - (714) 493-9627

Peninsula Pump & Septic Service  
 Nick Dragich  
 Office Number - (310) 832-4800  
 Cell Number - ((310) 753-9592

Contact Advanced Sewer Technologies  
 Mike Ashker  
 Office Number - (800) 800-0510  
 Cell Number - (323) 855-6824

EMERGENCY CONTACT TELEPHONE LIST:

GRINDER PUMPS — ON Private Property

Larry Still  
City of Rancho Palos Verdes  
Office Number - (310) 544-5252  
Cell Number - (310) 809-1599

Mike Bentzer  
Liquid Handling  
Office Number - (714) 558-2500  
Cell Number - (714) 493-9627

Bryan Fassauer  
Office Number - (714) 558-2500  
Cell Number - (714) 815-8151

Nick Dragich  
Peninsula Pump & Septic Service  
Office Number - (310) 832-4800  
Cell Number - ((310) 753-9592

Contact  
Electric Company  
Office Number - (000) 000-0000

Mike Ashker  
Contact Advanced Sewer Technologies  
Office Number - (800) 800-0510  
Cell Number - (323) 855-6824

GRINDER PUMP MAINTENANCE & SERVICING  
CONTROL PANELS SERVICING

EMERGENCY PUMPING SERVICE overflow

MAINLINE SEWER MAINTENANCE /  
REPAIR CONTRACTOR &  
LIFT STATION CLEANING

LIFT STATIONS

Larry Still  
City of Rancho Palos Verdes  
Office Number - (310) 544-5252  
Cell Number - (310) 809-1599

Wen Wang  
Multi W Systems, Inc  
Office Number - (626) 401-2627  
Cell Number - (626) 643-6962

Nick Dragich  
Peninsula Pump & Septic Service  
Office Number - (310) 832-4800  
Cell Number - ((310) 753-9592

Mike Ashker  
Contact Advanced Sewer Technologies  
Office Number - (800) 800-0510  
Cell Number - (323) 855-6824

HOMA PUMP REPRESENTATIVE /  
MAINTENANCE ON PUMPS FOR LIFT  
STATIONS & CONTROL PANEL REPAIRS  
FOR LIFT STATIONS

EMERGENCY PUMPING SERVICE

MAINLINE SEWER MAINTENANCE /  
REPAIR CONTRACTOR &  
LIFT STATION CLEANING

Mainline Pump

**MAINLINE SEWER - LOW / HIGH PRESSURE / GRAVITY LINES:**

Larry Still  
*City of Rancho Palos Verdes*  
Office Number - (310) 544-5252  
Cell Number - (310) 809-1599

Mike Ashker  
*Contact Advanced Sewer Technologies* —————> MAINLINE SEWER MAINTENANCE /  
Office Number - (800) 800-0510 REPAIR CONTRACTOR &  
Cell Number - (323) 855-6824 LIFT STATION CLEANING

Nick Dragich  
*Peninsula Pump & Septic Service* —————> EMERGENCY PUMPING SERVICE  
Office Number - (310) 832-4800  
Cell Number - ((310) 753-9592

CITY OF RANCHO PALOS VERDES  
ABALONE COVE SEWER SYSTEM

Gravity House Connections

Prop. No.	Plan Sheet No.	Address	Owner
108	18	5 CINNAMON LANE	JAMES & LORRAINE KNIGHT
109	18	7 CINNAMON LANE	WARREN EADS
110	18	9 CINNAMON LANE	JEFF & COLLEEN MAXWELL
115	18	11 CINNAMON LANE	ROBERT & FORENCE SUCH
121	18	12 CINNAMON LANE	CHARLES & SANDRA PARKS
116	18	13 CINNAMON LANE	CARLOS & JULIE ALBUJA
117	18	15 CINNAMON LANE	TIM VAUGHN
89	18	16 CINNAMON LANE	JOHN & CAROLYN TAYLOR
90	18	18 CINNAMON LANE	CATHERINE SABAN
119	18	19 CINNAMON LANE	JAMES & FRIEDA DEANE
91	18	20 CINNAMON LANE	DOROTHY BUNTEN
118	18	21 CINNAMON LANE	JAMES ZUMWALT
92	18	22 CINNAMON LANE	HOWARD & DOROTHY TOWLE
26	11	34 CINNAMON LANE	GERTRUDE EASTMAN
1	10	1 FRUIT TREE ROAD	HORACE WRIGHT JR.
12	10	5 FRUIT TREE ROAD	LOTHAR & MARGOTH MAERTENS
11	10	6 FRUIT TREE ROAD	TIMOTHY & JOAN KELLY
4	10	7 FRUIT TREE ROAD	CRAIG & ELOISE EHLENBERGER
5	10	9 FRUIT TREE ROAD	STEPHEN & BRIDGET HELLER
7	10	13 FRUIT TREE ROAD	THOMAS & MARLENE BLACK
8	10	15 FRUIT TREE ROAD	MAXINE RUCKER
101	6	3 GINGER ROOT LANE	HENRY & MURIEL TIZLER
100	6	5 GINGER ROOT LANE	WILLIAM & MAUREEN GRIFFIN
99	6	7 GINGER ROOT LANE	KEVIN & AMY MCCONNELL
98	6	9 GINGER ROOT LANE	JOSEPH & NOEL GALLAGHER
153	20	22 NARCISSA DRIVE	CORINNE GERRARD
177	21	35 NARCISSA DRIVE	JOHN & IRENE SHAHIN
178	6	40 NARCISSA DRIVE	LLOYD WOLF

\*\* These properties include both gravity and low-pressure sewer systems.

Gravity House Connections

CITY OF RANCHO PALOS VERDES  
ABALONE COVE SEWER SYSTEM

Gravity House Connections

Prop. No.	Plan Sheet No.	Address	Owner
38	8	57 NARCISSA DRIVE	JAMIE & JOANNE GONZALEZ
48*	8 & 15	60 NARCISSA DRIVE	ROBERT & RAE BAUER, SR. (2 SHEETS)
49*	8 & 15	68 NARCISSA DRIVE	RUSSELL & MONICA BAUER, JR.
62	9	75 NARCISSA DRIVE	MARYANN TOLOZKO
61	9	79 NARCISSA DRIVE	DONALD & ARDYSS BURT
55*	9 & 16	80 NARCISSA DRIVE	CHARLES LINCOLN STUART
56*	9 & 16	82 NARCISSA DRIVE	GENE & NANCY FRANK
60	9	83 NARCISSA DRIVE	DIANE HEWITT
14	10	3 PLUM TREE ROAD	JOHN HORN & PENELOPE TRICKETT
15	10	5 PLUM TREE ROAD	MR. & MRS. HOFFMAN
16	10	7 PLUM TREE ROAD	TIMOTHY & JEANETTE BETTS
64	16	6 SWEETBAY ROAD	WALLACE MCLAUGHLIN
67	16	12 SWEETBAY ROAD	TINDRA MOLLIKA
69	16	15 SWEETBAY ROAD	GARY STOKOE
88	16	18 SWEETBAY ROAD	BETTY ANN SCHIFF
71	16	19 SWEETBAY ROAD	LOU MOORE
87	15	20 SWEETBAY ROAD	MARK FAIRCHILD
72	16	21 SWEETBAY ROAD	WILLIAM & MARY SHERIDAN
73	16	23 SWEETBAY ROAD	JOY MAJOR
74	16	25 SWEETBAY ROAD	WILLIAM & LYNN PETAK
85	15	26 SWEETBAY ROAD	MICHELLE SMITH
76	15	29 SWEETBAY ROAD	MICHAEL & HONEY BARTH
81	15	30 SWEETBAY ROAD	STEPHEN & JUDITH KING
77	15	31 SWEETBAY ROAD	PATRICK & MARVA BURT
97	15	32 SWEETBAY ROAD	GEORGE & LEANNE TWIDWELL
78	15	33 SWEETBAY ROAD	FAY WOODRUFF & ROBERT DOUGLAS
79	15	34 SWEETBAY ROAD	NORWOOD TEAGUE
122	19	3 THYME PLACE	THOMAS & KATHLEEN MATTIS

\*\* These properties include both gravity and low-pressure sewer systems.

Gravity House Connections

CITY OF RANCHO PALOS VERDES  
ABALONE COVE SEWER SYSTEM

Gravity House Connections

Prop. No.	Plan Sheet No.	Address	Owner
46	14	6 & 8 VANDERLIP ROAD	KATHLEEN SNELL (NOS. 1 & 2)
45	14	10 VANDERLIP ROAD	MICHAEL HASTINGS
44	12	20 VANDERLIP ROAD	JACK DOWNHILL (NOS. 1 & 2)
40,41,43	13	85,98,99 VANDERLIP ROAD	JOHN VANDERLIP, ET AL.

\*\* These properties include both gravity and low-pressure sewer systems.

Gravity House Connections

CITY OF RANCHO PALOS VERDES  
ABALONE COVE SEWER SYSTEM  
 Grinder Pump System

Property No.	Plan Sheet No.	Address	Owner	Grinder Pump Quantity
	P-22	Beach House Property		2 Duplex Model GP - 2014
106	P-21	1 Cinnamon Lane	Hunter	1 Simplex Model GP - 2010
133	P-21	2 Cinnamon Lane	Gerold & Ursula Weber	1 Simplex Model GP - 2010
107	P-21	3 Cinnamon Lane	Ronald K. Burchett	1 Simplex Model GP - 2010
27	P-11	36 Cinnamon Lane	Jeremy Robin Davies	1 Simplex Model GP - 2010
28	P-11	38 Cinnamon Lane	Neil G. Siegel & Robyn C. Friend	1 Simplex Model GP - 2010
29	P-11	40 Cinnamon Lane	Enstead/Jones	1 Simplex Model GP - 2010
114	P-19	3 Clove Tree Place	Carl & Claudia Gutierrez	1 Simplex Model GP - 2010
105	P-19	5 Clove Tree Place	Burts	1 Simplex Model GP - 2010
112	P-19	6 Clove Tree Place	Sharon Nolan	1 Simplex Model GP - 2010
134	P-21	1 Figtree Road	Alfred & Adele Chan	1 Simplex Model GP - 2010
148	P-21	2 Figtree Road	William & Elisabeth Roberts	1 Simplex Model GP - 2010
135	P-21	3 Figtree Road	Nasser Novinshoar	1 Simplex Model GP - 2010
147	P-21	4 Figtree Road	Martin & Helen Faerber	1 Simplex Model GP - 2010
146	P-21	6 Figtree Road	Gino & Hope Rudolfi	1 Simplex Model GP - 2010
139	P-21	9 Figtree Road	Charles & Mary Oreb	1 Simplex Model GP - 2010
183	P-3	1 Narcissa Drive	Daniel Pinkham	1 Simplex Model GP - 2010
156	P-20	14 Narcissa Drive	Ahmad & Soudabeh Yousefi	1 Simplex Model GP - 2010
162	P-20	15 Narcissa Drive	Kenneth J. Liss	1 Simplex Model GP - 2010
155	P-20	16 Narcissa Drive	Parks	1 Simplex Model GP - 2010
164	P-20	19 Narcissa Drive	Lothar & Margoth Maertens	1 Simplex Model GP - 2010
154	P-20	20 Narcissa Drive	Ralph K. Jester	1 Simplex Model GP - 2010
152	P-20	24 Narcissa Drive	William & Sarah Miller	1 Simplex Model GP - 2010
171	P-21	25 Narcissa Drive	Gary J. McDonald	1 Simplex Model GP - 2010
172	P-21	27 Narcissa Drive	Peter McCalafferty	1 Simplex Model GP - 2010
150	P-21	28 Narcissa Drive	Lawrence J. Horan, Jr.	1 Simplex Model GP - 2010

\*\* These properties include both gravity and low-pressure sewer systems.

Grinder Pump System

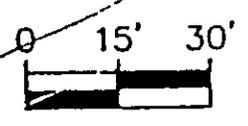
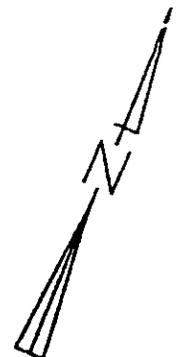
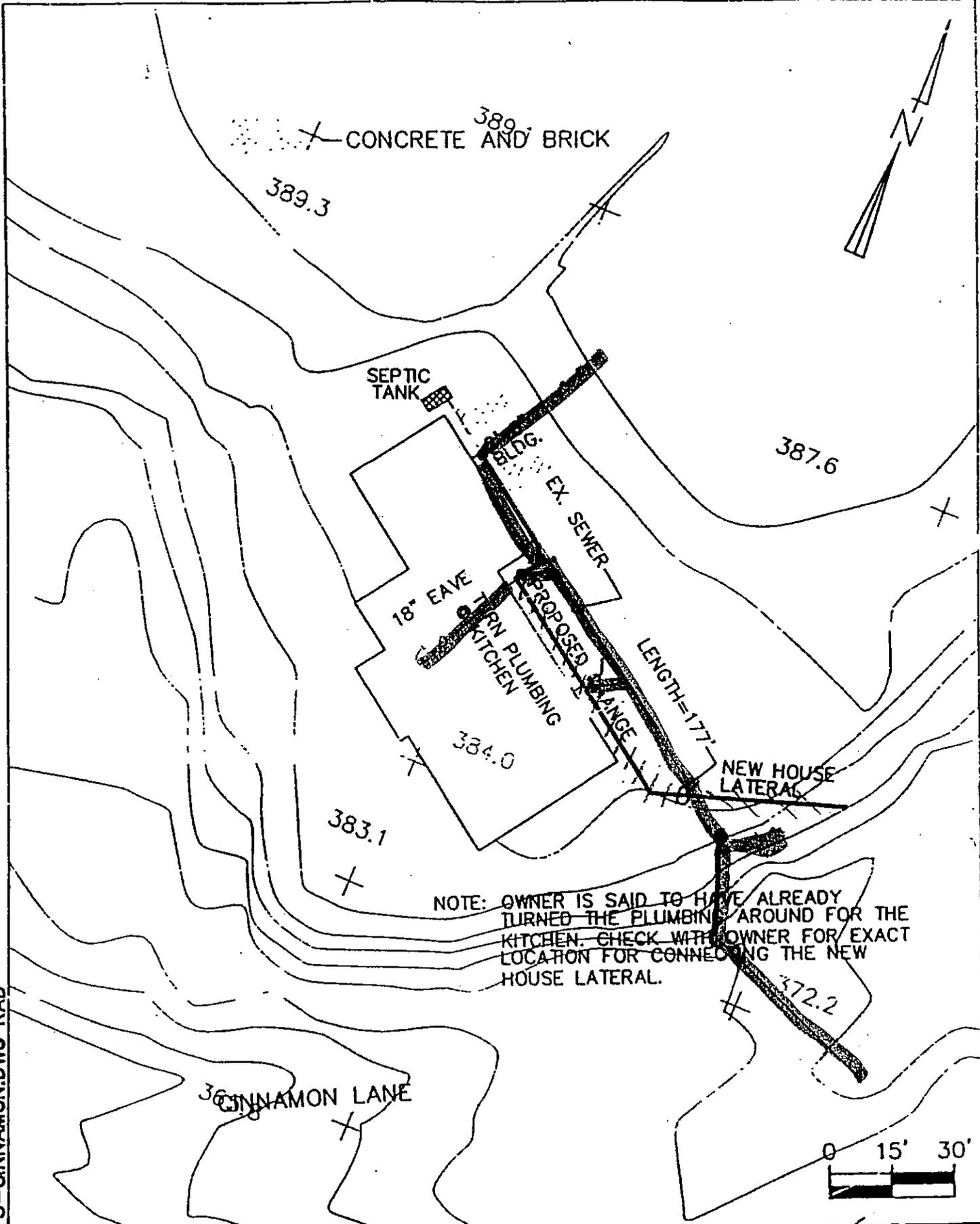
CITY OF RANCHO PALOS VERDES  
ABALONE COVE SEWER SYSTEM  
 Grinder Pump System

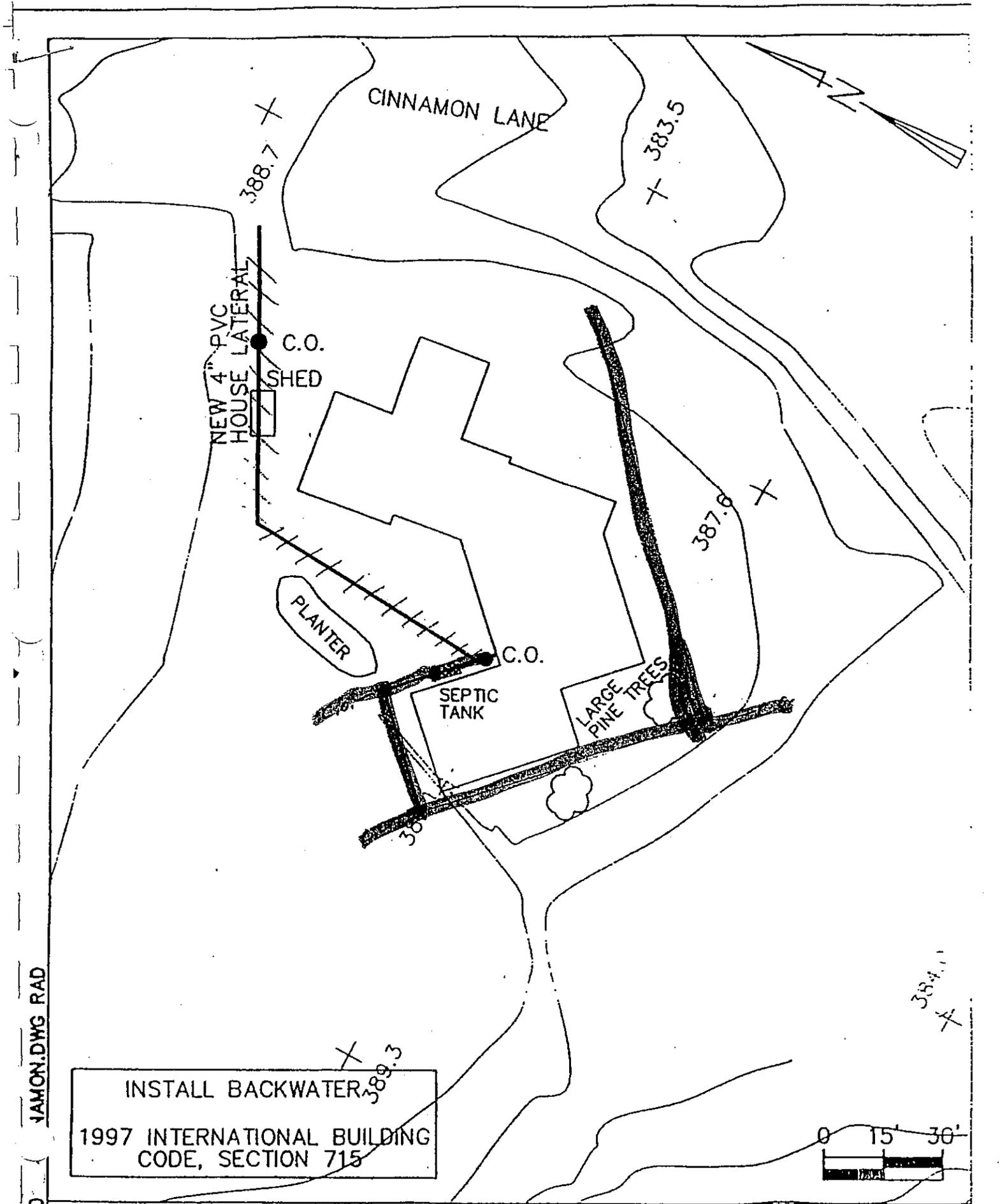
Property No.	Plan Sheet No.	Address	Owner	Grinder Pump Quantity
149	P-21	30 Narcissa Drive	Lothar & Margoth Maertens	1 Simplex Model GP - 2010
174	P-21	31 Narcissa Drive	William Hunter Saitta	1 Simplex Model GP - 2010
176	P-21	33 Narcissa Drive	James & Tina Madden	1 Simplex Model GP - 2010
104	P-21	38 Narcissa Drive	Leon	1 Simplex Model GP - 2010
51	P-9	72 Narcissa Drive	Neva R. Dyer	1 Simplex Model GP - 2010
52	P-9	76 Narcissa Drive	David Venanzi & Gail Worth	1 Simplex Model GP - 2010
55 **	P-9/16	80 Narcissa Drive	Charles L. Stuart	1 Simplex Model GP - 2010
56 **	P-9/16	82 Narcissa Drive	Gene & Nancy Frank	1 Simplex Model GP - 2010
57	P-9/16	84 Narcissa Drive	Magnus & Joneen Ohlaker	1 Simplex Model GP - 2010
59	P-9	88 Narcissa Drive	Robert & Diana Halderman	1 Simplex Model GP - 2010
182	P-17	3 W. Pomegranate Road	Sepp Donohauer	1 Simplex Model GP - 2010
126	P-17	10 W. Pomegranate Road	Betty E. Strauss	1 Simplex Model GP - 2010
	P-17	10 W. Pomegranate (Guest House)		1 Simplex Model GP - 2010
179	P-17	21 W. Pomegranate Road	Charles & Jean Shriver	1 Simplex Model GP - 2010
167	P-3	5500 PVD South	Michael J. Lightman	2 Simplex Model GP - 2010
158	P-3	5521 PVD South	James K. Ishibashi	1 Simplex Model GP - 2010
168	P-2	5755 Palos Verde South	Wayfare's Chapel	1 Simplex Model GP - 2010
130	P-19	1 Thyme Place	Allan & Mary Merralls	1 Simplex Model GP - 2010
128	P-19	6 Thyme Place	Harold & Beulah Bowen	1 Simplex Model GP - 2010
	P-19	4 Thyme Place		1 Simplex Model GP - 2010
127	P-19	8 Thyme Place	John & Sallie Reeves	1 Simplex Model GP - 2010
39	P-13, Revised	100 Vanderlip	Vanderlip	1 Duplex Model GP - 2014

\*\* These properties include both gravity and low-pressure sewer systems.

# CINNAMON LANE

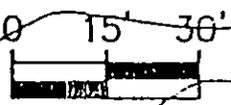
14/13/00 5-CINNAMON.DWG RAD





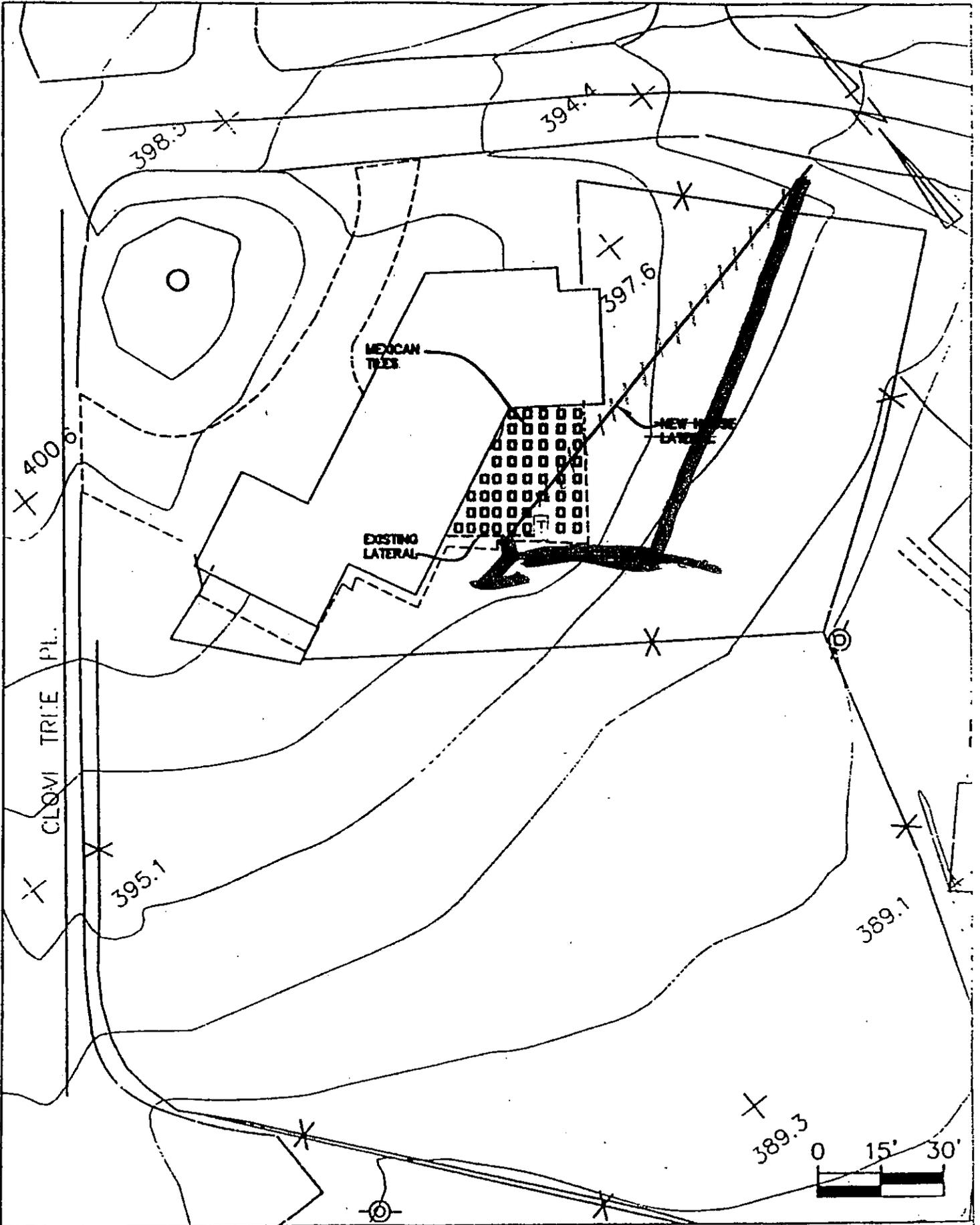
INSTALL BACKWATER

1997 INTERNATIONAL BUILDING CODE, SECTION 715



04/13/00 JAMON.DWG RAD

/20/00 JOB NO. 1045.002 RB

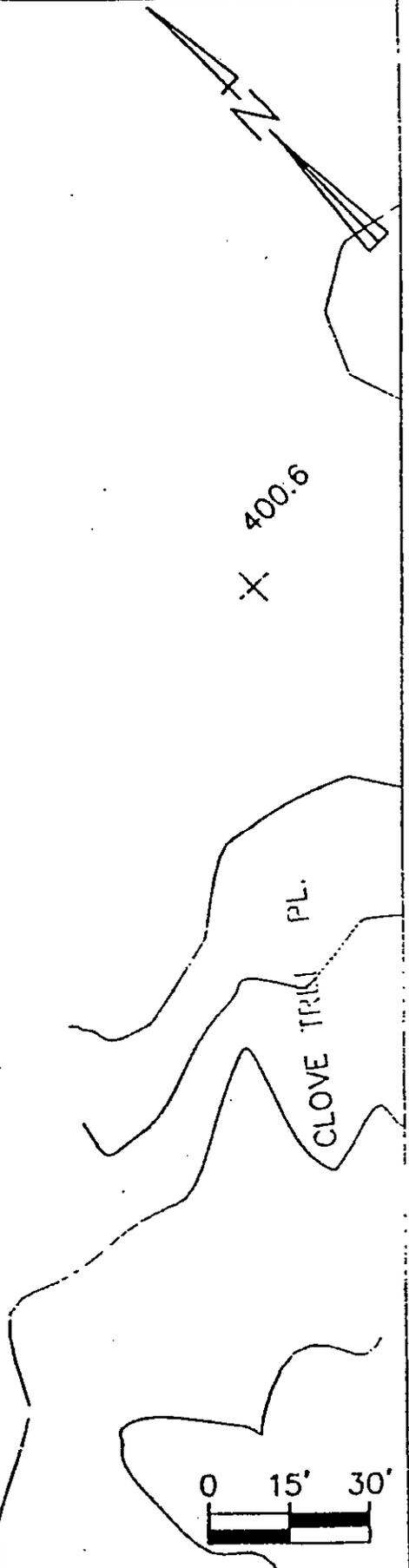
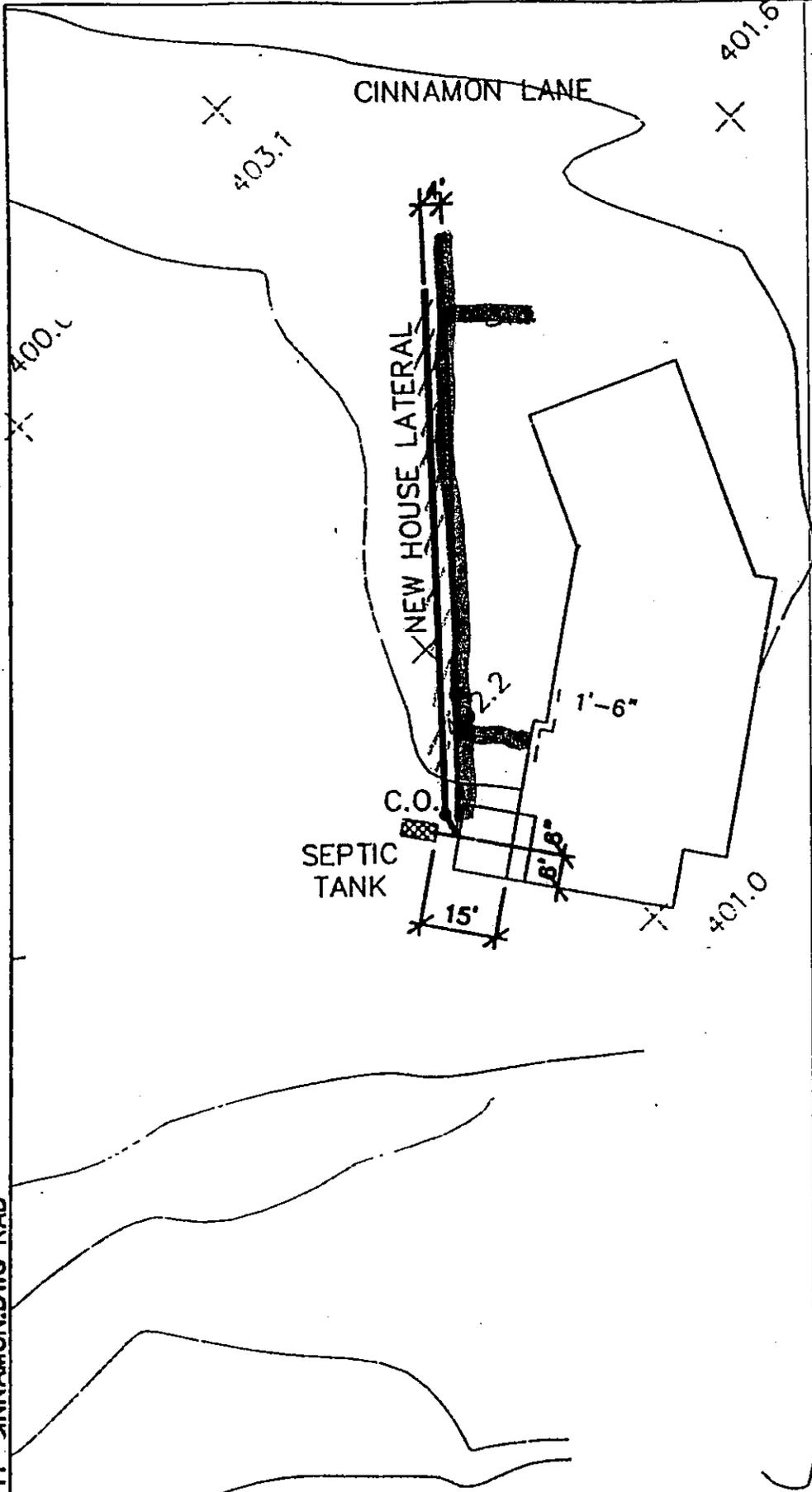


**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #110  
REF: PLAN SHEET NO. 18

9 CINNAMON  
E. JEFF MAXWELL  
COLLEEN MAXWELL

04/13/00 11 CINNAMON.DWG RAD

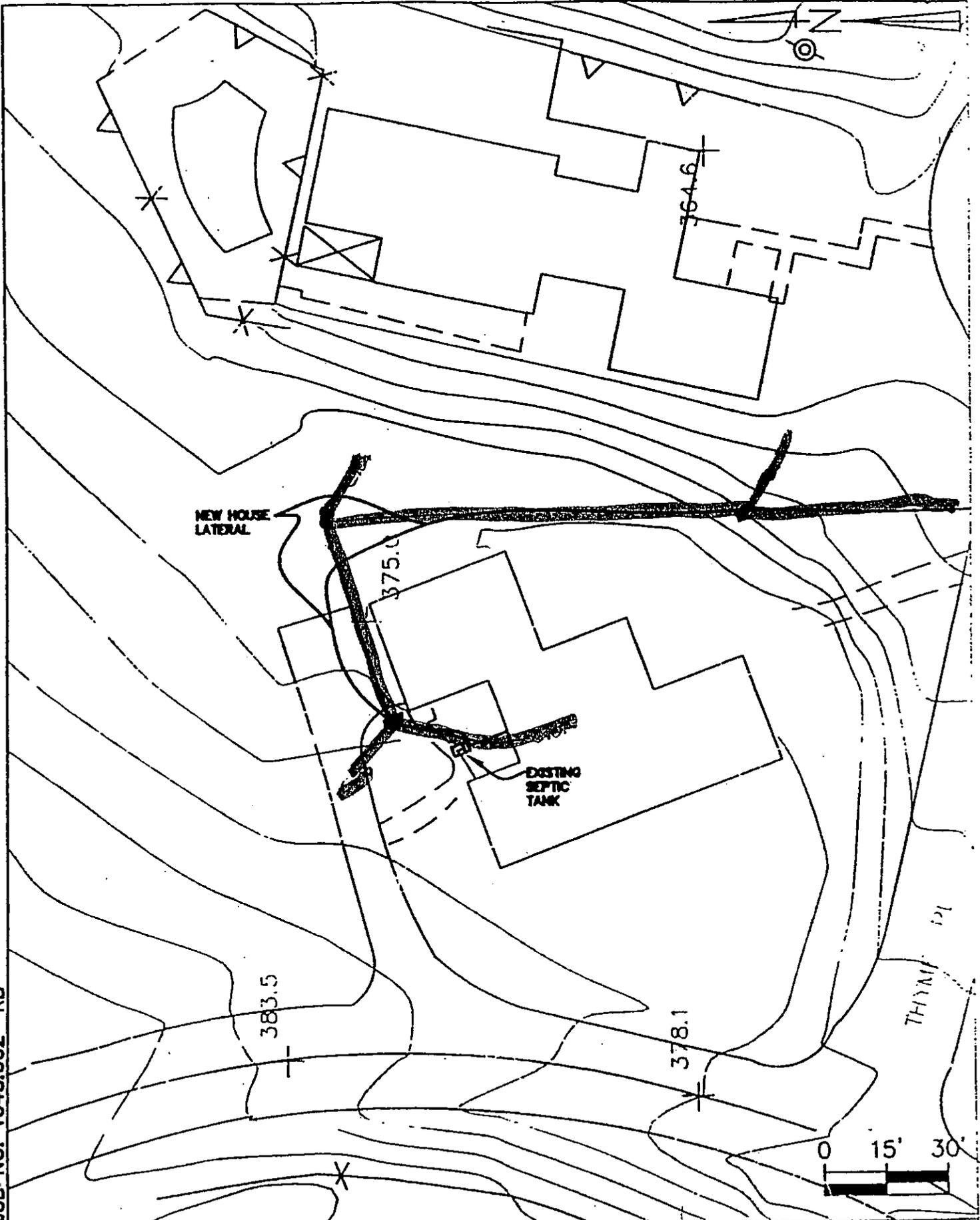


**CTE ENGINEERS**  
 CONSOER TOWNSEND ENVIRONMENTAL ENGINEERS, INC.

PLAN SHEET NO. P-18  
 PROP. # 115

11 CINNAMON  
 ROBERT D. SUCH  
 FLORENCE SUCH

4/20/00 JO. NO. 1045.002 RB

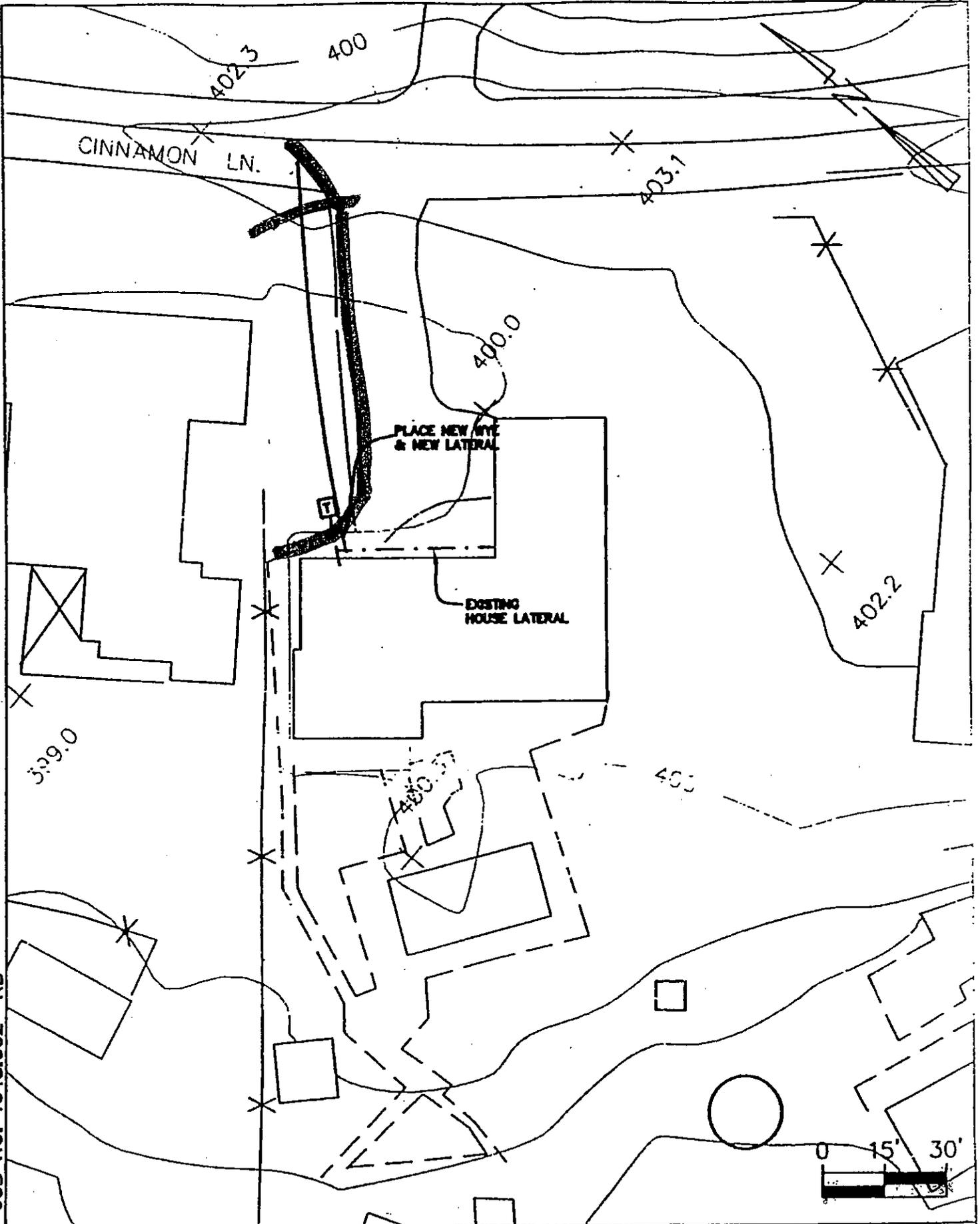


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #121.  
 REF: PLAN SHEET NO. 18

12 CINNAMON  
 CHARLES E. PARKS JR.  
 SANDRA J. PARKS

4/20/00 J. NO. 1045.002 RB

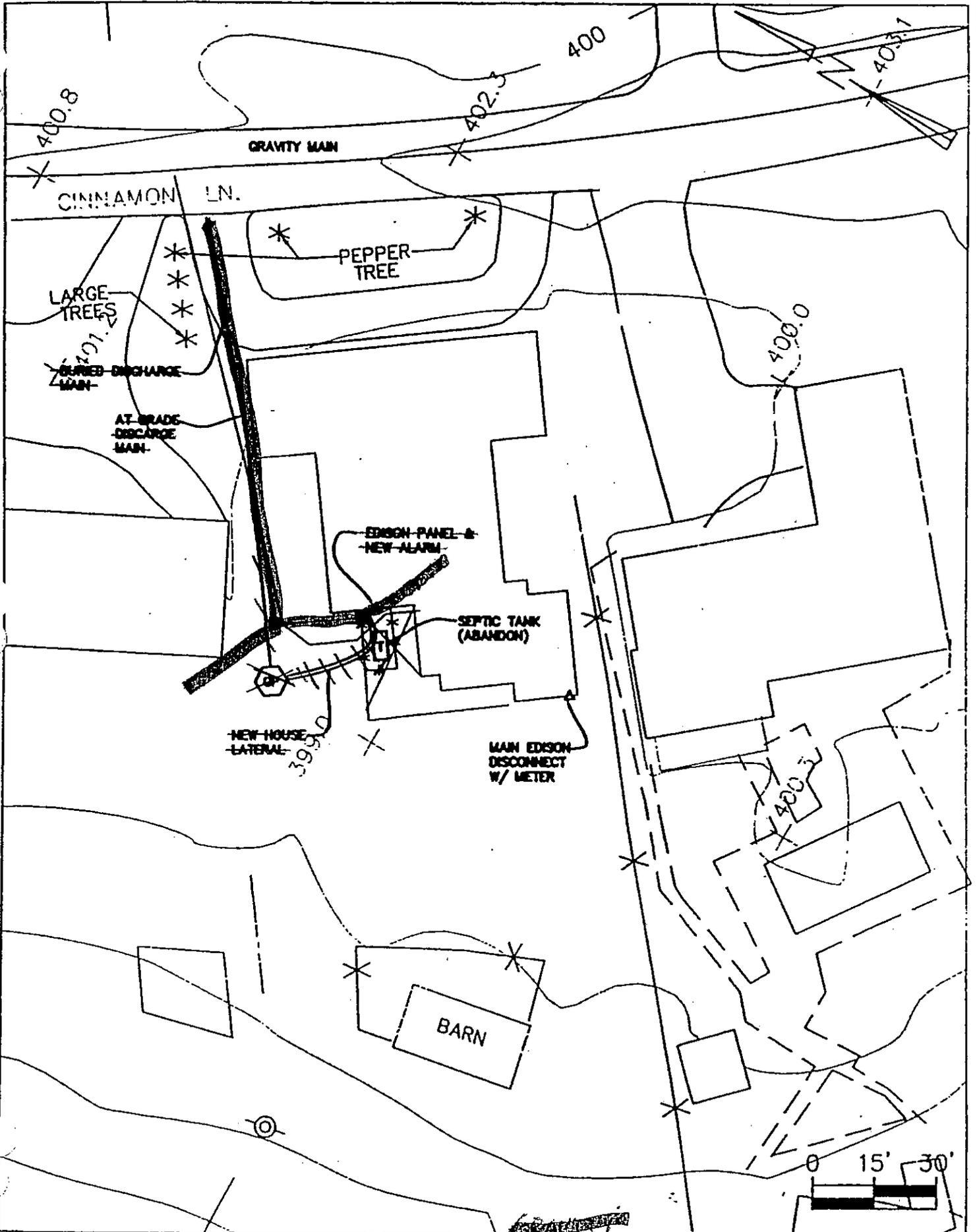


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #116  
 REF: PLAN SHEET NO.18

13 CINNAMON  
 CARLOS M. ALBUJA  
 JULIE ALBUJA

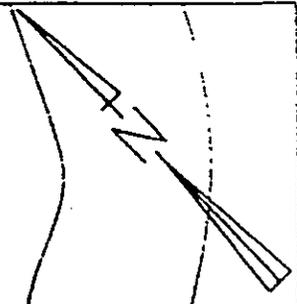
DT3.06Z RB



**SA**  
ASSOCIATES

PROPERTY #117  
REF. PLAN SHEET NO. 10

15 CINNAMON  
ROY J. ~~ROOD~~



EXACT LOCATION OF SEPTIC TANK UNKNOWN PROBE W/ BAR TO FIND.

OWNER BELIEVES SHE HAS A LEACH BED.

METAL SHED

SEPTIC TANK

PLAY HOUSE

GATE

CARE TAKER HOUSE CAMP TRAILER

NEW HOUSE LATERAL

397.7

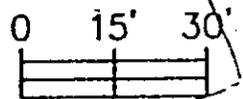
ASPHALT DRIVE

GRAVEL WALK

CINNAMON LANE

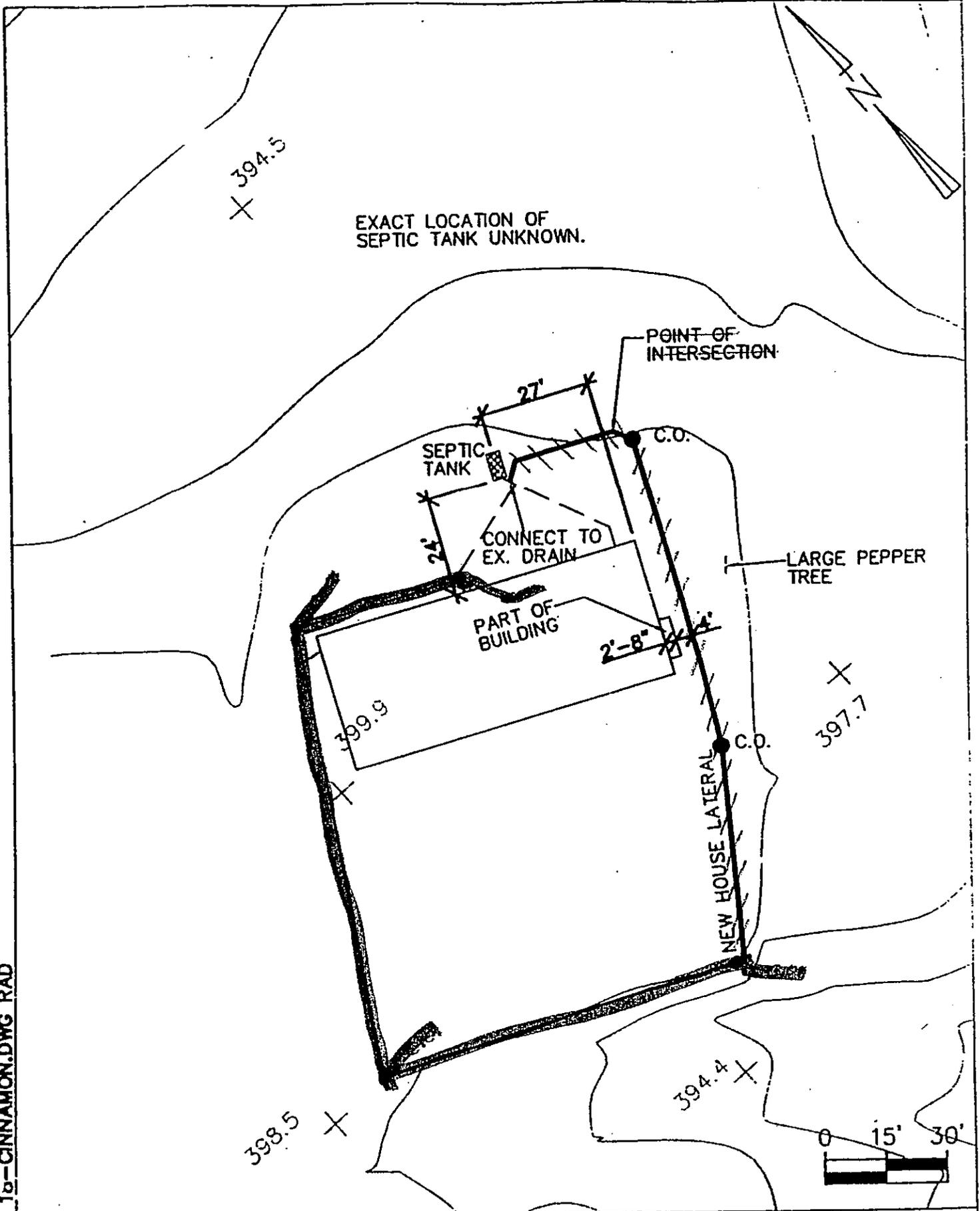
394.4

388.1

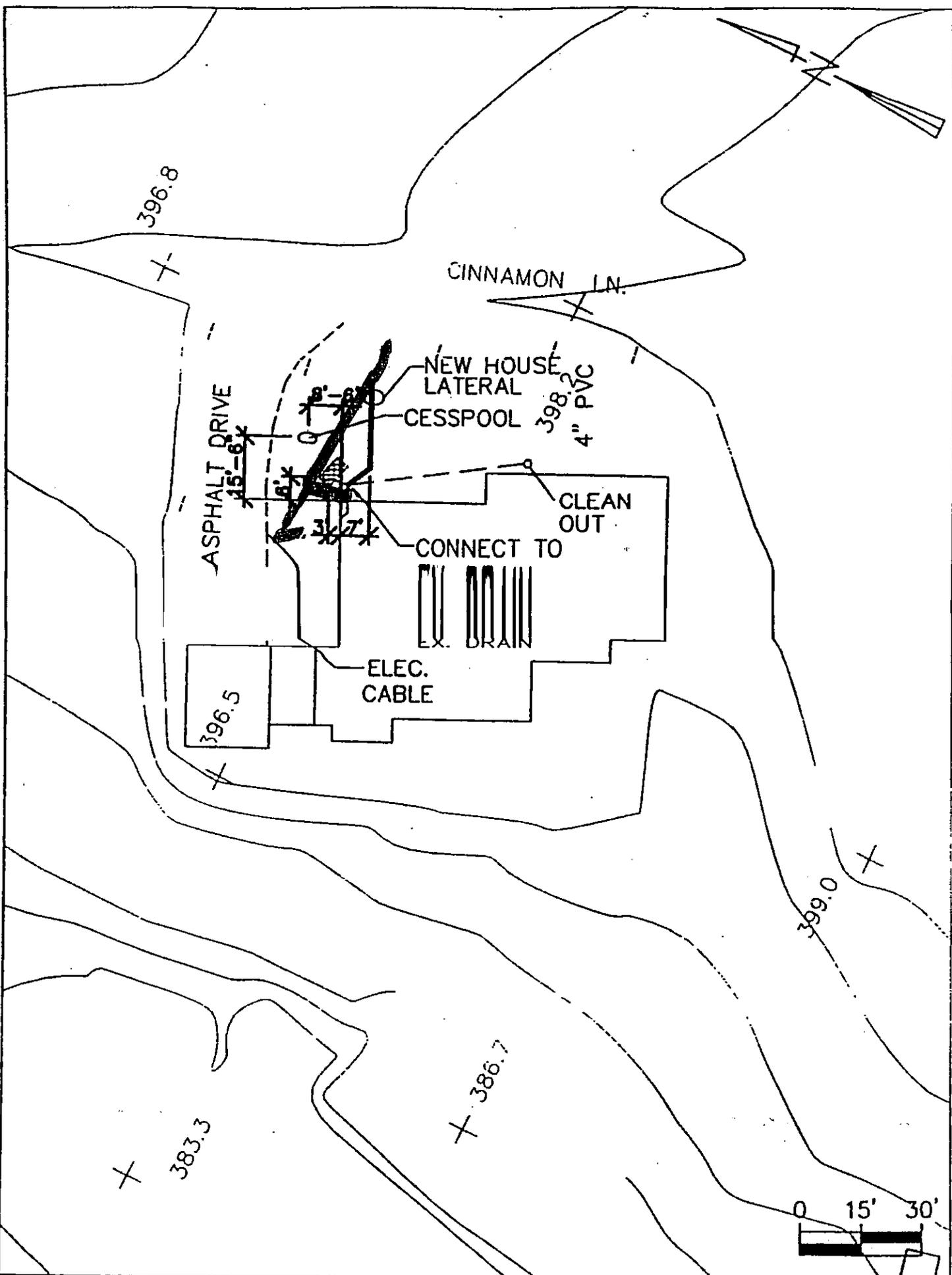


04/13/00 1p-CINNAMON.DWG RAD

04/13/00 1p-CINNAMON.DWG RAD

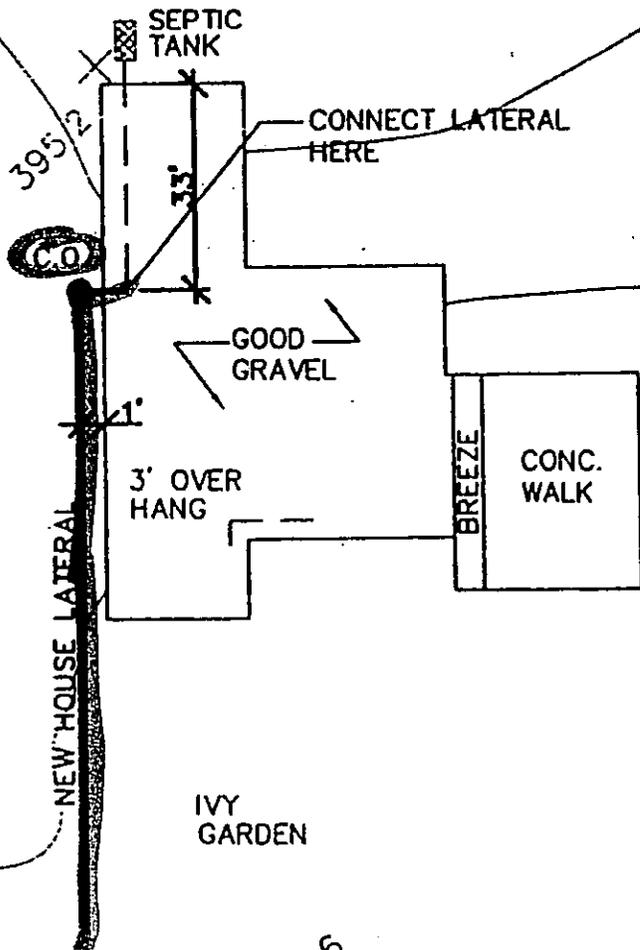


04/13/90 - CINNAMON.DWG RAD



24/13/00 20-CINNAMON.DWG RAD

403.1



GRD ELEV ● LAST DROP UNDER HOUSE  
396.5±  
I.E. 4" UNDER HSE 396.0±

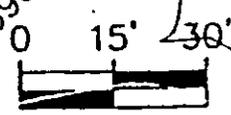
394.5

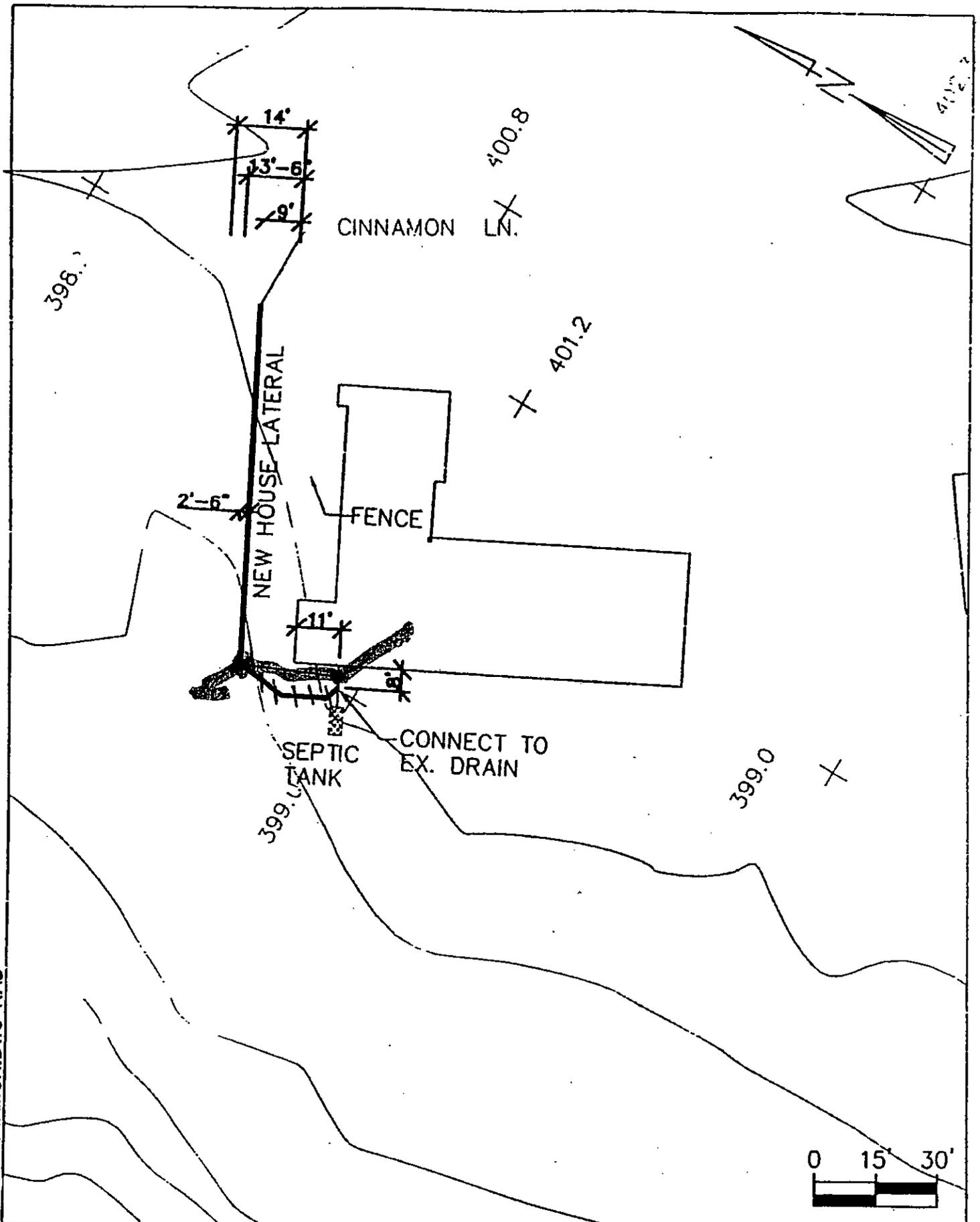
399.9

IVY GARDEN

401.6

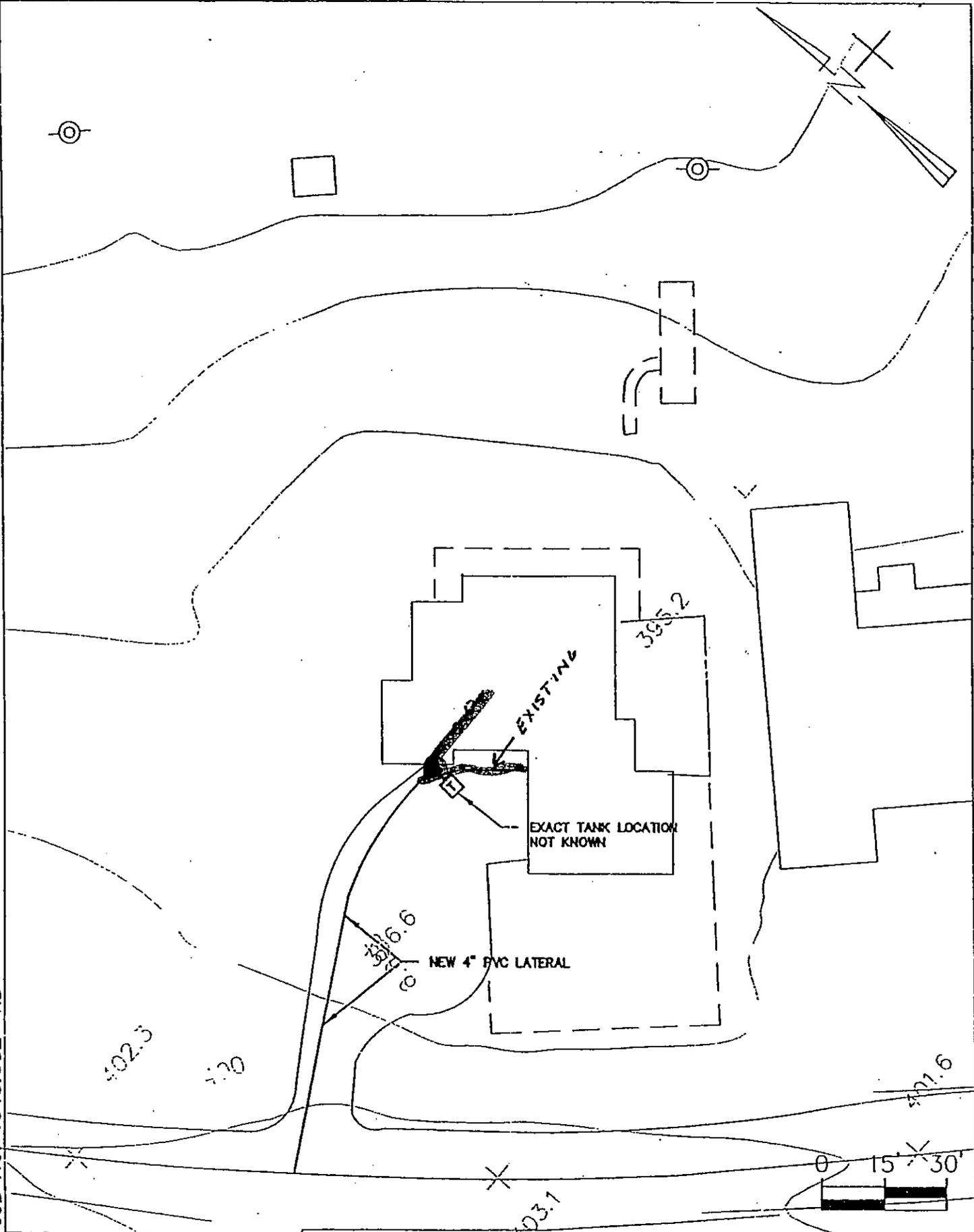
398.5





04/13/00 1 CINNAMON.DWG RAD

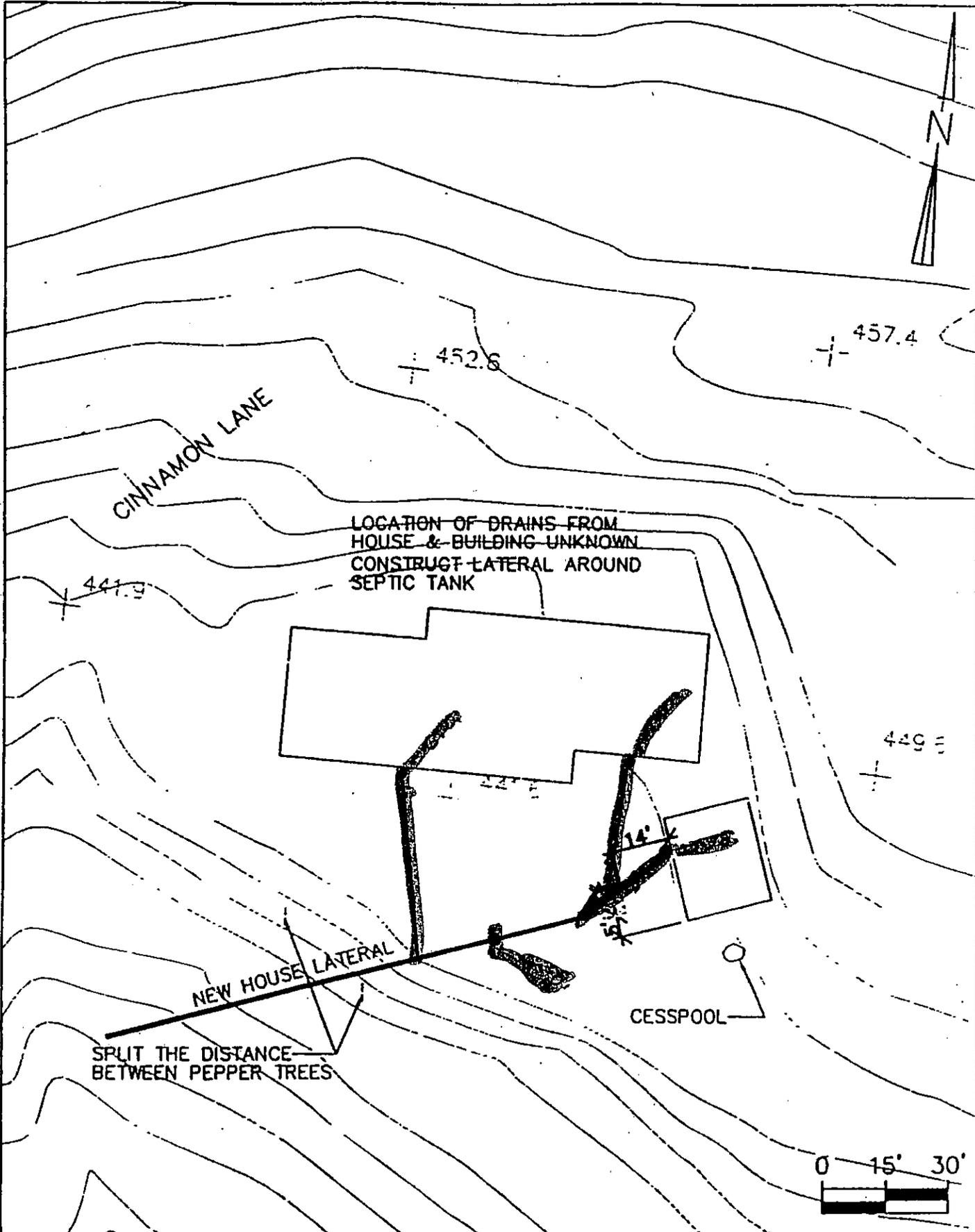
4/20/00 JOB NO. 1045.002 RB



**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY # 92 18  
 REF: PLAN SHEET NO. 20

22 CINNAMON  
 HOWARD P. TWOLE  
 DOROTHY TOWLE



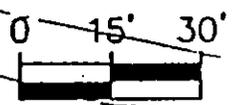
CINNAMON LANE

LOCATION OF DRAINS FROM HOUSE & BUILDING UNKNOWN  
CONSTRUCT LATERAL AROUND SEPTIC TANK

NEW HOUSE LATERAL

SPLIT THE DISTANCE BETWEEN PEPPER TREES

CESSPOOL



/13/00 34-CINNAMON.DWG RAD

**CTE** ENGINEERS

PLAN SHEET NO. P-11

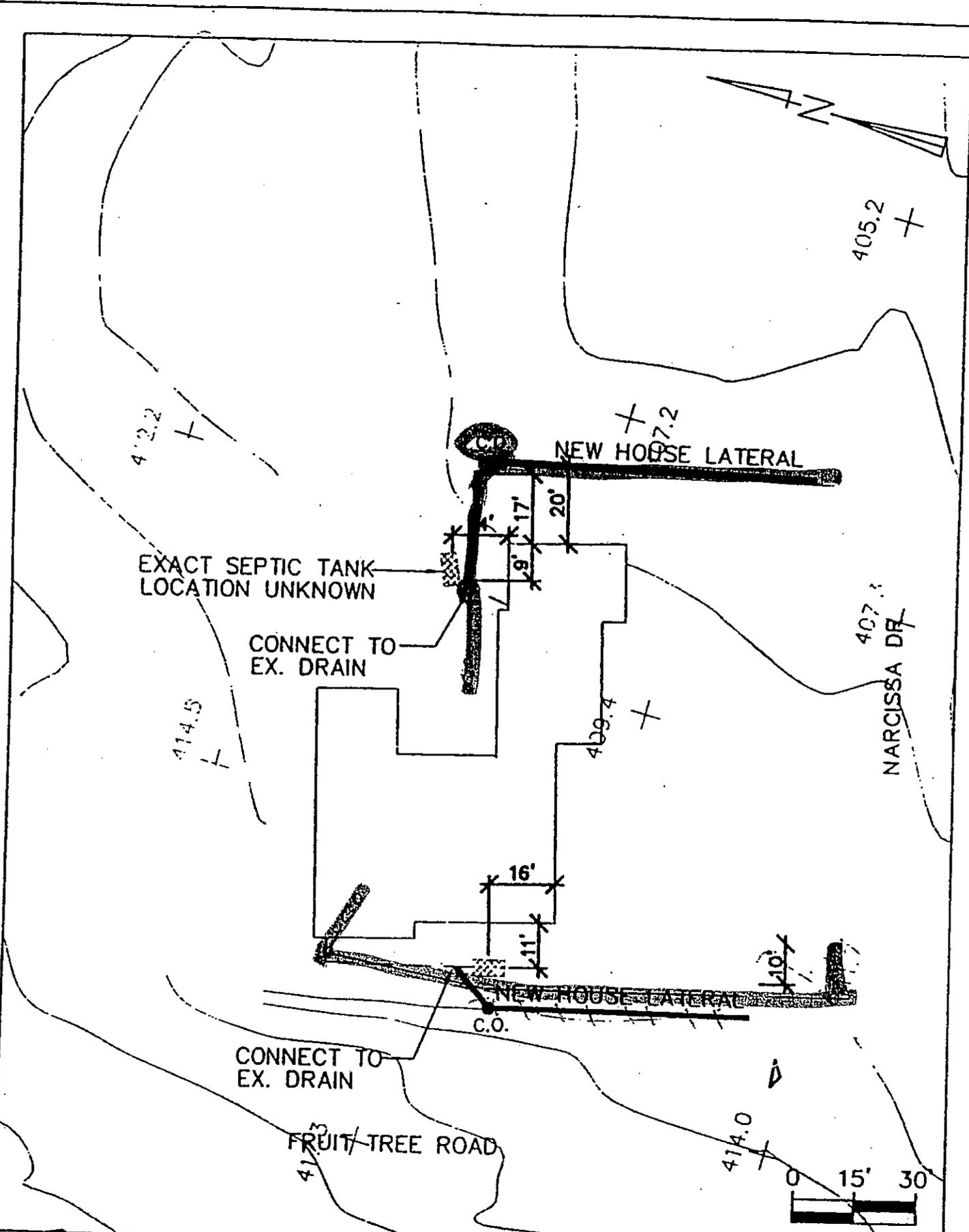
34 CINNAMON  
GERTRUDE B. EASTMAN  
BOOK NO. 00

PAGE NO. A. 24

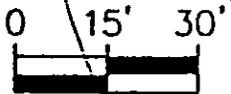
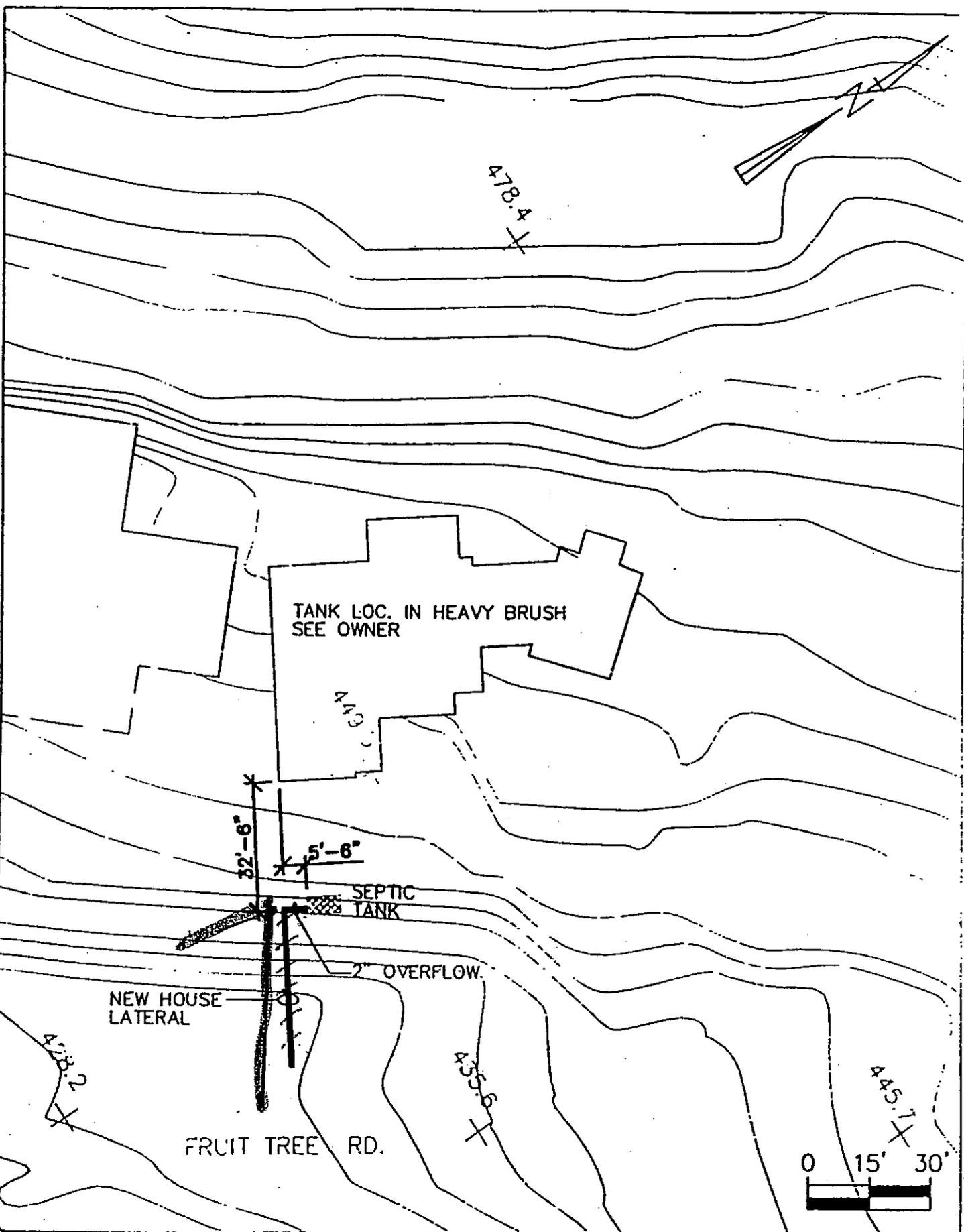
FRUIT TREE  
ROAD



04/13/00 IT-TREE.DWG RAD



04/13/00 JIT-TREE.DWG RAD



GINGER ROOT  
LANE

375.2  
START DIGGING 2' WEST OF DRIVE  
DO NOT DISTURB DRIVEWAY



GINGER ROOT LANE

2'-6" FROM  
EAVE LINE

NEW HOUSE  
LATERAL

2' OFF  
DRIVE

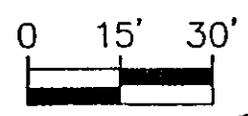
SEPTIC  
TANK

CONNECT TO  
EX. DRAIN

ASPHALT  
DRIVE

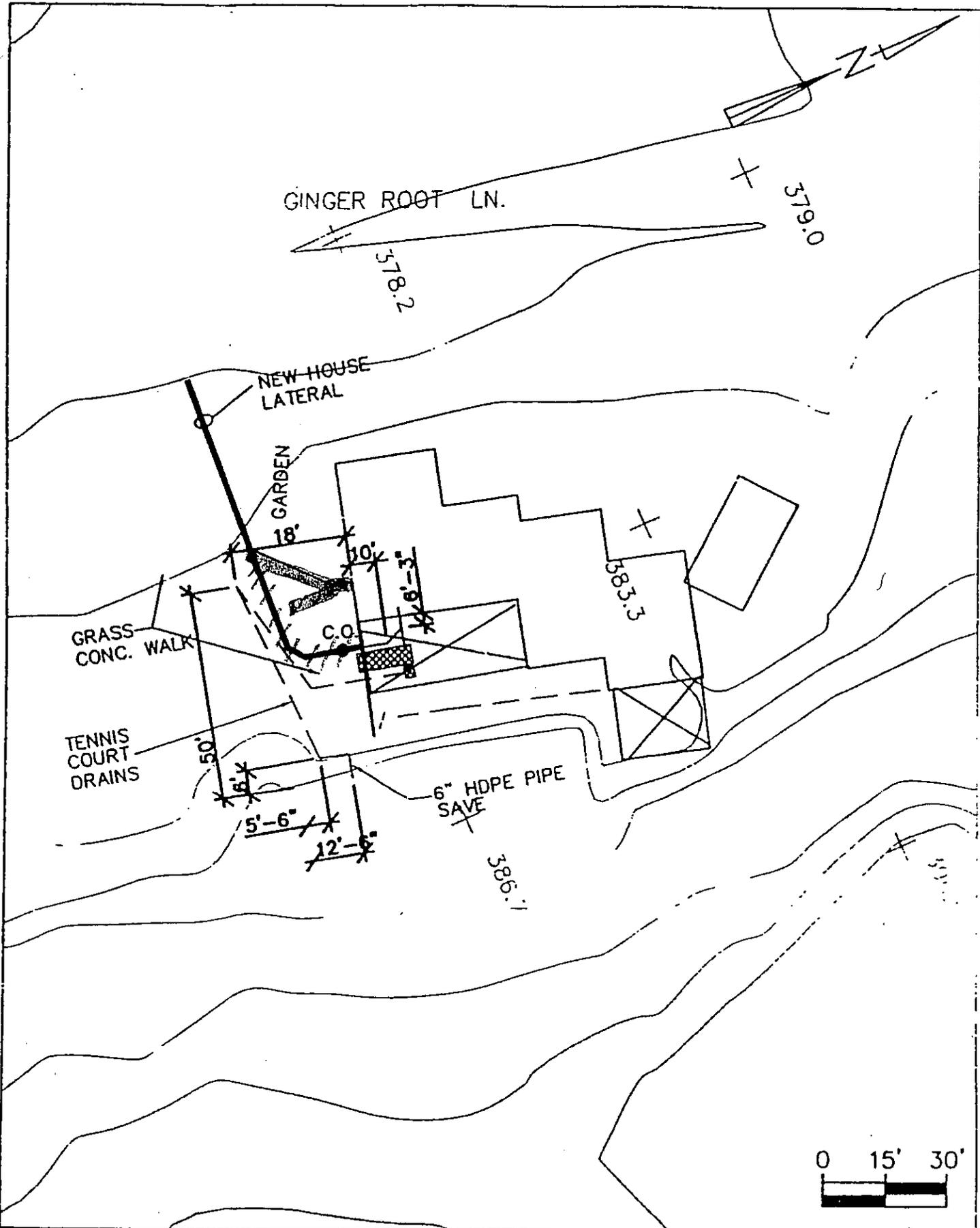
MAIN  
LINE

383.2

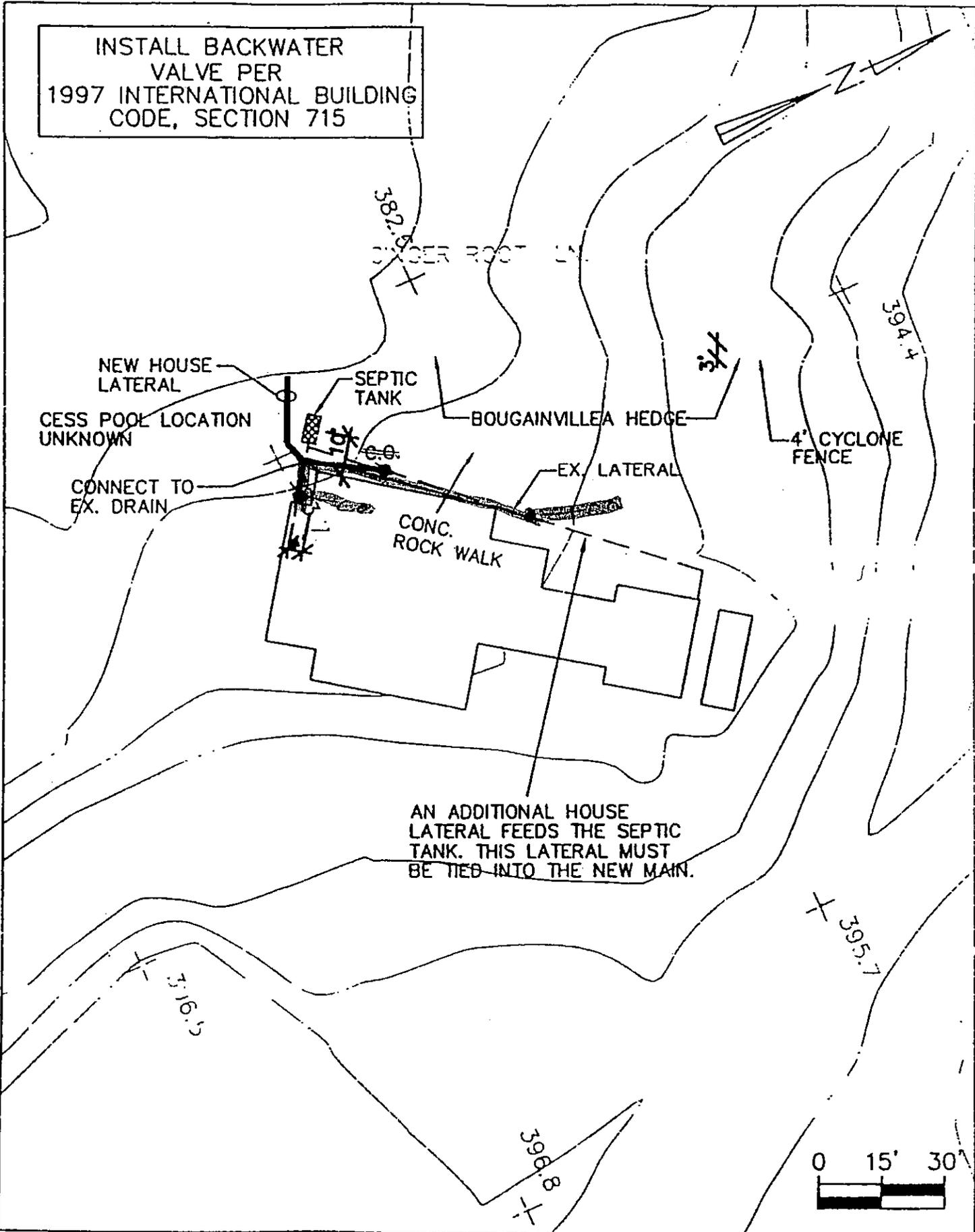


3/13/00  
SER.DWG RAD

14/13/00 1-6...SER.DWG RAD



INSTALL BACKWATER VALVE PER 1997 INTERNATIONAL BUILDING CODE, SECTION 715



CESS POOL LOCATION UNKNOWN

CONNECT TO EX. DRAIN

NEW HOUSE LATERAL

SEPTIC TANK

BOUGAINVILLEA HEDGE

EX. LATERAL

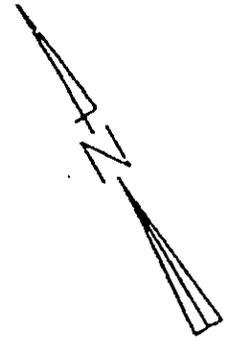
4' CYCLONE FENCE

CONC. ROCK WALK

AN ADDITIONAL HOUSE LATERAL FEEDS THE SEPTIC TANK. THIS LATERAL MUST BE TIED INTO THE NEW MAIN.

4/13/00 5-6 ER.DWG RAD

**NARCISSA DRIVE**



NARCISSA DRIVE

279.6

286.9

NEW HOUSE LATERAL

EX. DRAIN  
ROCK WALK

284.8

CONNECT TO EX. DRAIN

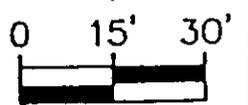
18'-6"

SIDE WALK

269.3

262.9

255.3



NARCISSA.DWG RAD

04/13/09



PLAN SHEET NO. P-4

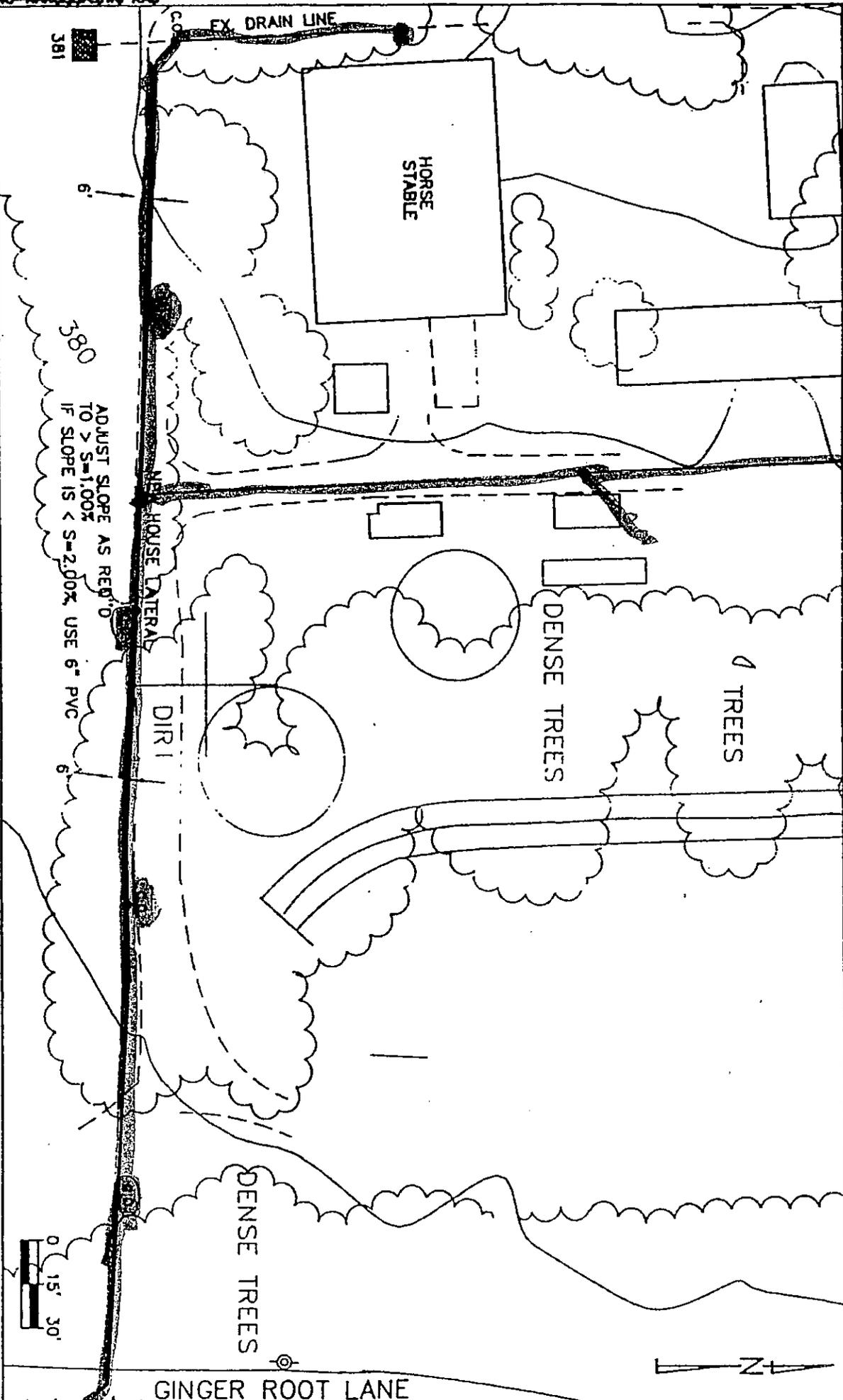
PAGE NO. A-1

22 NARCISSA  
CORINNE GERRARD  
PROP. NO. 153

ENGINEERS

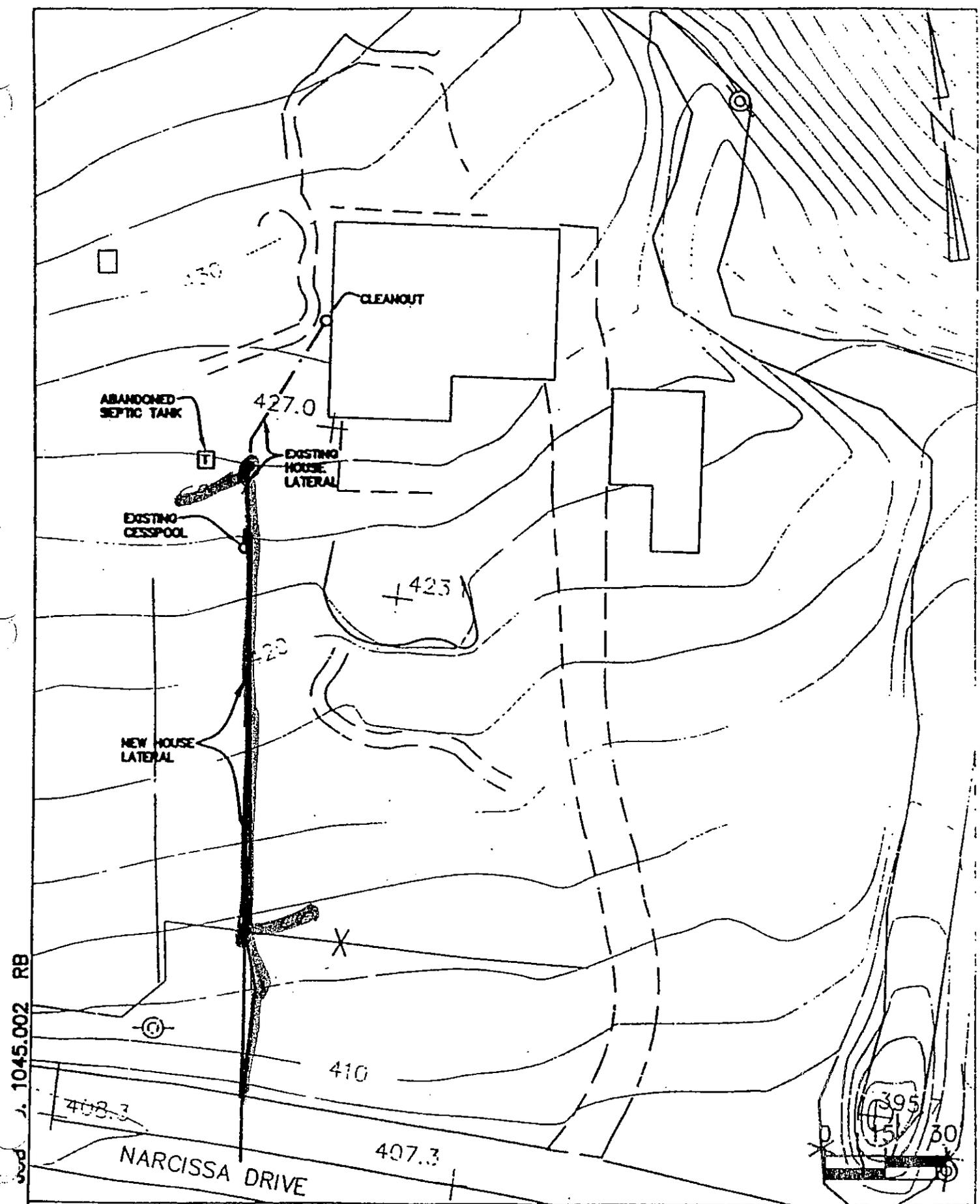
PLAN SHEET NO. P-6  
PAGE NO. 1

40 NARCISSA  
LLOYD S. WOLF



ADJUST SLOPE AS REQ'D  
 TO  $S=1.00\%$   
 IF SLOPE IS  $< S=2.00\%$ , USE 6" PVC

CONTINUES TO HOUSE TRAIL

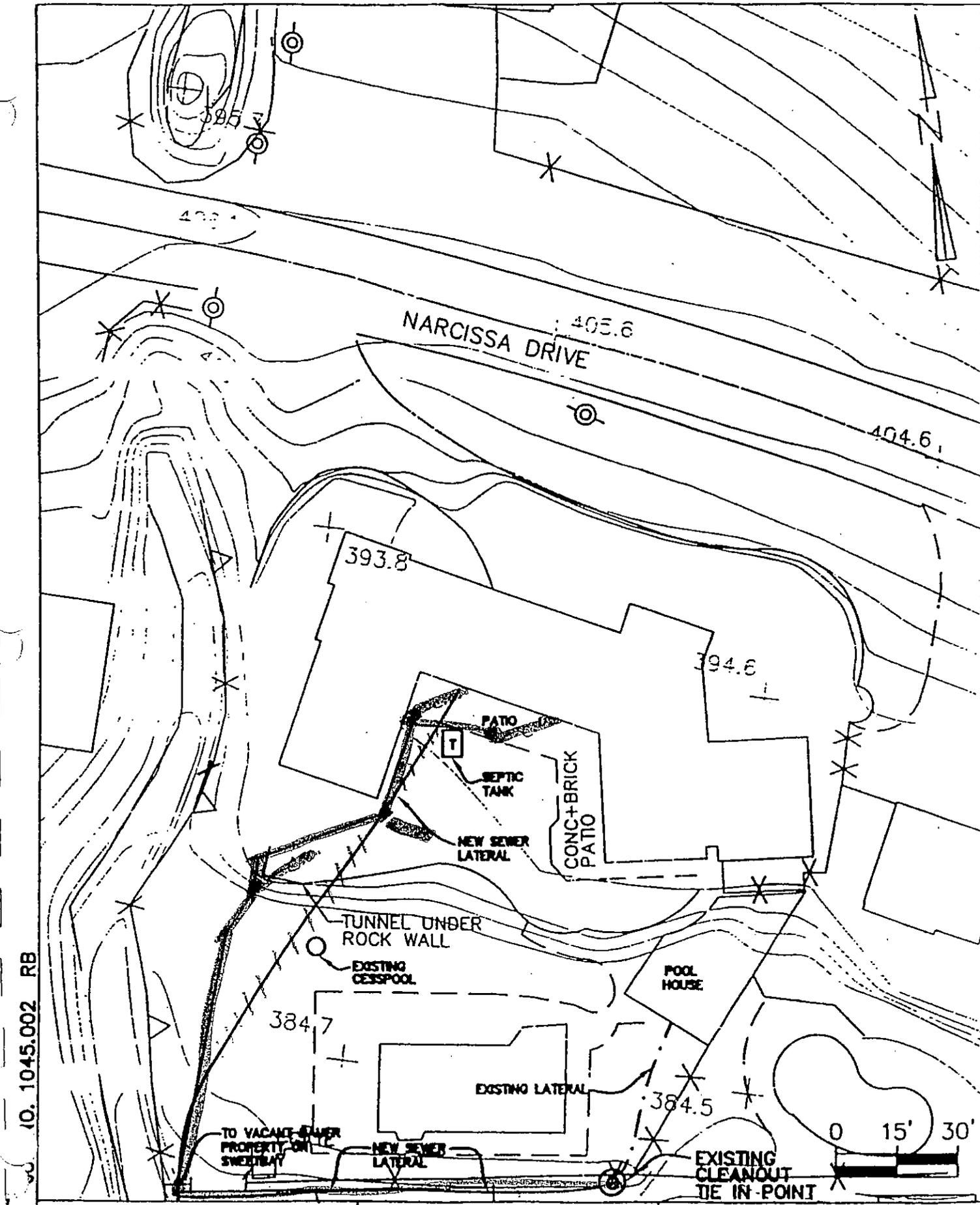


20/00 1045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY # 38  
REF: PLAN SHEET NO. 8

57 NARCISSA  
JAMIE GONZALEZ  
IOANNE GONZALEZ

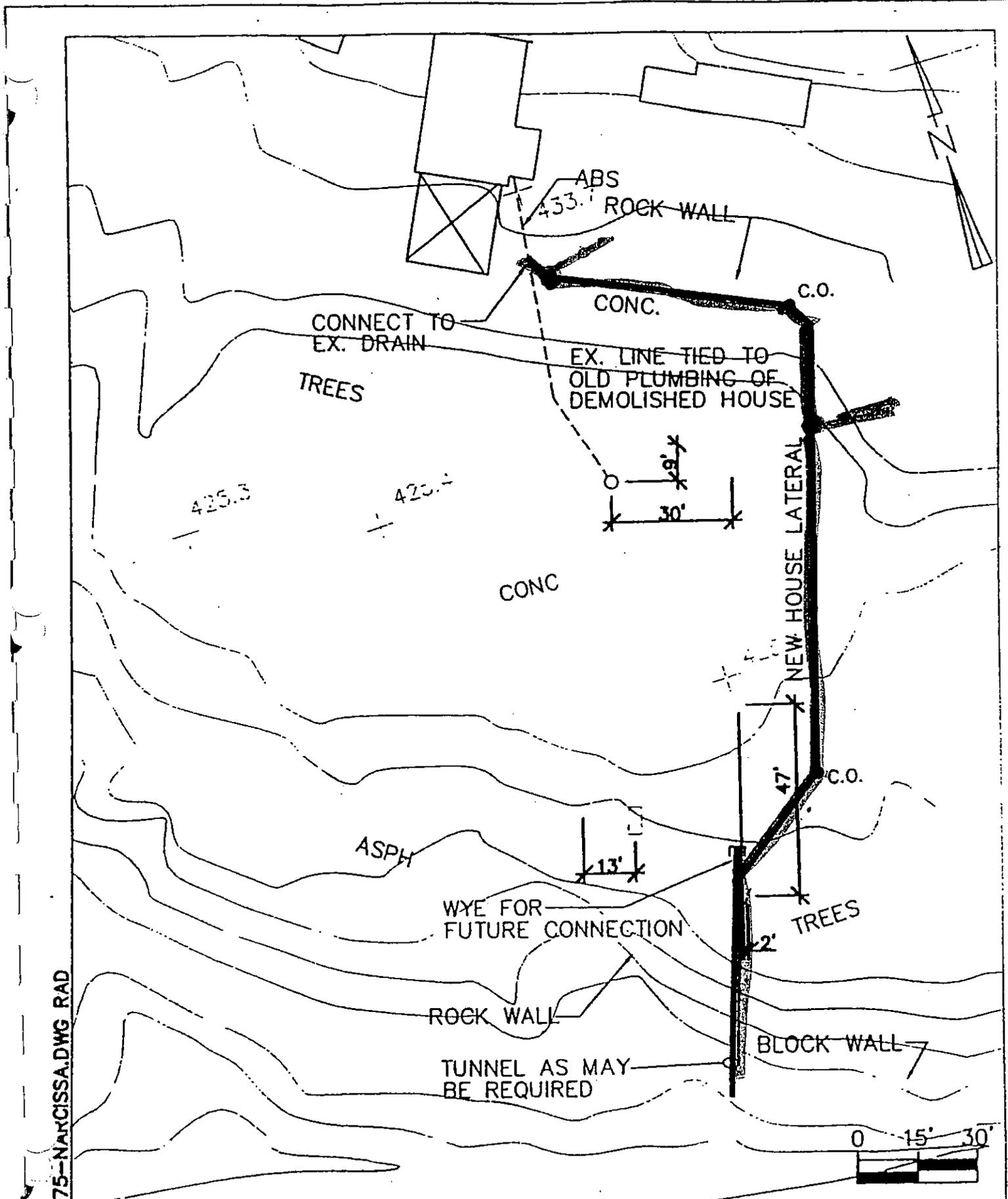


4/20/00 IO. 1045.002 RB

**SA**  
**ASSOCIATES**  
 CONSULTING ENGINEERS

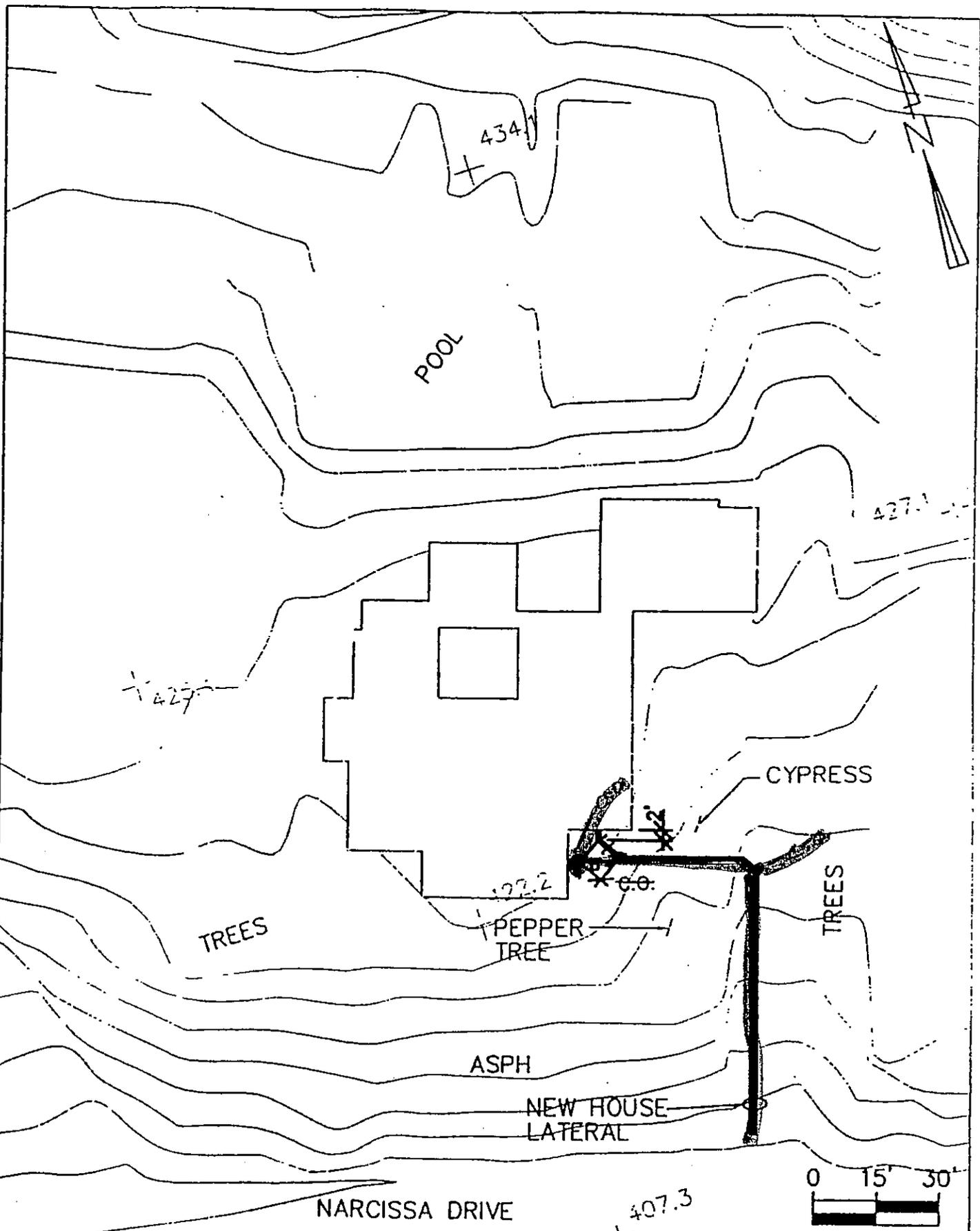
PROPERTY # 48  
 REF: PLAN SHEET NO. 8

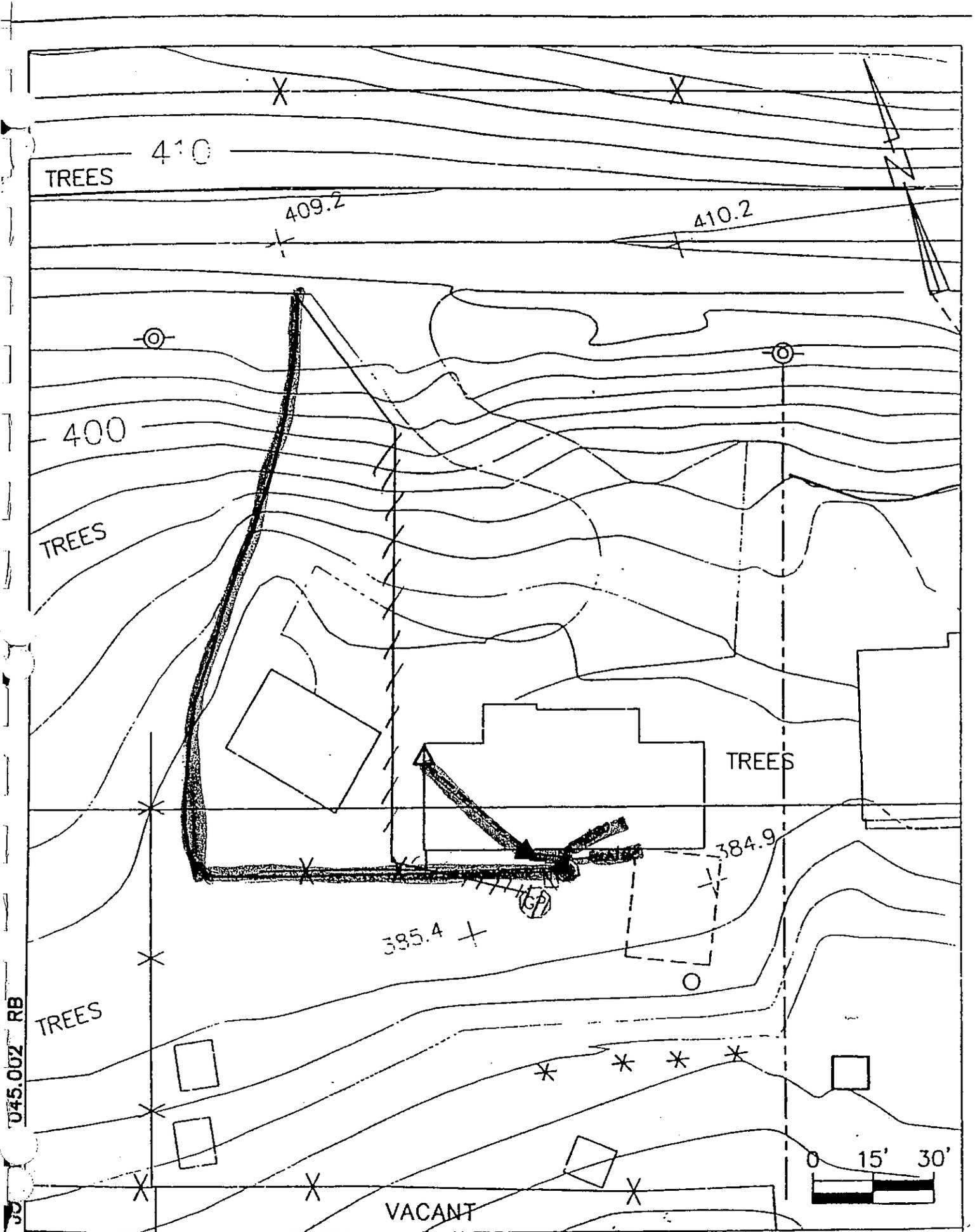
60 NARCISSA  
 ROBERT B. BAUER, SR.  
 RAE A. BAUER



13/00 75-NARCISSA.DWG RAD

04/13/00 79-NARCISSA.DWG RAD



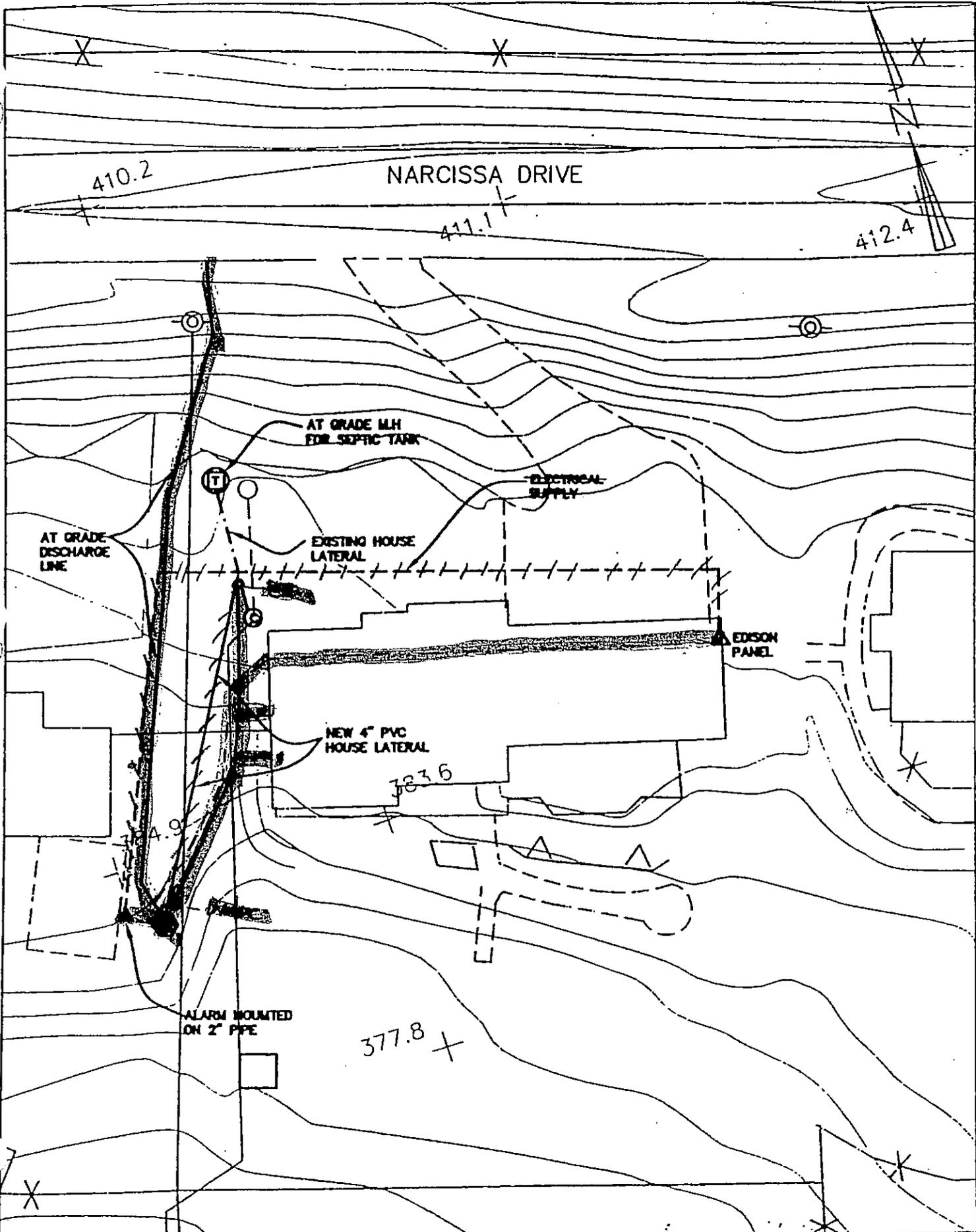


20700 30 045.002 RB

**SA**  
ASSOCIATES

PROPERTY #55  
IRFF: PLAN SHEET NO. 9

80 NARCISSA DRIVE  
CHARLES LINCOLN STUART

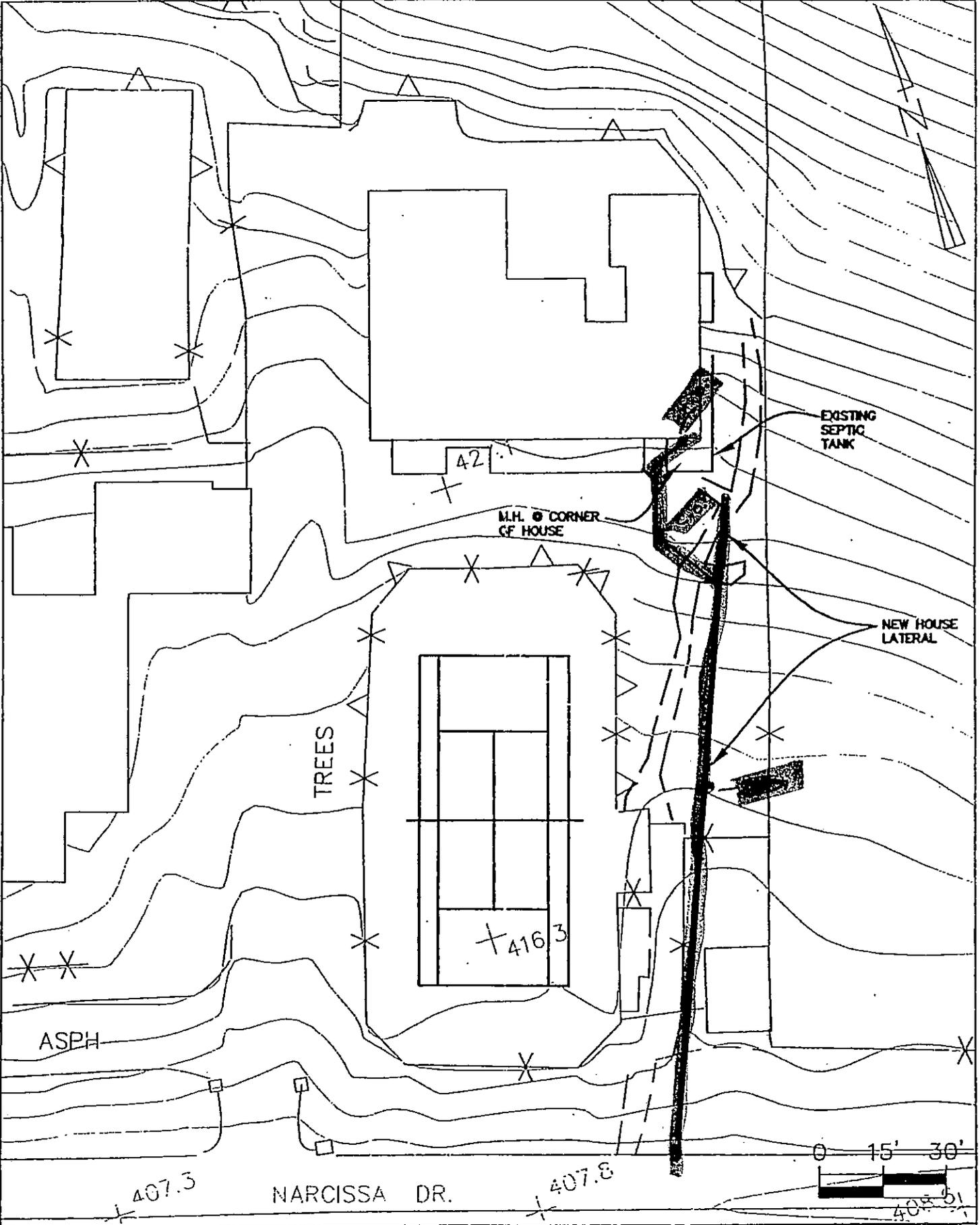


20/00 JO 1045.002 RB

**SA**  
ASSOCIATES

PROPERTY #56  
REF: PLAN SHEET  
NOV 2 8 16

82 NARCISSA DRIVE  
GENE FRANK  
NANCY FRANK



1/20/00 JOB 1045.002 RB

**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #60  
 REF: PLAN SHEET NO. 9

83 NARCISSA  
 DR. - NI-  
 DIANE HEWITT

PLUMTREE ROAD

INTERCEPT UNDER DECK OR DECK STEP

TREES MANHOLE CONNECT TO EX. DRAIN

4" RISER TO GRADE

DECK

LARGE TREE DO NOT DESTROY!!!

LARGE PALM

OWNER'S PROPERTY NEXT DOOR

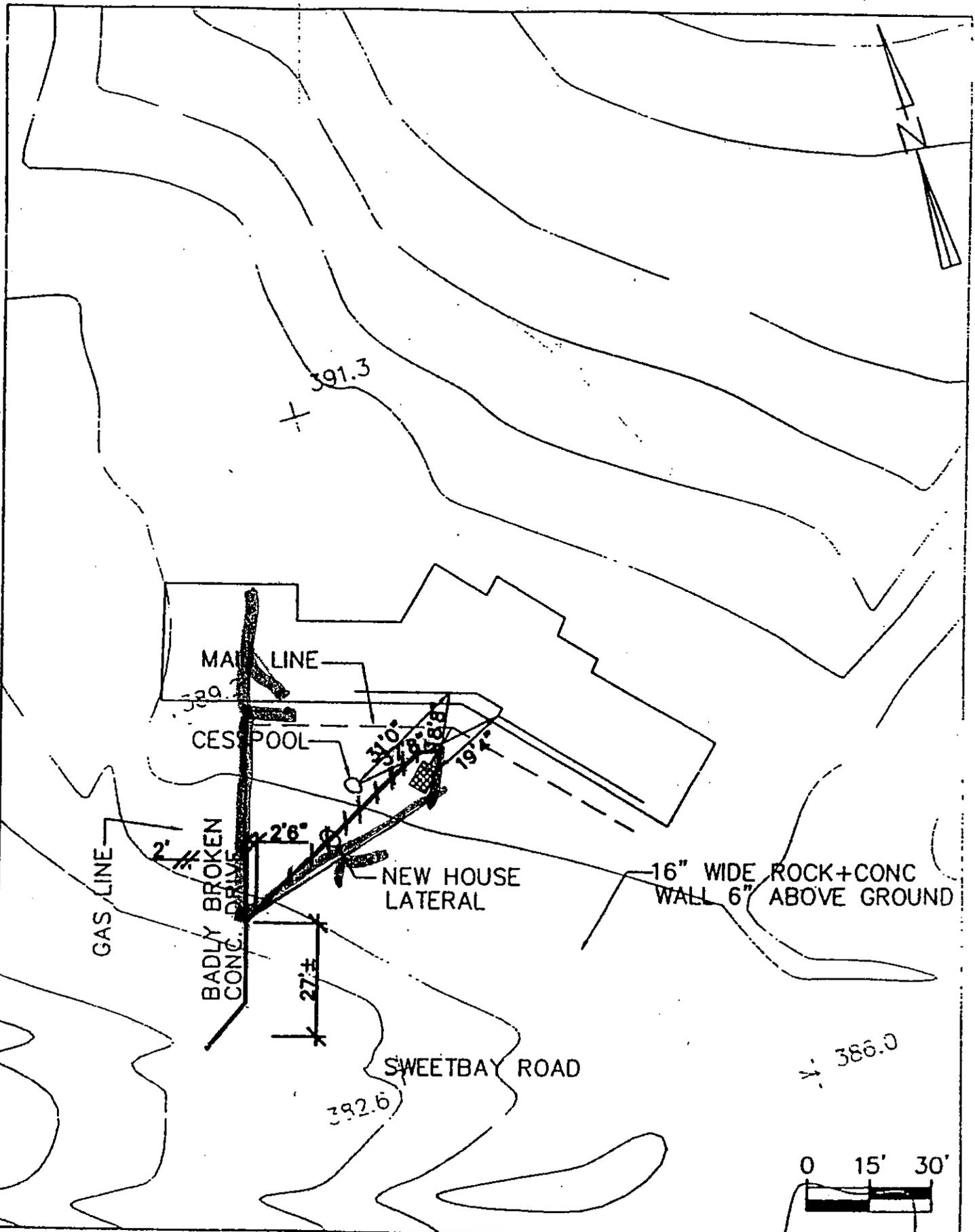
TREES

PLUM TREE RD.

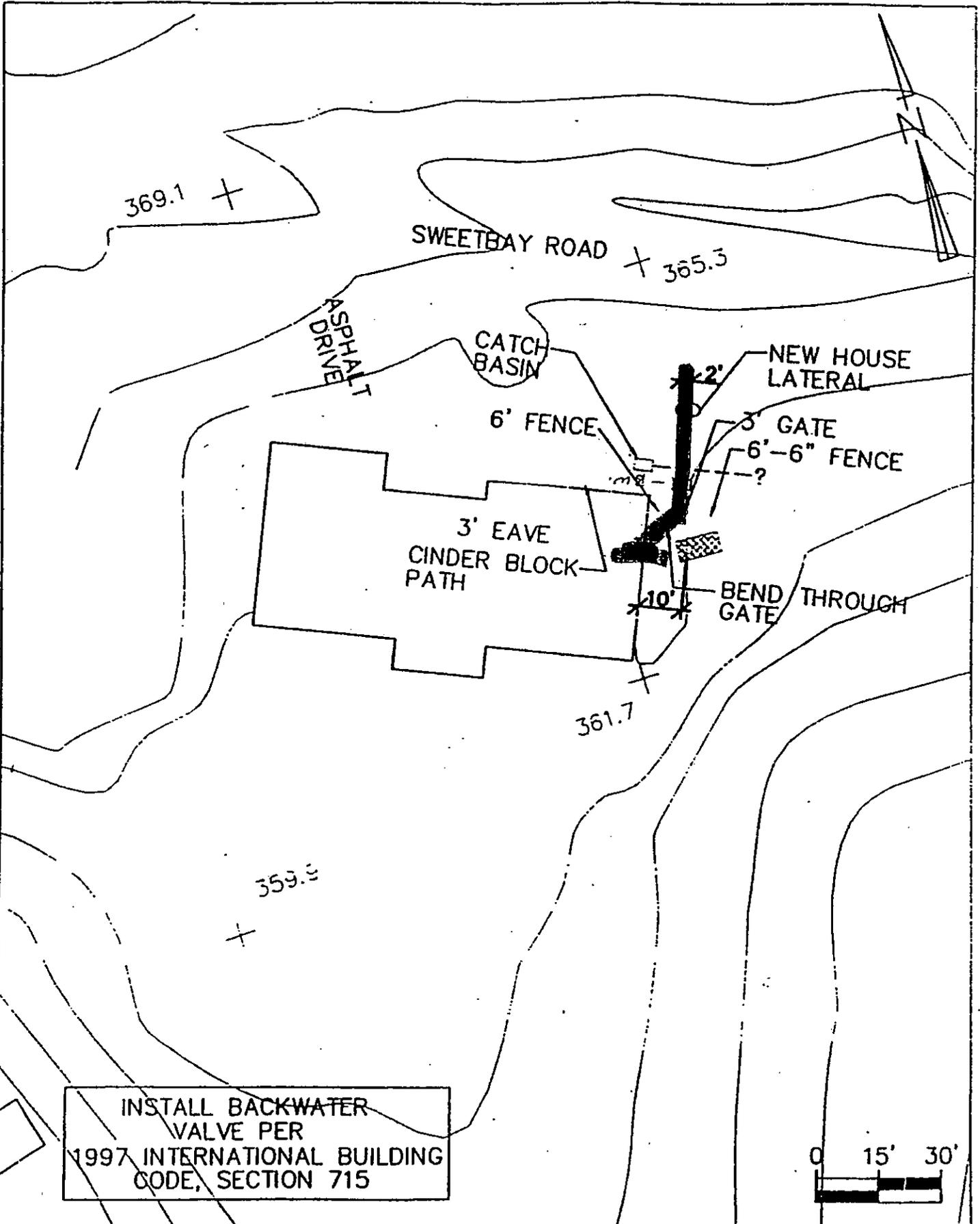
0 15' 30'

JM-TREE.DWG RAD

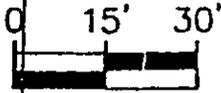
04/13/00 3



4/123/00 6--SWEETBAY.DWG RAD

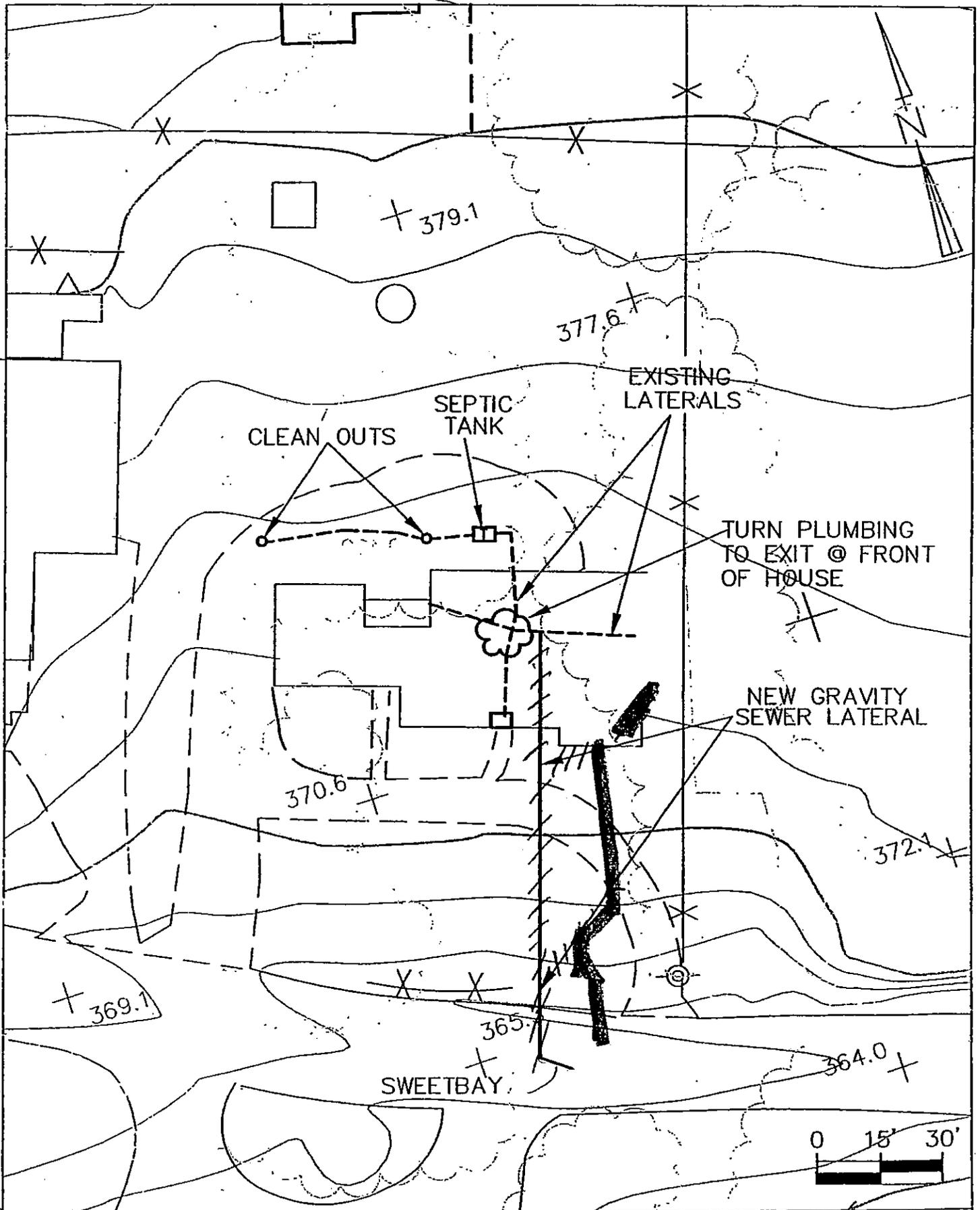


INSTALL BACKWATER VALVE PER 1997 INTERNATIONAL BUILDING CODE, SECTION 715



04/12/00 18-SWEETBAY.DWG RAD

10/02/007-SA.ASSOCIATES

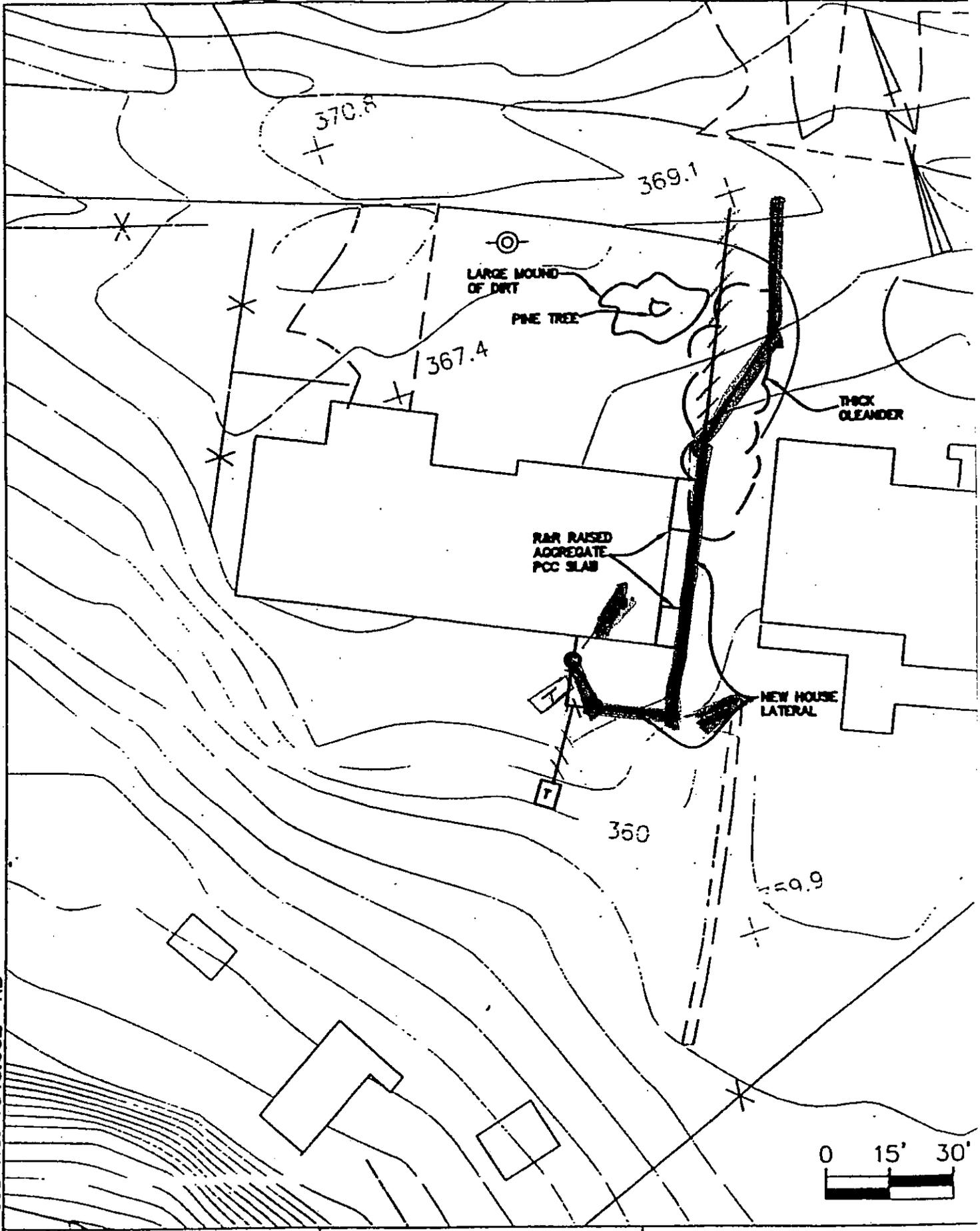


**SA**  
**ASSOCIATES**  
 CONSULTING ENGINEERS

PROPERTY, # 71  
 REF: PLAN SWEET NO. P-16

19 SWEETBAY ROAD  
 SWEETBAY LP

20/00 B NO. 1045.002 RB

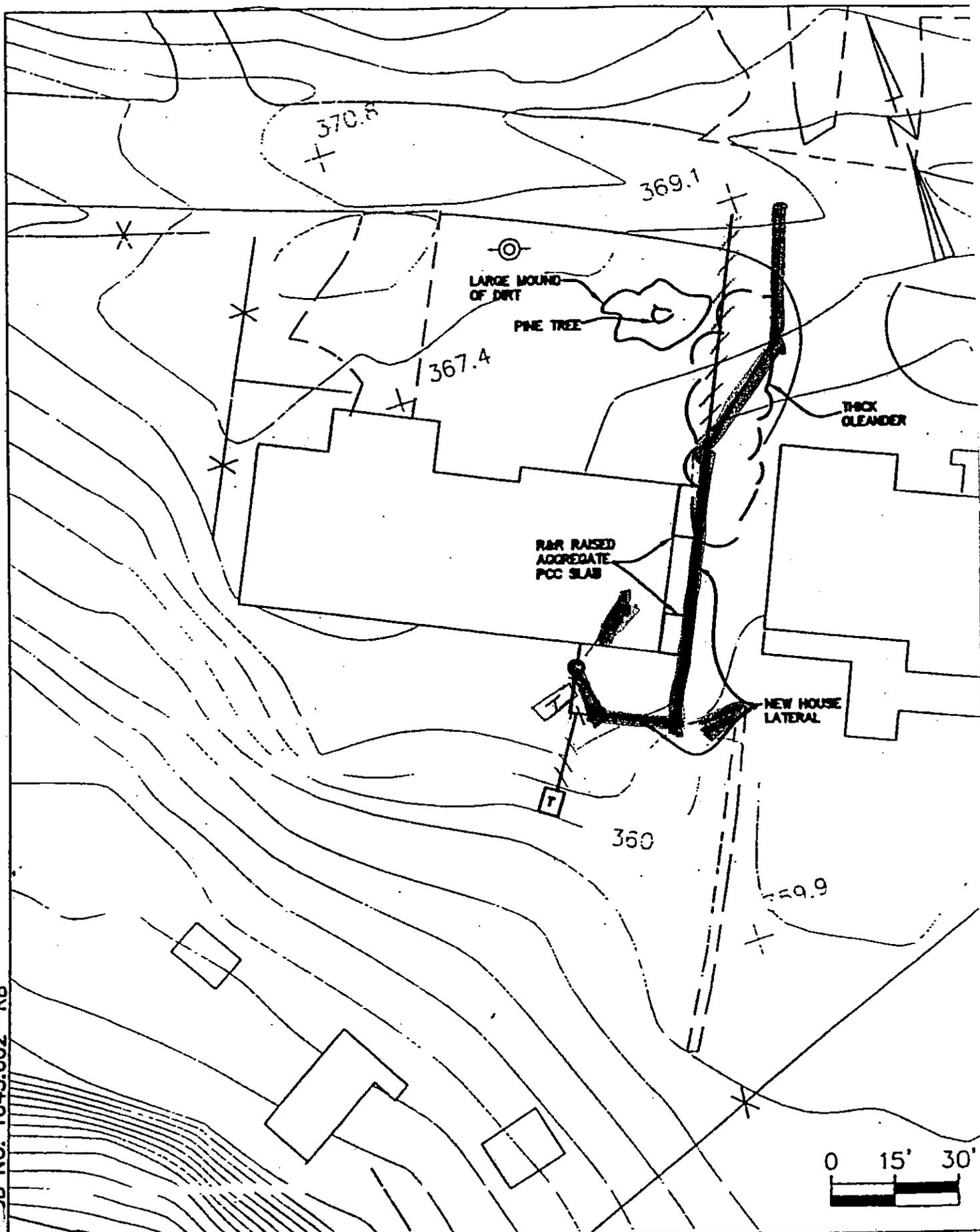


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #87  
 REF: PLAN SHEET NO. 15

20 SWEETBAY DRIVE  
 MARK C. FAIRCHILD

20/00 B NO. 1045.002 RB

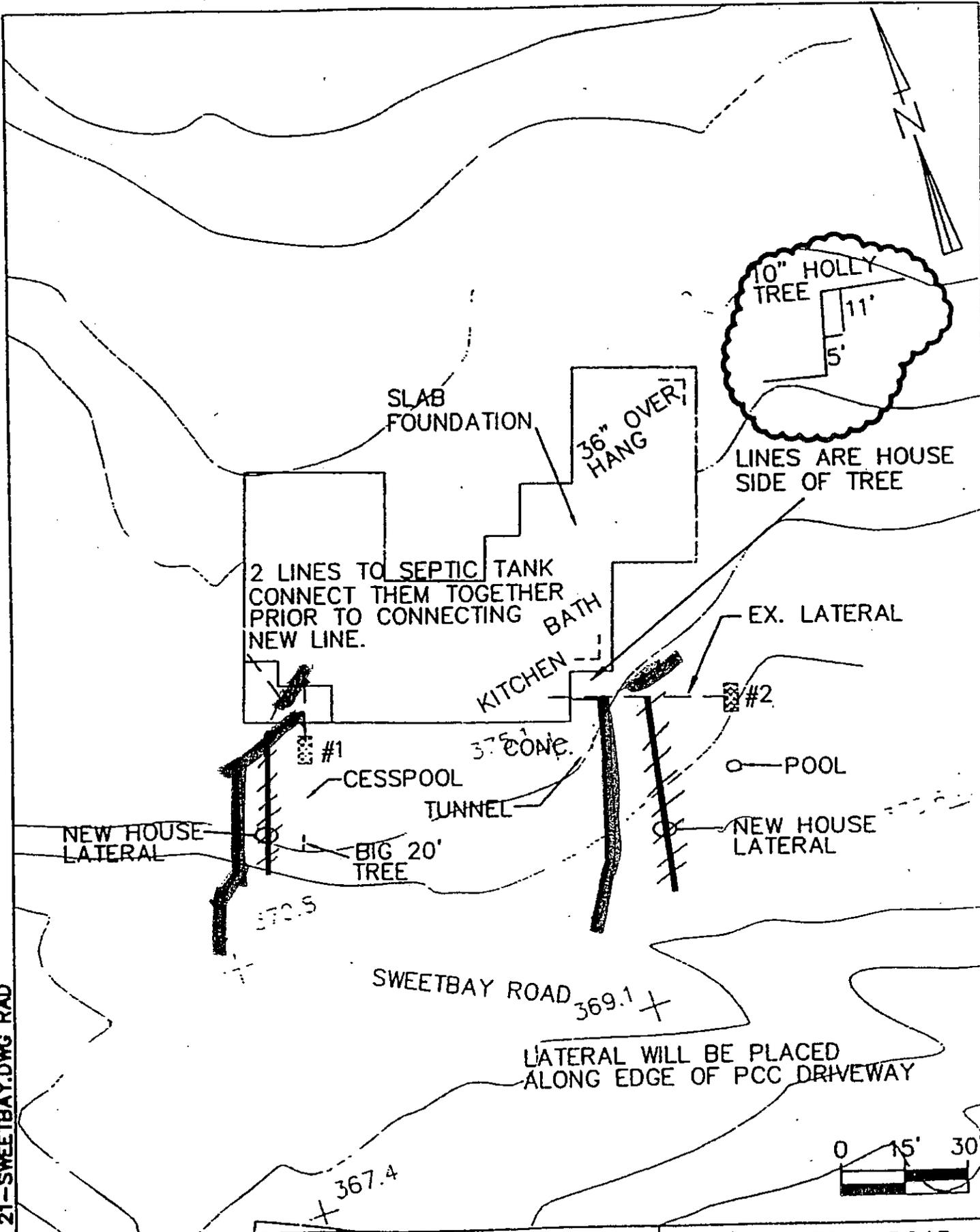


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

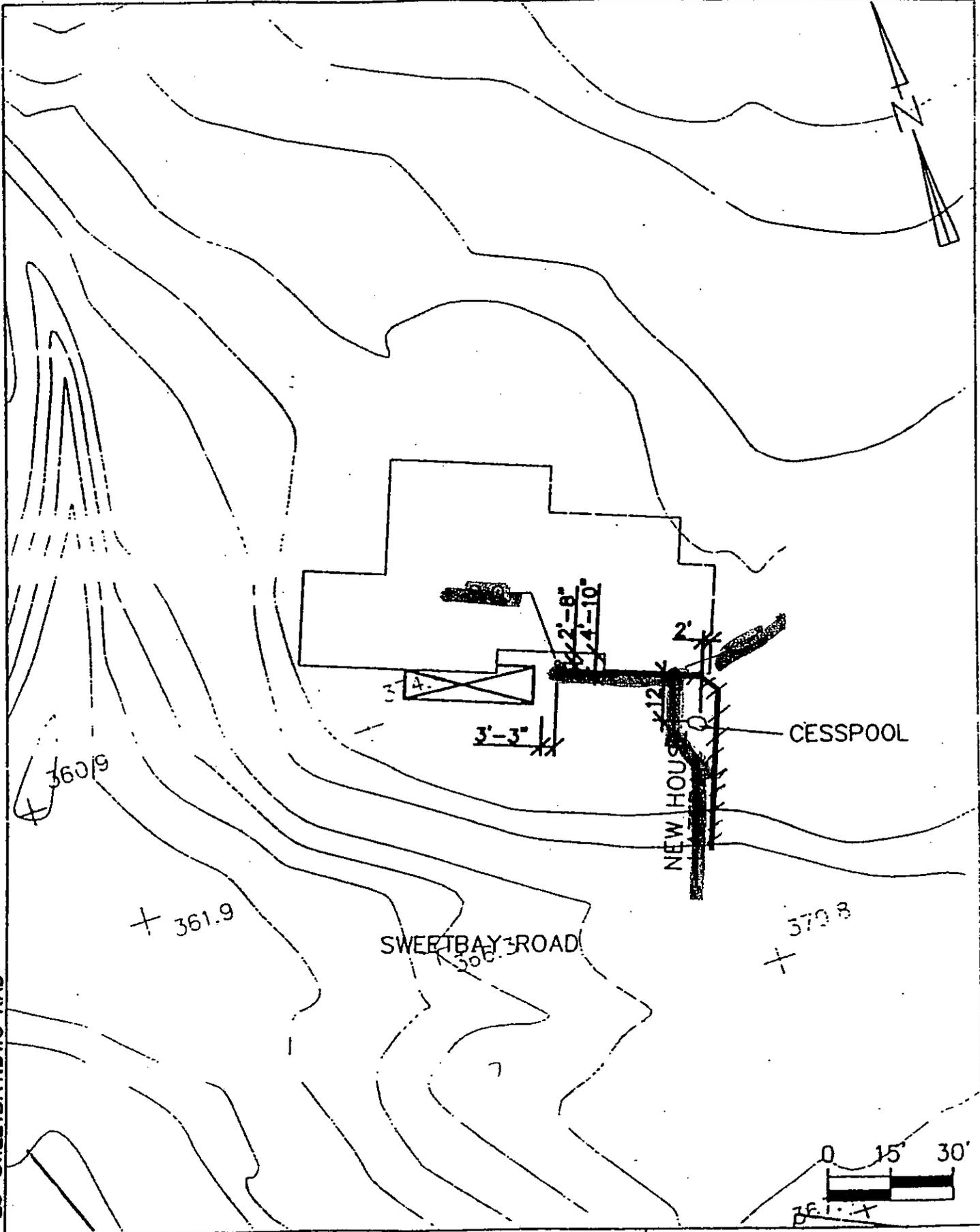
PROPERTY #87  
 REF: PLAN SHEET NO. 15

20 SWEETBAY DRIVE  
 MARK C. FAIRCHILD

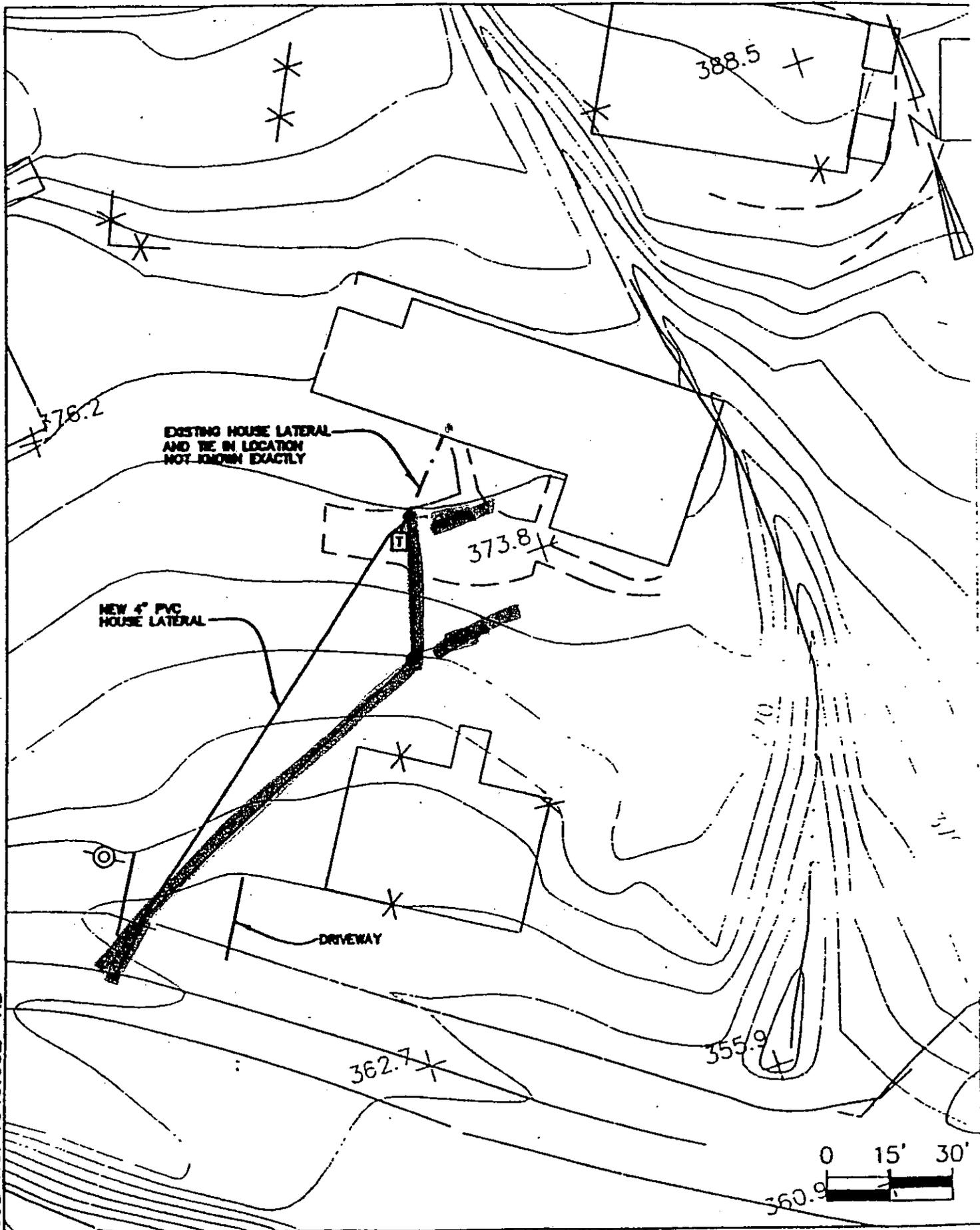
41/00 21-SWEETBAY.DWG RAD



13/00 23-SWEETBAY.DWG RAD



20/00 JO. NO. 1045.002 RB

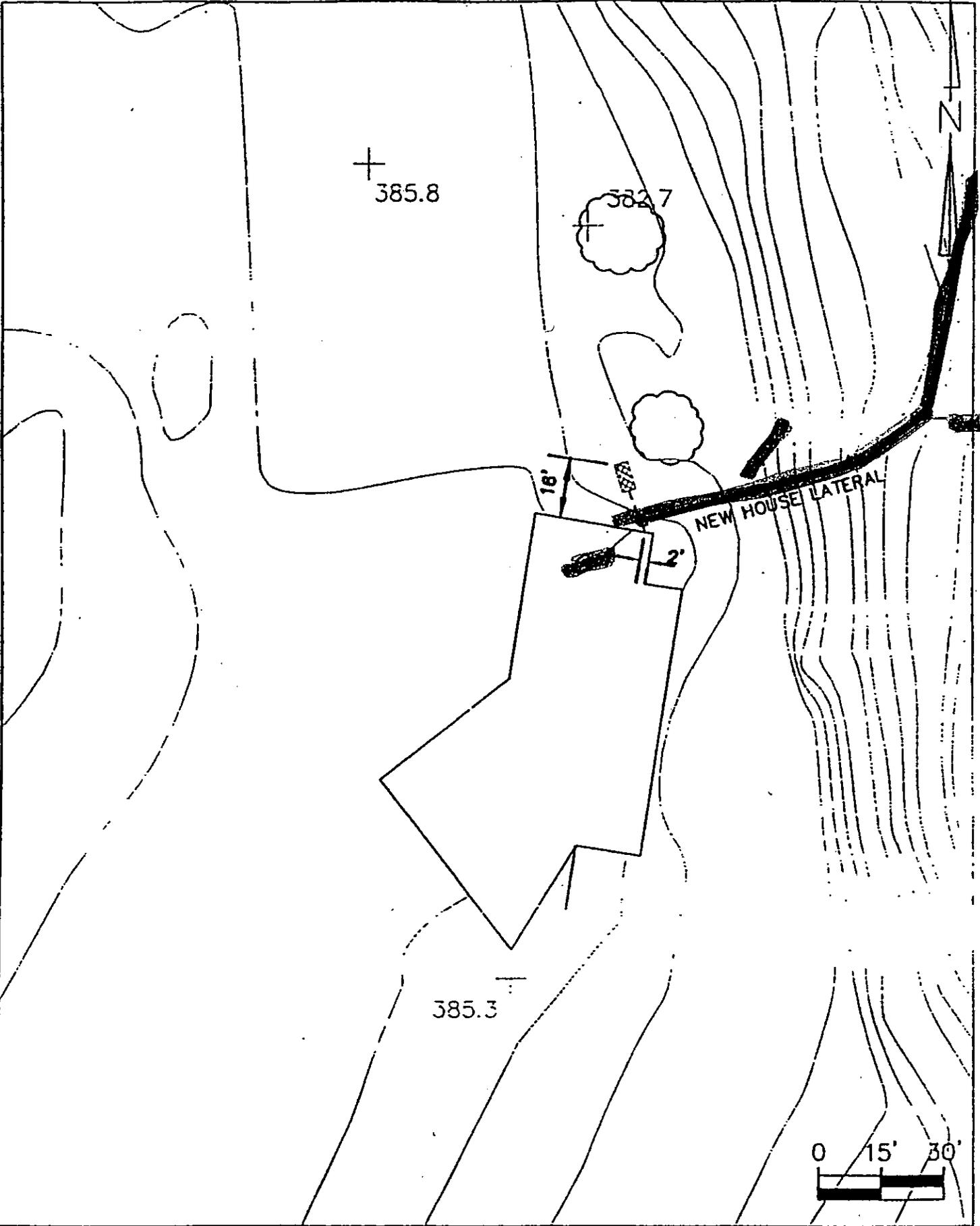


**SA**  
ASSOCIATES

PROPERTY #74  
REF: PLAN SHEET NO. 16

25 SWEETBAY ROAD  
WILLIAM M. PETAK

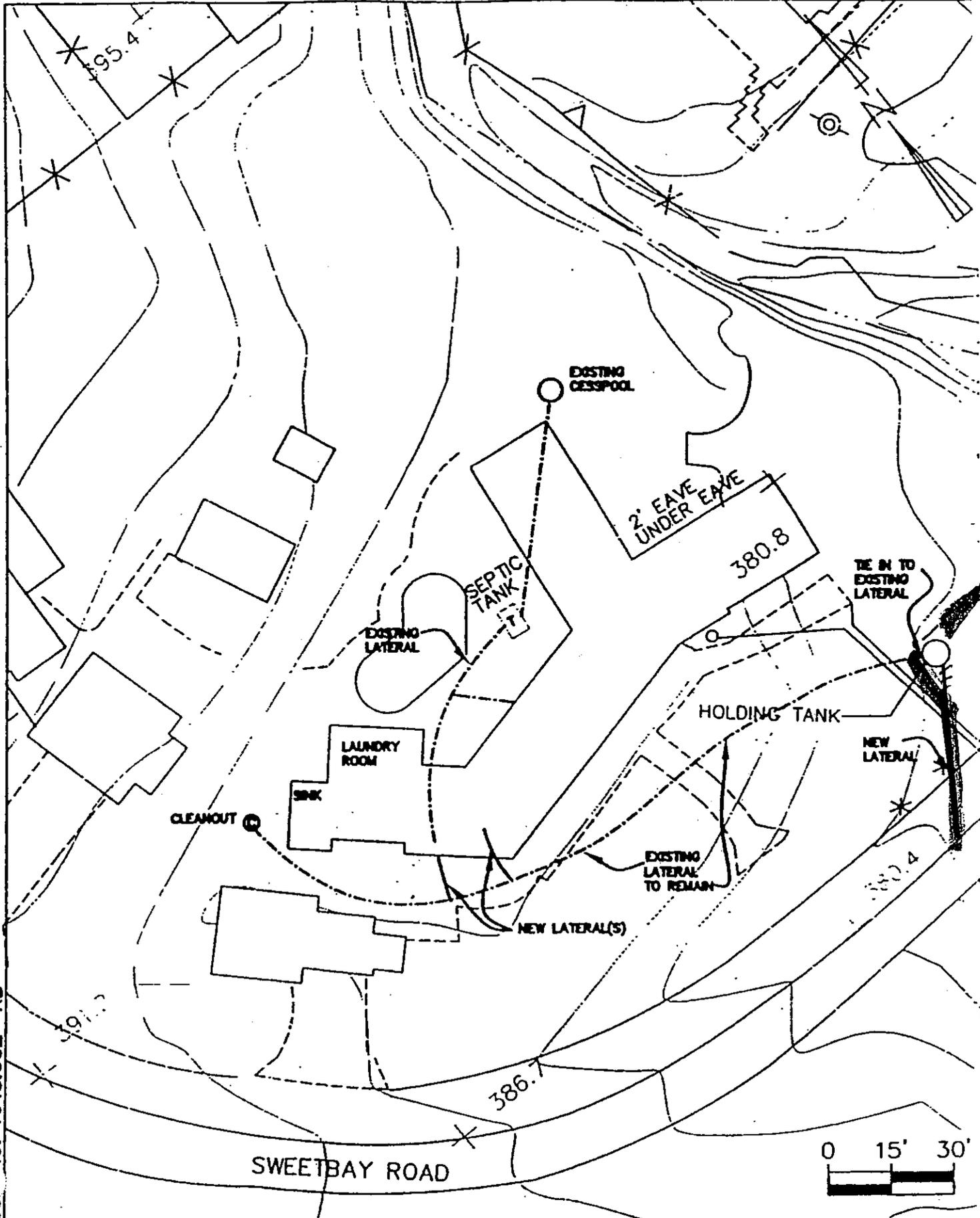
3/15/00 20--SWEETBAY.DWG RAD



**CTE ENGINEERS**  
CONSULTING ENGINEERS, INC.

PROPERTY #85  
REF: PLAN SHEET NO. 15

26 SWEETBAY ROAD  
MICHELE A. SMITH

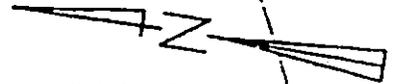


20/00 JC IC .045.002 RB

**SA**  
ASSOCIATES

PROPERTY #76  
REF. PLAN SHEET NO 15

29 SWEETBAY ROAD  
MICHAEL BARTH



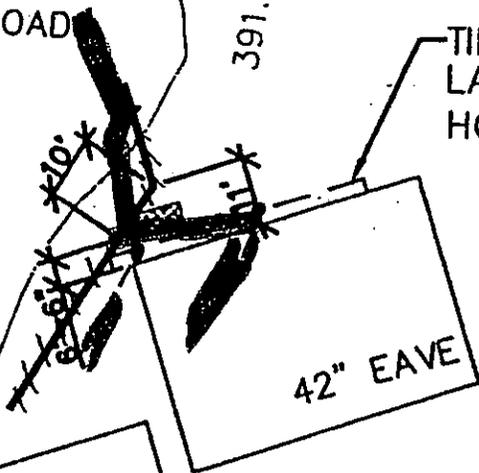
396.8

SWEETBAY ROAD

391.2

TIE IN SECOND LATERAL TO NEW HOUSE LATERAL

PICK UP DRAIN LINE FROM REAR BLDG. EXACT LOCATION UNKNOWN



42" EAVE

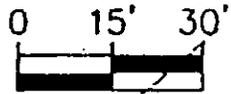
395.3

391.5

392.9

4/13/08 SWEETBAY.DWG RAD

INSTALL BACKWATER VALVE PER 1997 INTERNATIONAL BUILDING CODE, SECTION 715



390.8

395.4

INTERCEPT DRAIN LINE  
UNDER HOUSE AND REROUTE  
TO THE FRONT AS SHOWN

400.2

TURN  
PLUMBING  
UNDER HOUSE  
CONNECT AS SHOWN  
2' OVERHANG  
DIM ARE GOOD

IN ORDER TO  
MISS PINE TREES  
MOVE NEW LATERAL  
OVER 8'-1" TO CORNER  
OF DRIVEWAY

DIRT DRIVE

SPRINKLER

BRICK WALL

CONC DRIVE

403.6

SWEETBAY ROAD

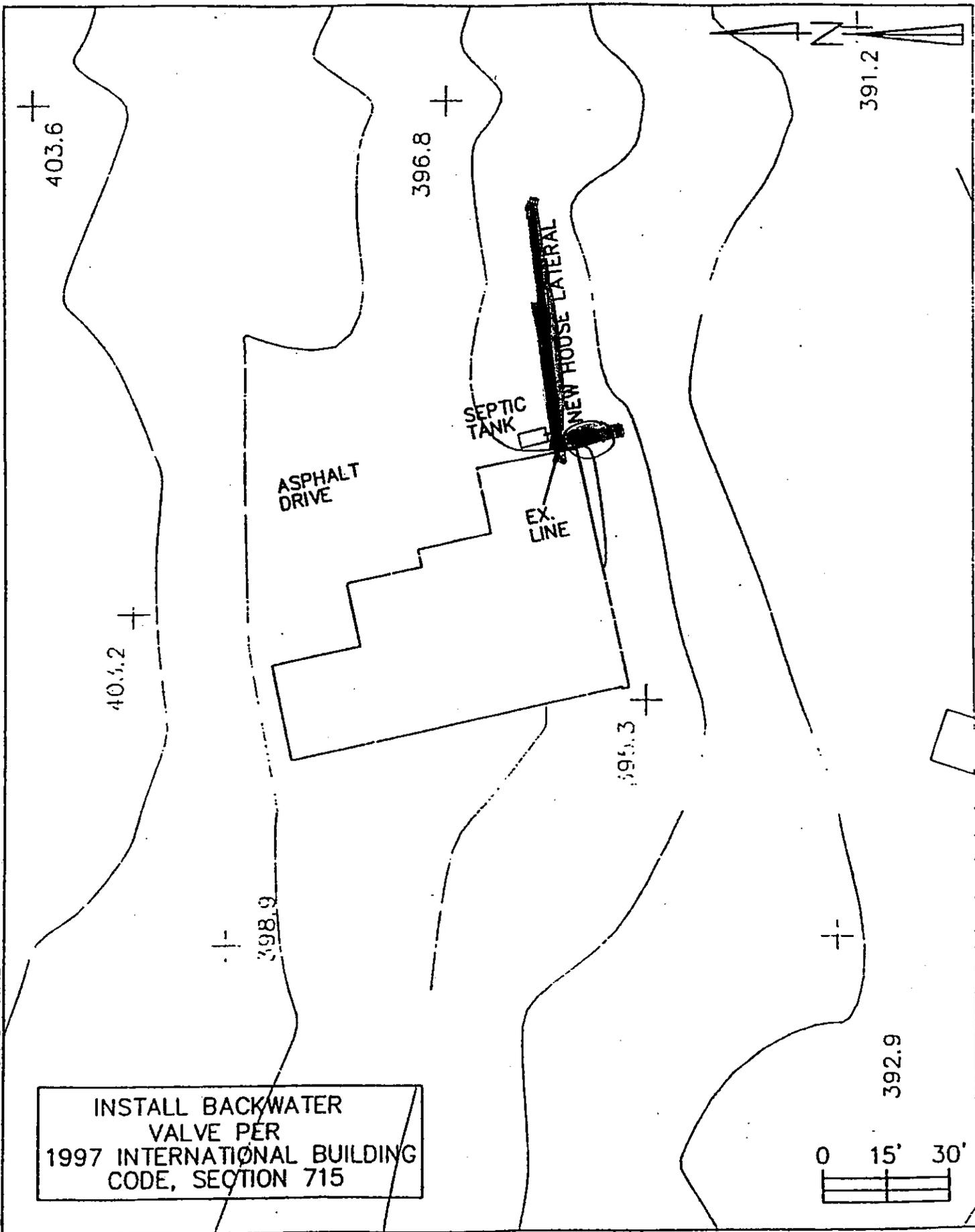
396.8

AVOID PINE TREES

13/00 31-SWEETBAY.DWG RAD



13/00 32-SWEETBAY.DWG RAD



INSTALL BACKWATER  
VALVE PER  
1997 INTERNATIONAL BUILDING  
CODE, SECTION 715



**CTE** ENGINEERS

PLAN SHEET NO. 15

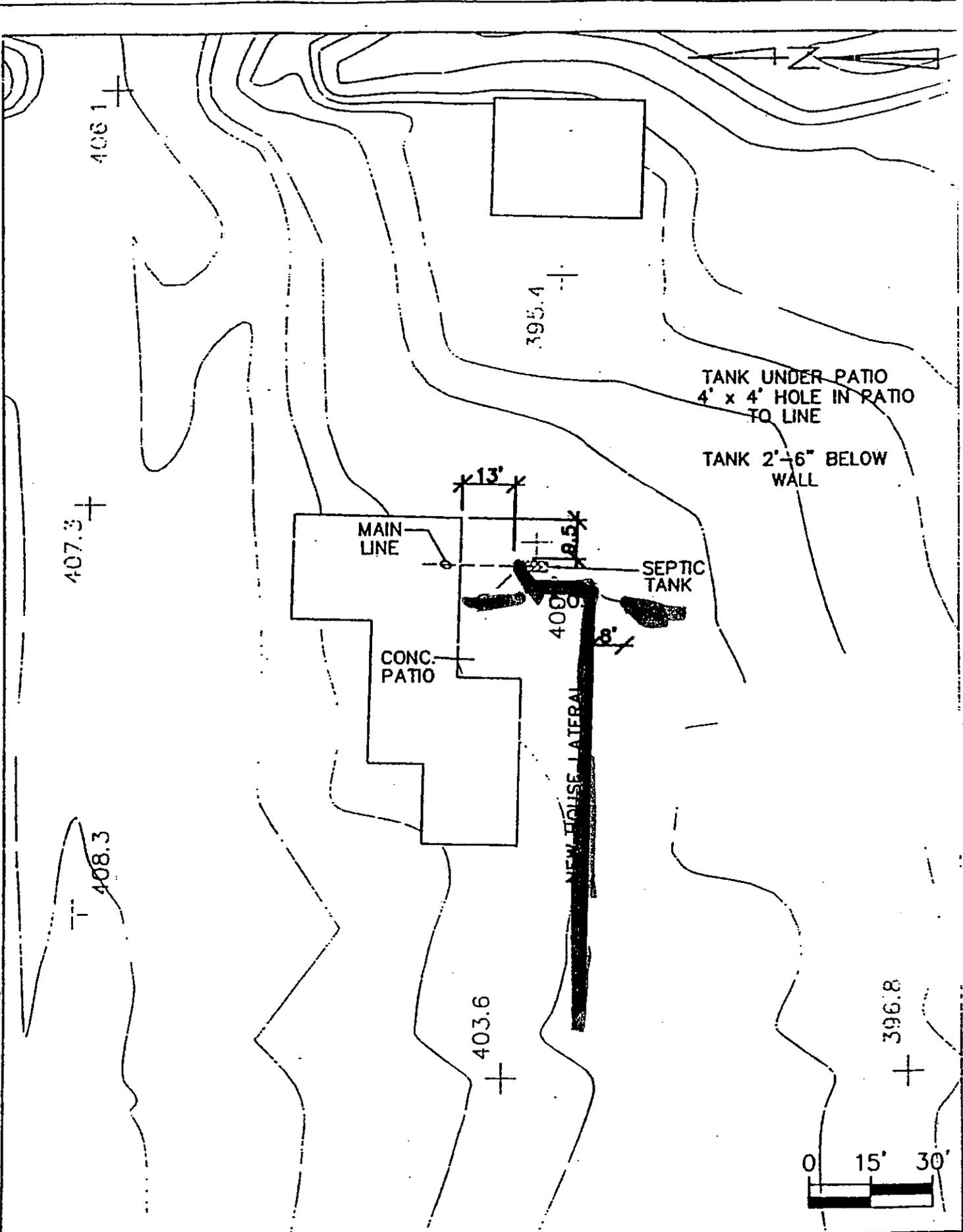
32 SWEETBAY ROAD  
GEORGE & LEANNE TWDWELL

13/00 33-SWEETBAY.DWG RAD

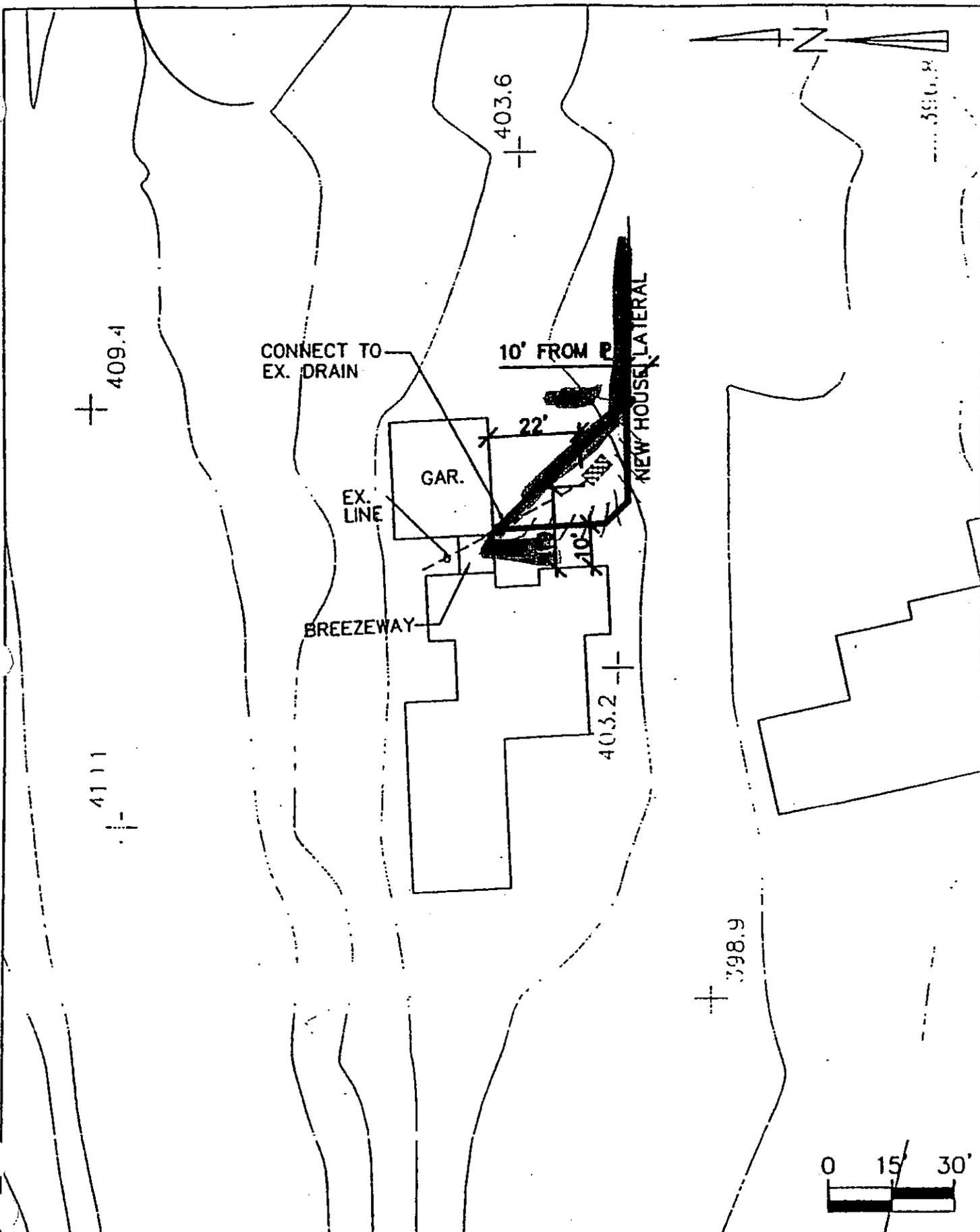
**CTE** ENGINEERS

PLAN SHEET NO. 15

33 SWEETBAY ROAD  
FAY WOODRUFF & ROBERT DOUGLAS

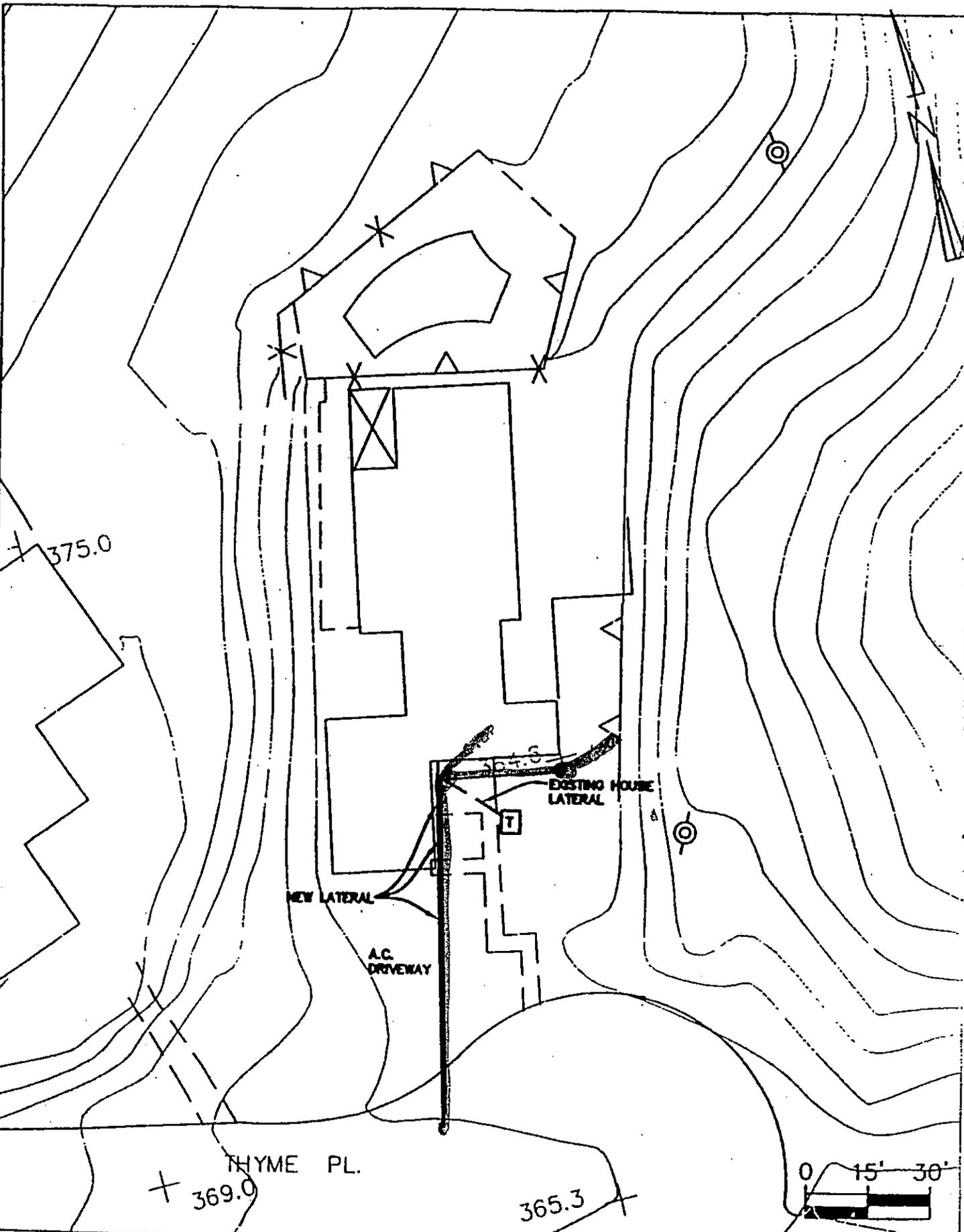


4/13/06 ETBAY.DWG RAD



# THYME PLACE

1/20/00 JOB O. 1045.002 RB

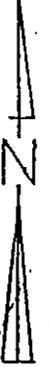


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

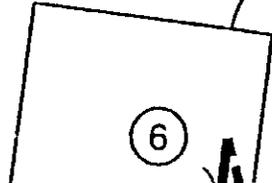
PROPERTY #122  
 REF: PLAN SHEET NO. 19

3 THYME PLACE  
 THOMAS J. MATTIS  
 KATHLEEN MATTIS

VANDERLIP



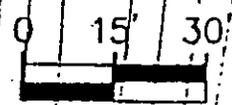
510.5



EXIST. MAIN LINE

PICK UP DRAIN UNDER HOUSE AND COME OUT THE BACK

PEPPER TREE



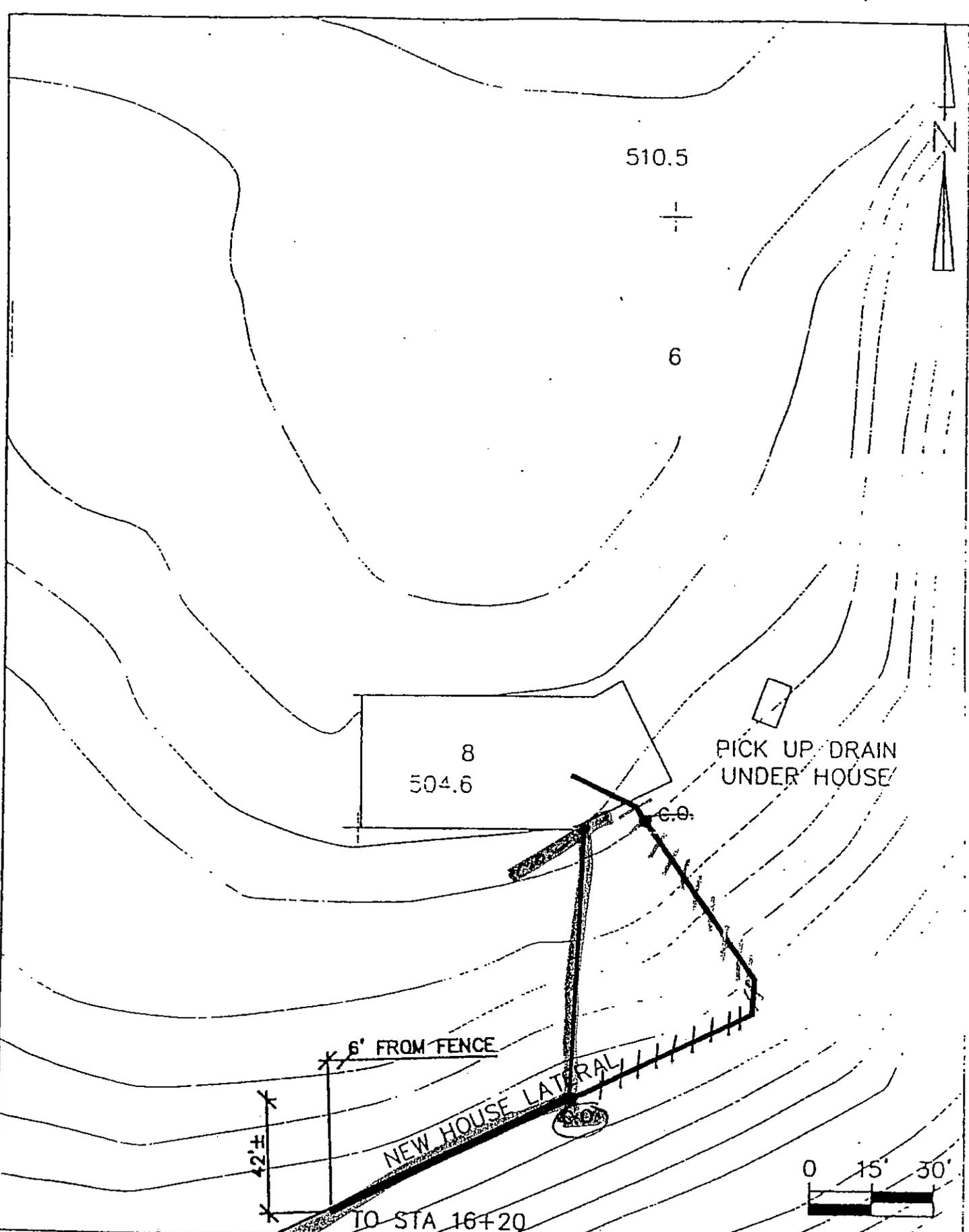
04/13/00 1006.DWG RAD

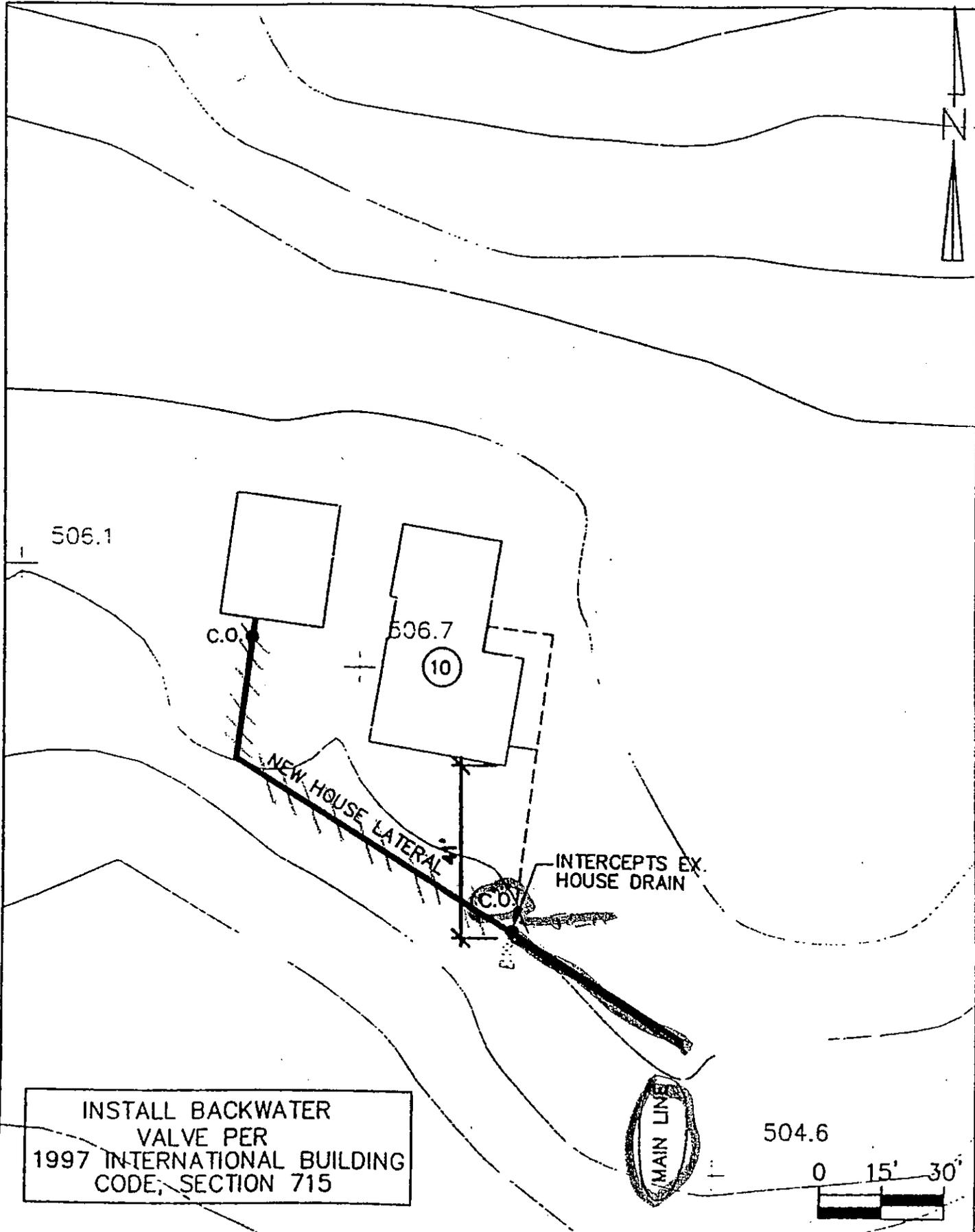
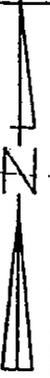
**CTE ENGINEERS**  
 CONSOER TOWNSEND ENVIRONMENTAL ENGINEERS, INC.

PLAN SHEET NO. P-14  
 PAGE NO. A-33

6 VANDERLIP DRIVE  
 KATHLEEN SNELL-NO.1  
 PROP. NO. 46

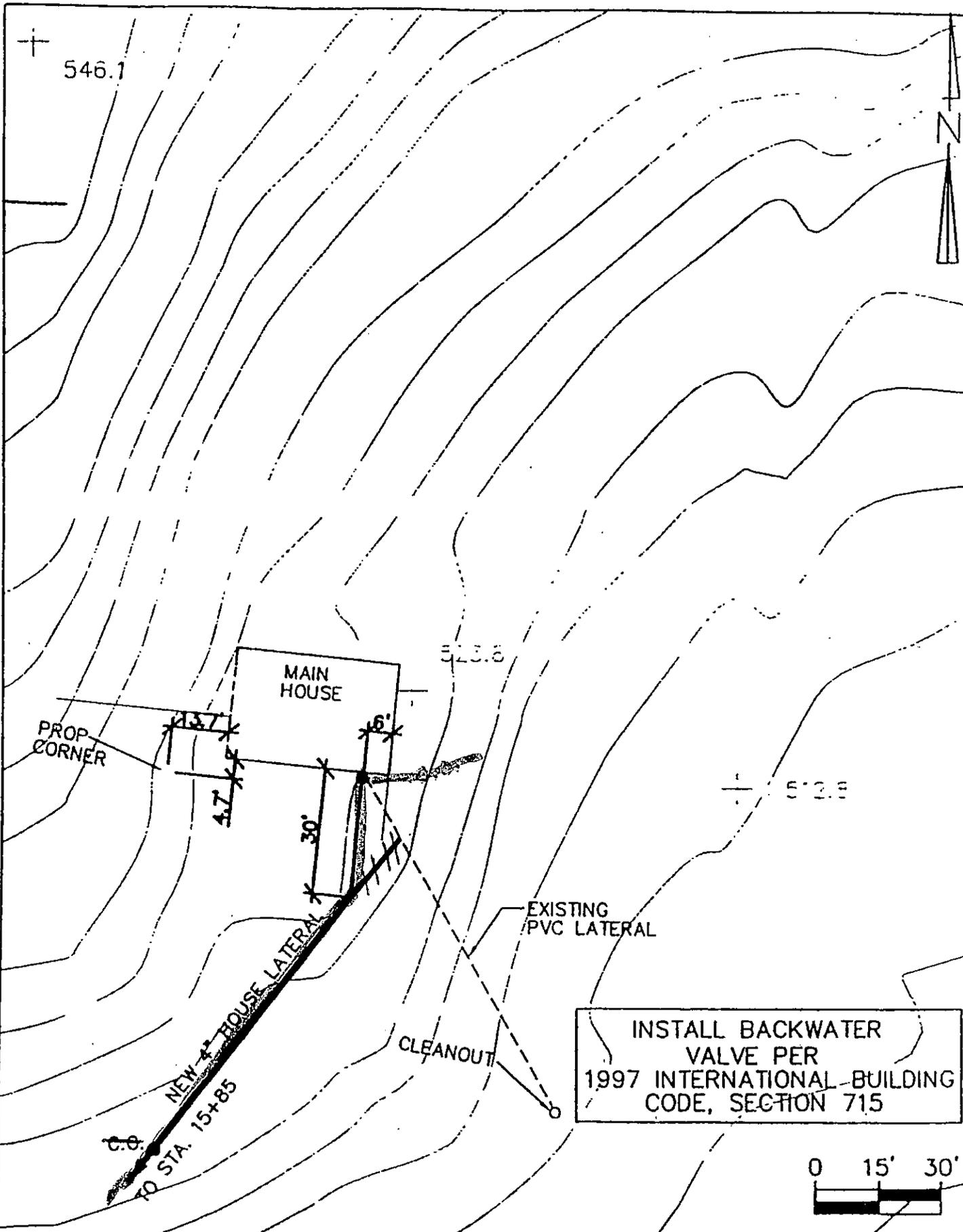
24/13/00 00 WG RAD





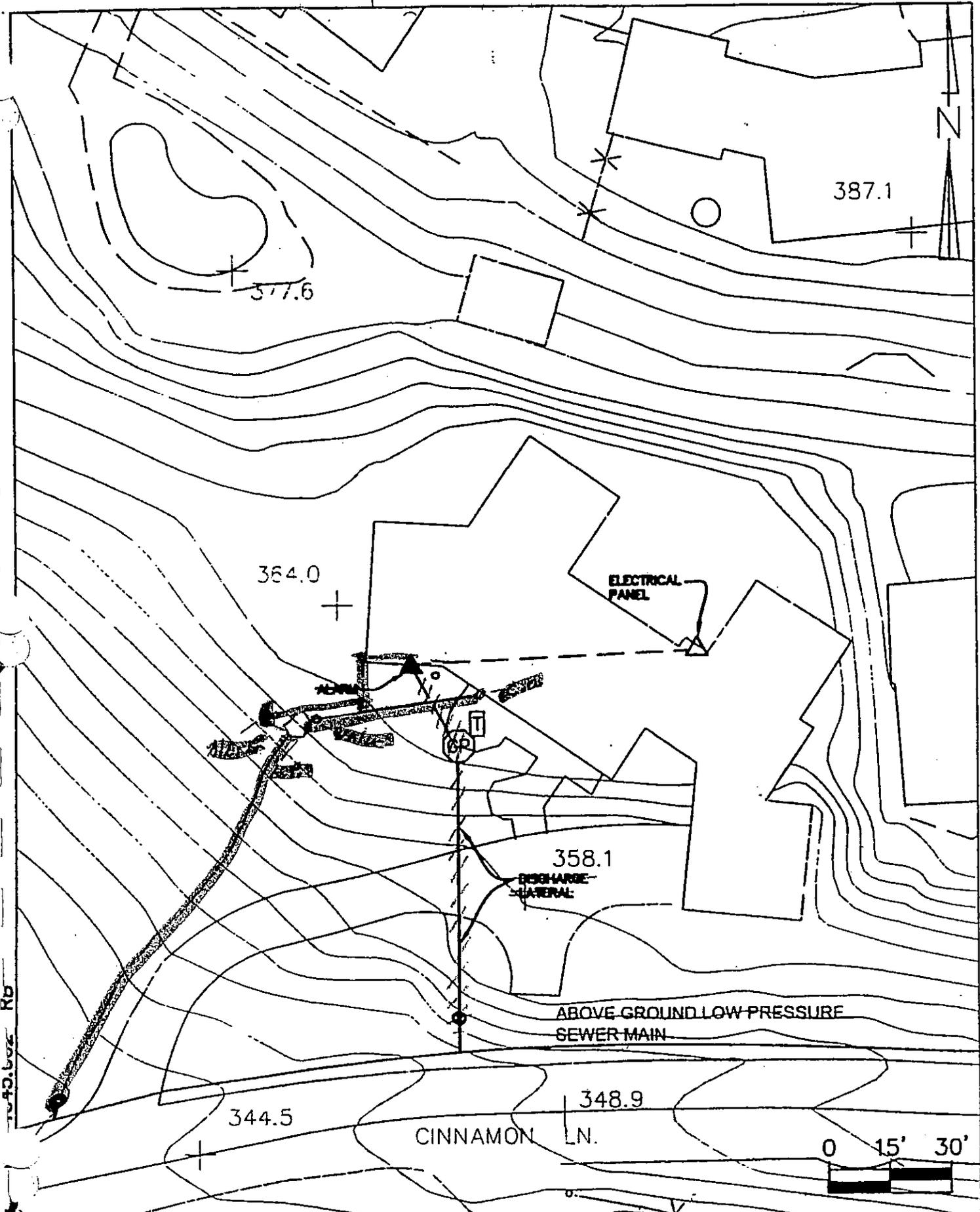
INSTALL BACKWATER VALVE PER 1997 INTERNATIONAL BUILDING CODE, SECTION 715

04/13/00 10u+.DWG RAD



4/13/00 1003.00 G RAD

# CINNAMON LANE



45.6oz Rd

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #106  
REF: PLAN SHEET NO. 21

1 CINNAMON  
~~AMY RHATT~~

ABOVE GROUND LOW PRESSURE  
SEWER MAIN

CINNAMON LN.

348.9

354.0

340.2

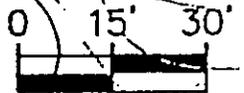
DISCHARGE  
LATERAL

ELECTRICAL  
PANEL

ELECTRICAL  
CONDUIT

NEW HOUSE LATERAL

327.3



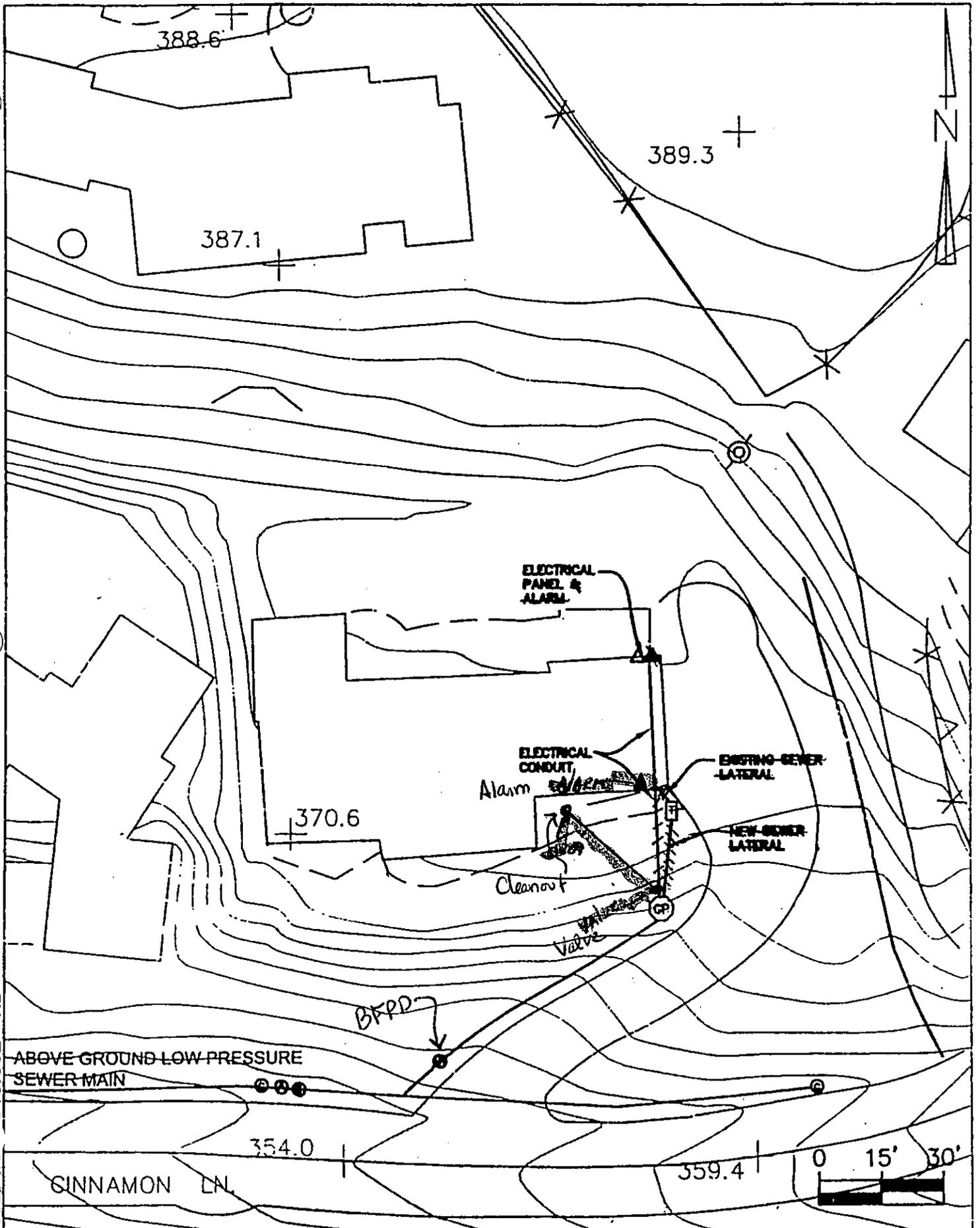
045.002 RB

20/00 JU

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #133  
REF. DIAM SHEET NO. 21

2 CINNAMON LN  
GEROLD WEBER



20/00 JOB NO. 045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #107  
DEC. PLAN SHEET NO. 21

3 CINNAMON  
RONALD K. BURCHETT

CINNAMON LN.

ABOVE GROUND LOW PRESSURE  
SEWER MAIN

ELECTRICAL  
PANEL &  
ALARM

ELECTRICAL  
CONDUIT

EXISTING SEWER  
LATERAL

NEW SEWER  
LATERAL

Alarm

Cleanout

Valve

BFPD

388.6

389.3

387.1

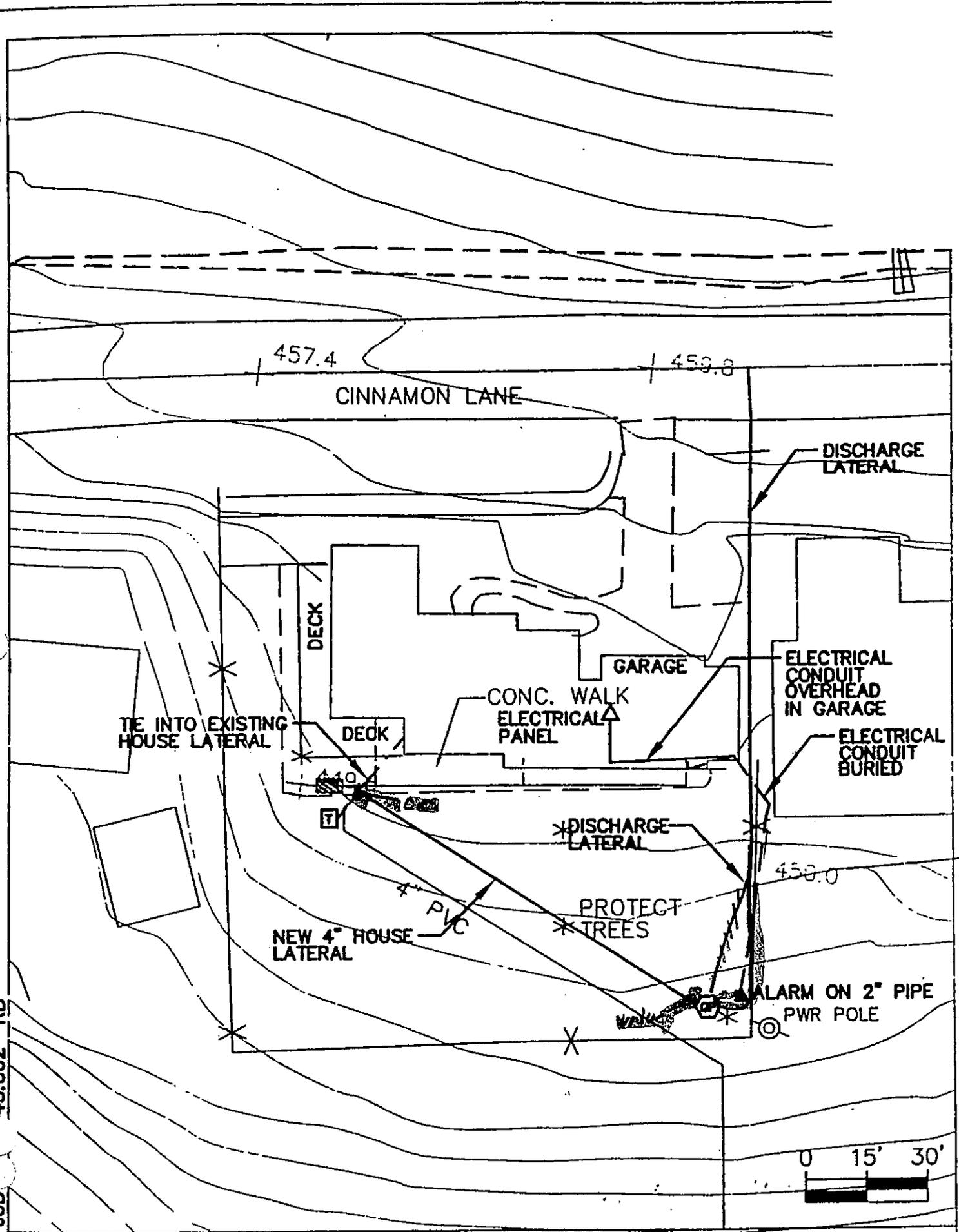
370.6

354.0

359.4

0 15' 30'

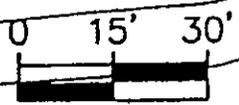
2/00 JOB 45.002 RB



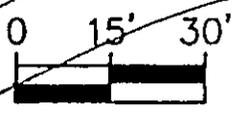
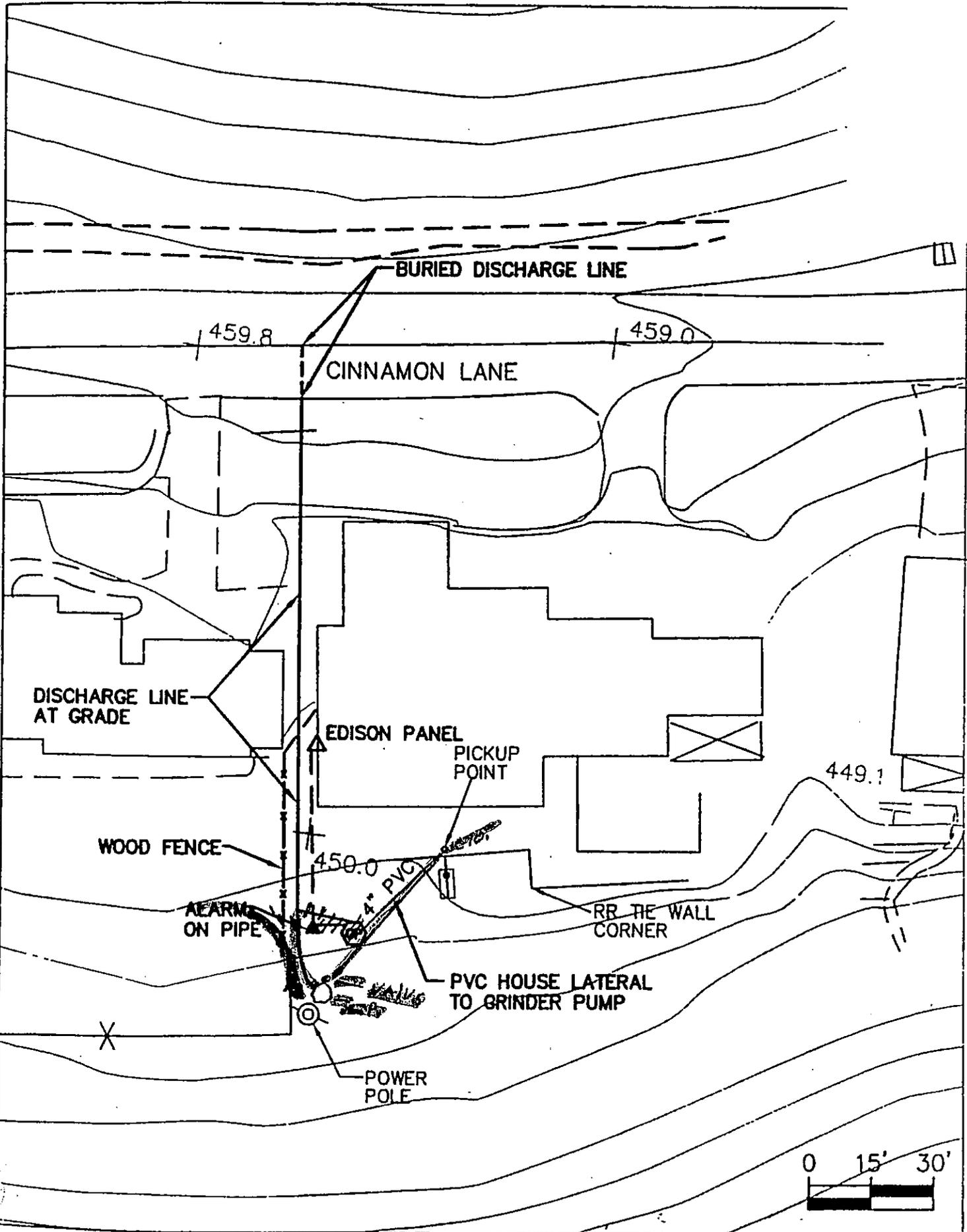
**SA**

PROPERTY #27  
REF. PLAN SHEET NO 10

36 CINNAMON  
JEREMY ROBIN DAVIES



1/20/00 1045.002 RB

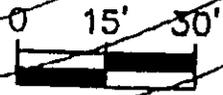


**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #28  
REF: PLAN SHEET NO. P-11

38 CINNAMON  
NEIL GILBERT SIEGAL  
BOBMY C. FRIEND

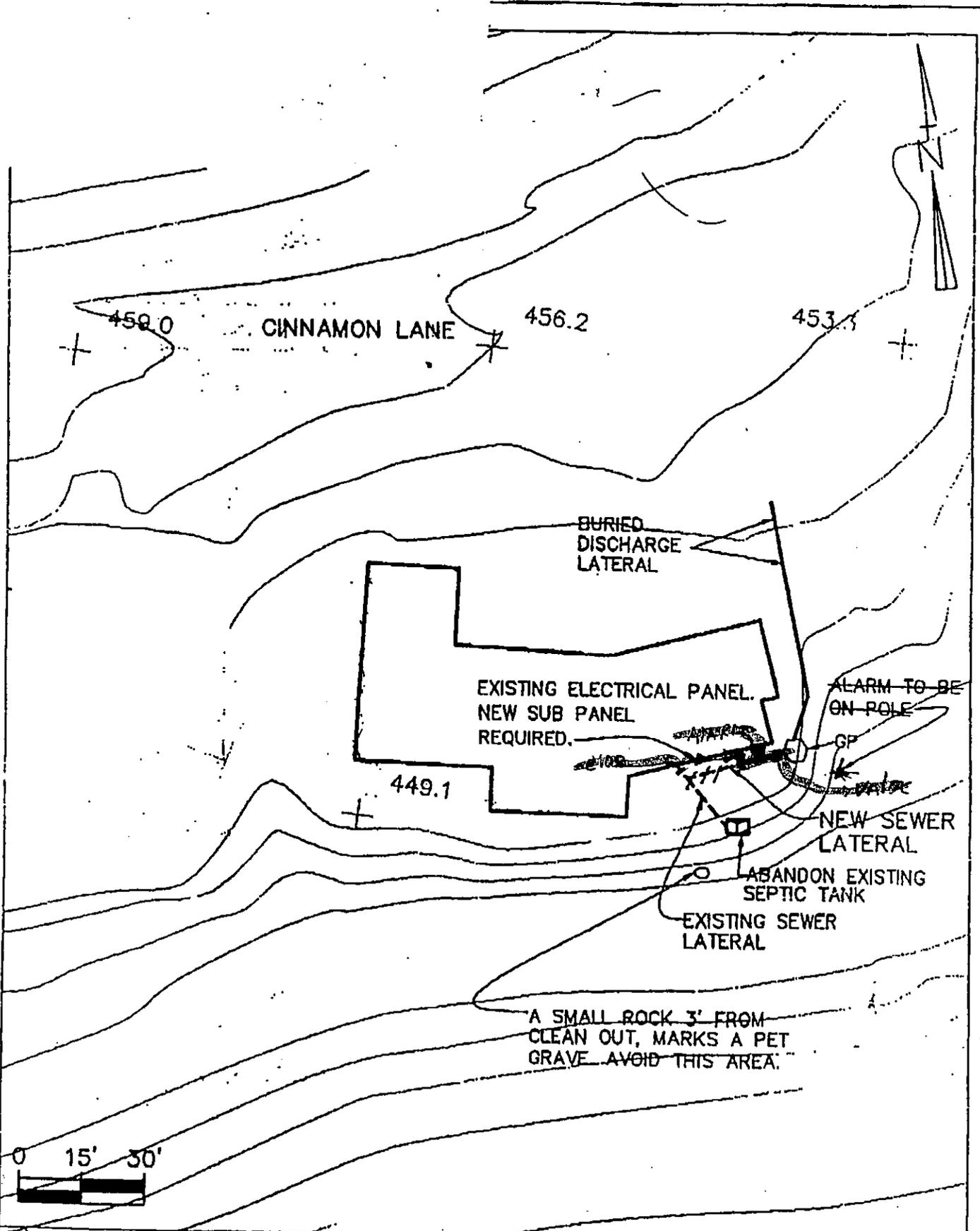
10/10/00/SA-ASSOCIATES.DWG



**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

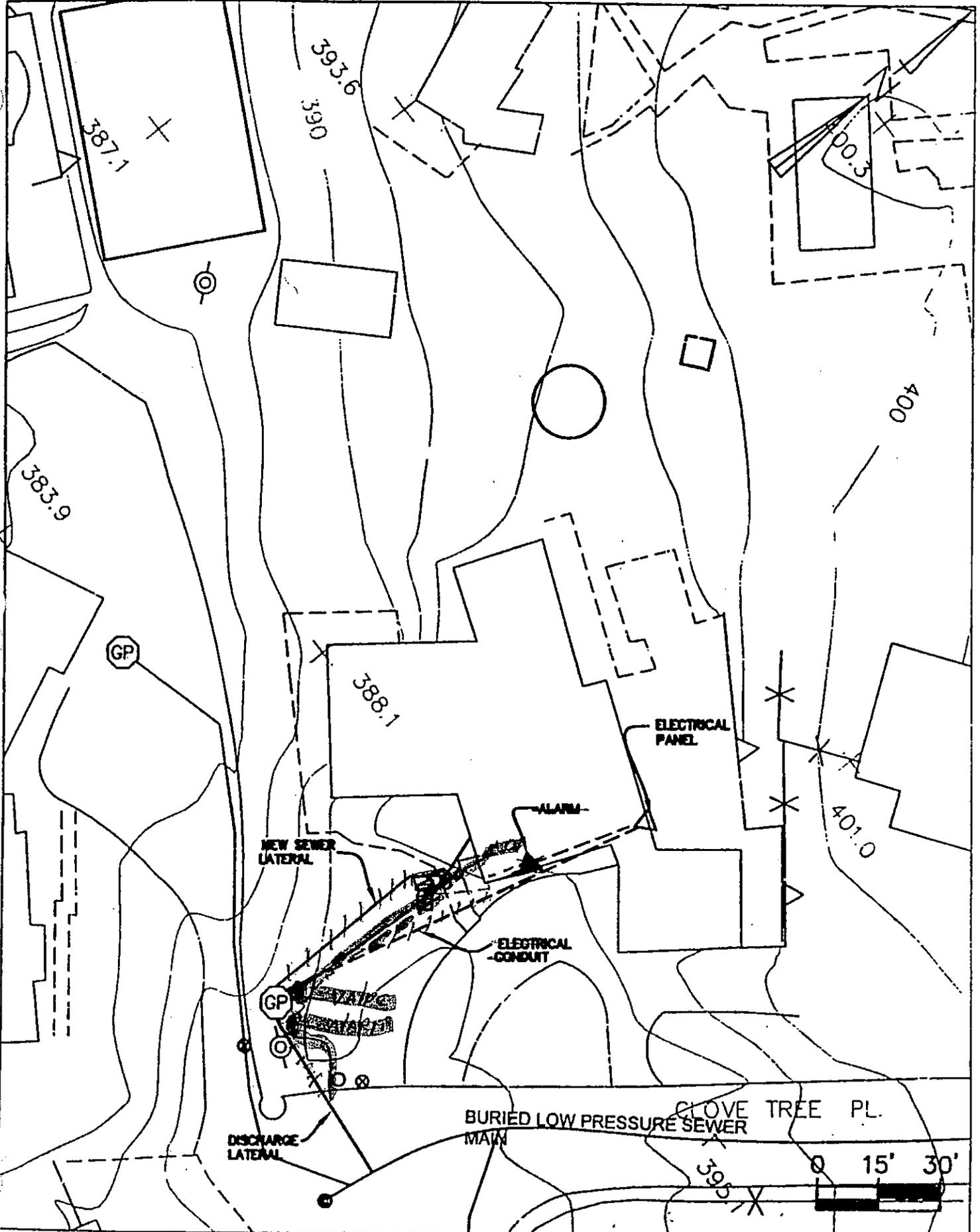
PROPERTY # 24  
REF: PLAN SHEET NO. P-11

40 CINNAMON  
LEW ENSTEDT, CASSIE JONES



CLOVE TREE  
PLACE

20/00 JC 1045.002 RB

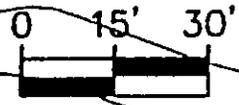
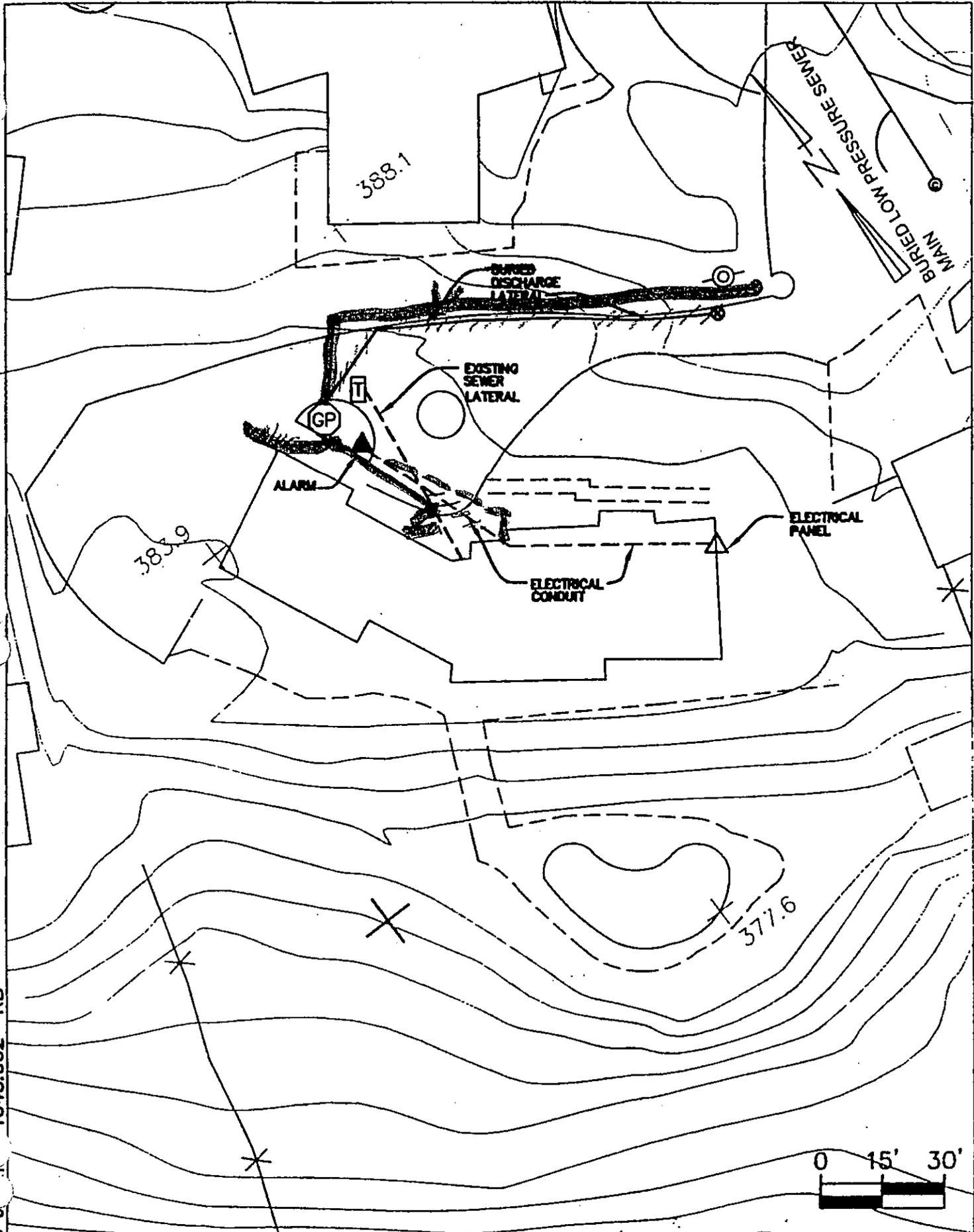


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #114  
 REF: PLAN SHEET NO. 19

3 CLOVE TREE  
 CARL L. GUTIERREZ

1045.002 RB

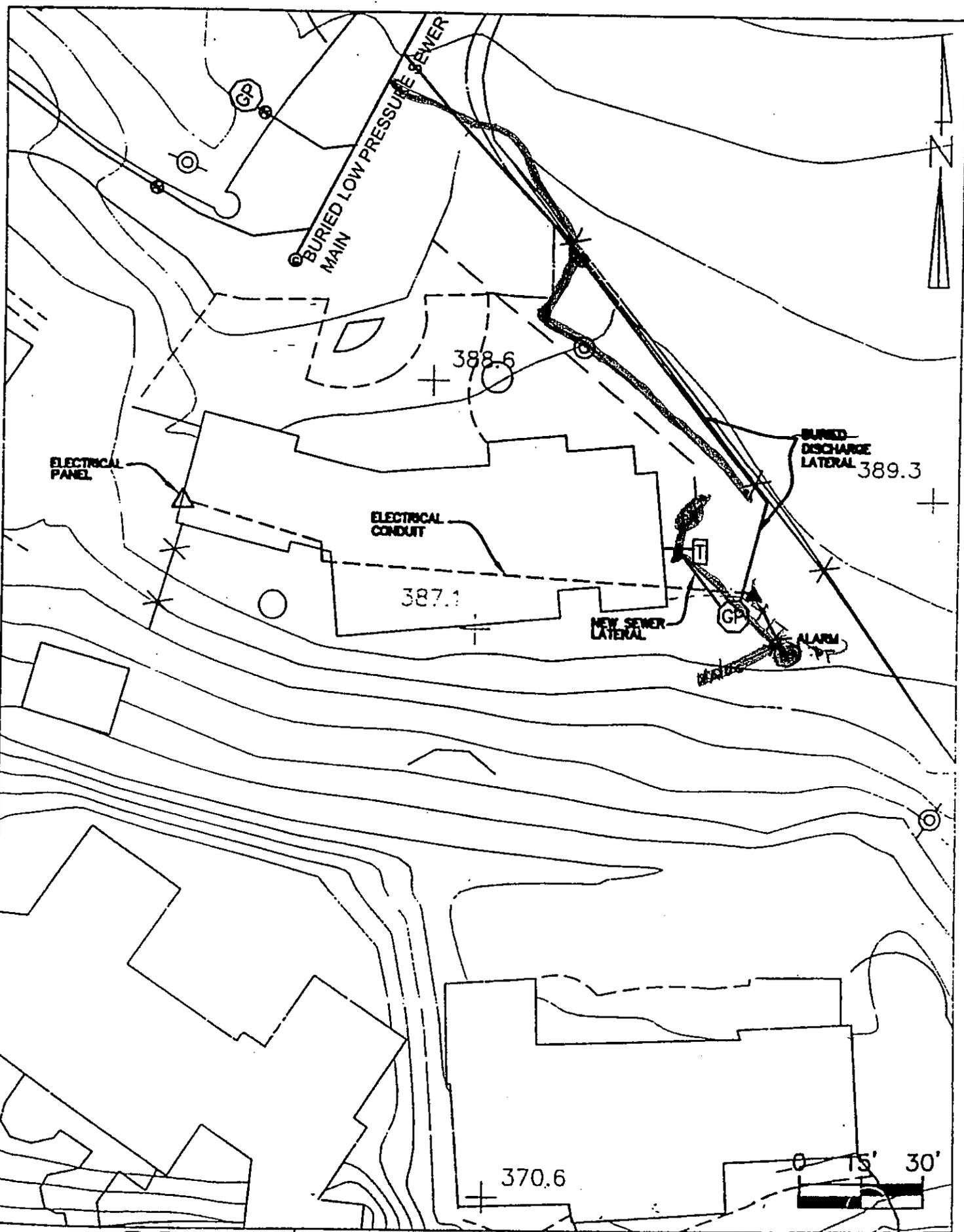


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #105  
 DEC. DI AM SHEET NO. 10

5 CLOVE TREE  
 EDNA MAE NORDSTROM

20/00 JB 1045.002 RB



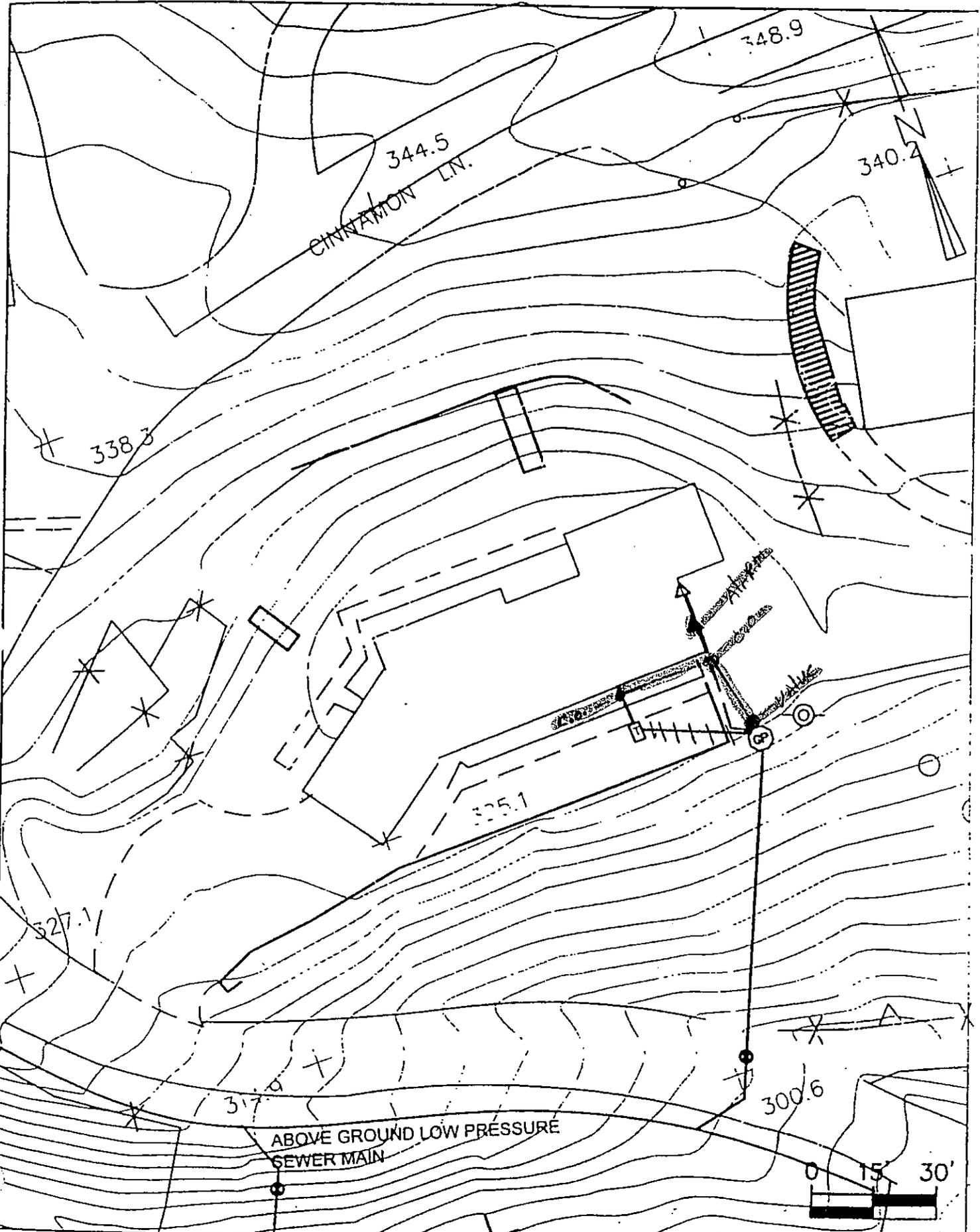
**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #112  
 REF. PLAN SHEET NO 10

6 CLOVE TREE  
 SHARON NOIAN

FIGTREE ROAD

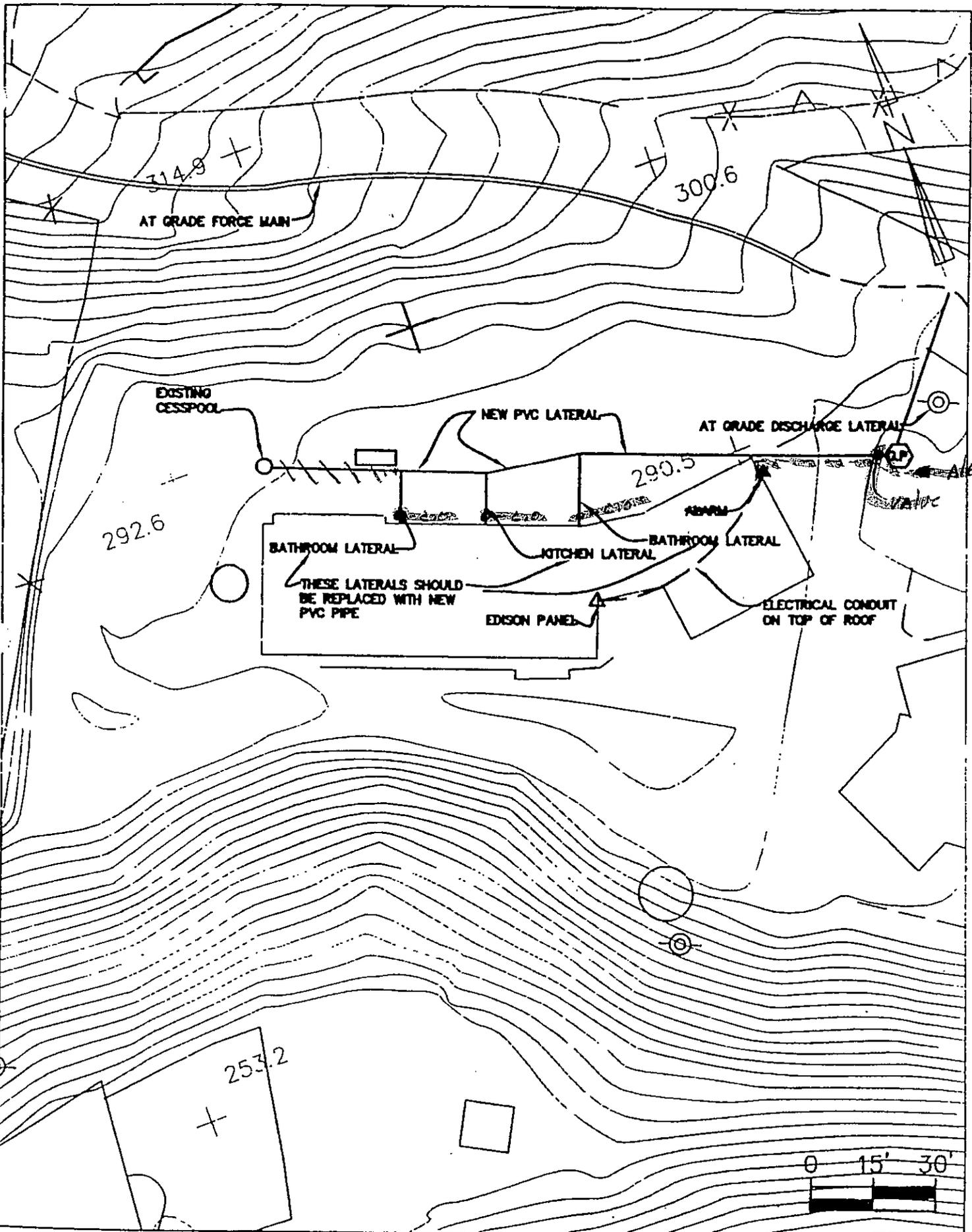
20/00 045.002 RB



**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #134

1 FIG TREE  
 ALFRED CHAN



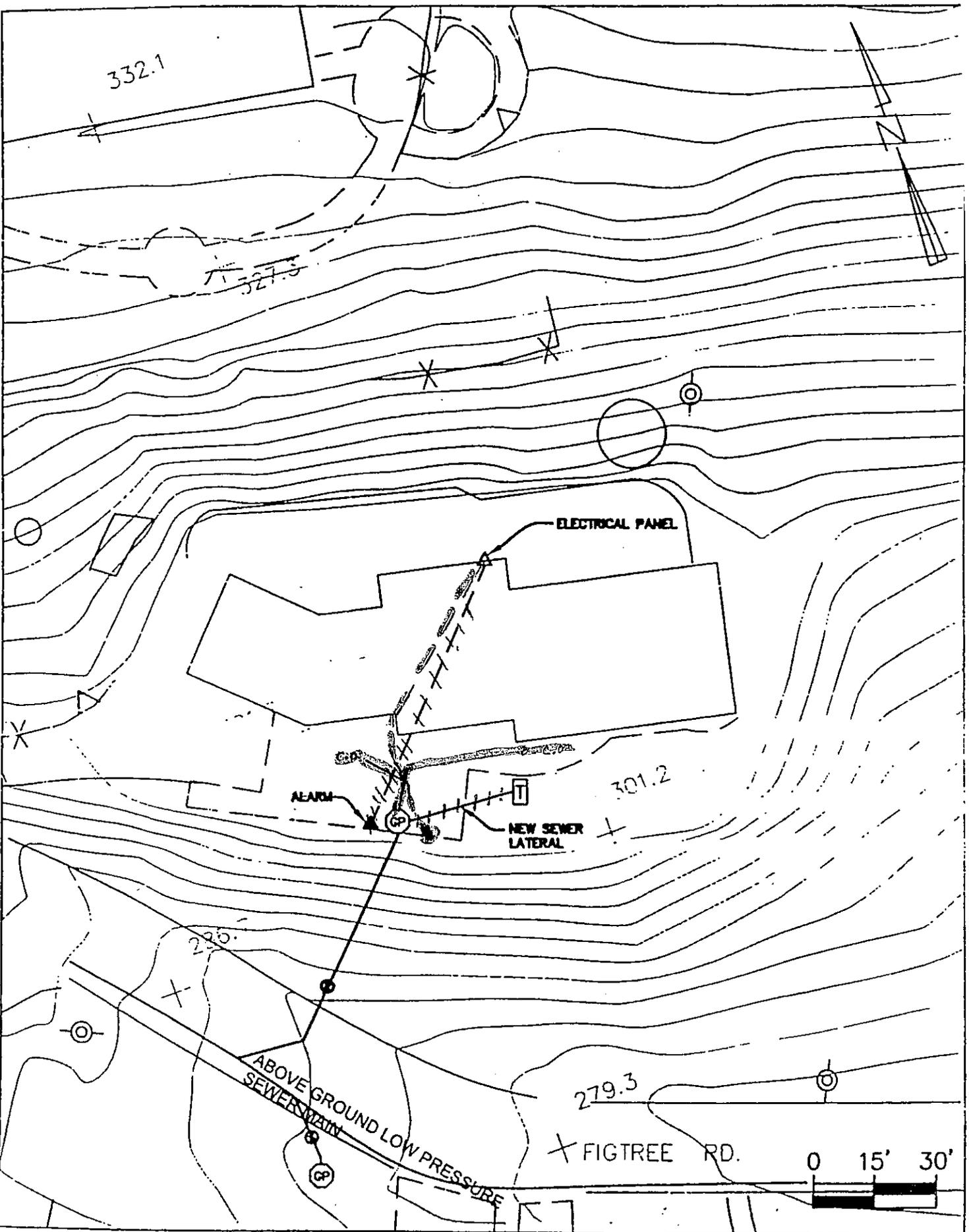
0/00 J 45.002 RB

**SA**  
ASSOCIATES

PROPERTY #148

2 FIG TREE  
WILLIAM ROBERTS

1/20/00 J. 1045.002 RB

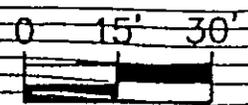
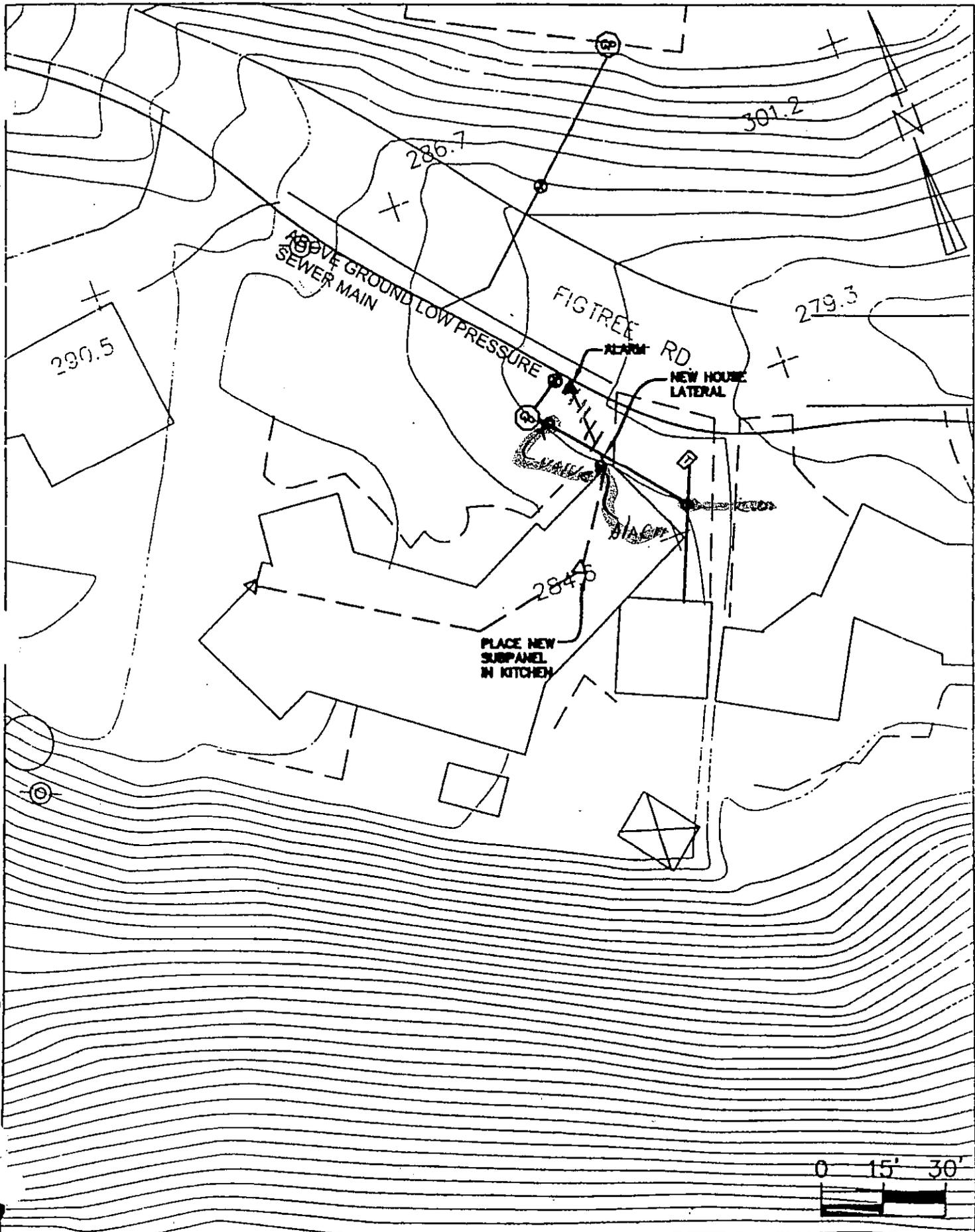


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #135  
 REF. PLAN SHEET NO. 04

3 FIG TREE  
 MAPPER: [unclear]

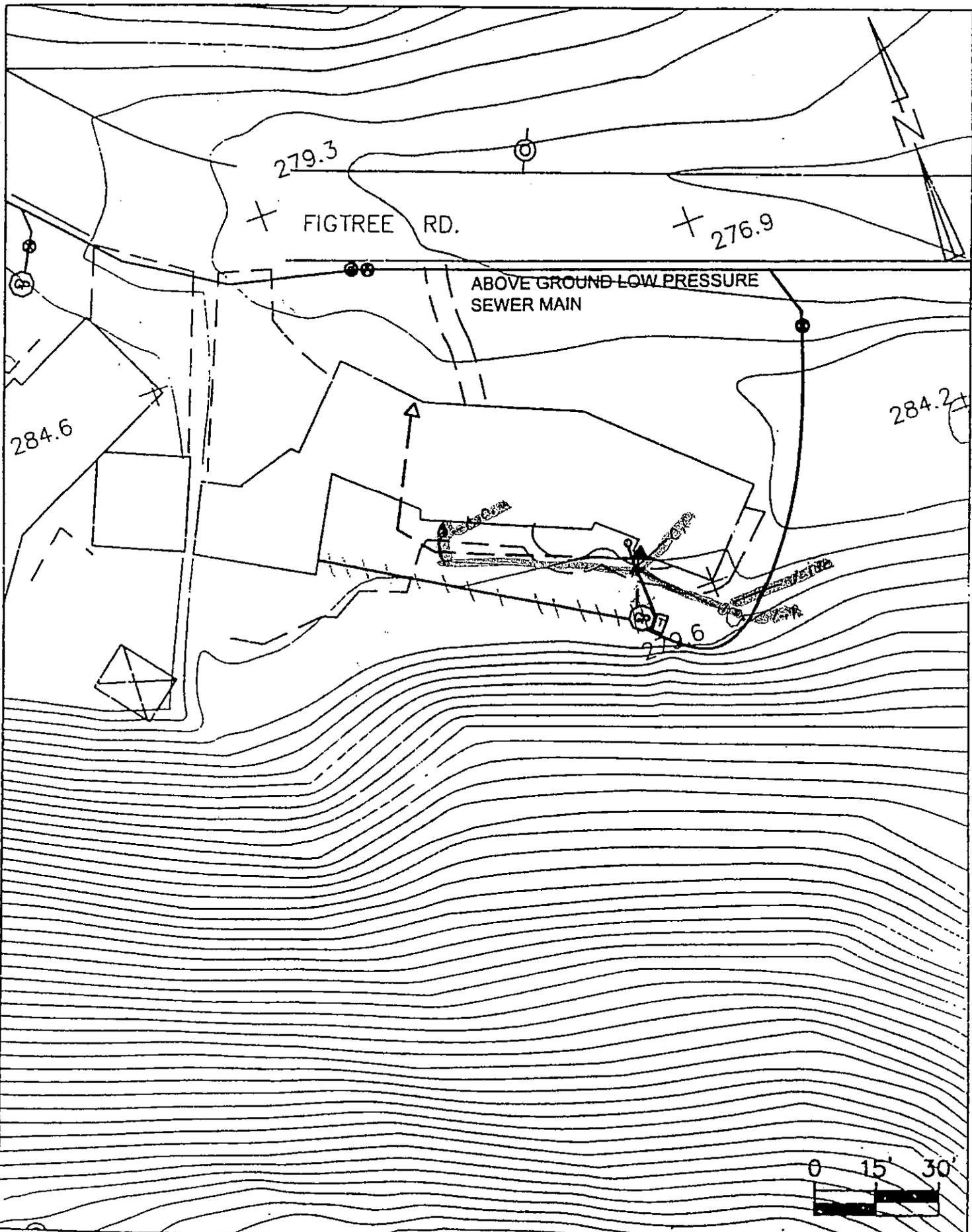
10/00 345.002 RB



**SA**  
ASSOCIATES

PROPERTY #147

4 FIG TREE  
MARTIN FAFFRFR



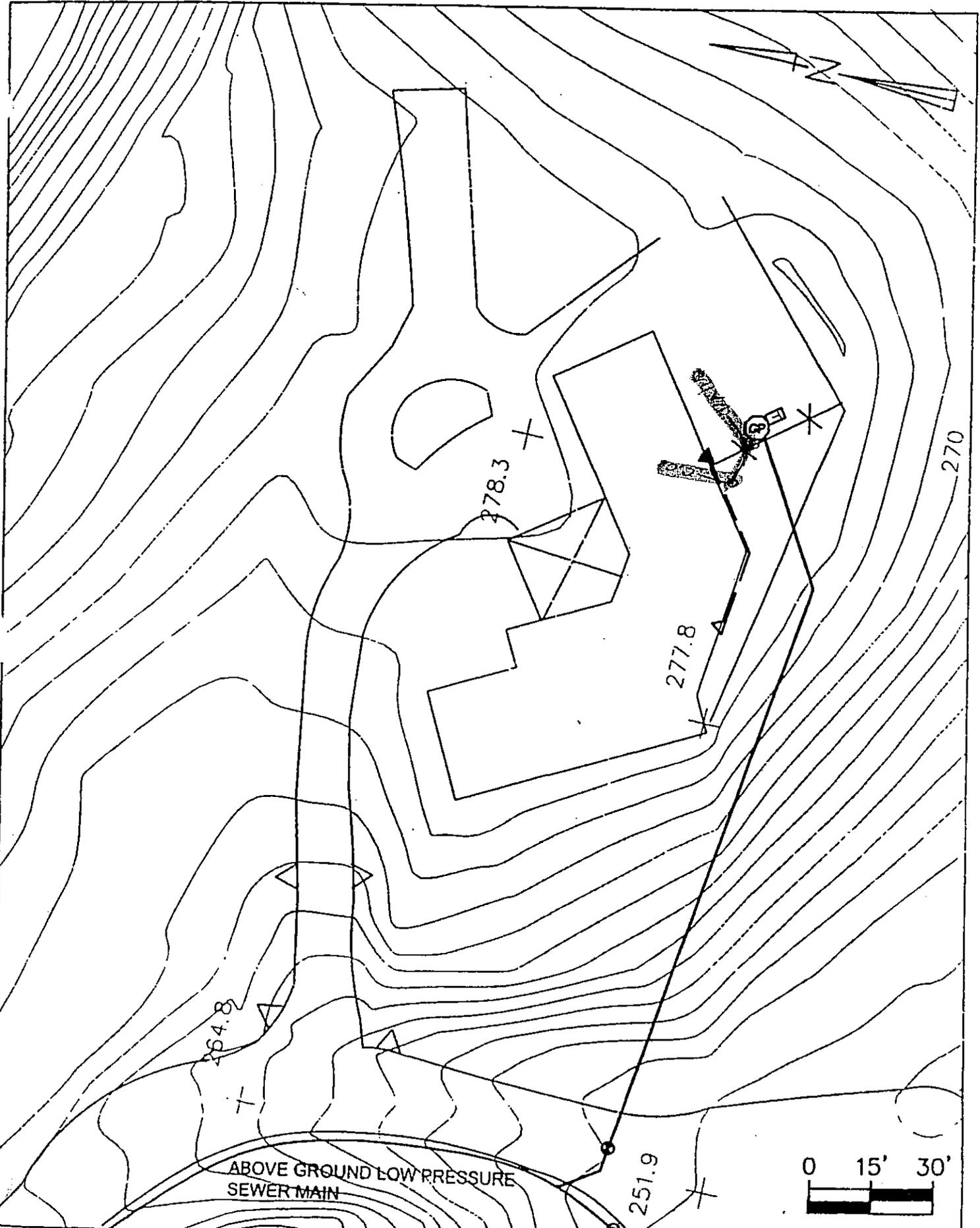
/20/00 1045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

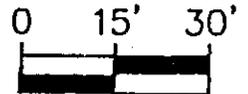
PROPERTY #146  
REF. PLAN SHEET NO. 21

6 FIG TREE  
GINO A. RUDOLFI

20/00 045.002 RB



ABOVE GROUND LOW PRESSURE SEWER MAIN



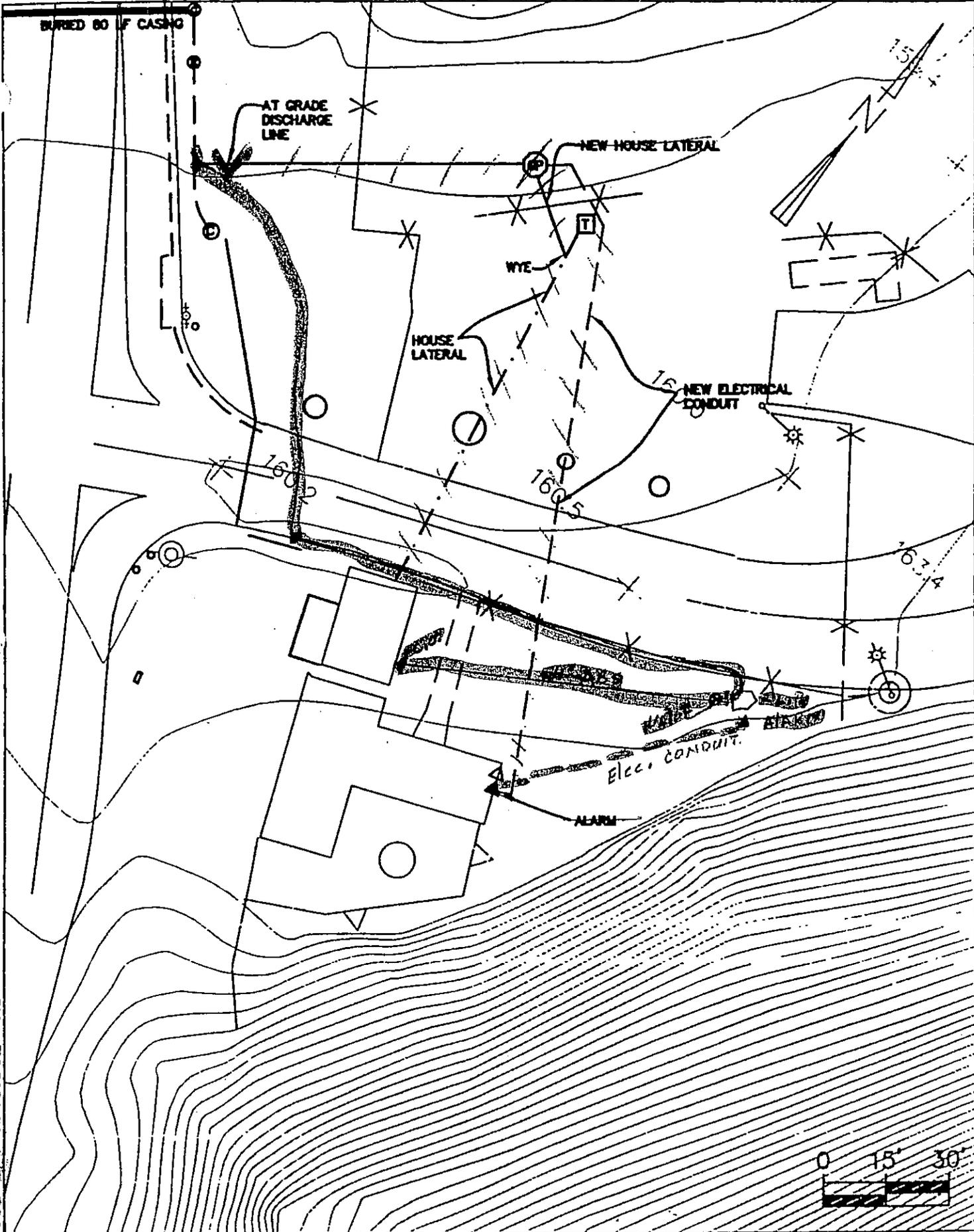
**SA**  
ASSOCIATES

PROPERTY #139

9 FIG TREE  
CHARLES D. OREB

**NARCISSA DRIVE**

0/00 JOB NO. 1045.002 RB

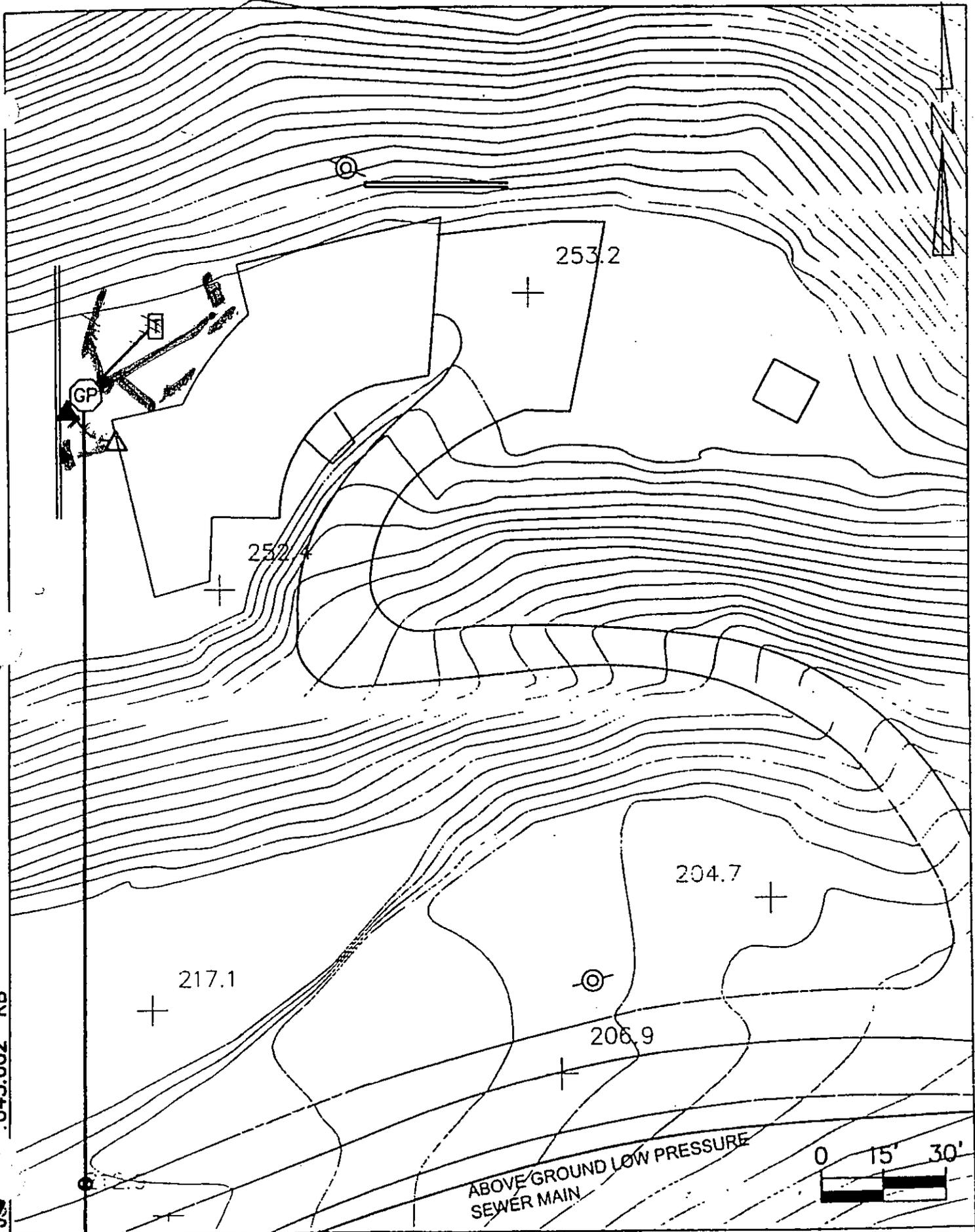


**SA**  
ASSOCIATES

PROPERTY #183  
REF: PLAN SHEET NO. 3

GATE HOUSE  
1 NARCISSA DR.  
DANIEL DINKHAM

10/00 J... .045.002 RB

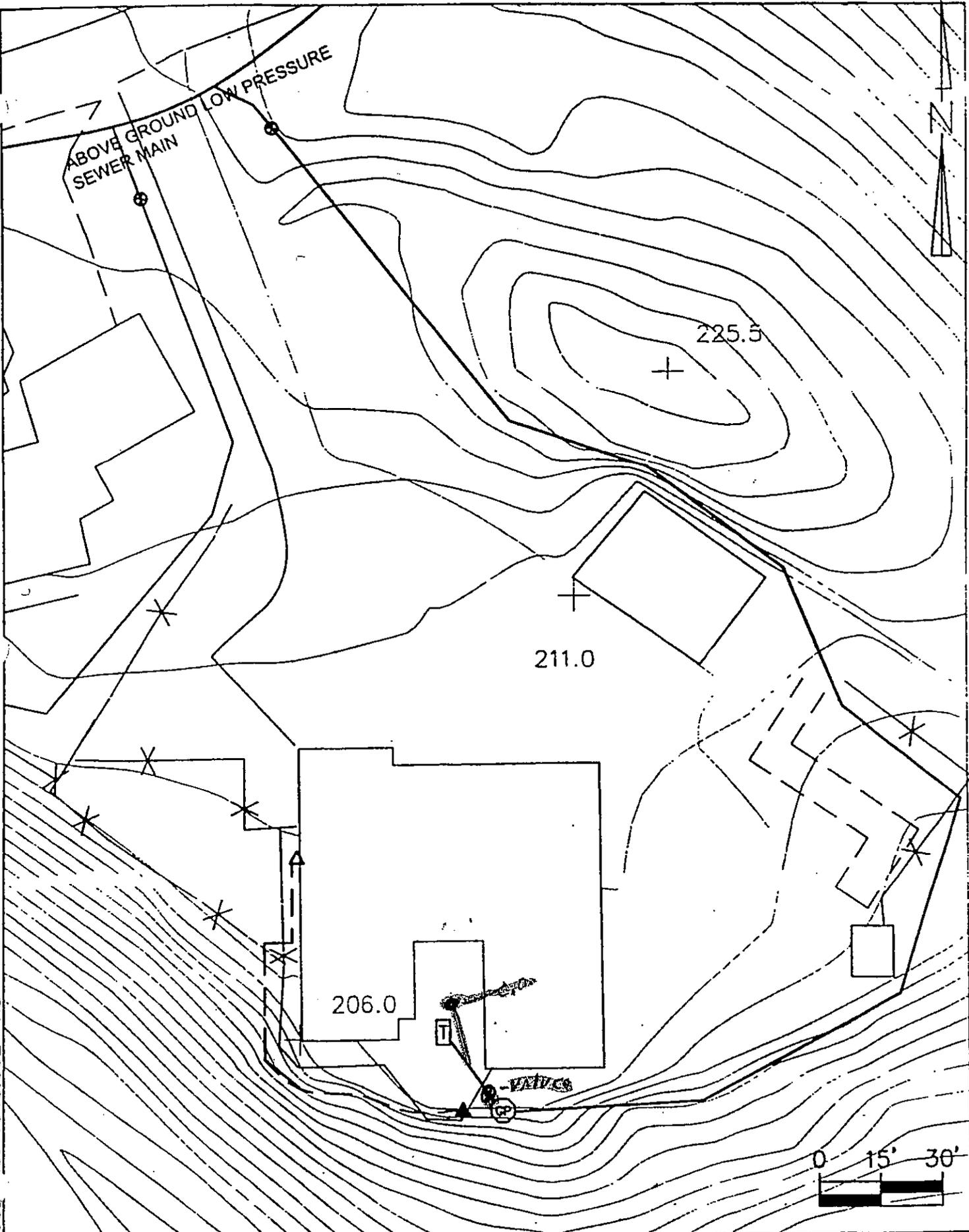


**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #156  
 REF. PLAN SHEET NO. 20

14 NARCISSA  
 AHMAD YOUSEFI

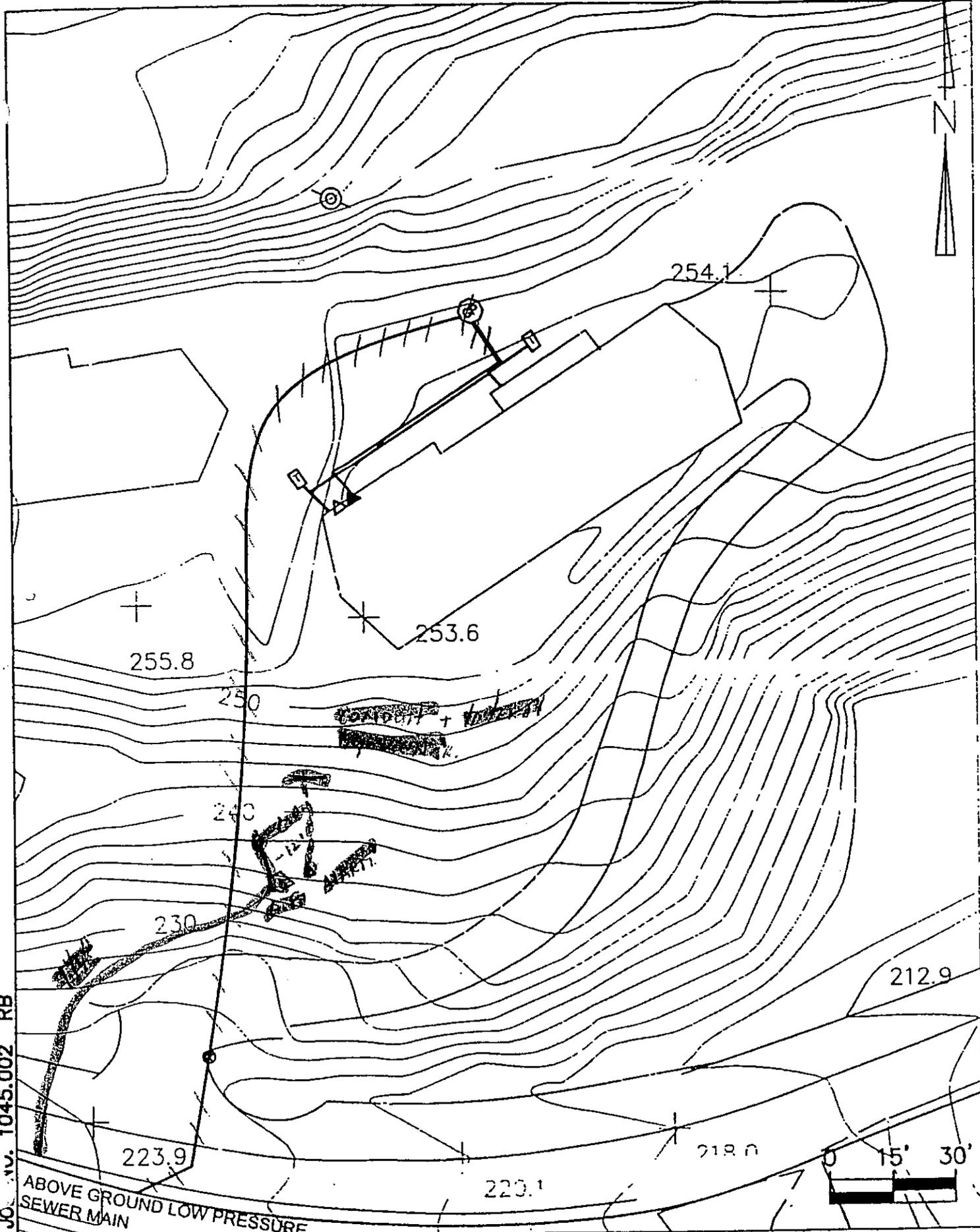
10/00 JOL 1045.002 RB



**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #162  
REF: PLAN SHEET NO. 20

15 NARCISSA  
KENNETH J. LISS



'20/00 JO. AV. 1045.002 RB

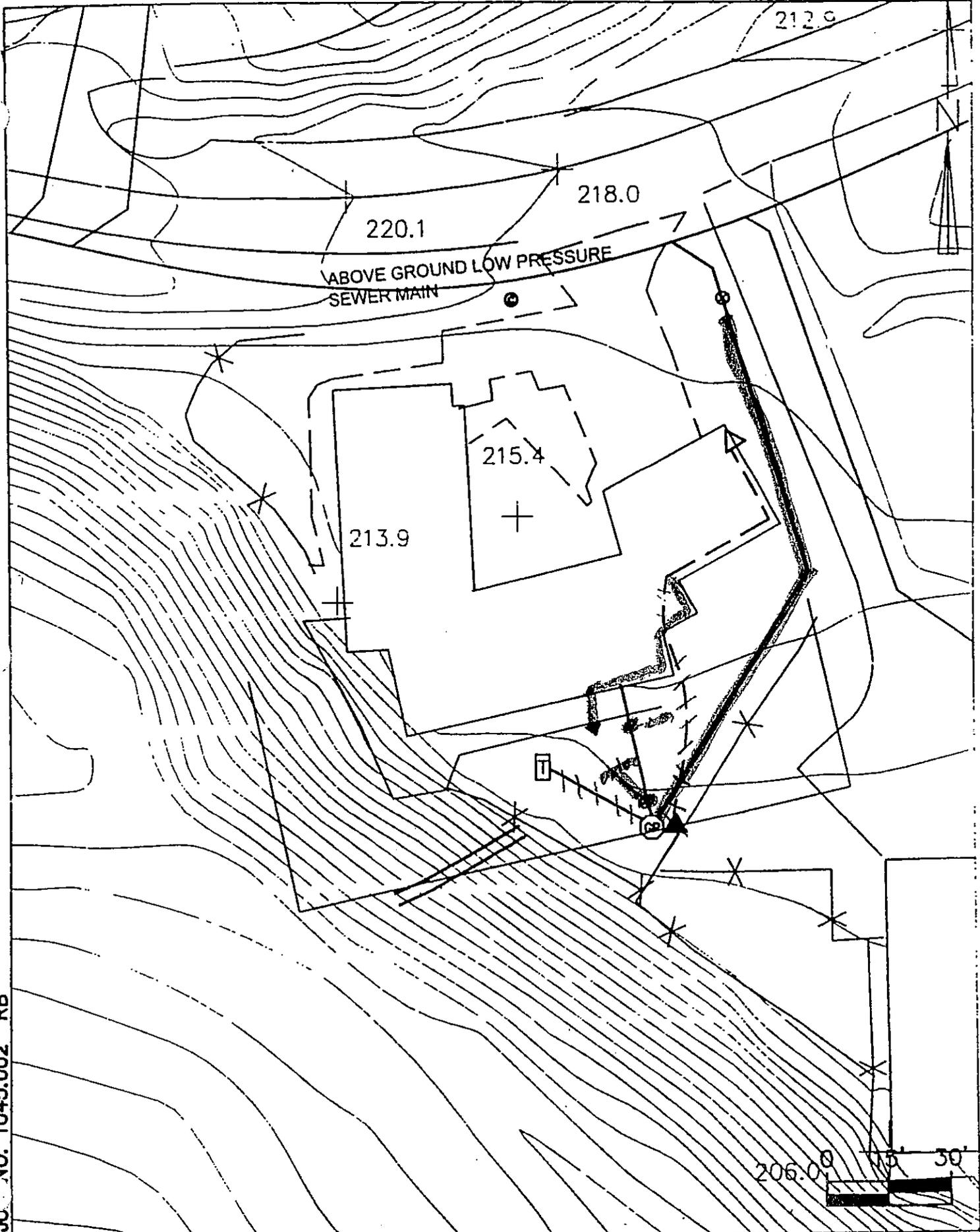
ABOVE GROUND LOW PRESSURE SEWER MAIN

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #155  
REF: PLAN SHEET NO. 20

16 NARCISSA  
PATRICK O'NEIL

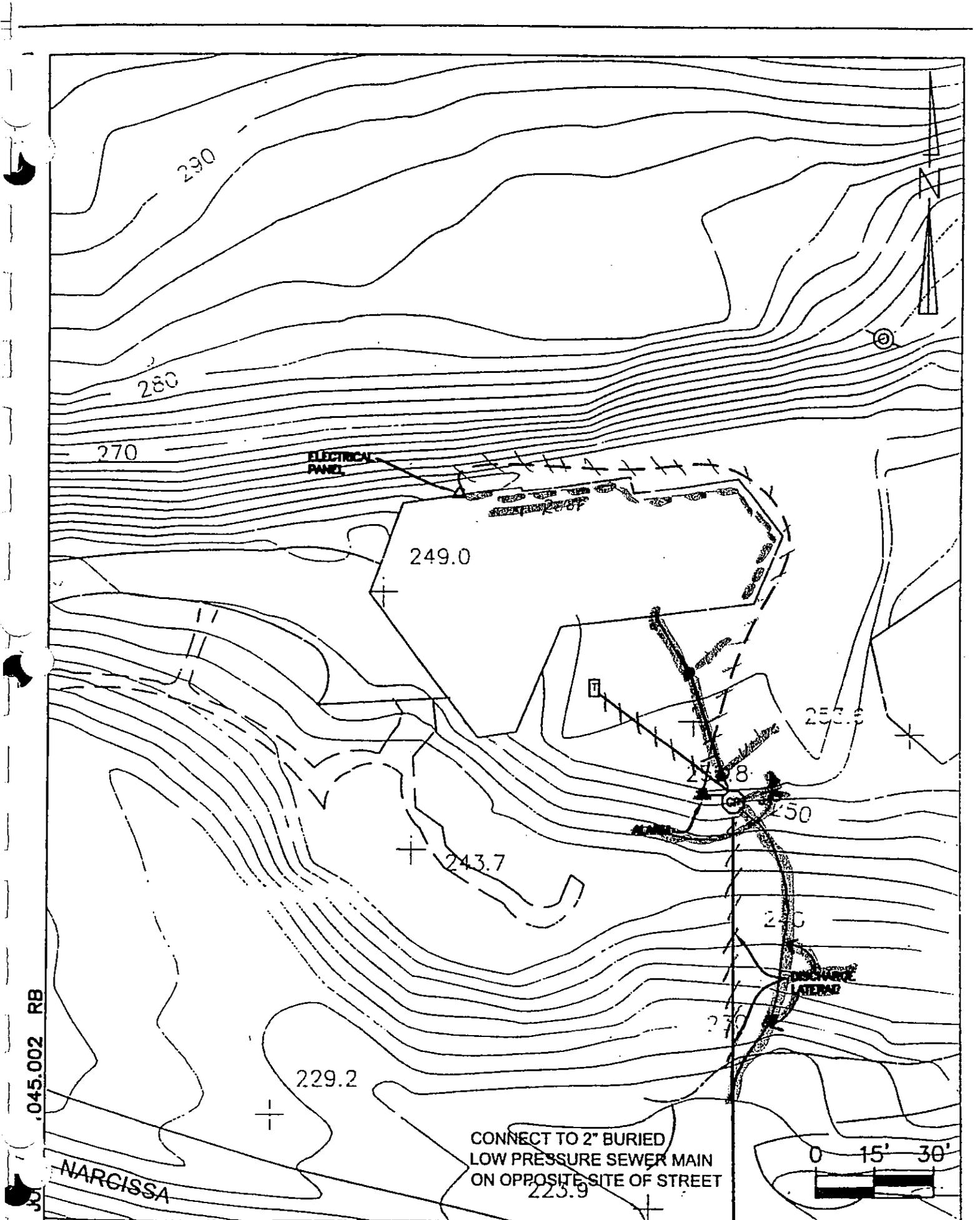
20/00 JO. NO. 1045.002 RB



**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #164  
REF: PLAN SHEET NO. 20

19 NARCISSA  
LOTHAR MAERTENS  
MARGOTH MAERTENS



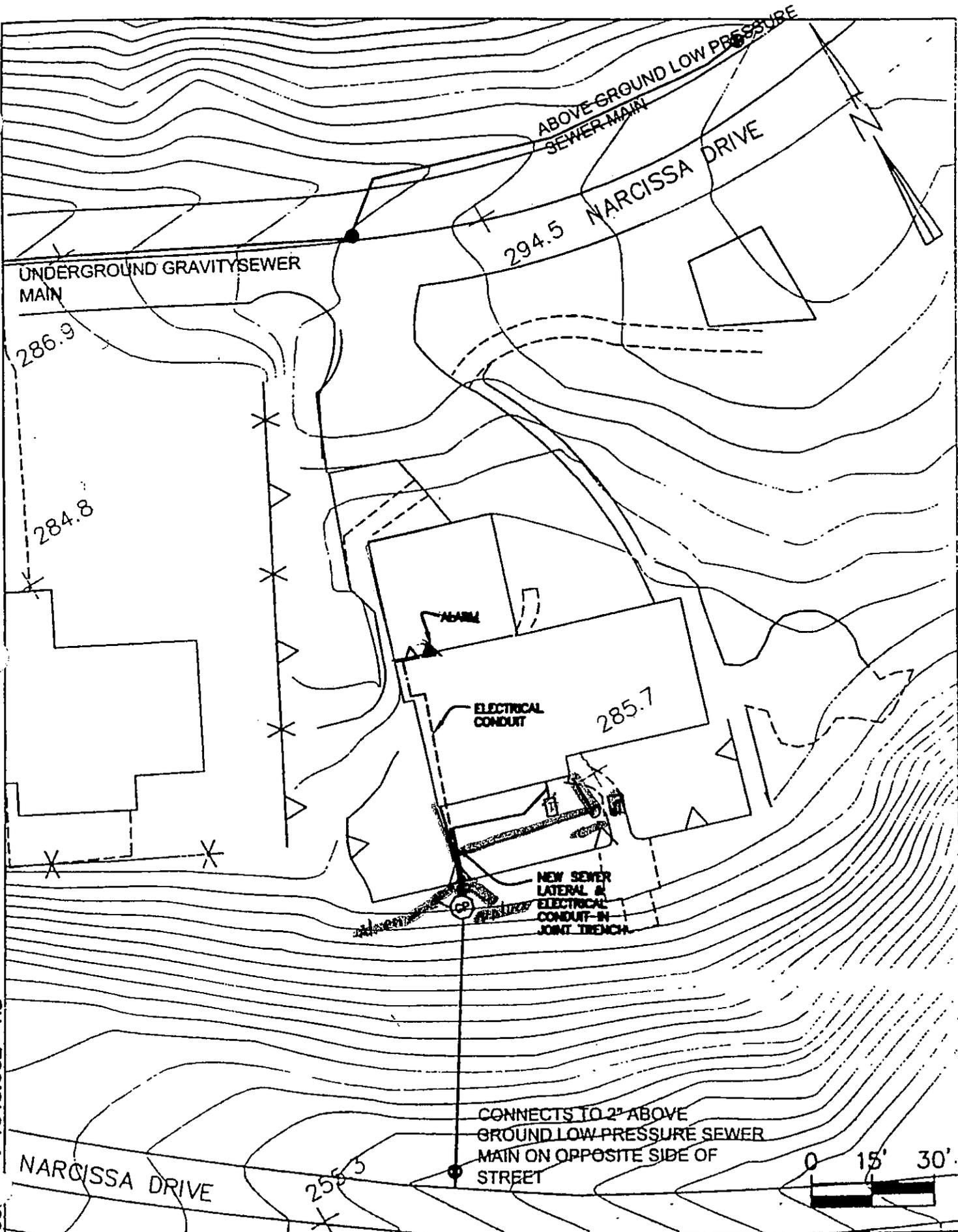
20/00 J... .045.002 RB

NARCISSA

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #154  
REF: PLAN SHEET NO. 20

20 NARCISSA  
DAILY REGISTER



20/00 J... 045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #152  
REF: PLAN SHEET NO. 20

24 NARCISSA  
WILLIAM R. MILLER

SEPTIC TANK & CESSPOOL  
GENERAL LOCATION UNDER  
2' x 6' DECK

N

3' EAVE  
323.8

322.8

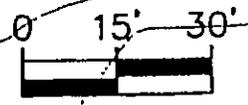
BOX WOOD  
DRIVE

ABOVE GROUND LOW PRESSURE  
SEWER MAIN

300.9

NARCISSA DRIVE

294.5



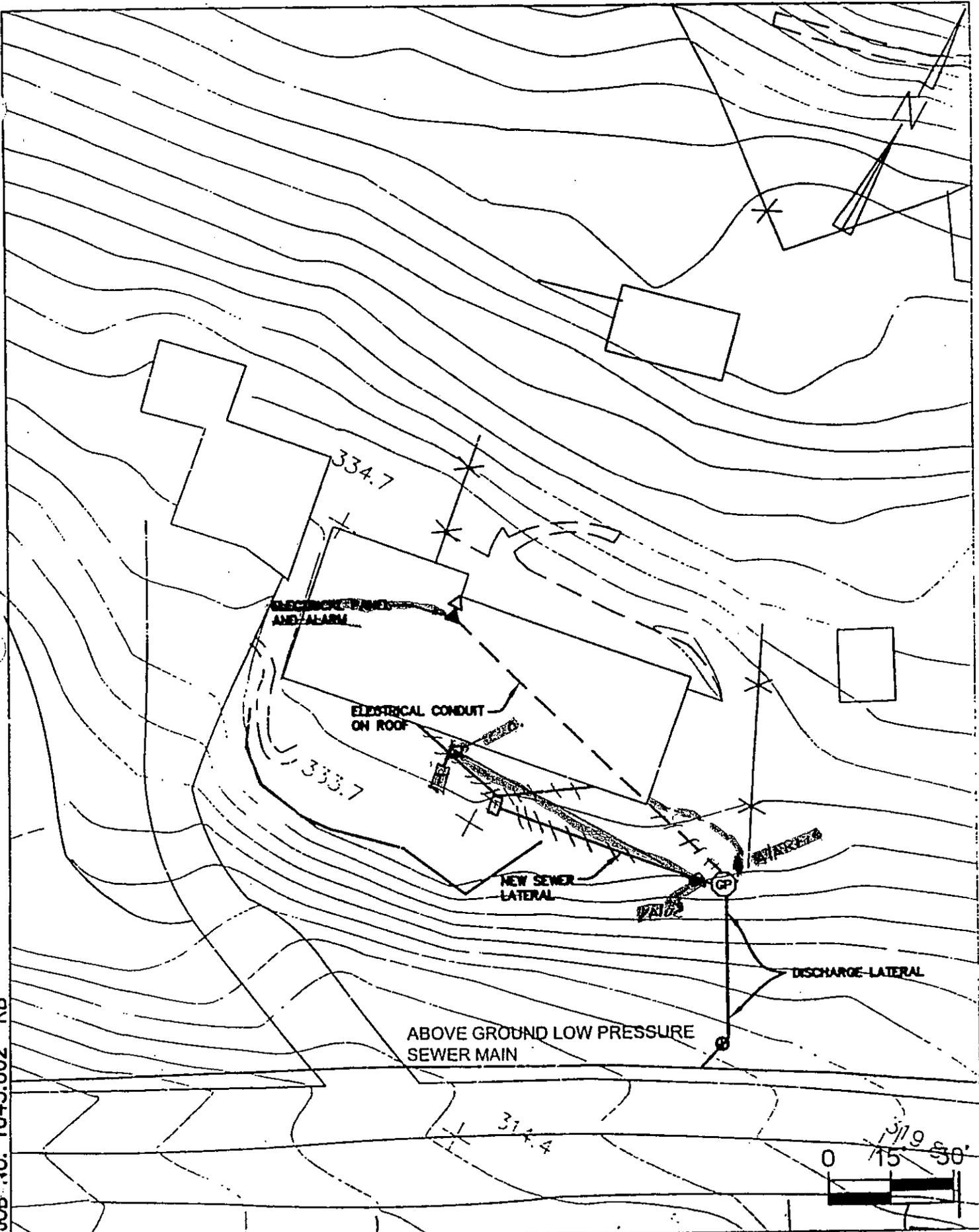
'20/00 J.C. 1045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #171  
REF: PLAN SHEET NO. 21

25 NARCISSA  
GARY J. McDONALD

20/00 JOB NO. 1045.002 RB



**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #172

27 NARCISSA

REF. PLAN SHEET NO. 01

PETER McCAFFERTY

ABOVE GROUND LOW PRESSURE  
SEWER MAIN

37.4

37.8

311.7

311.1

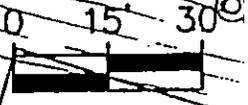
VAIVE

'20/00 J.O. NO. 1045.002 RB

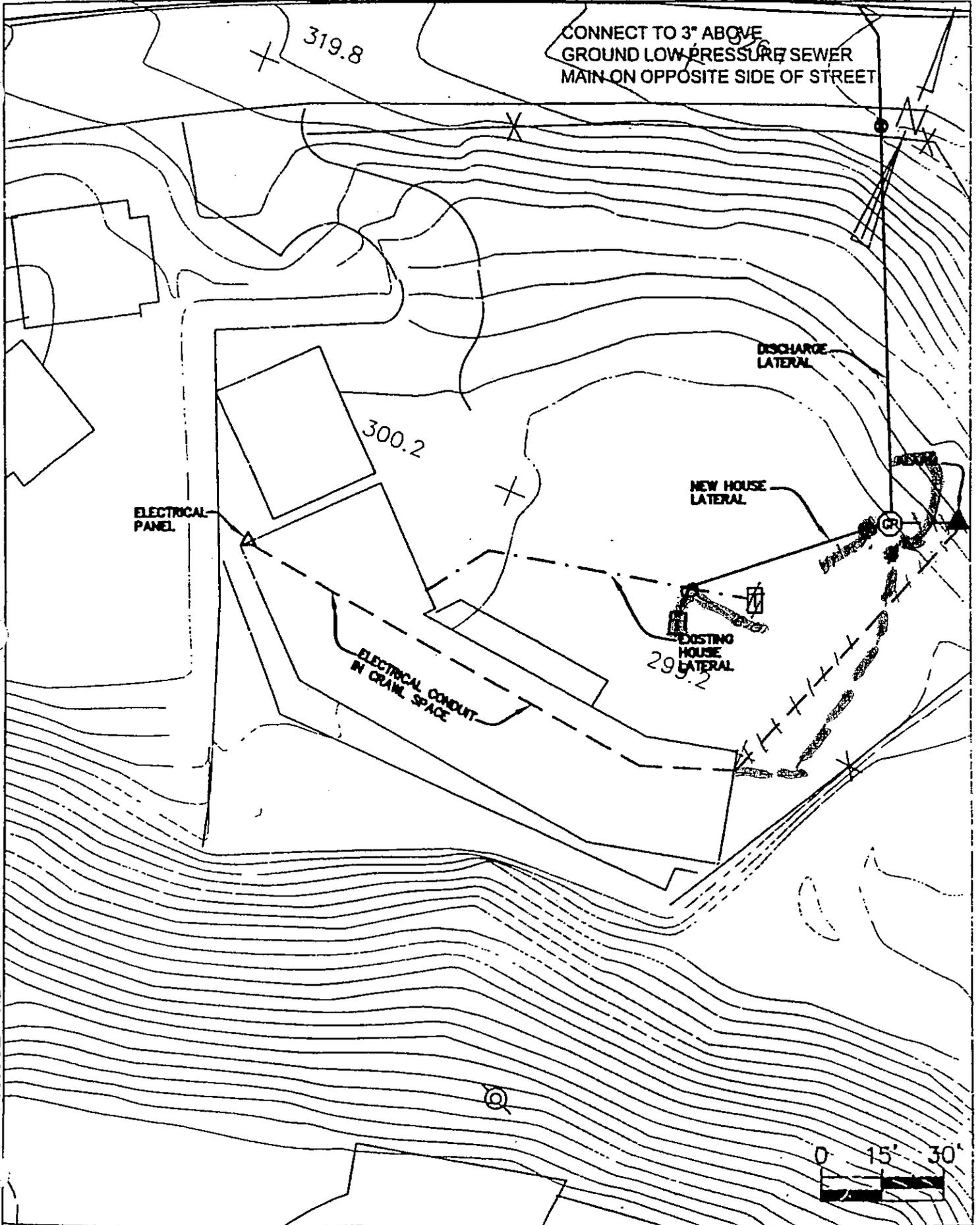
**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #150  
REF: PLAN SHEET NO. 21

28 NARCISSA  
LAWRENCE J. HORAN JR.



10/00 JOB # 045.002 RB

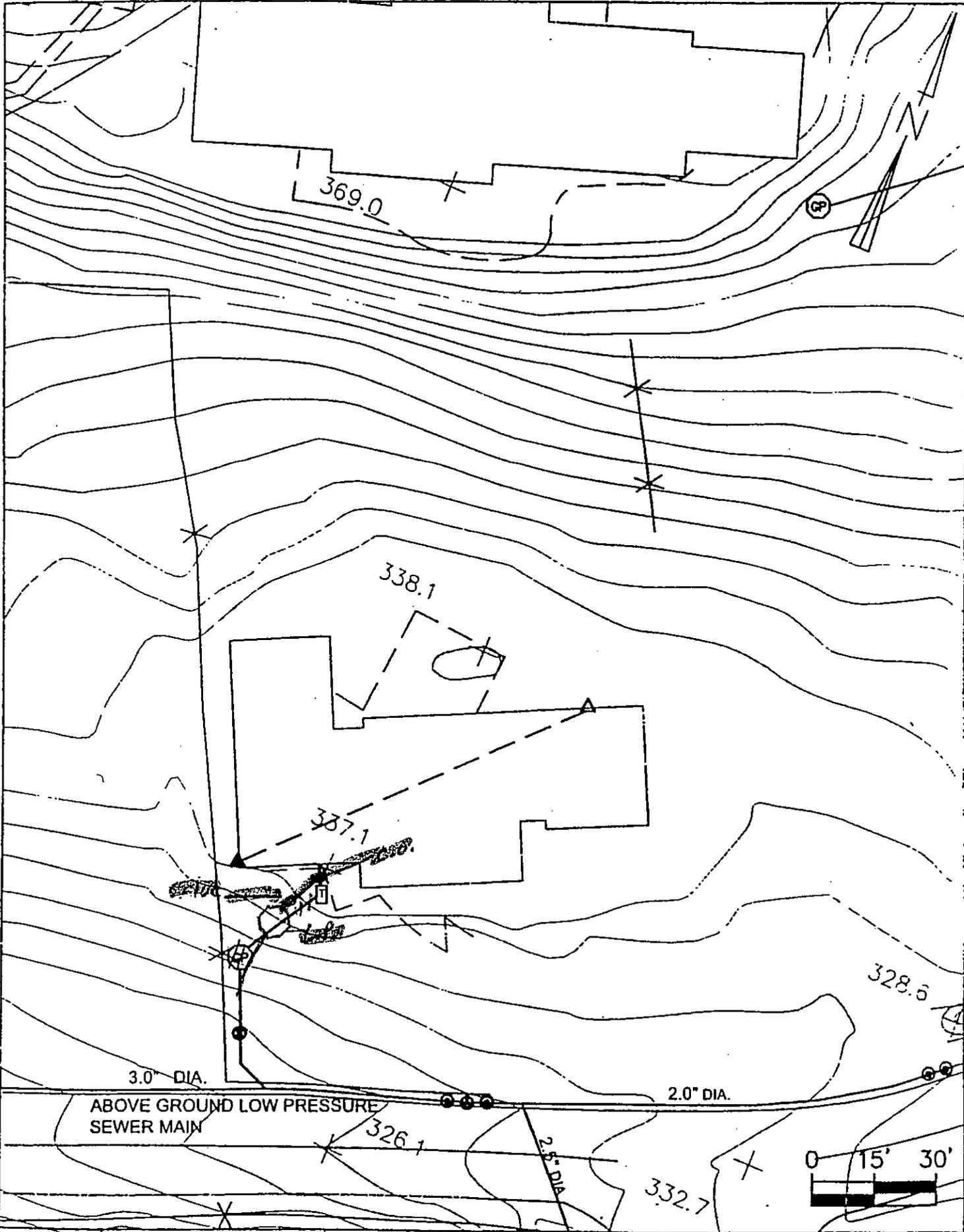


**SA**  
ASSOCIATES

PROPERTY # 149

30 NARCISSA  
LOTHAR MAERTENS

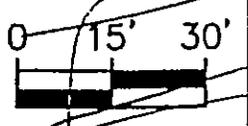
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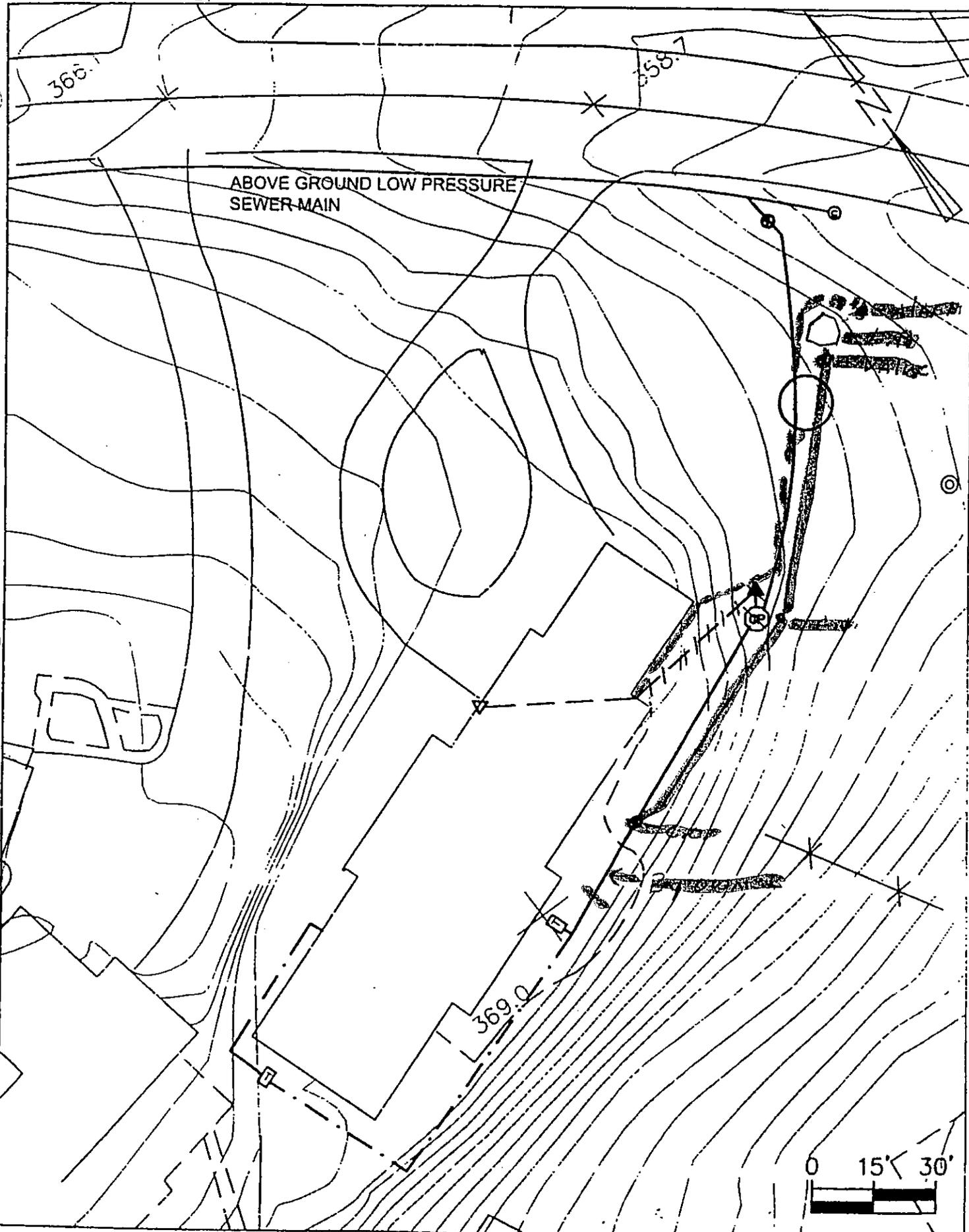
**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #174

31 NARCISSA  
WILLIAM HUNTER



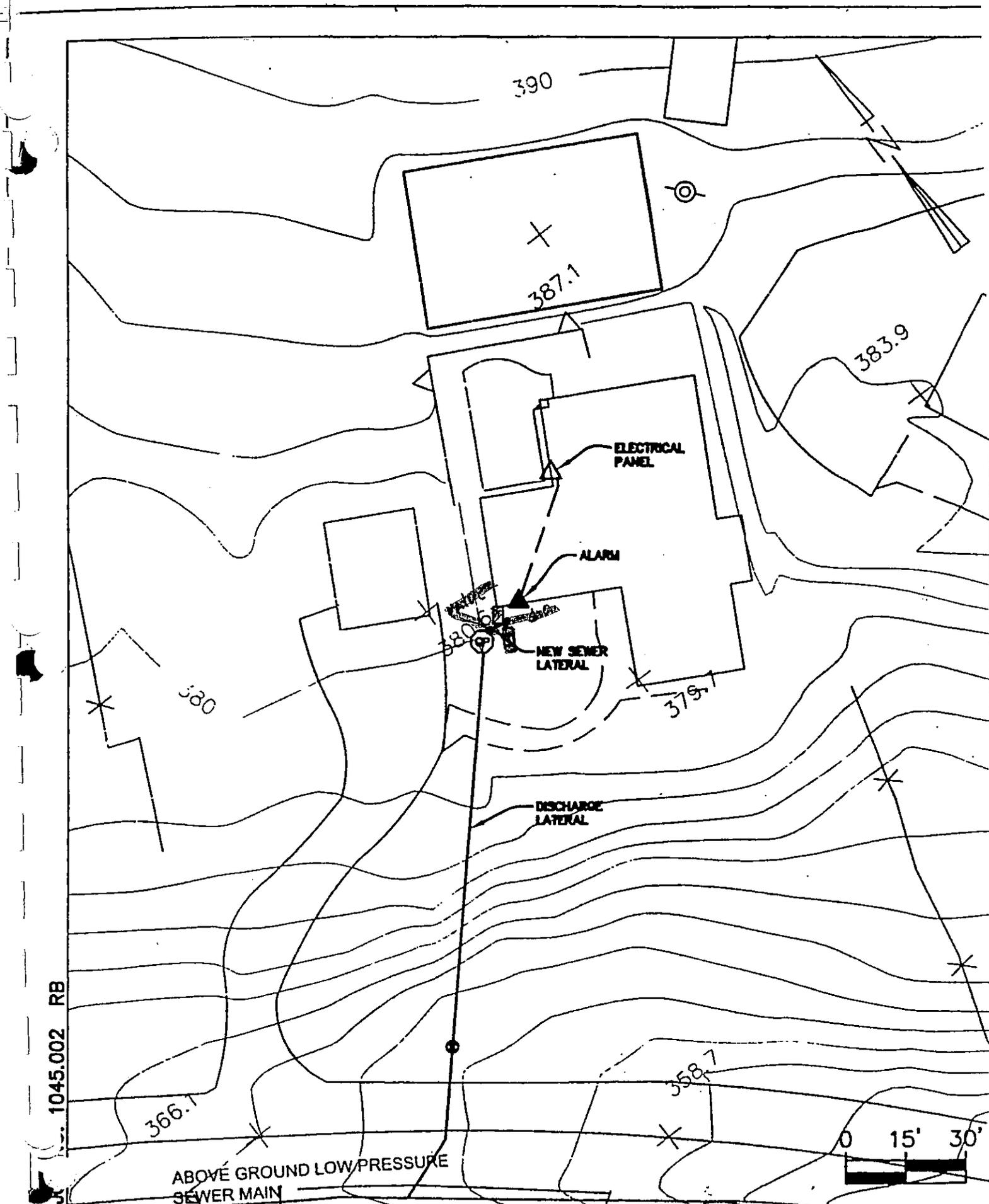
20/00 JO. U. 1045.002 RB



**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #176  
 DEF. PLAN SHEET NO. 01

33 NARCISSA  
 JAMES MADDEN

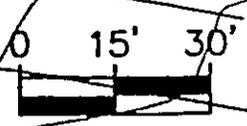


10/20/00 J. 1045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #104  
REF. PLAN SHEET NO. 21

38 NARCISSA  
CIVIL ENGINEER



410

404.5

405.6

8" UNDERGROUND GRAVITY SEWER MAIN

DISCHARGE LATERAL

394.5

ELECTRICAL PANEL

ALARM

ELECTRICAL CONDUIT

NEW HOUSE LATERAL

GP

10/00 JCL S. 1045.002 RB



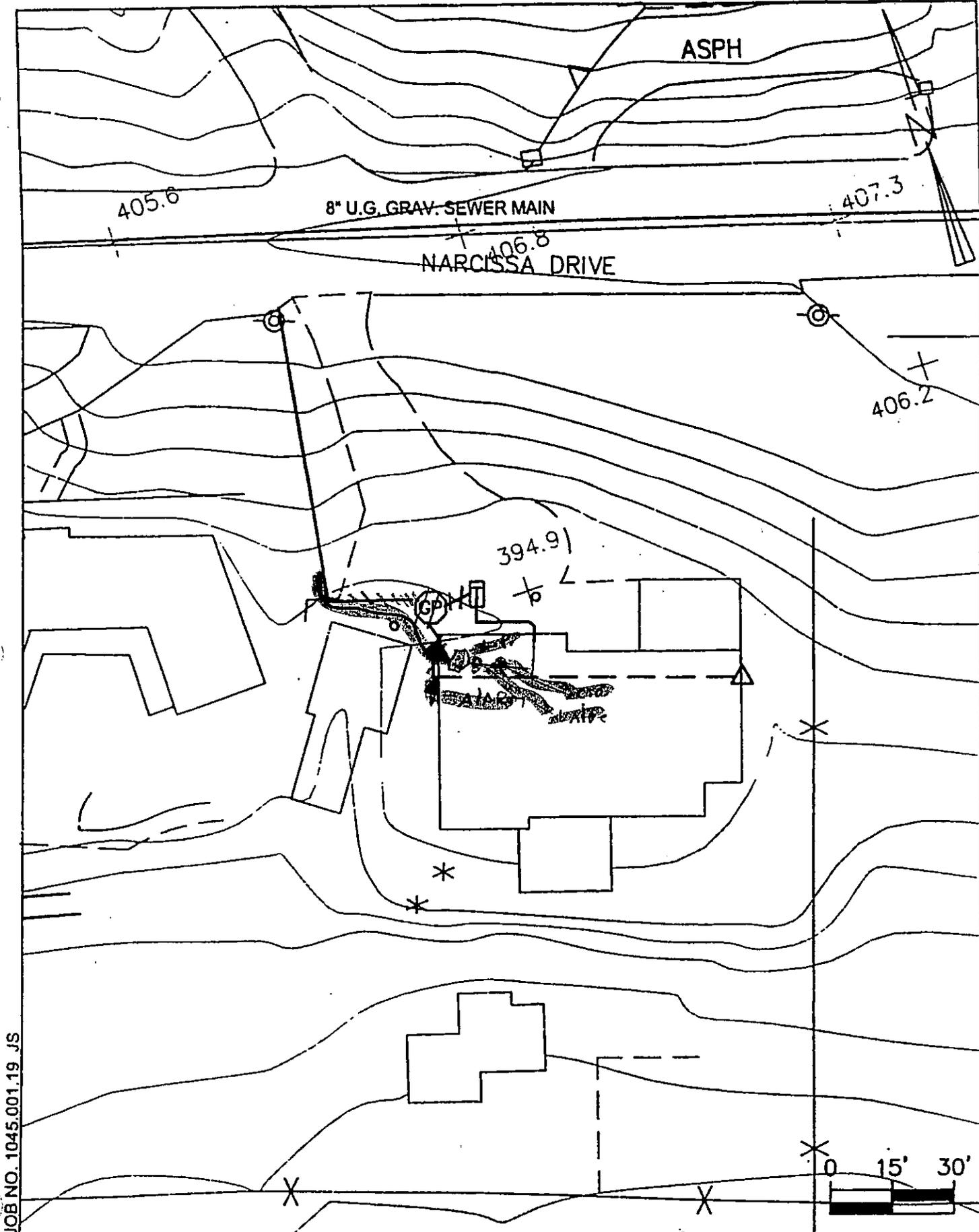
**SA**  
ASSOCIATES

PROPERTY #51

72 NARCISSA

REF. PLANSHEET NO. 0

NEVA D. DYER



04-08-99 JOB NO. 1045.001.19 JS

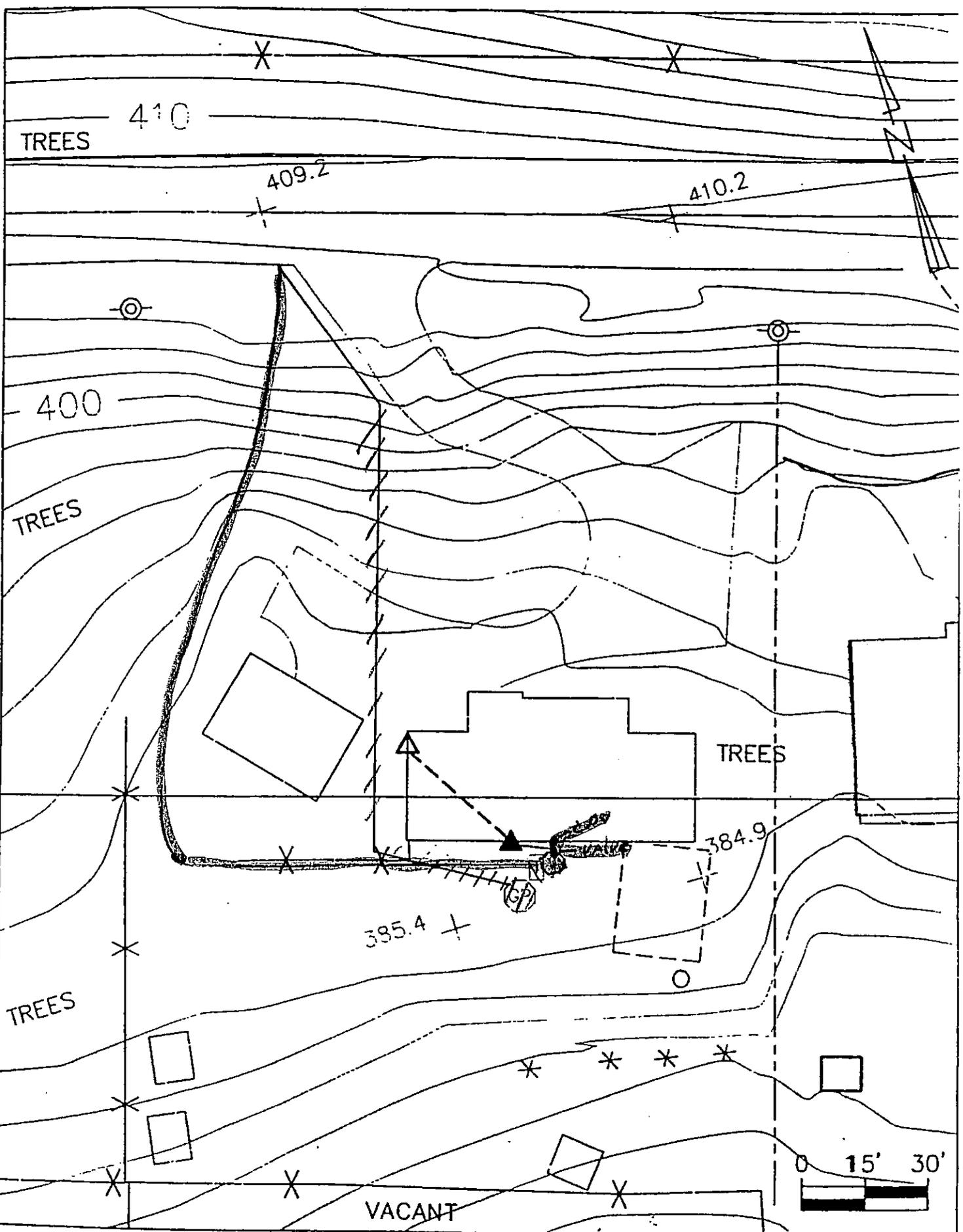
**SA**  
ASSOCIATES

CONSULTING ENGINEERS  
1130 W. Huntington Drive, Urr 12 Arcadia, CA 91007  
TEL 626-448-1444 FAX 626-448-1441

PROPERTY #52  
REF: PLAN SHEET NO. 9

76 NARCISSA DRIVE  
DAVID A. VENANZI  
GAIL WORTH

20/00 JK NO. 1045.002 RB

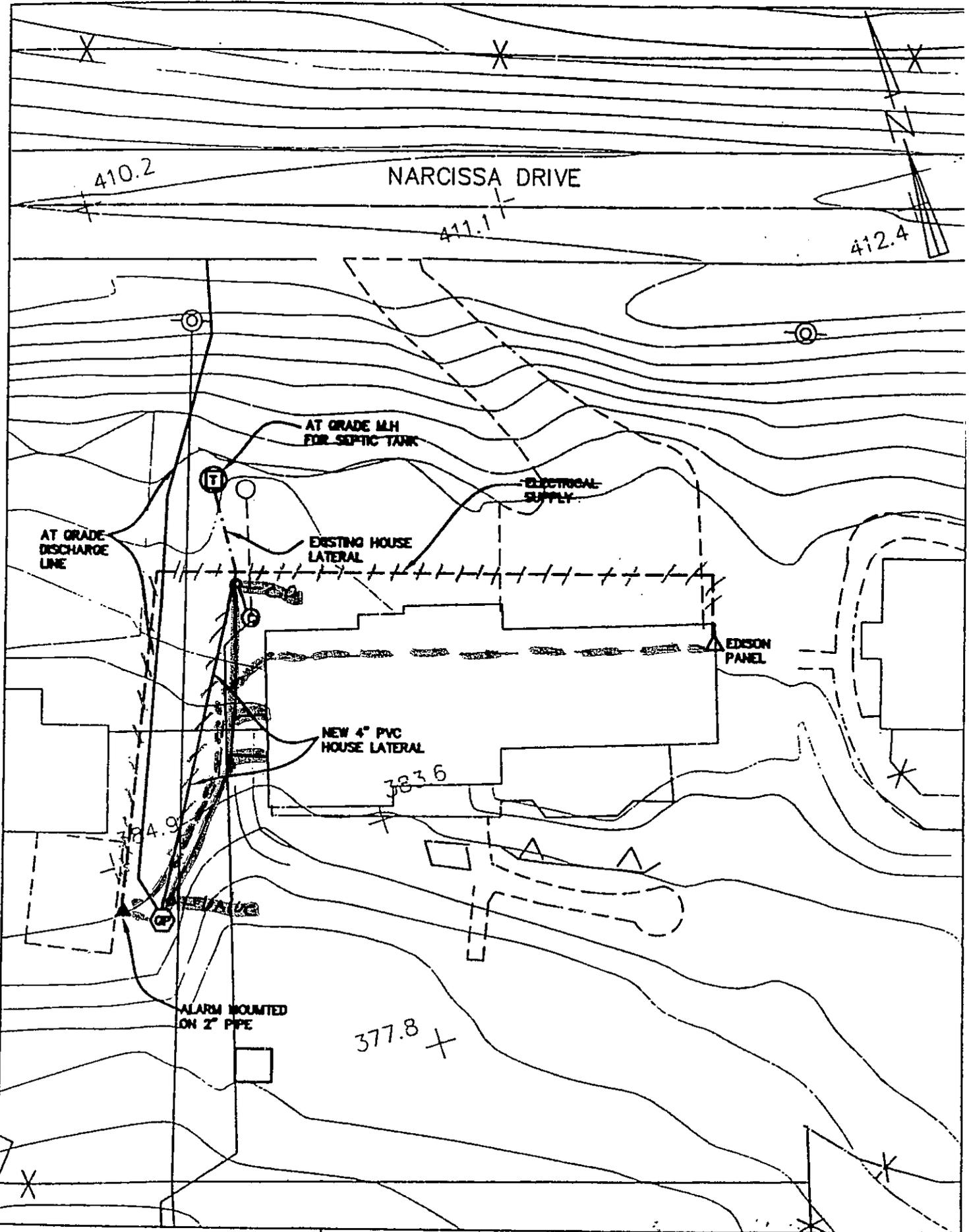


**SA**  
ASSOCIATES

PROPERTY #55  
REF: PLAN SHEET NO. 9

80 NARCISSA DRIVE  
CHARLES LINCOLN STUART

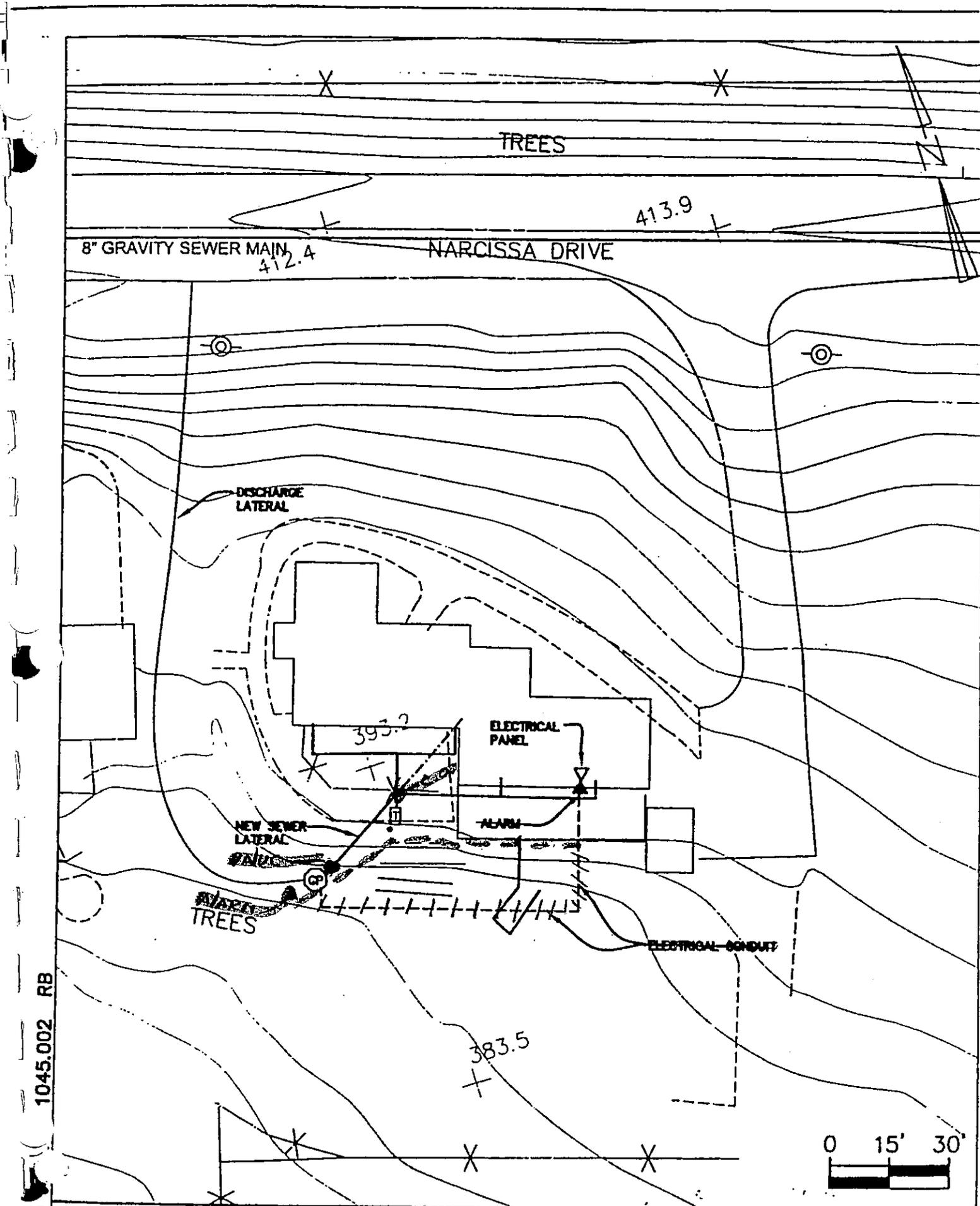
1/20/00 J. NO. 1045.002 RB



**SA**  
 ASSOCIATES  
 CONSULTING ENGINEERS

PROPERTY #56  
 REF: PLAN SHEET  
 NOS. 9 & 16

82 NARCISSA DRIVE  
 GENE FRANK  
 NANCY FRANK

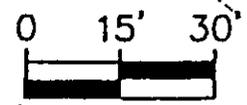


/20/00 1045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #57  
REF: PLAN SHEET NO R

84 NARCISSA DRIVE  
MAGNUS OHLAKER



8" BURIED GRAVITY SEWER MAIN

NARGISSA DRIVE

418.0

DISCHARGE LATERAL

ELECTRICAL PANEL

DECK

DECK

ALARM

406.5

NEW SEWER LATERAL

0 15' 30'

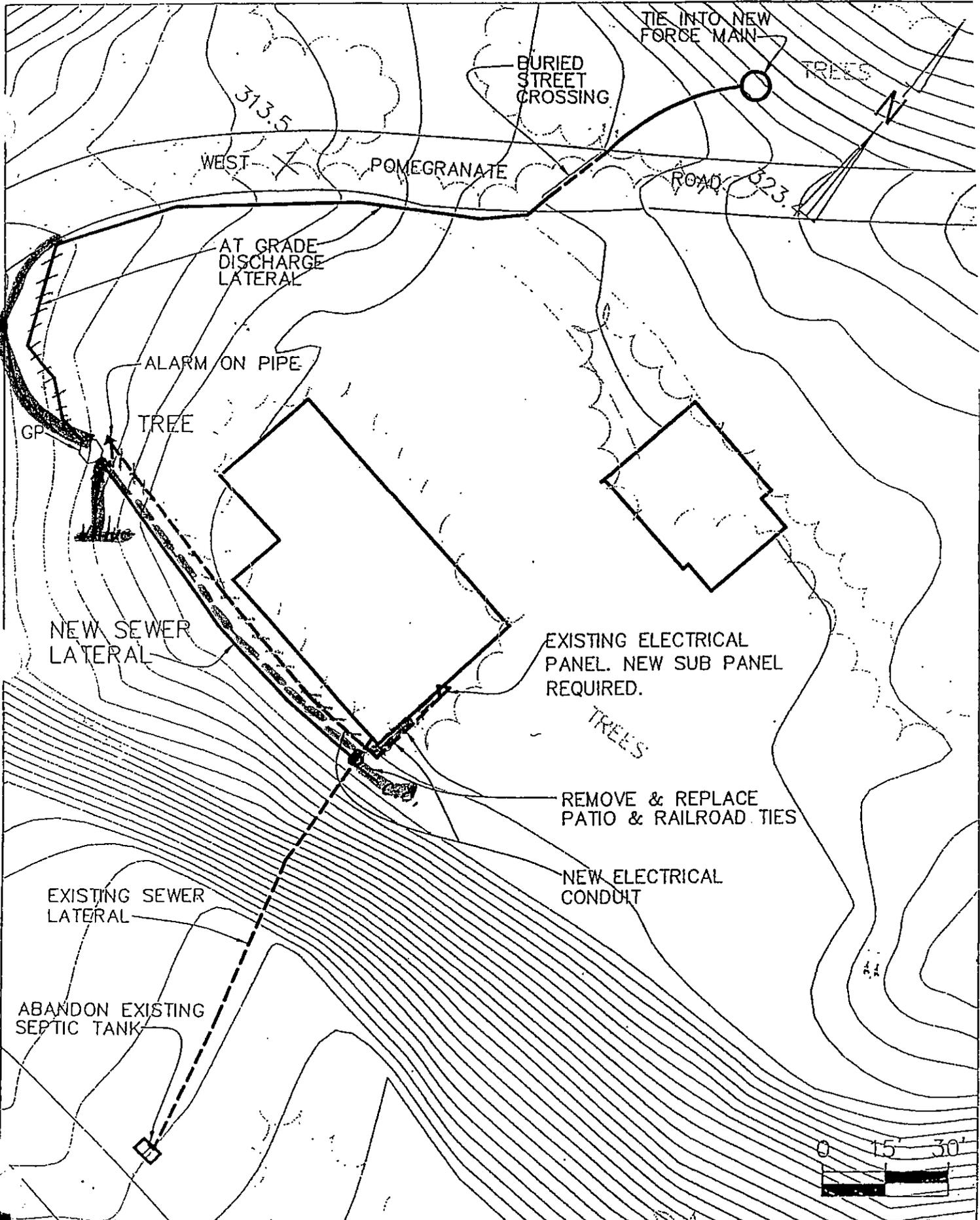
1045.002 RB

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #59  
DEC. PLAN SHEET NO. 0

88 NARGISSA DRIVE  
ROBERT H. HALDERMAN

# POMEGRANATE ROAD

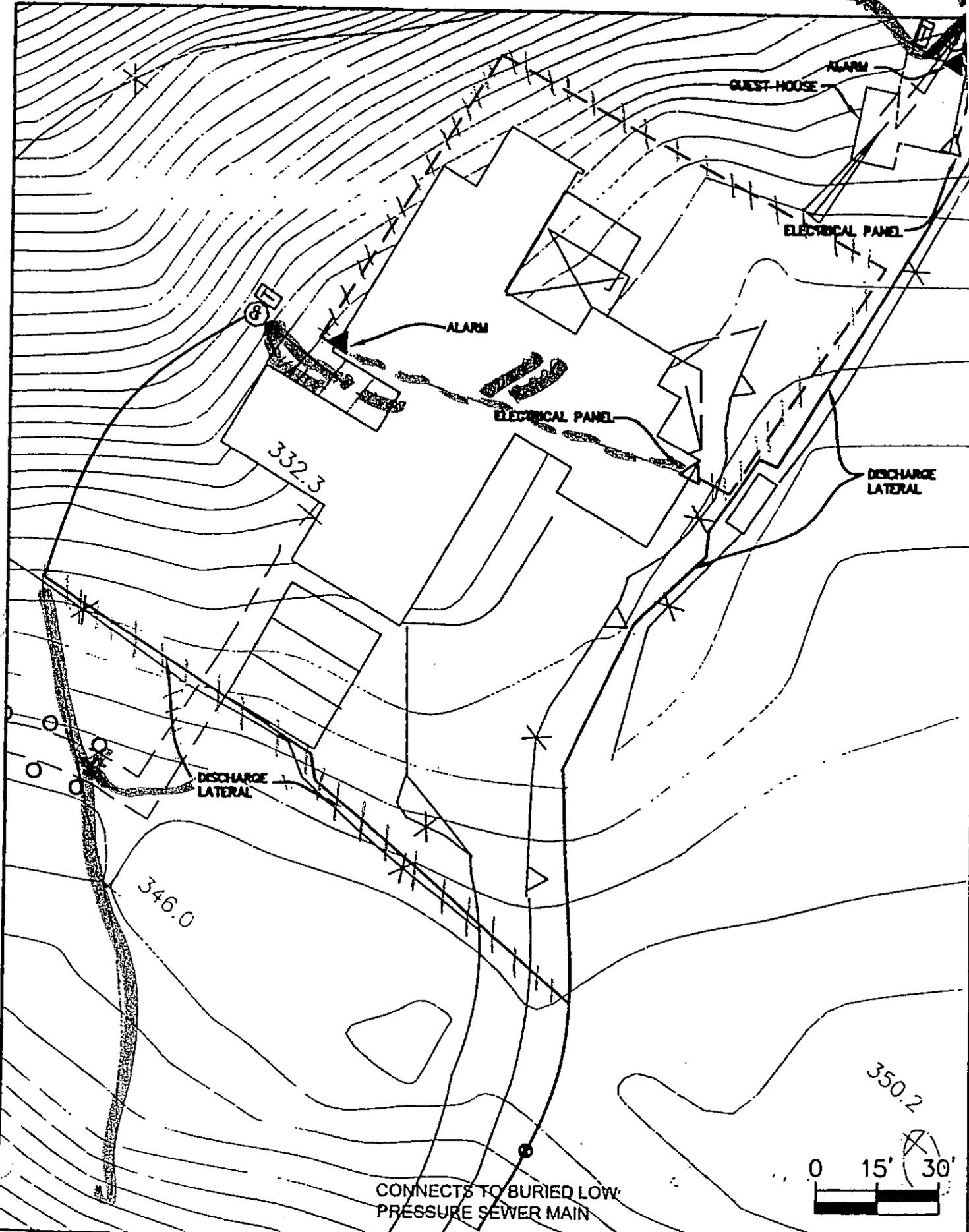


10/27/03 WG

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY # 182  
REF: PLAN SHEET NO. P-17

..(310) 377-2818  
3 WEST POMEGRANATE ROAD  
SEPP DONAHOWER



1/00 JOB #5.002 RB

**SA**  
ASSOCIATES

PROPERTY #126

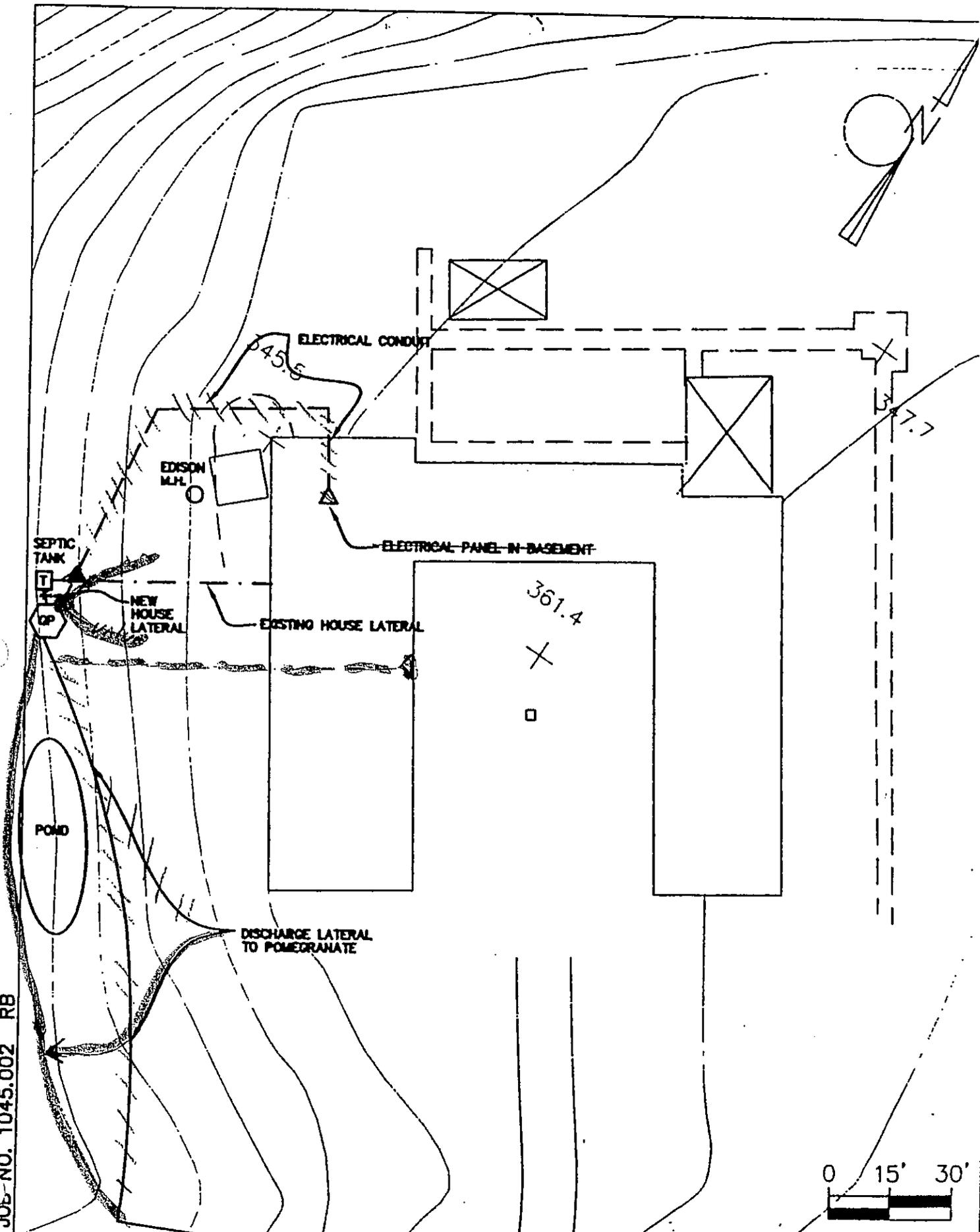
10 POMEROYANATE ROAD

20/00 JOB NO. 1045.002 RB

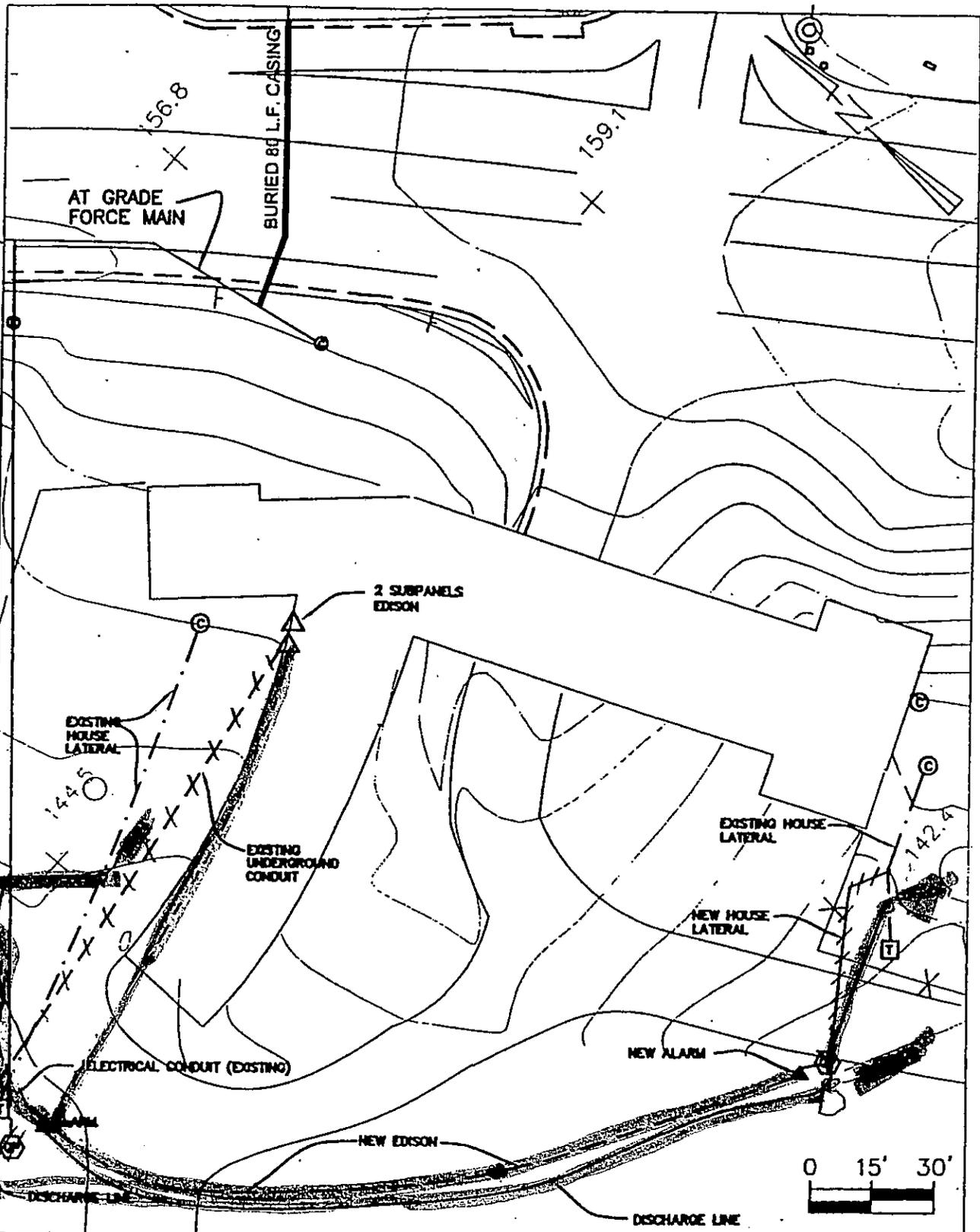
**SA**  
ASSOCIATES

PROPERTY #179  
REF: PLAN SHEET NO. 17

21 POMEGRANATE ROAD  
CHARLES D. SHRIVER



PALOS VERDES  
DRIVE SOUTH

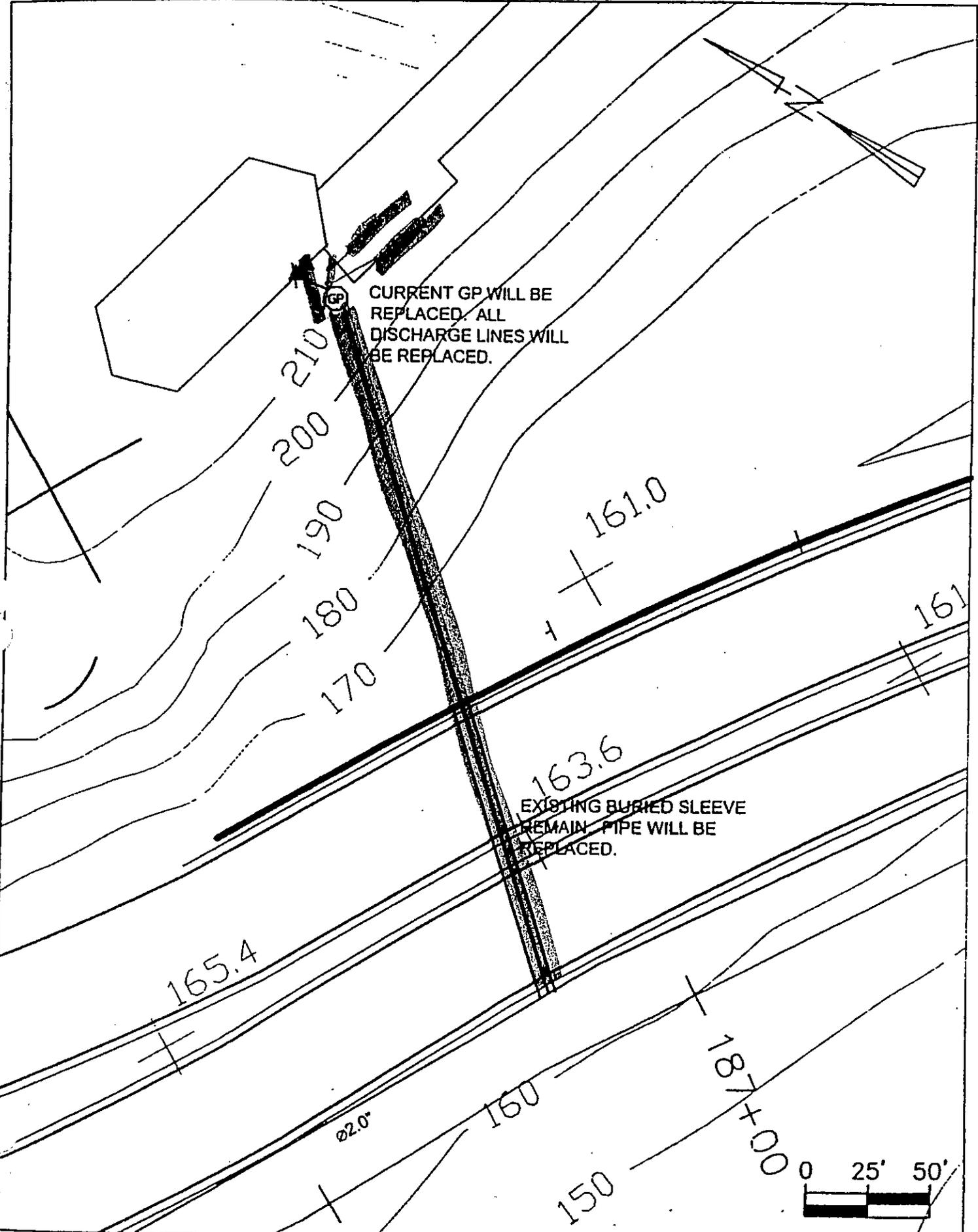


**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #167  
REF: PLAN SHEET NO.  
2,3&21

5500 PVD SOUTH  
MICHAEL J. LIGHTMAN

3.062 RB



GP  
 CURRENT GP WILL BE  
 REPLACED. ALL  
 DISCHARGE LINES WILL  
 BE REPLACED.

163.6  
 EXISTING BURIED SLEEVE  
 REMAIN PIPE WILL BE  
 REPLACED.

# THYME PLACE

8" BURIED GRAVITY SEWER MAIN

THYME PL.

369.0

372.2

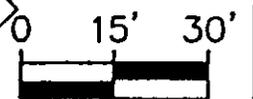
365.3

ELECTRICAL PANEL

DISCHARGE LATERAL

ALARM

36



1045.00Z RB

126700

**SA**  
ASSOCIATES  
CONSULTING ENGINEERS

PROPERTY #130  
REF: PLAN SHEET NO. 19

1 THYME PL  
ALLAN R. MERRALLS

1 1/4" ABOVE GROUND HDPE

363.7

EXIST. ELECT.  
END NEW ELECT.  
± 3' FROM WALL

CONTROL/ALARM

PERPER TREE

CESS POOL

EXISTING CO

352.4

APPX. EXISTING LATERAL

0 15' 30'

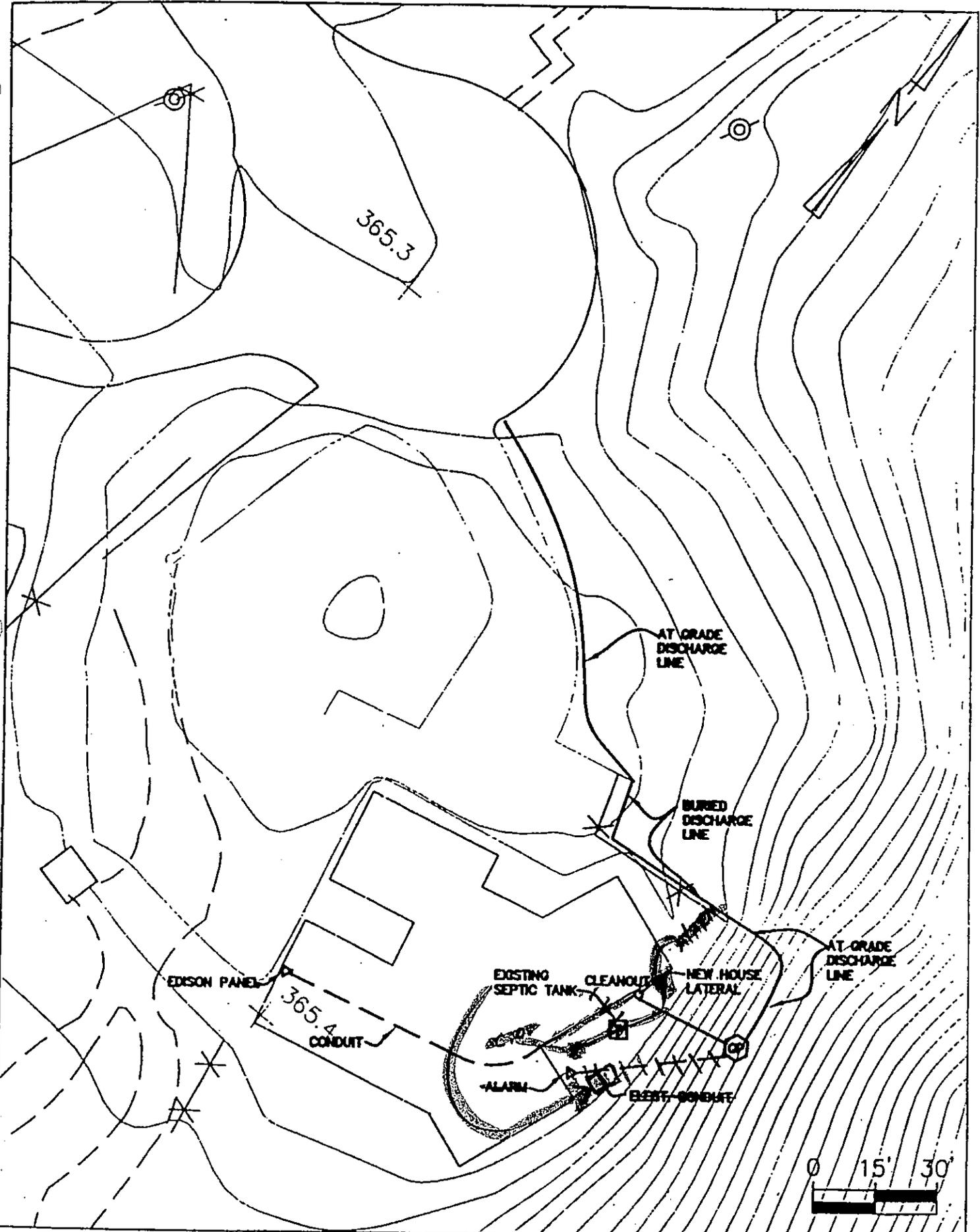
08/03/98 4-THYME.DWG 15:31 KJD



FOR CONTINUATION  
SEE SHEET 18  
PROP. 129

4 THYME PLACE  
ED & SUE BEALL  
RESIDENT NAME

0700 JOB 745.002 RB

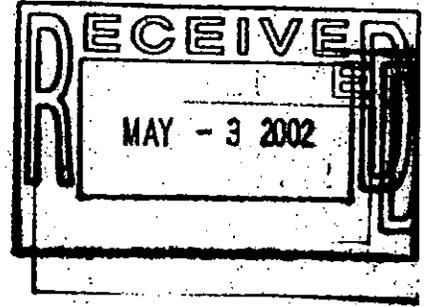


**SA**  
ASSOCIATES

PROPERTY #127

8 THYME  
JOHN D. BEEVER

**OPERATIONS  
&  
MAINTANANCE**



**GRAVITY PUMP STATIONS**

**HOMA PUMPS**

**ABALONE COVE SEWER IMPROVEMENTS  
SWEETBAY EAST  
&  
THYME PLACE**

4/22/2002

Item A, SP-27, 16, (a)(vii)

All pump stations have been started properly by Wen C. Wang, P.E., Multi W Systems  
All these four Pump stations are properly installed, tested and functioned in accordance to the specification.

Item B, SP-27, 16, (b) Demonstration and instructions

All pump stations have been run through several cycles to demonstrate they work well both in Manual and Automatic control system(SP-27; 16.b)

- (1) we have demonstrated the operation and maintenance of Products to owner's representative
- (2) Review and explain all important O&M tips to customer in detail
- (3) Demonstrate to owner on Start-up, operation, control system, adjustment, and trouble-shooting, servicing, maintenance and shut-down according to the maintenance schedule.
- (4) 2 hours will be for control system and one hour will be for pump

Item C, SP-29(d) Equipment maintenance schedule;

The following schedule applies to all pumps and controls, also please refer Please refer to HOMA Manual page 7)

1. Pumps; only semi-annually
2. Controls: Annually

Item D, SP-51.5, Grinder pump start-up authorization Form

Start-up authorization form for each pump station with test result(Please refer to HOMA Manual Page 10 and 11)

Test stand not applied to Homa Pumps

Item E, SP-60, (viii ), Installation

Installation certification and documentation(Please refer to HOMA Manual Page 10 and 11)

Please contact the undersigned if you need further information!



Prepared by; Wen C. Wang, P.E.  
Multi W Systems, Inc.



## GRP Series

### Installation, Operation & Maintenance Manual

Project: Abalone Cove Drainage/Sewerage Improvements R.P.V

Installation: Thyme Place & Sweetbay East

GRP26-1 (Thyme)

Pump Model: GRP16-7 (Sweetbay) Serial Number: \_\_\_\_\_

HOMA Pump Technology, Inc.  
390 Birmingham Boulevard • Ansonia, CT 06401

## ELECTRICAL INSTALLATION:

### GENERAL GUIDELINES

All electrical work shall be carried out under the supervision of an authorized, licensed electrician. The present state adopted edition of the National Electrical Code as well as all local codes and regulations shall be complied with.

### VERIFICATION OF POWER SUPPLY

Prior to making any electrical connections or applying power to the pump, compare the power supply available at the pump station to the data on the unit's nameplate. *Confirm that both voltage and phase match between pump and control panel.* The voltage supplied at the pump shall be plus or minus 10% of the nameplate value, frequency shall be plus or minus 5% of the nameplate value, the voltage phase balance shall be within 1% and the maximum corrected power factor shall be 1.0.

### POWER LEAD WIRING

HOMA GRP Series pumps may be provided with 1 or more cables, depending on motor horsepower and operating voltage. Power leads L1, L2, & L3 may be provided as single conductor, or as two conductor. Two conductor configuration may use leads from two separate cables, or may use two conductors within one cable. Please refer to wiring diagram in the appendix for specific connection details. *The pump must be connected electrically through a motor starter with proper circuit breaker protection in order to validate warranty. Do not splice cables.*

### THERMAL SWITCH WIRING :

Pumps are equipped with thermal switches which are normally closed, automatically resetting switches. Switches will open when the internal temperature rises above the design temperature, and will close when the temperature returns to normal. GRP 16 & 21 pumps have internally connected thermals which shut pump down in the event of over temperature condition, and do not require any external connection. GRP 26 & 117 pumps have thermal switches which must be wired into

the over temperature circuit of the control panel. **Note: All sizes of Class1, Div. 1 pump for hazardous areas will have externally wired thermal switches. Thermal switch leads must be connected to a current regulated control circuit in accordance with the NEC.**

Identify thermal switch leads marked T1 and T3 in the power or control cable. The resistance across these leads will be .5 $\Omega$ . These leads must be connected to the thermal overload relay located in the control panel. *Thermal switch leads must be connected to validate warranty.*

### SEAL PROBE WIRING (OPTIONAL)

The mechanical seal leak detector probe utilized in the pump is a conductive probe which is normally open. The intrusion of water into the seal chamber completes the electrical circuit. Control panel provisions will sense this circuit closure, and will provide indication or alarm functions depending on the panel design.

Either single or dual wire systems may be provided. Single wire systems utilize one energizing conductor, and the pump casing and neutral lead as the ground or return portion of the circuit. The dual wire systems utilize two separate conductors for each leg of the circuit. With either system, the seal probe leads must be wired into a control circuit provided in the control panel. This control circuit must energize the probe with a regulated power source, and sense the closed circuit in event of water intrusion. Indication and alarm functions must also be provided in the control circuit. Please see control panel wiring diagram (by others) for seal probe connection points. **IMPORTANT: For Hazardous Area Classification Pumps, leak detector circuit must be in conformance with applicable NEC codes and regulations.**

### START / RUN CAPACITORS AND RELAYS:

All single phase motors require start and/or run capacitors to operate. Refer to the wiring schematics in the appendix. *Capacitors and relays must be sized for the specific motor.*

## INSTALLATION OF PUMPS WITH RING STANDS:

The ring stand design allows for simple economical installation or to be transportable from one installation to another. It is intended to operate completely or partially submerged in the pumping liquid. Pump is designed to be installed as a free standing unit.

Install the ring stand to the underside of the volute with the supplied fasteners identified in the accessory fastener selection table. Use tightening torque's indicated in the table.

Install suitable lifting chain of an adequate length to ensure proper lowering and raising capabilities. Lower the pump into the area where it is required. Properly position power cable and chain so they stay above pump and cannot enter the pump suction.

## START-UP

### Prior To Applying Power

*Prior to applying power to the pump; double check all wiring and verify that the power (Voltage, Phase) that will be supplied to the unit matches the nameplate specified values.*

Measure resistance of cable and pump motor resistance of ground circuit between control panel and outside of pump. Perform MEG ohm check of motor insulation. Record all data on start-up checklist which is included with this manual.

### Prior To Installation:

Before lowering the pump into position check the direction of rotation. The impeller will rotate clockwise as viewed from above, therefore the pump will try to move in the counter clockwise direction as the impeller rotates. "Bump the Motor" by closing the pump circuit breaker and push the pump start button and look for the direction of movement specified above. For three phase motors, if the starting jerk is in the clockwise direction, open the circuit breaker to

isolate power and interchange two of the three phase leads inside the control panel.

### Wet Well Applications

If the above checks prove satisfactory the pump is ready for operation. Lower the pump into position. (Refer to Mechanical installation section of this manual.)

Open discharge valve, and verify that all check valves operate freely. It is very common for discharge check valves to be jammed shut (or open) after sitting for a period of time. Once all valves are open and free, start the pump and allow it to stabilize for several minutes prior to recording any test data.

Listen for any unusual noise and be on the lookout for unusual vibration. This is generally detectable on guide rails for AutoCoupling installations and on discharge piping for ring stand installations. Also for AutoCoupling installations, look for any blow by from the discharge connection.

Perform all remaining electrical, operational, and performance tests specified on start-up checklist. *Record and provide details on the checklist to validate warranty.*

## PREVENTIVE MAINTENANCE

Regular preventive maintenance will help ensure longer pump life and more reliable operation. It is recommended that pumps in intermittent operation be inspected twice a year and pumps in continuous operation be inspected every 1,000 hours. The following is a listing of required inspection and maintenance items. (Refer to shop manual for disassembly and reassembly procedures).

**If any of the problems described in the following list exists stop operating the pump to avoid damage or personal injury.**

### 1. CABLE ENTRY

Make sure that the cable entry flange and strain relief clamp are tight. If the cable entry is showing signs of leakage remove cable from entry, remove grommet, cut a piece of cable off so that the grommet seats on a new portion of the cable, replace grommet, and reinstall cable assembly, into the top of the motor.

*Note: Explosion Proof cables are sealed with a Factory Mutual Approved potting compound. Please consult factory for instruction.*

### 2. CABLES

Inspect the cable for cuts, scrapes or sharp bends. If the outer jacket is damaged, replace the cable. Do not attempt splices within wetwells.

### 3. MOTOR INSULATION RESISTANCE

Megger the insulation between the phases and between any phase and ground. Resistance values should be greater than 1 M ohm. If abnormal readings are obtained contact authorized service center immediately.

### 4. EXTERNAL PARTS ON PUMP

Make sure that all screws, bolts and nuts are tight. Check the condition of pump lifting eyes and replace if damaged or worn. Replace any external part that appears worn or damaged.

### 5. SEAL CHAMBER OIL

Check the condition of the oil to see if any water leakage has occurred. Remove the oil fill plug. Drain the oil from the seal chamber into a transparent container. Check for impurities and emulsification (Oil is cream-like). If water intrusion has occurred check lower mechanical seal and replace if necessary. Refill seal chamber with fresh oil. Refer to shop manual for type and quantity of oil.

### 6. IMPELLER

Periodically inspect impeller by turning pump on its side, remove suction strainer nuts and strainer to expose impeller and relocate position of adjusting plate (suction cover) as needed. Replace the impeller if it is damaged or severely worn.

### SPARE PARTS

In order to obtain spare parts identify the required parts by looking at the enclosed cross sectional drawing and listing, and contact authorized HOMA PUMP TECHNOLOGY representative with the parts required and the pump serial number. Authentic Homa Pump Technology parts shall be used to maintain warranty.

*Note: Explosion Proof pumps must be identified as such, and the pump serial number must be referenced for proper parts identification.*

### RECOMMENDED TOOLS AND SUPPLIES

In addition to ordinary, standard tools and lifting devices, ensure that complete set of metric Allen wrenches, dead blow hammer, impeller puller, Loctite 242 (Blue), petroleum jelly and anti-seize compound are on hand.

## START-UP REPORT

This report is designed to insure the customer that customer service and a quality product are the number one priority with Homa Pump Technology, Inc. Please answer the following questions completely and as accurately as possible. Mail this form to:

HOMA PUMP TECHNOLOGY, INC.  
390 BIRMINGHAM BOULEVARD  
ANSONIA, CT 06401  
ATTN: SERVICE MANAGER

Receipt of completed report will initiate operational warranty.  
Reports that are not returned can delay or void warranty.

1.) Pump User's Name: City of Rancho Palos Verdes  
Site Location: Thyme Place  
Site Contract: Colich & Sons  
Unit Supplied By: Multi W Systems, Inc.

2.) Homa Pumps Model: GRP26-1 Serial No. N/A  
Voltage 230 Phase Single Hertz 60 Horsepower 2.4  
Method Used to Check Rotation (viewed from bottom) Yes  
Does Impeller Turn Freely By Hand: YES  NO

3.) Condition of Equipment: EXCELLENT  GOOD  AVERAGE   
Condition of Cable Jacket: EXCELLENT  GOOD  AVERAGE   
Resistance of Cable and Pump Motor (measured at pump control)  
U - V \_\_\_\_\_ Ohms V - W \_\_\_\_\_ Ohms U - W \_\_\_\_\_ Ohms  
Resistance of Ground Circuit Between Control Panel and Outside of Pump \_\_\_\_\_ Ohms  
MEG Ohm Check of Insulation:  
U to Ground \_\_\_\_\_ V to Ground \_\_\_\_\_ W to Ground \_\_\_\_\_

4.) Condition of Equipment at Start-Up: Dry \_\_\_\_\_ Wet  Muddy \_\_\_\_\_  
Was Equipment Stored: No Length of Storage \_\_\_\_\_  
Describe Station Layout: wet well w/ sliderail.

5.) Liquid Level Controls: Model 30MPEND Type mercury float  
Is Control Installed Away From Turbulence? Yes  
Operation Check: ( IF FLOAT SWITCHES SUPPLIED). Yes  
Tip lowest float (stop float), all pumps should remain off.  
Tip second float (and stop float), one pump comes on.  
Tip third float (and stop float), both pumps on (alarm on simplex).  
Tip fourth float (and stop float), high level alarm on (omit on simplex).

6.) Electrical Readings:  
Single Phase:  
Voltage Supply at Panel Line Connection, Pump Off, L1,L2 230 L2-L3 N/A L3-L1 N/A  
Voltage Supply at Panel Line Connection, Pump On, L1,L2 220 L2-L3 N/A L3-L1 N/A  
Amperage: Load Connection, Pump On, L1 10.2 L2 N/A L3 N/A  
~~Three Phase:  
Voltage Supply at Panel Line Connection, Pump Off, L1-L2 \_\_\_\_\_ L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
Voltage Supply at Panel Line Connection, Pump On, L1-L2 \_\_\_\_\_ L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
Amperage Load Connection, Pump On, L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_~~

## START-UP REPORT

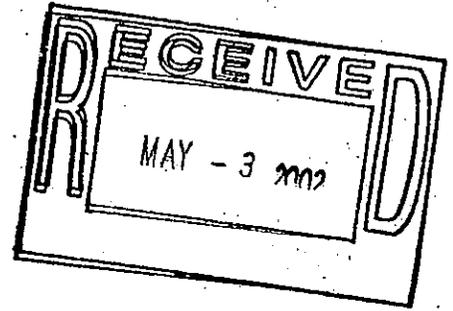
This report is designed to insure the customer that customer service and a quality product are the number one priority with HOMA Pump Technology, Inc. Please answer the following questions completely and as accurately as possible. Mail this form to:

HOMA PUMP TECHNOLOGY INC.  
 390 BIRMINGHAM BOULEVARD  
 ANSONIA, CT 06401  
 ATTN: SERVICE MANAGER

Receipt of completed report will initiate operational warranty.  
 Reports that are not returned can delay or void warranty.

- 1.) Pump User's Name: City of Rancho Palos Verdes  
 Site Location: Sweetbay East  
 Site Contract: \_\_\_\_\_  
 Unit Supplied By: Multi W System Inc.
  
- 2.) HOMA Pumps Model GRPIG-1 Serial No. N/A  
 Voltage 230 Phase Single Hertz 60 Horsepower 1.6  
 Method Used to Check Rotation (viewed from bottom) Y/N  
 Does Impeller Turn Freely By Hand: YES  NO
  
- 3.) Condition of Equipment: EXCELLENT  GOOD \_\_\_\_\_ AVERAGE \_\_\_\_\_  
 Condition of Cable Jacket: EXCELLENT  GOOD \_\_\_\_\_ AVERAGE \_\_\_\_\_  
 Resistance of Cable and Pump Motor (measured at pump control)  
 U - V \_\_\_\_\_ Ohms V - W \_\_\_\_\_ Ohms U - W \_\_\_\_\_ Ohms  
 Resistance of Ground Circuit Between Control Panel and Outside of Pump \_\_\_\_\_ Ohms  
 MEG Ohm Check of Insulation:  
 U to Ground \_\_\_\_\_ V to Ground \_\_\_\_\_ W to Ground \_\_\_\_\_
  
- 4.) Condition of Equipment at Start-Up: Dry \_\_\_\_\_ Wet  Muddy \_\_\_\_\_  
 Was Equipment Stored: NO Length of Storage \_\_\_\_\_  
 Describe Station Layout West well with slide rail system
  
- 5.) Liquid Level Controls: Model 30 MPCNO Type mercury float  
 Is Control Installed Away From Turbulence? yes  
 Operation Check : ( IF FLOAT SWITCHES SUPPLIED).  
 Tip lowest float (stop float), all pumps should remain off.  
 Tip second float (and stop float), one pump comes on.  
 Tip third float (and stop float ), both pumps on (alarm on simplex).  
 Tip fourth float (and stop float), high level alarm on (omit on simplex).
  
- 6.) Electrical Readings :  
 Single Phase:  
 Voltage Supply at Panel Line Connection, Pump Off, L1,L2 230 L2-L3 N/A L3-L1 N/A  
 Voltage Supply at Panel Line Connection, Pump On, L1,L2 230 L2-L3 N/A L3-L1 N/A  
 Amperage: Load Connection, Pump On, L1 7.2 L2 N/A L3 N/A  
  
~~Three Phase:  
 Voltage Supply at Panel Line Connection, Pump Off, L1-L2 \_\_\_\_\_ L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
 Voltage Supply at Panel Line Connection, Pump On, L1-L2 \_\_\_\_\_ L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
 Amperage Load Connection, Pump On, L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_~~

**OPERATIONS  
&  
MAINTANANCE**



**GRAVITY PUMP STATIONS**

**HOMA PUMPS**

**ABALONE COVE SEWER IMPROVEMENTS  
SWEETBAY @ ALTIMIRA  
&  
PALOS VERDES DR. SOUTH**

4/22/2002

Item A, SP-27, 16, (a)(vii)

All pump stations have been started properly by Wen C. Wang, P.E., Multi W Systems  
All these four Pump stations are properly installed, tested and functioned in accordance to the specification.

Item B, SP-27, 16, (b) Demonstration and instructions

All pump stations have been run through several cycles to demonstrate they work well both in Manual and Automatic control system(SP-27, 16.b)

- (1) we have demonstrated the operation and maintenance of Products to owner's representative
- (2) Review and explain all important O&M tips to customer in detail
- (3) Demonstrate to owner on Start-up, operation, control system, adjustment, and trouble-shooting, servicing, maintenance and shut-down according to the maintenance schedule.
- (4) 2 hours will be for control system and one hour will be for pump

Item C, SP-29(d) Equipment maintenance schedule:

The following schedule applies to all pumps and controls, also please refer Please refer to HOMA Manual page 7)

1. Pumps; only semi-annually
2. Controls: Annually

Item D, SP-51.5, Grinder pump start-up authorization Form

Start-up authorization form for each pump station with test result(Please refer to HOMA Manual Page 10 and 11)

Test stand not applied to Homa Pumps

Item E, SP-60, (viii ), Installation

Installation certification and documentation(Please refer to HOMA Manual Page 10 and 11)

Please contact the undersigned if you need further information!



Prepared by; Wen C. Wang, P.E.  
Multi W Systems, Inc.



## A Series

### Installation, Operation & Maintenance Manual

Project: Abalone Cove Drainage/Sewerage Improvements R.P.V.

Installation: Sewerbay @ Altamira and Palos Verdes DR.

Pump Model: AM434/1 Serial Number: N/A

**HOMA Pump Technology, Inc.**  
390 Birmingham Boulevard • Ansonia, CT 06401

## ELECTRICAL INSTALLATION:

### GENERAL GUIDELINES

All electrical work shall be carried out under the supervision of an authorized, licensed electrician. **The present state adopted edition of the National Electrical Code as well as all local codes and regulations shall be complied with.**

### VERIFICATION OF POWER SUPPLY

Prior to making any electrical connections or applying power to the pump, compare the power supply available at the pump station to the data on the unit's nameplate. *Confirm that both voltage and phase match between pump and control panel.* The voltage supplied at the pump shall be plus or minus 10% of the nameplate value, frequency shall be plus or minus 5% of the nameplate value, the voltage phase balance shall be within 1% and the maximum corrected power factor shall be 1.0.

### POWER LEAD WIRING

HOMA A Series pumps may be provided with 1 or more cables, depending on motor horsepower and operating voltage. Power leads L1, L2, & L3 may be provided as single conductor, or as multiple conductors. Multiple conductor configuration may use leads from separate cables, or may use two conductors within one cable. Please refer to wiring diagram in the appendix for specific connection details. *The pump must be connected electrically through a motor starter with proper circuit breaker protection in order to validate warranty. Do not splice cables.*

### THERMAL SWITCH WIRING :

Pumps are equipped with thermal switches embedded in the stator windings which are normally closed, automatically resetting switches. Switches will open when the internal temperature rises above the design temperature, and will close when the temperature returns to normal. Thermal switches must be wired to a current regulated control circuit in accordance with the NEC.

Identify thermal switch leads marked T1 and T3 in the power or control cable. The resistance across these leads will be .50. These leads must be connected to the thermal overload relay located in the control panel. *Thermal switch leads must be connected to validate warranty.*

### SEAL PROBE WIRING (OPTIONAL)

The mechanical seal leak detector probe utilized in the pump is a conductive probe which is normally open. The intrusion of water into the seal chamber completes the electrical circuit. Control panel provisions will sense this circuit closure, and will provide indication or alarm functions depending on the panel design.

Either single or dual wire systems may be provided. Single wire systems utilize one energizing conductor, and the pump casing and neutral lead as the ground or return portion of the circuit. The dual wire systems utilize two separate conductors for each leg of the circuit. With either system, the seal probe leads must be wired into a control circuit provided in the control panel. This control circuit must energize the probe with a regulated power source, and sense the closed circuit in event of water intrusion. Indication and alarm functions must also be provided in the control circuit. Please see control panel wiring diagram for seal probe connection points. **IMPORTANT: For Hazardous Area Classification Pumps, leak detector circuit must be in conformance with applicable NEC codes and regulations.**

### START / RUN CAPACITORS AND RELAYS:

All single phase motors require start and/or run capacitors to operate. Refer to the wiring diagram on page 9 for specific details.

### Variable Frequency Drives:

**Special considerations must be taken when operating pumps with variable frequency drives ( inverters).** *The inverter circuit design, horsepower required by pump, motor cooling system, power cable length, operating voltage, and anticipated turndown ratio must be fully evaluated during the design stage of the installation.*

tightening torque's indicated in the table. Install suitable lifting chain of an adequate length to ensure proper lowering and raising capabilities. Lower the pump into the area where it is required. Properly position power cable and chain so they stay above pump and cannot enter the pump suction.

## INSTALLATION OF PUMPS FOR DRY PIT APPLICATIONS:

### Foundation and Piping Requirements:

#### General

The following recommendations are basic guidelines which are intended to outline basic requirements in the design of the dry pit station. It is essential that a licensed professional engineer be retained by the owner to design the station and all support structures.

#### Foundations

Foundations may consist of any structure heavy enough to provide permanent rigid support for the pump and inlet elbow stand. Concrete foundations built up from the solid ground are the most commonly used. The concrete floor shall be level. The space required by the inlet stand and the location of the foundation anchor bolts are shown on the outline dimension drawing. Foundation bolts are to be embedded in the concrete.

#### Suction Piping

Suction piping should be at least as large as the pump inlet elbow suction. If reducers are utilized they should be of the conical type. If the liquid source level is below the volute horizontal centerline, the reducer must be eccentric and installed with the level side up. If the liquid level is above the pump volute horizontal centerline, either eccentric or concentric reducers may be used. Suction piping should be run as straight as possible. All pipe flange joints should be gasketed to prevent air from entering the pipe. High points that may collect vapor are to be avoided. Check valve shall not be used. Isolation valves such as gate valves can be installed in order to facilitate the removal of the

pump for maintenance. Any valve installed in the suction line should be installed with the stems horizontal.

### Discharge Piping

A check valve and isolation valve shall be installed in the discharge line. The check valve should be installed between the pump discharge flange and the isolation valve. If pipe increasers are used on the discharge line, they should be placed between the check valve and the pump.

The inlet elbow stand allows the pump to be installed in a stationary position in a dry pit. Place the inlet stand in position and tighten the anchor nuts.

Lower the pump on to the top flange of the inlet stand. **DO NOT ALLOW SLACK ON THE LIFTING CABLE UNTIL THE PUMP IS BOLTED DOWN.** Make sure the flange bolt holes align with the mounting holes on the underside of the volute. Secure the pump to the mounting flange with the fasteners that are specified in the Accessory Fastener Selection Table below.

PUMP MODEL	QTY OF BOLTS	BOLT SIZE	NUT SIZE	TORQUE
4" A-SERIES AUTOCOUPLING	8	5/8" X 3"	5/8"	70 ft/#
<del>4" A-SERIES RING STAND</del>	<del>4</del>	<del>16x25mm</del>	<del>16mm</del>	<del>80 ft/#</del>
<del>4" A-SERIES DRY SUMP</del>	<del>8</del>	<del>16x40mm</del>	<del>16mm</del>	<del>80 ft/#</del>
6" A-SERIES AUTOCOUPLING	8	3/4" X 3	3/4"	125 ft/#
<del>6" A-SERIES RING STAND</del>	<del>4</del>	<del>20x40mm</del>	<del>20mm</del>	<del>150 ft/#</del>
<del>6" A-SERIES DRY SUMP</del>	<del>8</del>	<del>20x40mm</del>	<del>20mm</del>	<del>150 ft/#</del>

## MAINTENANCE

Regular maintenance will help ensure longer pump life and more reliable operation. It is recommended that pumps in intermittent operation be inspected twice a year and pumps in continuous operation be inspected every 1,000 hours. The following is a listing of required inspection and maintenance items.

**If any of the problems described in the following list exists stop operating the pump to avoid damage or personal injury.**

### 1. CABLE ENTRY

Make sure that the cable entry flange and strain relief clamp are tight. If the cable entry is showing signs of leakage remove cable from entry, remove grommet, cut a piece of cable off so that the grommet seats on a new portion of the cable, replace grommet, and reinstall cable assembly, into the top of the motor.

*Note: Explosion Proof cables are sealed with a Factory Mutual Approved potting compound. Please consult factory for instruction.*

### 2. CABLES

Inspect the cable for cuts, scrapes or sharp bends. If the outer jacket is damaged, replace the cable. Splices of the power or control cable within the wet well area are not acceptable.

### 3. MOTOR INSULATION RESISTANCE

Megger the insulation between the phases and between any phase and ground. Resistance values should be greater than 1 M ohm. If abnormal readings are obtained contact authorized service center immediately.

### 4. EXTERNAL PARTS ON PUMP

Make sure that all screws, bolts and nuts are tight. Check the condition of pump lifting eyes and replace if damaged or worn, Replace any external part that appears worn or damaged.

### 5. SEAL CHAMBER OIL

*Note: Use extreme care when removing the seal chamber plug, as the chamber may become pressurized if seal failure has occurred.* Seal chamber oil should be checked for signs of water intrusion, or other impurities any time the pump is removed from wet well. To check the condition of the oil, remove the oil fill plug. Drain the chamber volume into a transparent container. Visually check sample for impurities or emulsification (oil may appear cream-like if a small amount of water is present). If significant water intrusion has occurred, remove and replace lower mechanical seal. Unless obvious mechanical damage has occurred to the lower seal, it is good practice to replace the upper and lower mechanical seals as a set. Refill seal chamber with fresh oil to the bottom of fill plug port (when pump is in vertical position) and replace oil fill plug.

### 6. IMPELLER

Periodically inspect impeller by turning pump on its side, remove suction strainer nuts and strainer to expose impeller and relocate position of adjusting plate (suction cover) as needed. Replace the impeller if it is damaged or worn.

### SPARE PARTS

In order to obtain spare parts identify the required parts by looking at the enclosed cross sectional drawing and listing, and contact authorized HOMA PUMP TECHNOLOGY representative with your order. Authentic Homa Pump Technology parts shall be used to maintain warranty.

*Note: Explosion Proof pumps must be identified as such, and the pump serial number must be referenced for proper parts identification.*

### RECOMMENDED TOOLS AND SUPPLIES

In addition to ordinary maintenance and lifting devices, ensure that complete set of metric Allen wrenches, impeller puller, Loctite 242 (Blue), and Anti-seize compound are on hand.

## START-UP REPORT

This report is designed to insure the customer that customer service and a quality product are the number one priority with HOMA Pump Technology, Inc. Please answer the following questions completely and as accurately as possible. Mail this form to:

HOMA PUMP TECHNOLOGY INC.  
390 BIRMINGHAM BOULEVARD  
ANSONIA, CT 06401  
ATTN: SERVICE MANAGER

Receipt of completed report will initiate operational warranty.  
Reports that are not returned can delay or void warranty.

- 1.) Pump User's Name: City of Rancho Palos Verdes  
Site Location: Sweetbay @ Attonira and Palos Verdes Dr.  
Site Contract: \_\_\_\_\_  
Unit Supplied By: Multi W systems, inc.
  
- 2.) HOMA Pumps Model AM434/1 Serial No. N/A  
Voltage 230 Phase single Hertz 60 Horsepower 10  
Method Used to Check Rotation (viewed from bottom) yes  
Does Impeller Turn Freely By Hand: YES  NO
  
- 3.) Condition of Equipment: EXCELLENT  GOOD \_\_\_\_\_ AVERAGE \_\_\_\_\_  
Condition of Cable Jacket : EXCELLENT  GOOD \_\_\_\_\_ AVERAGE \_\_\_\_\_  
Resistance of Cable and Pump Motor (measured at pump control)  
U - V \_\_\_\_\_ Ohms V - W \_\_\_\_\_ Ohms U - W \_\_\_\_\_ Ohms  
Resistance of Ground Circuit Between Control Panel and Outside of Pump \_\_\_\_\_ Ohms  
MEG Ohm Check of Insulation:  
U to Ground \_\_\_\_\_ V to Ground \_\_\_\_\_ W to Ground \_\_\_\_\_
  
- 4.) Condition of Equipment at Start-Up: Dry \_\_\_\_\_ Wet  Muddy \_\_\_\_\_  
Was Equipment Stored: No Length of Storage \_\_\_\_\_  
Describe Station Layout wet well installation
  
- 5.) Liquid Level Controls: Model 30 MFCMD Type mercury float  
Is Control Installed Away From Turbulence? yes  
Operation Check : ( IF FLOAT SWITCHES SUPPLIED).  
Tip lowest float (stop float), all pumps should remain off.  
Tip second float (and stop float), one pump comes on.  
Tip third float (and stop float ), both pumps on (alarm on simplex).  
Tip fourth float (and stop float), high level alarm on ~~(emit on simplex)~~.
  
- 6.) Electrical Readings :  
Single Phase:  
Voltage Supply at Panel Line Connection, Pump Off, L1,L2 230 L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
Voltage Supply at Panel Line Connection, Pump On, L1,L2 220 L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
Amperage: Load Connection, Pump On, L1 37.5 L2 \_\_\_\_\_ L3 \_\_\_\_\_  
  
~~Three-Phase:  
Voltage Supply at Panel Line Connection, Pump Off, L1-L2 \_\_\_\_\_ L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
Voltage Supply at Panel Line Connection, Pump On, L1-L2 \_\_\_\_\_ L2-L3 \_\_\_\_\_ L3-L1 \_\_\_\_\_  
Amperage Load Connection, Pump On, L1 \_\_\_\_\_ L2 \_\_\_\_\_ L3 \_\_\_\_\_~~

Catalog : GP 2010

## Model GP 2010 Grinder Pump

### Contents:

[General Applications](#)

[Features](#)

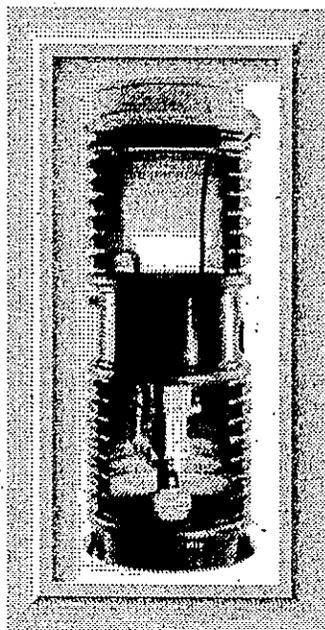
[Operational Information](#)

[Installation](#)

### Downloads:

[GP 2010 drawings \(864K PDF\)](#)

[GP 2010 drawings \(self-extracting DXF\)](#)



### General Applications

Its size, efficiency and operating economy make the GP 2010 your best choice for single dwellings, waterfront property, subdivision developments and marinas. It is ideally suited for both new and existing communities.

### Features

The GP 2010 is a complete unit, including grinder pump, check valve, tank and all necessary controls packaged into a single unit, ready to connect.

All solids are ground into fine particles to pass easily through the pump, check valve and small diameter pipe lines ... even objects that should not be in sewage (plastic, rubber, fiber, wood, etc.). The 1 1/4" discharge connection can be adapted to any piping materials which meets local code requirements.

A tough, corrosion resistant tank of high density polyethylene, sized on the basis of computer studies of water usage patterns, provides optimum holding capacity.

An internal check valve assembly in the Grinder Pump is custom designed for non-clog, trouble-free operation.

The Grinder Pump is automatically activated and, because it runs infrequently and for very short periods, its annual electric energy consumption is typically that of a 40 watt light bulb.

Units are available for indoor and outdoor installations. Outdoor units accommodate a wide range of depths.

## Operational Information

### Motor:

1 HP, 1725 rpm, high torque, capacitor start, thermally protected, 240 or 120 volt, 60 hertz, 1 phase

### Inlet Connections:

4" inlet grommet standard for DWV pipe. Other inlet configurations available from factory.

### Discharge Connections:

Pump Discharge terminates in 1 1/4 inch NPT female thread. Can easily be adapted to 1 1/4" PVC pipe or any other material required by local codes.

### Discharge:\*

15 gpm at 0 psig

11 gpm at 40 psig

9 gpm at 60 psig

### Overload Capacity:

Maximum pressure which pump can generate is limited by motor characteristics to a value well below the rating of the piping and appurtenances. Automatic reset feature does not require manual operation following overload.

US and foreign patents issued and pending.

\*Discharge data includes loss through check valve which is minimal.

\*\*CSA certification applies only to Grinder Pumps bearing the "C" in the model number.

## Installation

The Environment One Grinder Pump is a well engineered, reliable and proven product: proper installation will assure years of trouble-free service. The following instructions define the recommended procedure for installing the Model 2010 Grinder Pump. These instructions cover the installation of units with and without accessways.

This is a sewage handling pump and must be vented in accordance with local plumbing codes. This pump is not to be installed in locations classified as hazardous in accordance with National Electric Code, ANSI / NFPA 70. All piping and electrical systems must be in compliance with applicable local and state codes.

### 1. REMOVE PACKING MATERIAL

The User Instructions must be given to the home owner. Hard-ware supplied with the unit, if any, will be used at installation.

## 2. TANK INSTALLATION

The tank is supplied with a standard grommet for connecting the 4" DWV (4.50" outside Dia.) incoming sewer drain. Other inlet types and sizes are optional (caution 4" DR-35 pipe is of smaller diameter and won't create a water tight joint with the standard grommet). Please confirm that you have the correct inlet before continuing. If a concrete ballast is attached to the tank lift only by the lifting eyes, (rebar) embedded in the concrete. Do not drop, roll, or lay tank on its side. This will damage the unit and void the warranty.

### **If the tank has no accessway (Indoor Installation) (Fig. 1b):**

The pump may be installed on or in the basement floor (see Fig. 1b). If the tank is to be set on the floor it must be a flat and level bearing surface. If the tank is to go into the basement floor, it must be anchored to prevent unit from floating due to high ground water (see Chart 1, page 8 for weight).

### **If the tank is to go in the floor:**

A hole of the correct width and depth should be excavated. The tank must be placed on a 6" bed of gravel made up of naturally rounded aggregate, clean and free flowing, with particle size not less than 1/8" or more than 3/4" in diameter. The wet well should be leveled and filled with water prior to pouring the concrete to prevent the tank from shifting. If it's necessary to pour the concrete to a level above the inlet, the inlet must be sleeved with an 8" tube before pouring.

There must be a minimum clearance of three feet directly above the tank to allow for removal of the pump core.

### **If the tank has an accessway (Fig. 1a):**

Excavate a hole to a depth, so that the removable cover extends above the finished grade line. The grade should slope away from the unit. The diameter of the hole must be large enough to allow for a concrete anchor. Place the unit on a bed of gravel, naturally rounded aggregate, clean and free flowing, with particles not less than 1/8" or more than 3/4" in diameter. The concrete anchor is not optional. The amount of concrete required varies for each respective unit. (See Chart 1 on page 8 for specific requirements for your unit)

The unit should be leveled and the wet well filled with water to the bottom of the inlet to help prevent the unit from shifting while the concrete is being poured. The concrete must be vibrated to ensure there are no voids.

If it is necessary to pour the concrete to a higher level than the inlet, the inlet must be sleeved with an 8" tube before pouring.

If your unit is a model taller than 93" it may be shipped in two sections, requiring field assembly. See Field Joint Assembly Instructions on page 6 for additional information.

### 3. INLET PIPE INSTALLATION

Mark the inlet Pipe 3 1/2" from the end to be inserted. Inlet pipe should be chamfered and lubricated with a soap solution. Lubricate the inlet grommet with soap solution as well. Insert the pipe into the grommet up to the 3 1/2" mark. Inspect to ensure the grommet has remained intact and in place.

### 4. DISCHARGE

The use of 1-1/4" PVC pres-sure pipe Schedule 40 and polyethylene pipe SDR 11 or SDR 7 are recommended. If polyethylene is chosen use compression type fittings to provide a smooth inner passage. It is recommended that a Redundant Check Valve Assembly (E/One part no. PB0104GXX) be installed between the pump discharge and the street main on all installations. Never use a ball type valve as a check valve. We recommend the valve be installed as close to the public right-of-way as possible. Check local codes for applicable requirements.

*CAUTION: Redundant check valves on station laterals and anti-siphon/check valve assemblies on grinder pump cores should not be used as system isolation valves during line tests.*

#### **If the tank has no accessway (Indoor Installation):**

The discharge connection is a 1-1/4" male NPT. The discharge piping must incorporate a shut-off valve and a union with a minimum pressure rating of 160 PSI, or a suitable piping disconnect to allow for removal of the pump core. The valve should be of the type that provides a full-ported passage (i.e. a ball or gate valve). A standard 1-1/4" union or a compression type coupling should be used as a disconnect joint.

#### **If the tank has an accessway:**

There is a ball valve and a quick disconnect pre-installed in the accessway. There is a 1-1/4" female NPT discharge connection on the outside of the tank 41" above the bottom of the tank.

### 5. BACKFILL REQUIREMENTS

Proper backfill is essential to the long term reliability of any underground structure. Several methods of backfill are available to produce favorable results with different native soil conditions.

The most highly recommended method of backfilling is to surround the unit to grade using Class I or Class II backfill material as defined in ASTM 2321. Class 1A and Class 1B are recommended where frost heave is a concern, Class 1B is a better choice when the native soil is sand or if a high, fluctuating water table is expected. Class I, angular crushed stone offers an added benefit in that it needs minimal compaction. Class II, naturally rounded stone, may require more compactive effort, or tamping, to achieve the proper density.

If the native soil condition consist of clean compactable soil, with less than 12% fines, free of ice, rocks, roots, and organic material it may be an acceptable backfill. Such soil must be compacted in lifts not to exceed one foot to reach a final Proctor Density of between 85% and 90%. Non-compactable clays and silts are not suitable backfill for this or any under-ground structure such as inlet or discharge lines. If you are unsure of the consistency of the native soil it is recommended that a geotechnical evaluation of the material be obtained before specifying backfill.

Another option is the use of a flowable fill (i.e., low slump concrete). This is particularly attractive when installing grinder pump stations in augured holes where tight clearances make it difficult to assure proper backfilling and compaction with dry materials. Flowable fills should not be dropped with more than four feet between the discharge nozzle and the bottom of the hole since this can cause separation of the constituent materials.

## 6. VENTING

The unit must be properly vented to assure correct operation of the pump. If you have an indoor unit it can be vented through the 2" port supplied at the top of the wet well or through the incoming sewer line with a 2" pipe (the vent must be within four feet of the grinder pump, and before the first change of direction fitting).

The outdoor units are supplied with a vent pipe from the wet well to the top of the accessway.

Failure to properly vent the tank will result in faulty operation and will void the warranty.

**7. ELECTRICAL CONNECTION** (Supply panel to E/One control panel) Before proceeding verify that the service voltage is the same as the motor voltage shown on the name plate. An alarm device is to be installed in a conspicuous location where it can be readily seen by the home owner. An alarm device is required on every installation. There shall be no exceptions.

Wiring of supply panel and Environment One Control Panel shall be per Figure 2a and 2b, control panel wiring diagrams and local codes.

#### **8. ELECTRICAL CONNECTION (Pump to Panel) (Fig. 4)**

The Environment One GP2000 grinder pump station is provided with a cable for connection between the station and the control panel, (The Supply Cable). The supply cable is shipped inside the station with a small portion fed through the cable connector mounted on the wall of the fiberglass shroud. The supply cable, a six conductor tray cable, meets NEC requirements for direct burial as long as a minimum of 24" burial depth is maintained. Those portions of the cable which have less than 24" of cover must be contained in suitable conduit. This includes the vertical portion dropping to a 24" depth at the station and the length rising out of the ground at the control panel. NOTE: Wiring must be installed in compliance with local codes.

#### **8a. Procedure for installing E/One supply cable**

1. Open the lid of the station, Locate the cable and the feed-thru connector on the wall of the shroud. If the station has a field joint and was delivered in two pieces be sure the 2 halves of the EQD are securely assembled together. Loosen the nut on the connector and pull the supply cable out through the connector until it hits the crimped on stop feature on the cable, approximately 24" from the EQD.

*IMPORTANT: All but 24" of the cable must be pulled out of the station, and the portion of the cable between the EQD and the molded in cable breather should be secured in the hook provided to ensure that the pump functions properly. Do not leave the excess cable in the station.*

2. Retighten the nut. This connection must be tight or ground water will enter the station.
3. Feed the wire through the length of conduit (contractor provided) which will protect it until it is below the 24" burial depth.
4. Position the conduit vertically below the cable connector along side of the station reaching down into the burial depth. Attach the small fiberglass guard (Protective Shroud) provided with the station to protect the exposed cable where it enters the station. Four self tapping screws are provided.
5. Run the cable under-ground, in a trench or tunnel, to the location of the E/One panel. Leave a 6-12 inch loop of cable at each end to allow for shifting and settling. Connections made at the panel are shown in the panel wiring diagram (Fig. 2a and 2b).

#### **9. DEBRIS REMOVAL**

Prior to start-up test procedure, the core must be removed and the incoming sewer line flushed to force all miscellaneous debris into the tank. Next, all liquid and debris must be removed. Once tank is clean,

re-install the pump and proceed with the test.

## 10. TEST PROCEDURE

When the system is complete and ready for use, the following steps should be taken to verify proper installation and operation:

- a. Make sure that the discharge shutoff valve is fully open. This valve must not be closed when the pump is operating. In some installations there may be a valve, or valves, at the street main that must also be open.
- b. Turn ON the alarm power circuit breaker.
- c. Fill tank with water until the alarm turns ON. Shut off water.
- d. Turn ON pump power circuit breaker Pump should immediately turn on. Within one minute the alarm will turn off. Within three minutes the pump will turn off.

## Field Joint Assembly Instructions

It is extremely important that the joint is sealed properly before backfilling. Excavating a unit for repair is very expensive and can be easily avoided by using proper caution during the following procedure.

Parts included in Field Joint Kit:

Identify all parts before proceeding with installation.

- (16) 3/8-16 x 1-1/2 Long screws
- (16) 3/8-16 Elastic Stop Nuts
- (32) Flat Washers
- (1) Length Sealant (Sika) Tape
- (1) Hole Punch
- (1) Vent Pipe Extension

1. Carefully clean and dry both accessway flanges with solvent. **IMPORTANT:** Sealing surfaces must be dry to ensure the sealant adheres correctly.

2. Apply Sika tape twice around the perimeter of the flange that is attached to the tank, start at one hole and go all the way around just inside the bolt circle. Remove the backing paper as you lay the adhesive on the flange. Do not stretch Sika tape during application, it may result in a leak. The tape should overlap at the end by approximately 1/2 inch, as shown in Fig. 5a. If a section of Sika Tape is misapplied, the bad section may be cut out and replaced. Cut away the poorly laid portion cleanly with a knife and be sure to overlap the tape at each end about 1/2 inch.

3. Using the tool provided, punch a hole through the tape at each of

the 16 existing bolt holes in the flange. Be careful to keep the exposed sealant clean and dry.

4. Insert three of the sixteen 3/8-16 x 1-1/2" long bolts, with a flat washer, into the flange attached to the upper part of the accessway. These will act as guides while aligning the bolt pattern of the two flanges.
5. Support the upper access-way section a few inches over the tank with the green stripes on each lined up. Once aligned, lower the upper section onto the mating flange using the three bolts to guide it to the proper position. See Fig. 5b.
6. Insert the remaining 13 bolts with flat washers into the flanges. Place a flat washer and elastic stop nut on the end of each bolt, turning the nut on just enough to hold the washer in place.
7. Tighten up the bolts until the sealant begins to squeeze out from between the flanges. To ensure a consistent, sturdy seal tighten them in the following sequence: 1, 9; 5, 13; 3, 11; 7, 15; 2, 10; 4, 12; 6, 14; 8, 16. Always be sure to tighten one bolt and then the bolt at the position 180\* from it, see Figure 1 for position numbers.
8. Using the same sequence as in step 7 tighten each bolt to 60 in-lbs. Visually inspect the joint, each bolt and each nut should have a flat washer between it and the flange, and a uniform amount of sealant should be protruding from the seam along the entire perimeter.

*In the event that there are any voids in the sealant, the joint may leak. Take corrective actions if necessary and be sure that the joint is leak free before continuing.*

9. Install the vent pipe extension piece which was shipped inside the upper piece of the accessway. Push the extension pipe into the bell mouth fitting on the pipe installed in the wet well tank. Be sure the pipe is seated correctly. Slide the top end of the extension pipe into the receptacle on the bottom of the lid.

### **Lifting Instructions**

Failure to follow these instruction completely will void warranty.

1. Transporting unit to installation site:  
Always lift a unit from the bottom for the purpose of transportation. The station should be received attached to a pallet for this purpose. Never roll a station or move it on its side.

**2. No Ballast (to be poured in place):**

If the concrete anchor is to be poured while the station is in place lift the unit using 2 nylon straps wrapped around the accessway making a sling, as shown below. Keep station oriented vertically to avoid any damage. Only lift from the accessway to put unit in hole, not for moving any distance.

**3. Precast Ballast:**

Never lift a station that has a ballast attached by any means except the rebar. The weight of the concrete will damage the station if you attempt to lift it from any part of the station.

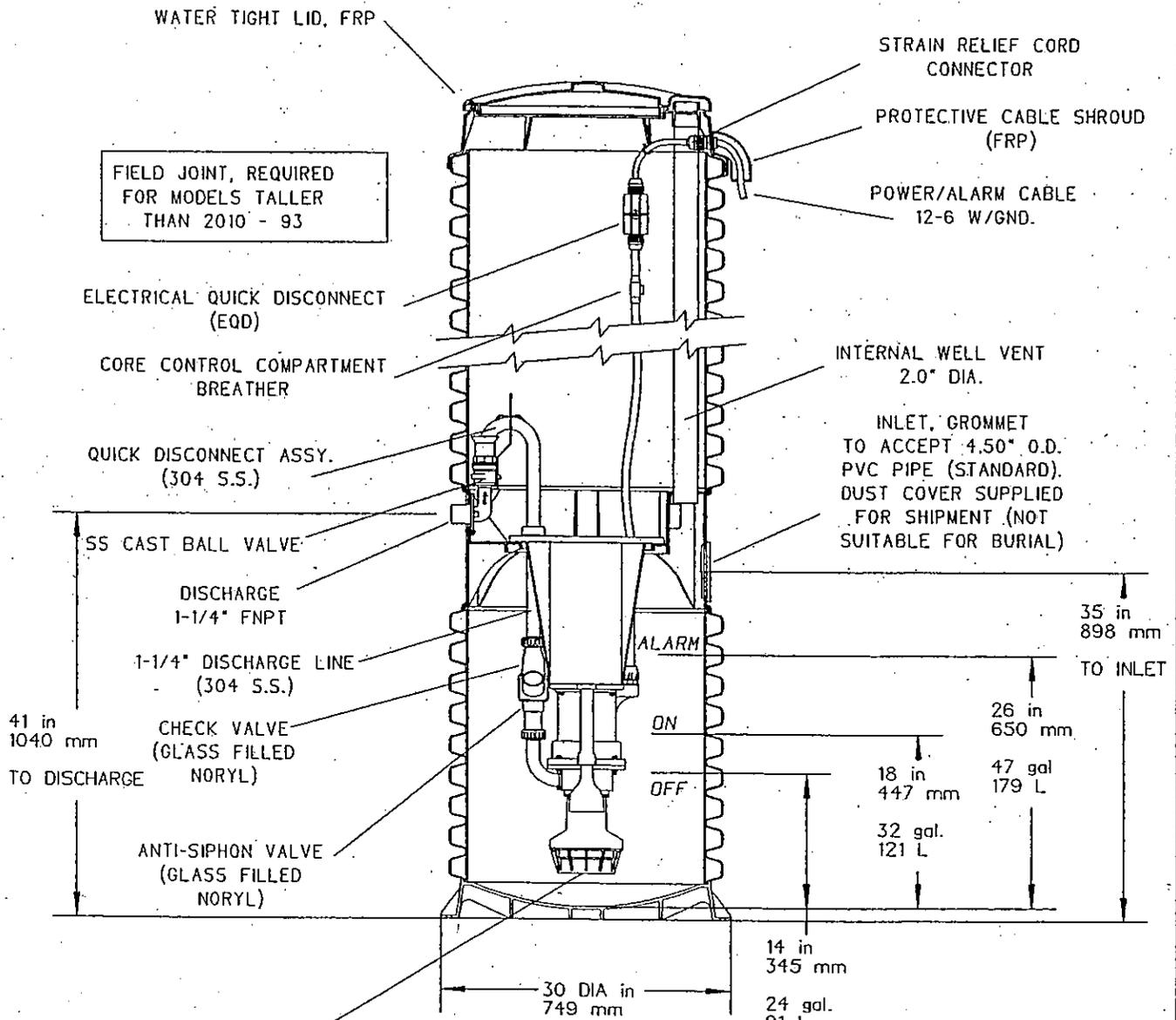
Please contact Environment One Corporation for ballast information.

Environment One Corporation  
2773 Balltown Road, Niskayuna, NY 12309-1090  
Voice: (518) 346-6161 Fax: (518) 346-6188  
eone@worldnet.att.net

▲ top

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[Sales & Service](#) [Resources](#) [Catalog](#) [Map](#) [Contact](#)

2010



SEMI-POSITIVE DISPLACEMENT TYPE PUMP  
 DIRECTLY DRIVEN BY A 1 HP MOTOR  
 CAPABLE OF DELIVERING 9 gpm AT 138' T.D.H.  
 (34 lpm AT 42m T.D.H.)



SGS	CAH	1/25/99	F	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE



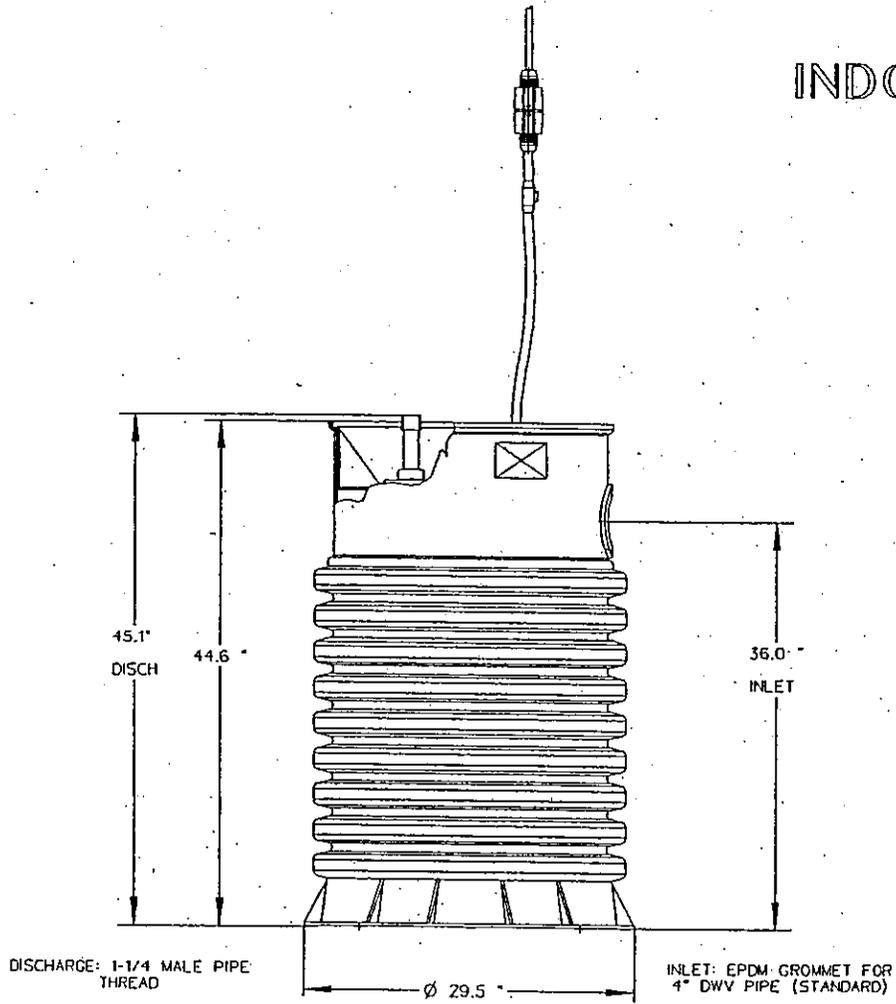
MODEL 2010, DETAIL SHEET

PA 0908 P01

NOTE: A CONCRETE ANCHOR IS REQUIRED TO PREVENT TANK FROM FLOATING. SEE INSTALLATION INSTRUCTIONS OR SPECIFIC CUT SHEET FOR SIZE AND WEIGHT OF ANCHOR

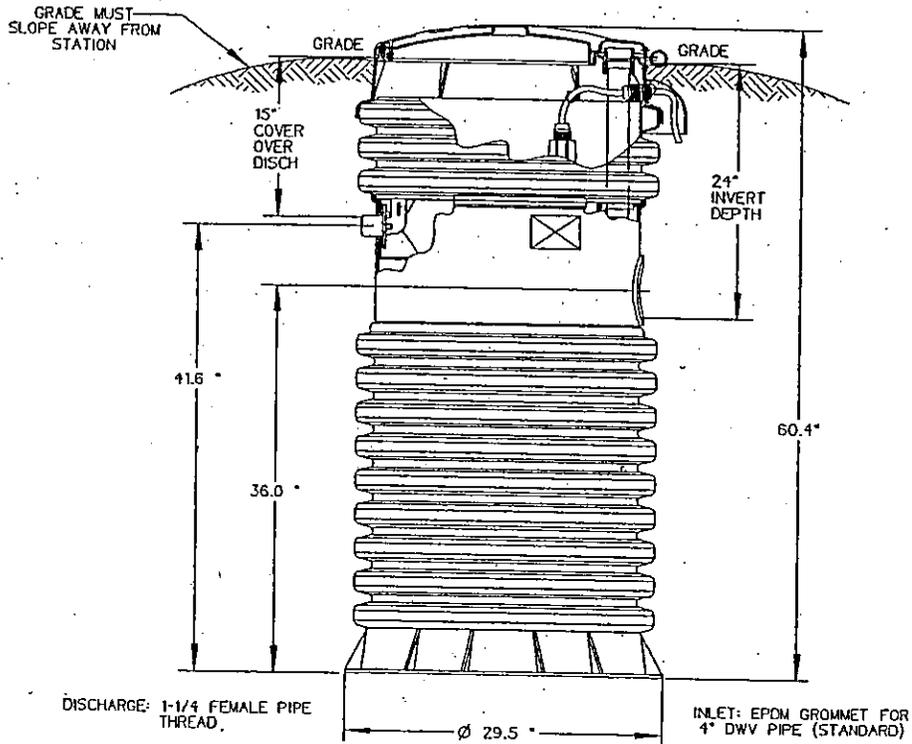
2010-44

INDOOR UNIT



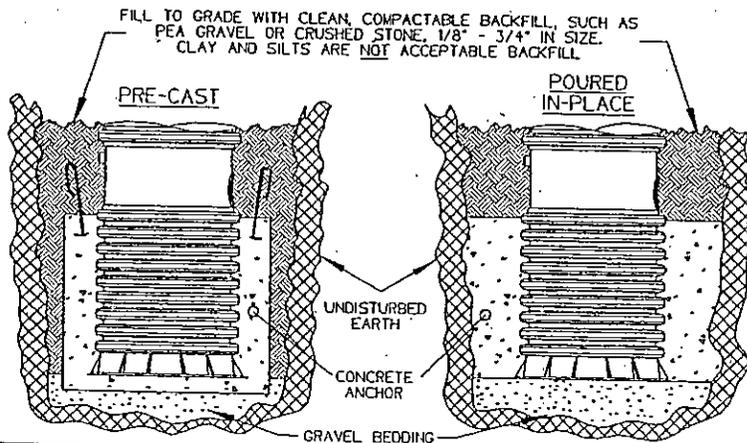
SGS	CAH	1/26/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE
 SEWER SYSTEMS				
MODEL 2010-44				
PA 0856 P10				

2010-61



\*\*SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

NOTE: A CONCRETE ANCHOR OF 1600 lbs (10.5 cu ft) IS REQUIRED ON ALL MODEL 2010 61" STATIONS.



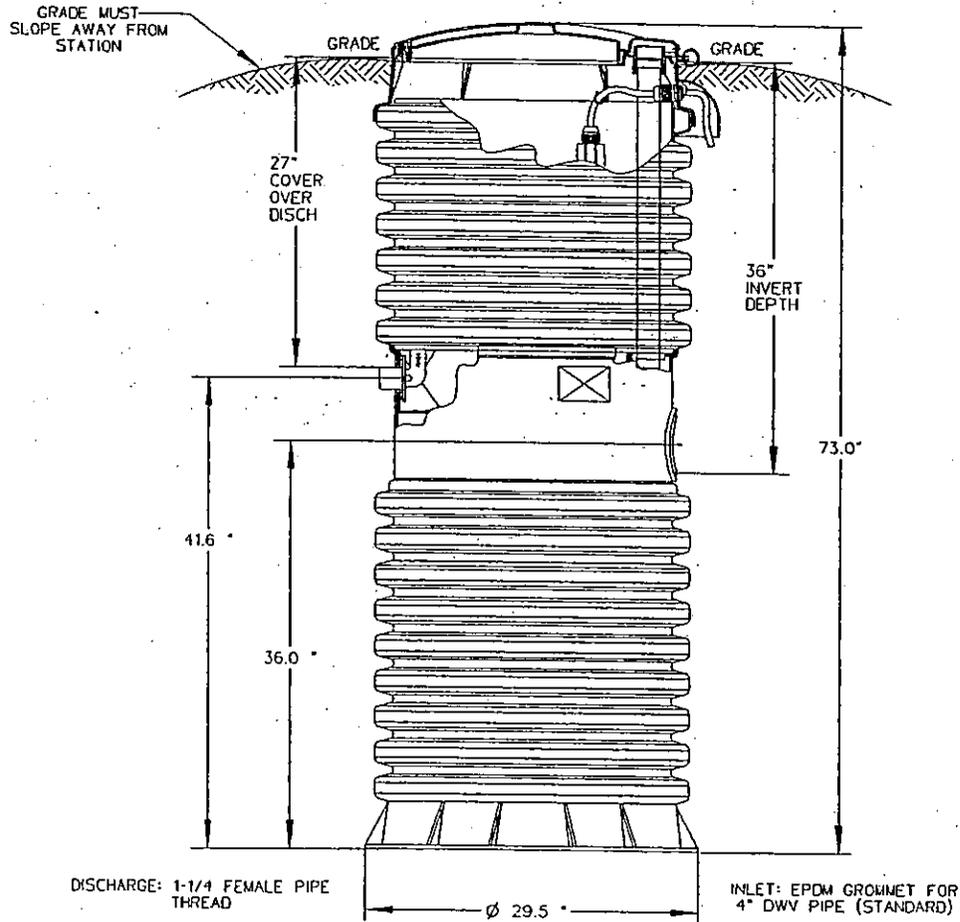
SGS	CAH	01/09/01	B	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE



MODEL 2010-61

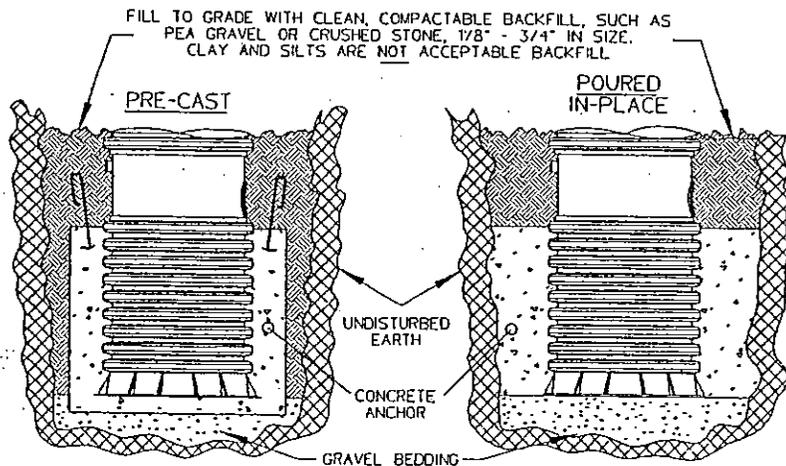
PA 0856 P02

2010-74



\*\*SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

NOTE: A CONCRETE ANCHOR OF 2000 lbs (13.2 cu ft) IS REQUIRED ON ALL MODEL 2010 74" STATIONS.



SGS	CAH	01/21/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE

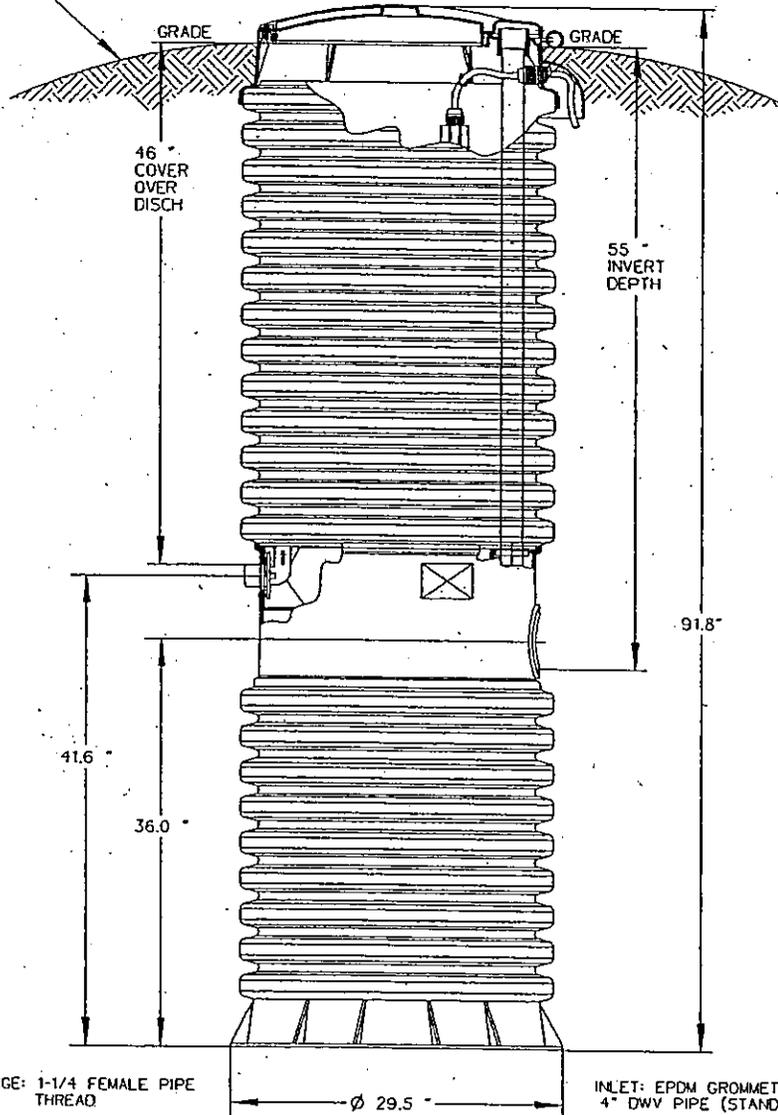


MODEL 2010-74

PA 0856 P03

2010-93

GRADE MUST SLOPE AWAY FROM STATION



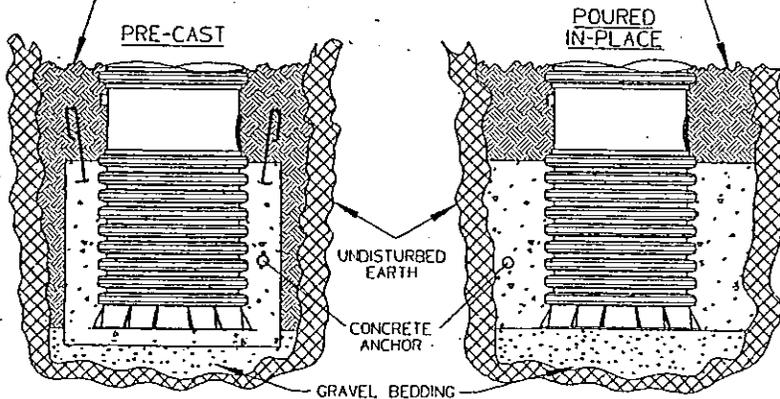
DISCHARGE: 1-1/4 FEMALE PIPE THREAD

INLET: EPDM GROMMET FOR 4" DWV PIPE (STANDARD)

\*\*SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

NOTE: A CONCRETE ANCHOR OF 2600 lbs (17.3 cu ft) IS REQUIRED ON ALL MODEL 2010 93" STATIONS.

FILL TO GRADE WITH CLEAN, COMPACTABLE BACKFILL, SUCH AS PEA GRAVEL OR CRUSHED STONE, 1/8" - 3/4" IN SIZE. CLAY AND SILTS ARE NOT ACCEPTABLE BACKFILL



SGS	CAH	01/21/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE

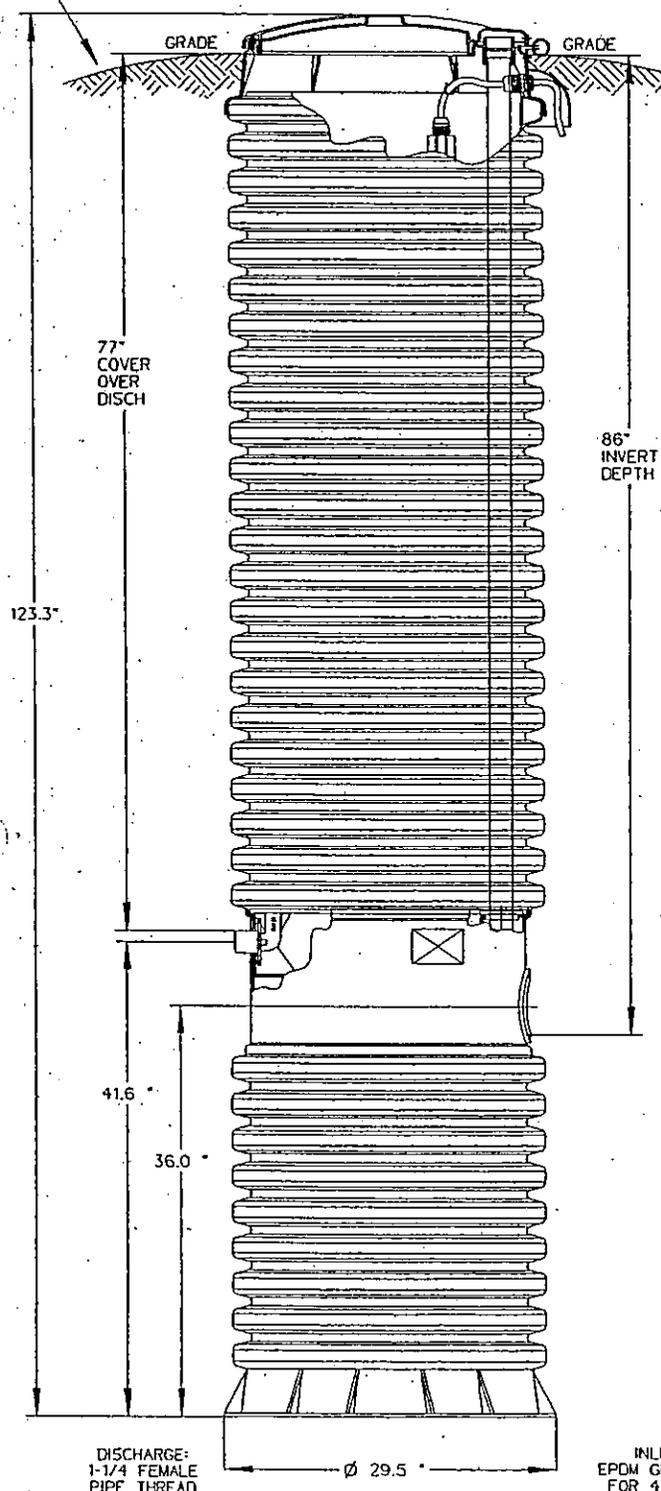


MODEL 2010-93

PA 0856 P04

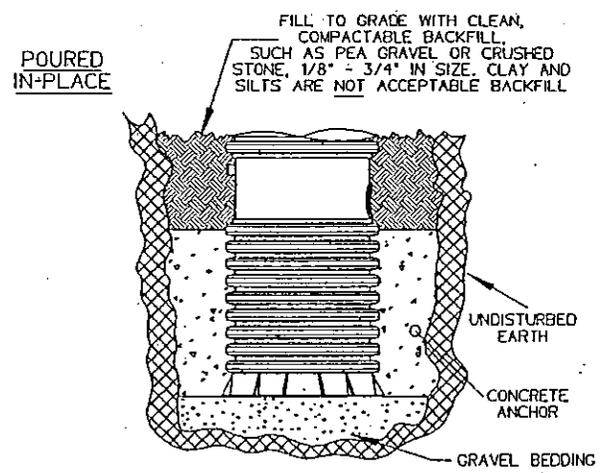
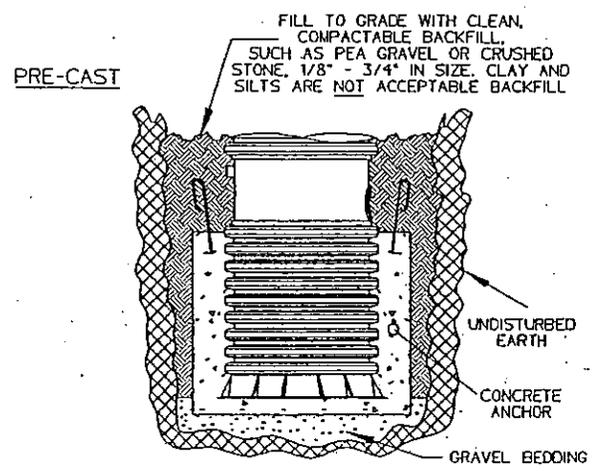
# 2010-124

GRADE MUST SLOPE AWAY FROM STATION

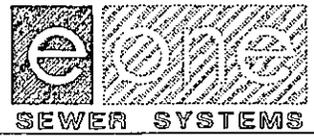


\*\*SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

NOTE: A CONCRETE ANCHOR OF 3700 lbs. (24.3 cu ft) IS REQUIRED ON ALL 2010 124\"/>



SGS	CAH	01/21/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE



MODEL 2010-124

PA 0856 P06

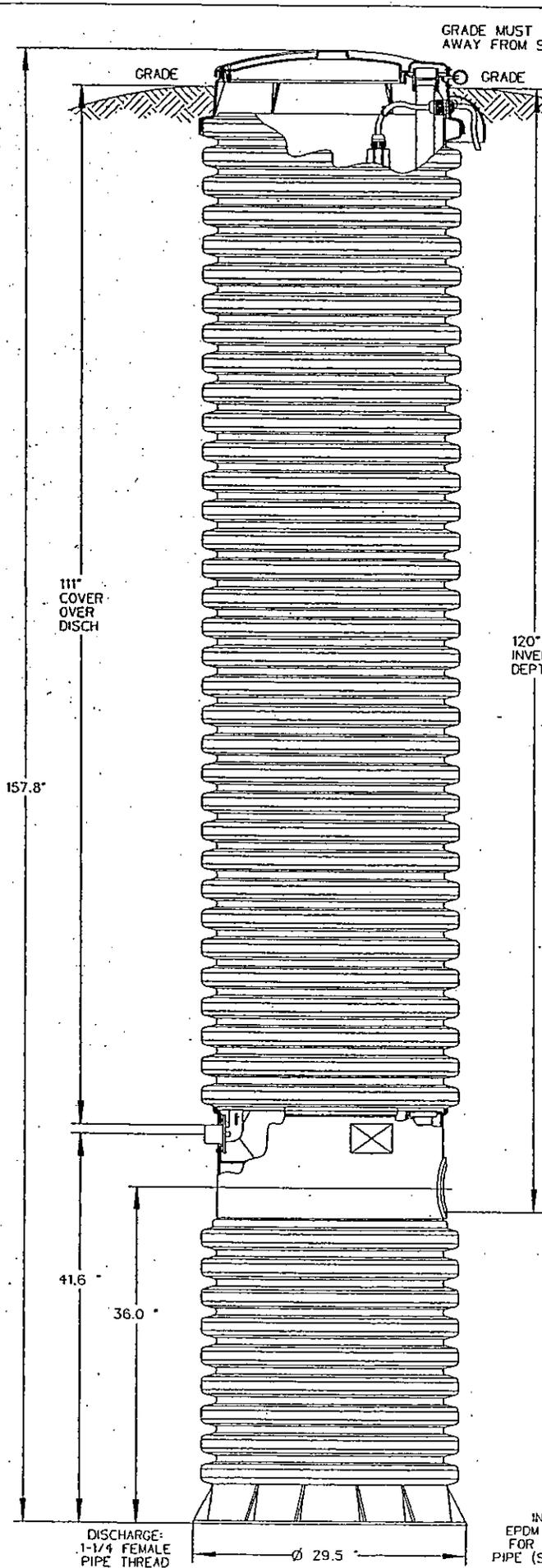
DISCHARGE:  
1-1/4 FEMALE  
PIPE THREAD

INLET:  
EPDM GROMMET  
FOR 4\"/>

# 2010-158

\*\*SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

NOTE: A CONCRETE ANCHOR OF 4800 lbs (31.6 cu ft) IS REQUIRED ON ALL MODEL 2010 158" STATIONS.



GRADE MUST SLOPE AWAY FROM STATION

GRADE

GRADE

111" COVER OVER DISCH

120" INVERT DEPTH

157.8"

41.6"

36.0"

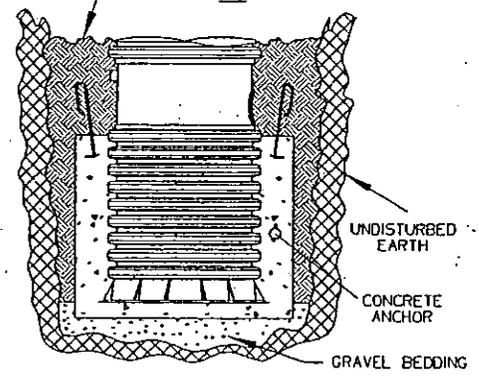
DISCHARGE: 1-1/4" FEMALE PIPE THREAD

Ø 29.5"

INLET: EPDM GROMMET FOR 4" DWV PIPE (STANDARD)

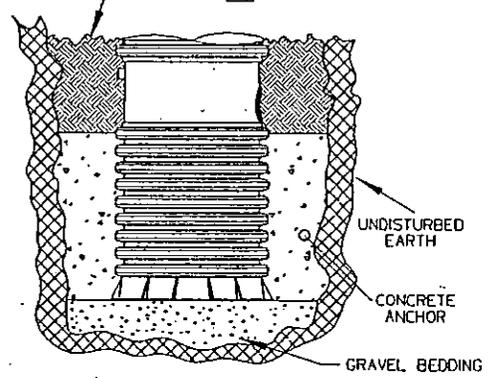
PRE-CAST

FILL TO GRADE WITH CLEAN, COMPACTABLE BACKFILL, SUCH AS PEA GRAVEL OR CRUSHED STONE, 1/8" - 3/4" IN SIZE. CLAY AND SILTS ARE NOT ACCEPTABLE BACKFILL



POURED IN-PLACE

FILL TO GRADE WITH CLEAN, COMPACTABLE BACKFILL, SUCH AS PEA GRAVEL OR CRUSHED STONE, 1/8" - 3/4" IN SIZE. CLAY AND SILTS ARE NOT ACCEPTABLE BACKFILL



SGS	CAH	01/21/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE



MODEL 2010-158

PA 0856 P08

Products : GP 2014

## Model GP 2014 Grinder Pump

### **Contents:**

General Applications

Features

Operational Information

Installation

### **Downloads:**

GP 2014 drawings (640K PDF)

GP 2014 drawings (self-extracting DXF)



## General Applications

Its size, efficiency and operating economy make the GP 2014 your best choice for multiple dwellings, waterfront property, subdivision developments and marinas. It is ideally suited for both new and existing communities.

## Features

The GP 2014 is a complete unit, including grinder pump, check valve, tank and all necessary controls packaged into a single unit, ready to connect.

All solids are ground into fine particles to pass easily through the pump, check valve and small diameter pipe lines ... even objects that should not be in sewage (plastic, rubber, fiber, wood, etc.). The 1 1/4" discharge connection can be adapted to any piping materials which meets local code requirements.

A tough, corrosion resistant tank of HDPE, sized on the basis of computer studies of water usage patterns, provides optimum holding capacity.

An internal check valve assembly in the Grinder Pump is custom designed for non-clog, trouble-free operation.

The Grinder Pump is automatically activated and, because it runs infrequently and for very short periods, its annual electric energy consumption is typically that of a 40 watt light bulb.

Units are available for indoor and outdoor installations. Outdoor units accommodate a wide range of depths.

## Operational Information

### Motors:

1 HP, 1725 rpm, high torque, capacitor start, thermally protected, 240 or 120 volt, 60 hertz, 1 phase

### Inlet Connections:

4" inlet grommet standard for DWV pipe. Other inlet configurations available from factory.

### Discharge Connections:

Pump Discharge terminates in 1 1/4" NPT female thread. Can easily be adapted to 1 1/4" PVC pipe or any other material required by local codes.

### Discharge:\*

15 gpm at 0 psig

11 gpm at 40 psig

9 gpm at 60 psig

### Overload Capacity:

Maximum pressure which pump can generate is limited by motor characteristics to a value well below the rating of the piping and appurtenances. Automatic reset feature does not require manual operation following overload.

US and foreign patents issued and pending.

\*Discharge data includes loss through check valve which is minimal.

\*\*CSA certification applies only to Grinder Pumps bearing the "C" in the model number.

## Installation

The Environment One Grinder Pump is a well-engineered, reliable and proven product: proper installation will assure years of trouble-free service. The following instructions define the recommended procedure for installing the Model 2010 Grinder Pump. These instructions cover the installation of units with and without accessways.

This is a sewage-handling pump and must be vented in accordance with local plumbing codes. This pump is not to be installed in locations classified as hazardous in accordance with National Electric Code, ANSI / NFPA 70. All piping and electrical systems must be in compliance with applicable local and state codes.

### 1. REMOVE PACKING MATERIAL

The User Instructions must be given to the homeowner. Hardware supplied with the unit, if any, will be used at installation.

## **2. TANK INSTALLATION**

The tank is supplied with a standard grommet for connecting the 4" DWV (4.50" outside diameter) incoming sewer drain. Other inlet types and sizes are optional (caution 4" DR-35 pipe is of smaller diameter and won't create a watertight joint with the standard grommet). Please confirm that you have the correct inlet before continuing. If a concrete ballast is attached to the tank lift only by the lifting eyes, (rebar) embedded in the concrete. Do not drop, roll, or lay tank on its side. This will damage the unit and void the warranty.

### **If the tank has no accessway (Indoor Installation) (Fig. 1b):**

The pump may be installed on or in the basement floor (see Fig. 1b). If the tank is to be set on the floor it must be a flat and level bearing surface. If the tank is to go into the basement floor, it must be anchored to prevent unit from floating due to high ground water (see Chart 1, page 8 for weight).

### **If the tank is to go in the floor:**

A hole of the correct width and depth should be excavated. The tank must be placed on a 6" bed of gravel made up of naturally rounded aggregate, clean and free flowing, with particle size not less than 1/8" or more than 3/4" in diameter. The wet well should be leveled and filled with water prior to pouring the concrete to prevent the tank from shifting. If it's necessary to pour the concrete to a level above the inlet, the inlet must be sleeved with an 8" tube before pouring.

There must be a minimum clearance of three feet directly above the tank to allow for removal of the pump core.

### **If the tank has an accessway (Fig. 1a):**

Excavate a hole to a depth, so that the removable cover extends above the finished grade line. The grade should slope away from the unit. The diameter of the hole must be large enough to allow for a concrete anchor. Place the unit on a bed of gravel, naturally rounded aggregate, clean and free flowing, with particles not less than 1/8" or more than 3/4" in diameter. The concrete anchor is not optional. The amount of concrete required varies for each respective unit. (See Chart 1 on page 8 for specific requirements for your unit)

The unit should be leveled and the wet well filled with water to the bottom of the inlet to help prevent the unit from shifting while the concrete is being poured. The concrete must be vibrated to ensure there are no voids.

If it is necessary to pour the concrete to a higher level than the inlet, the inlet must be sleeved with an 8" tube before pouring.

If your unit is a model taller than 93" it may be shipped in two sections, requiring field assembly. See Field Joint Assembly Instructions on page 6 for additional information.

### 3. INLET PIPE INSTALLATION

Mark the inlet Pipe 3 1/2" from the end to be inserted. Inlet pipe should be chamfered and lubricated with a soap solution. Lubricate the inlet grommet with soap solution as well. Insert the pipe into the grommet up to the 3 1/2" mark. Inspect to ensure the grommet has remained intact and in place.

### 4. DISCHARGE

The use of 1-1/4" PVC pressure pipe Schedule 40 and polyethylene pipe SDR 11 or SDR 7 are recommended. If polyethylene is chosen use compression type fittings to provide a smooth inner passage. It is recommended that a Redundant Check Valve Assembly (E/One part no. PB0104GXX) be installed between the pump discharge and the street main on all installations. Never use a ball type valve as a check valve. We recommend the valve be installed as close to the public right-of-way as possible. Check local codes for applicable requirements.

*CAUTION: Redundant check valves on station laterals and anti-siphon/check valve assemblies on grinder pump cores should not be used as system isolation valves during line tests.*

#### **If the tank has no accessway (Indoor Installation):**

The discharge connection is a 1-1/4" male NPT. The discharge piping must incorporate a shut-off valve and a union with a minimum pressure rating of 160 PSI, or a suitable piping disconnect to allow for removal of the pump core. The valve should be of the type that provides a full-ported passage (i.e. a ball or gate valve). A standard 1-1/4" union or a compression type coupling should be used as a disconnect joint.

#### **If the tank has an accessway:**

There is a ball valve and a quick disconnect pre-installed in the accessway. There is a 1-1/4" female NPT discharge connection on the outside of the tank 41" above the bottom of the tank.

### 5. BACKFILL REQUIREMENTS

Proper backfill is essential to the long term reliability of any underground structure. Several methods of backfill are available to produce favorable results with different native soil conditions.

The most highly recommended method of backfilling is to surround the unit to grade using Class I or Class II backfill material as defined in ASTM 2321. Class 1A and Class 1B are recommended where frost heave is a concern, Class 1B is a better choice when the native soil is sand or if a high, fluctuating water table is expected. Class I, angular crushed stone offers an added benefit in that it needs minimal compaction. Class II, naturally rounded stone, may require more compactive effort, or tamping, to achieve the proper density.

If the native soil condition consist of clean compactable soil, with less than 12% fines, free of ice, rocks, roots, and organic material it may be an acceptable backfill. Such soil must be compacted in lifts not to exceed one foot to reach a final Proctor Density of between 85% and 90%. Non-compactable clays and silts are not suitable backfill for this or any under-ground structure such as inlet or discharge lines. If you are unsure of the consistency of the native soil it is recommended that a geotechnical evaluation of the material be obtained before specifying backfill.

Another option is the use of a flowable-fill (i.e., low slump concrete). This is particularly attractive when installing grinder pump stations in augured holes where tight clearances make it difficult to assure proper backfilling and compaction with dry materials. Flowable fills should not be dropped with more than four feet between the discharge nozzle and the bottom of the hole since this can cause separation of the constituent materials.

## 6. VENTING

The unit must be properly vented to assure correct operation of the pump. If you have an indoor unit it can be vented through the 2" port supplied at the top of the wet well or through the incoming sewer line with a 2" pipe (the vent must be within four feet of the grinder pump, and before the first change of direction fitting).

The outdoor units are supplied with a vent pipe from the wet well to the top of the accessway.

Failure to properly vent the tank will result in faulty operation and will void the warranty.

**7. ELECTRICAL CONNECTION** (Supply panel to E/One control panel) Before proceeding verify that the service voltage is the same as the motor voltage shown on the nameplate. An alarm device is to be installed in a conspicuous location where it can be readily seen by the homeowner. An alarm device is required on every installation. There shall be no exceptions.

Wiring of supply panel and Environment One Control Panel shall be per Figure 2a and 2b, control panel wiring diagrams and local codes.

### **8. ELECTRICAL CONNECTION (Pump to Panel) (Fig. 4)**

The Environment One GP2000 grinder pump station is provided with a cable for connection between the station and the control panel, (The Supply Cable). The supply cable is shipped inside the station with a small portion fed through the cable connector mounted on the wall of the fiberglass shroud. The supply cable, a six-conductor tray cable, meets NEC requirements for direct burial as long as a minimum of 24" burial depth is maintained. Those portions of the cable which have less than 24" of cover must be contained in suitable conduit. This includes the vertical portion dropping to a 24" depth at the station and the length rising out of the ground at the control panel. NOTE: Wiring must be installed in compliance with local codes.

#### **8a. Procedure for installing E/One supply cable**

1. Open the lid of the station, Locate the cable and the feed-thru connector on the wall of the shroud. If the station has a field joint and was delivered in two pieces be sure the 2 halves of the EQD are securely assembled together. Loosen the nut on the connector and pull the supply cable out through the connector until it hits the crimped on stop feature on the cable, approximately 24" from the EQD.  
*IMPORTANT: All but 24" of the cable must be pulled out of the station, and the portion of the cable between the EQD and the molded in cable breather should be secured in the hook provided to ensure that the pump functions properly. Do not leave the excess cable in the station.*
2. Retighten the nut. This connection must be tight or ground water will enter the station.
3. Feed the wire through the length of conduit (contractor provided) which will protect it until it is below the 24" burial depth.
4. Position the conduit vertically below the cable connector along side of the station reaching down into the burial depth. Attach the small fiberglass guard (Protective Shroud) provided with the station to protect the exposed cable where it enters the station. Four self-tapping screws are provided.
5. Run the cable underground, in a trench or tunnel, to the location of the E/One panel. Leave a 6-12 inch loop of cable at each end to allow for shifting and settling. Connections made at the panel are shown in the panel wiring diagram (Fig. 2a and 2b).

### **9. DEBRIS REMOVAL**

Prior to start-up test procedure, the core must be removed and the incoming sewer line flushed to force all miscellaneous debris into the tank. Next, all liquid and debris must be removed. Once tank is clean,

re-install the pump and proceed with the test.

## 10. TEST PROCEDURE

When the system is complete and ready for use, the following steps should be taken to verify proper installation and operation:

- a. Make sure that the discharge shutoff valve is fully open. This valve must not be closed when the pump is operating. In some installations there may be a valve, or valves, at the street main that must also be open.
- b. Turn ON the alarm power circuit breaker.
- c. Fill tank with water until the alarm turns ON. Shut off water.
- d. Turn ON pump power circuit breaker Pump should immediately turn on. Within one minute the alarm will turn off. Within three minutes the pump will turn off.

## Field Joint Assembly Instructions

It is extremely important that the joint is sealed properly before backfilling. Excavating a unit for repair is very expensive and can be easily avoided by using proper caution during the following procedure.

Parts included in Field Joint Kit:

Identify all parts before proceeding with installation.

- (16) 3/8-16 x 1-1/2 Long screws
- (16) 3/8-16 Elastic Stop Nuts
- (32) Flat Washers
- (1) Length Sealant (Sika) Tape
- (1) Hole Punch
- (1) Vent Pipe Extension

1. Carefully clean and dry both accessway flanges with solvent. **IMPORTANT:** Sealing surfaces must be dry to ensure the sealant adheres correctly.

2. Apply Sika tape twice around the perimeter of the flange that is attached to the tank, start at one hole and go all the way around just inside the bolt circle. Remove the backing paper as you lay the adhesive on the flange. Do not stretch Sika tape during application, it may result in a leak. The tape should overlap at the end by approximately 1/2 inch, as shown in Fig. 5a. If a section of Sika Tape is misapplied, the bad section may be cut out and replaced. Cut away the poorly laid portion cleanly with a knife and be sure to overlap the tape at each end about 1/2 inch.

3. Using the tool provided, punch a hole through the tape at each of

the 16 existing bolt holes in the flange. Be careful to keep the exposed sealant clean and dry.

4. Insert three of the sixteen 3/8-16 x 1-1/2" long bolts, with a flat washer, into the flange attached to the upper part of the accessway. These will act as guides while aligning the bolt pattern of the two flanges.

5. Support the upper access-way section a few inches over the tank with the green stripes on each lined up. Once aligned, lower the upper section onto the mating flange using the three bolts to guide it to the proper position. See Fig. 5b.

6. Insert the remaining 13 bolts with flat washers into the flanges. Place a flat washer and elastic stop nut on the end of each bolt, turning the nut on just enough to hold the washer in place.

7. Tighten up the bolts until the sealant begins to squeeze out from between the flanges. To ensure a consistent, sturdy seal tighten them in the following sequence: 1, 9; 5, 13; 3, 11; 7, 15; 2, 10; 4, 12; 6, 14; 8, 16. Always be sure to tighten one bolt and then the bolt at the position 180\* from it, see Figure 1 for position numbers.

8. Using the same sequence as in step 7 tighten each bolt to 60 in-lbs. Visually inspect the joint, each bolt and each nut should have a flat washer between it and the flange, and a uniform amount of sealant should be protruding from the seam along the entire perimeter.

*In the event that there are any voids in the sealant, the joint may leak. Take corrective actions if necessary and be sure that the joint is leak free before continuing.*

9. Install the vent pipe extension piece which was shipped inside the upper piece of the accessway. Push the extension pipe into the bell mouth fitting on the pipe installed in the wet well tank. Be sure the pipe is seated correctly. Slide the top end of the extension pipe into the receptacle on the bottom of the lid.

### **Lifting Instructions**

Failure to follow these instruction completely will void warranty.

1. Transporting unit to installation site:

Always lift a unit from the bottom for the purpose of transportation. The station should be received attached to a pallet for this purpose. Never roll a station or move it on its side.

**2. No Ballast (to be poured in place):**

If the concrete anchor is to be poured while the station is in place lift the unit using 2 nylon straps wrapped around the accessway making a sling, as shown below. Keep station oriented vertically to avoid any damage. Only lift from the accessway to put unit in hole, not for moving any distance.

**3. Precast Ballast:**

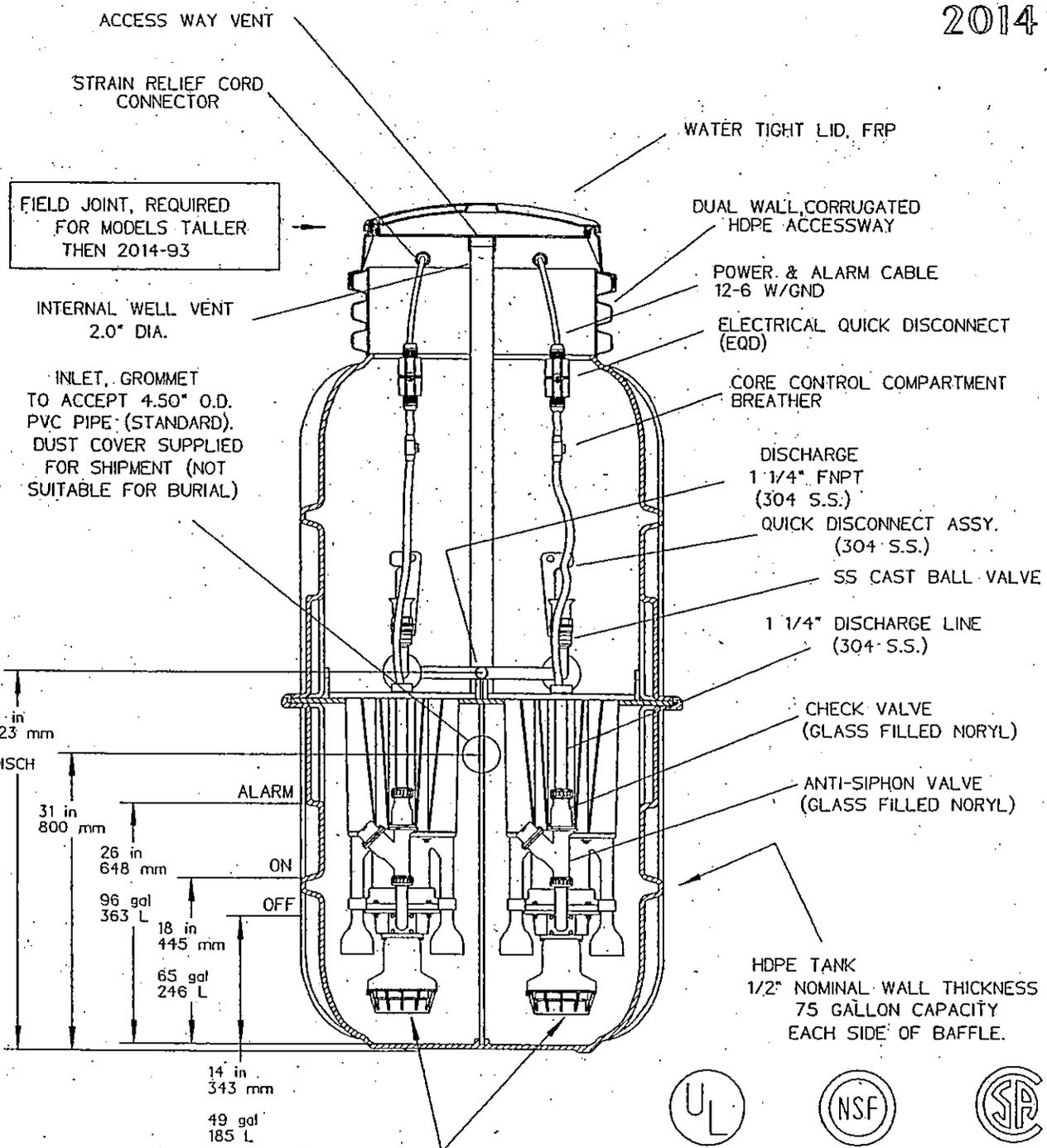
Never lift a station that has a ballast attached by any means except the rebar. The weight of the concrete will damage the station if you attempt to lift it from any part of the station.

Please contact Environment One Corporation for ballast information.

Environment One Corporation  
2773 Balltown Road, Niskayuna, NY 12309-1090  
Voice: (518) 346-6161 Fax: (518) 346-6188  
eone@worldnet.att.net

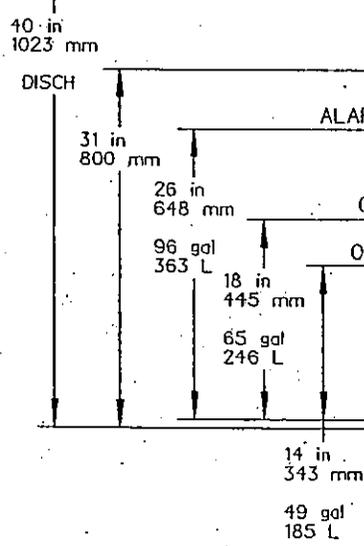
[A. Top](#)

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[Sales & Service](#) [Resources](#) [Catalog](#) [Map](#) [Contact](#)



FIELD JOINT, REQUIRED FOR MODELS TALLER THAN 2014-93

INLET, GROMMET TO ACCEPT 4.50" O.D. PVC PIPE (STANDARD). DUST COVER SUPPLIED FOR SHIPMENT (NOT SUITABLE FOR BURIAL)



HDPE TANK  
1/2" NOMINAL WALL THICKNESS  
75 GALLON CAPACITY  
EACH SIDE OF BAFFLE.



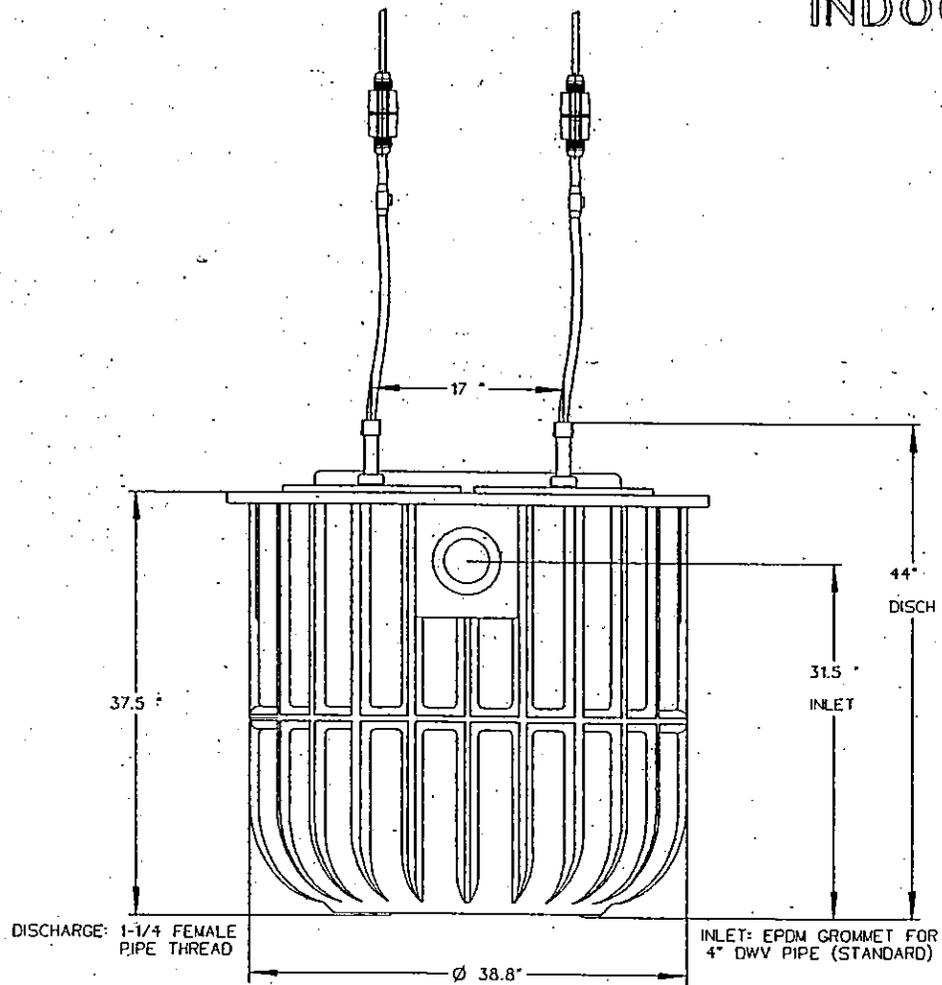
SEMI-POSITIVE DISPLACEMENT TYPE PUMP  
DIRECTLY DRIVEN BY A 1 HP MOTOR  
CAPABLE OF DELIVERING 9 gpm AT 138' T.D.H.  
(34 lpm AT 42m T.D.H.)

NOTE: A CONCRETE ANCHOR IS REQUIRED TO PREVENT THE TANK FROM FLOATING. SEE INSTALLATION INSTRUCTIONS OR SPECIFIC CUT SHEET FOR SIZE AND WEIGHT OF ANCHOR

SGS	CAH	01/25/99	G	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE
 <b>SEWER SYSTEMS</b>				
MODEL 2014, DETAIL SHEET				
PA 0910 P01				

2014-38

INDOOR UNIT



SGS	CAH	01/27/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE

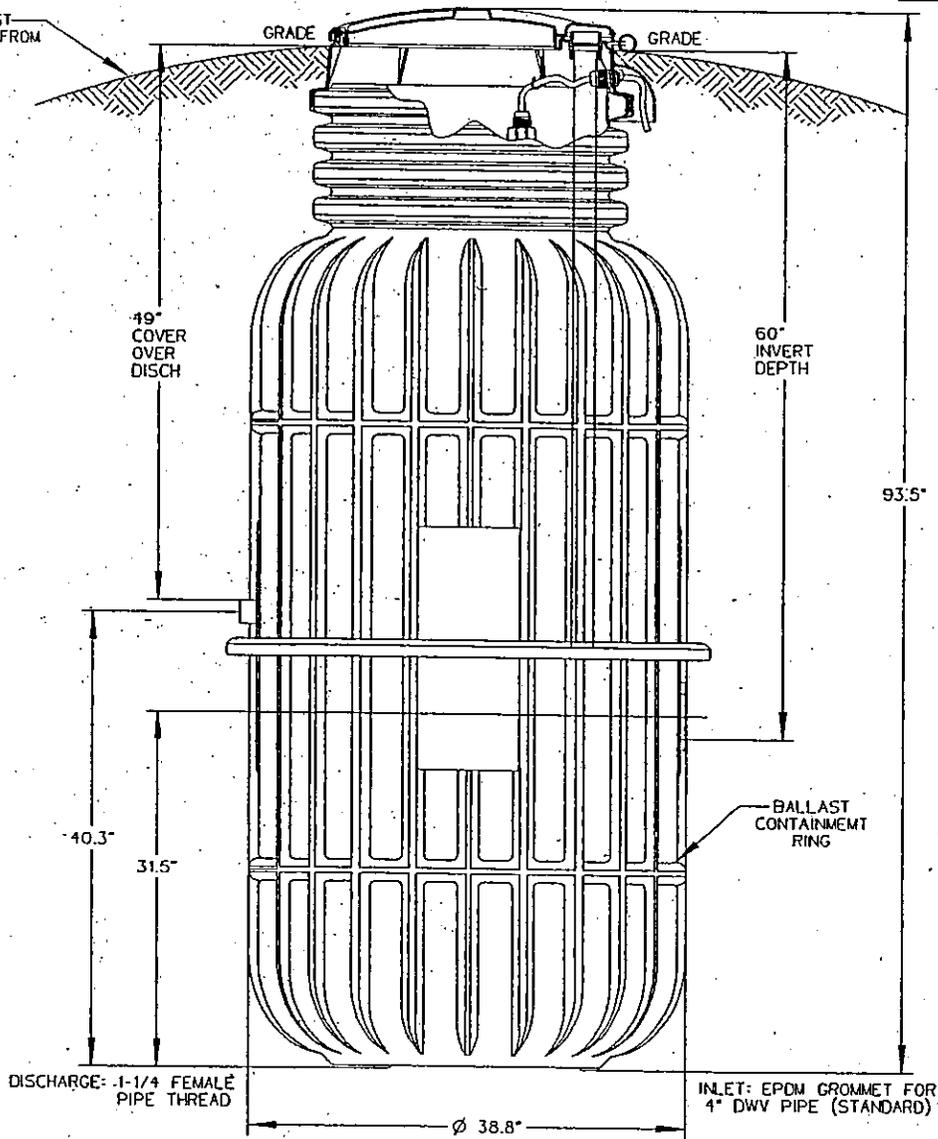


MODEL 2014-38

PA 1337 P01

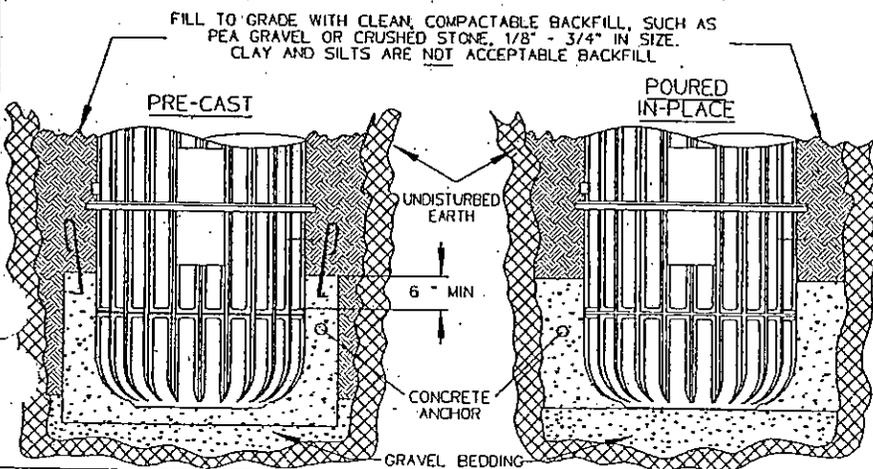
2014-93

GRADE MUST SLOPE AWAY FROM STATION



\*\*SEE INSTALLATION INSTRUCTIONS FOR SPECIFIC DIAMETERS AND HEIGHTS REQUIRED FOR PROPER CONTAINMENT WHEN USING 2014 PRE-CAST BALLASTS

NOTE: A CONCRETE ANCHOR OF 4500 lbs (29.9 cu ft) IS REQUIRED ON ALL MODEL 2014 93" STATIONS.



SGS	CAH	1/25/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE



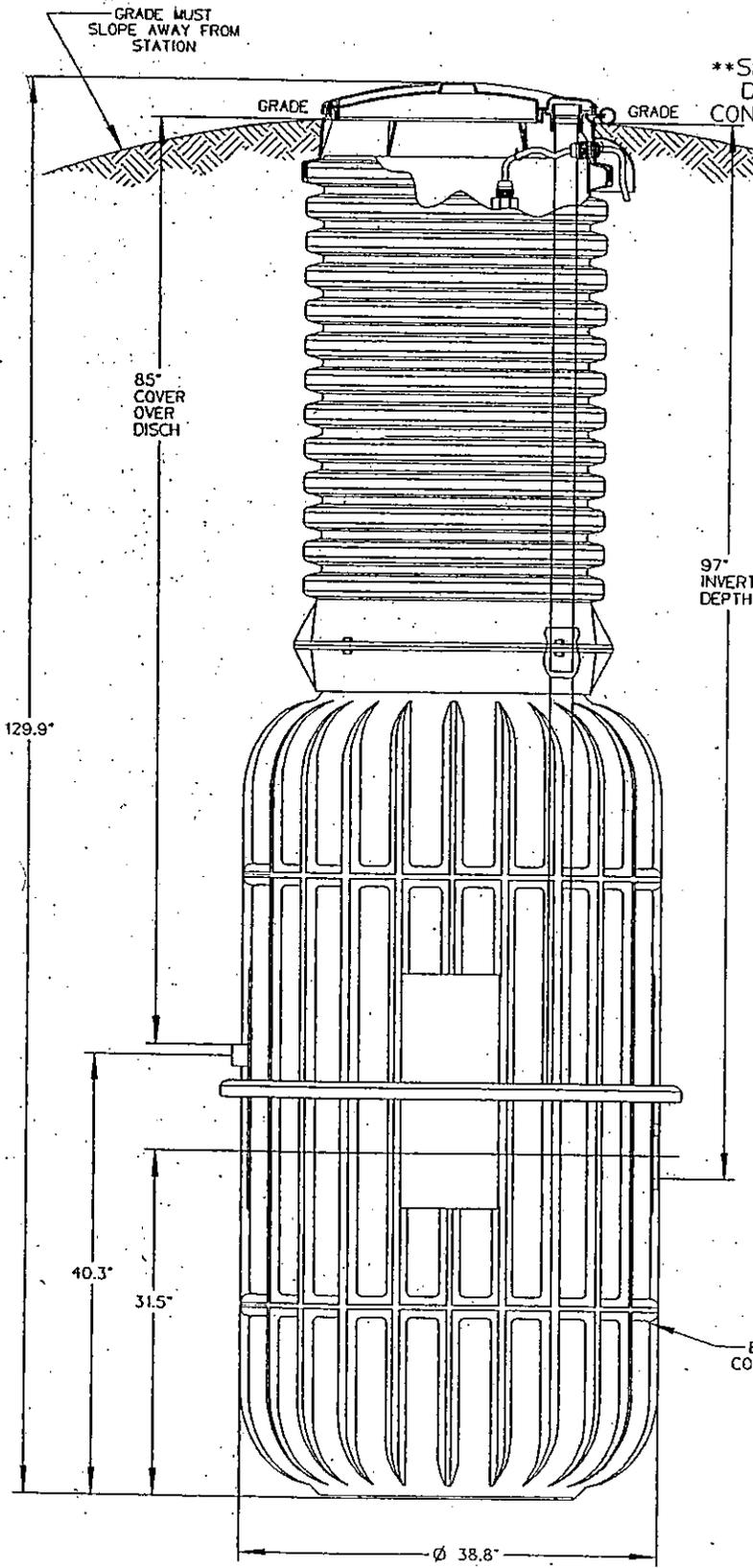
MODEL 2014-93

PA 1337 P03

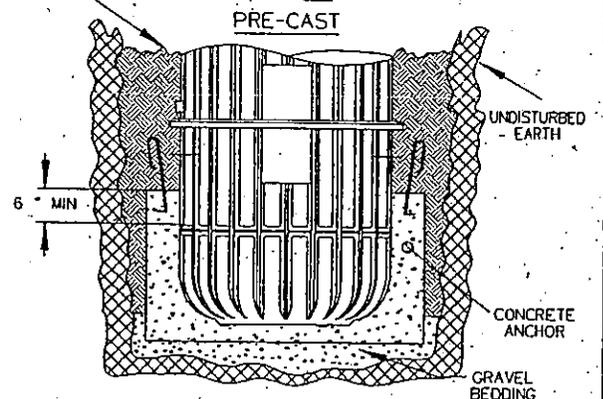
# 2014-129

**\*\*SEE INSTALLATION INSTRUCTIONS FOR SPECIFIC DIAMETERS AND HEIGHTS REQUIRED FOR PROPER CONTAINMENT WHEN USING 2014 PRE-CAST BALLASTS**

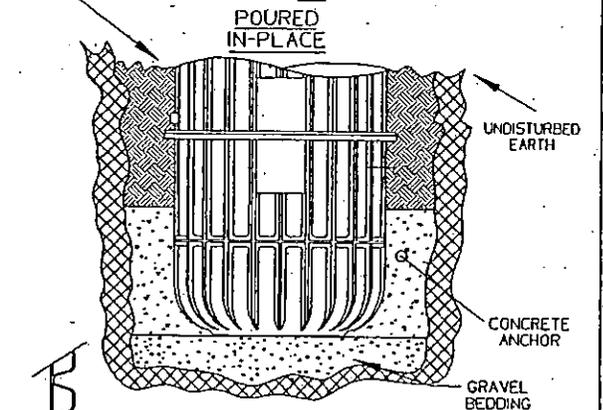
**NOTE: A CONCRETE ANCHOR OF 5700 lbs (37.6 cu ft) IS REQUIRED ON ALL MODEL 2014 129\* STATIONS.**



FILL TO GRADE WITH CLEAN, COMPACTABLE BACKFILL, SUCH AS PEA GRAVEL OR CRUSHED STONE, 1/8" - 3/4" IN SIZE. CLAY AND SILTS ARE NOT ACCEPTABLE BACKFILL.



FILL TO GRADE WITH CLEAN, COMPACTABLE BACKFILL, SUCH AS PEA GRAVEL OR CRUSHED STONE, 1/8" - 3/4" IN SIZE. CLAY AND SILTS ARE NOT ACCEPTABLE BACKFILL.



SGS	CAH	1/25/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE



SEWER SYSTEMS

MODEL 2014-129

PA 1337 P04

DISCHARGE: 1-1/4 FEMALE PIPE THREAD

INLET: EPDM GROMMET FOR 4" DWV PIPE (STANDARD)

BALLAST CONTAINMENT RING

85° COVER OVER DISCH

97° INVERT DEPTH

40.3"

31.5"

Ø 38.8"

GRADE MUST SLOPE AWAY FROM STATION

GRADE

GRADE

PRE-CAST

POURED IN-PLACE

3/8" STAINLESS STEEL HARDWARE -FIELD ASSEMBLY- (16 PLACES)

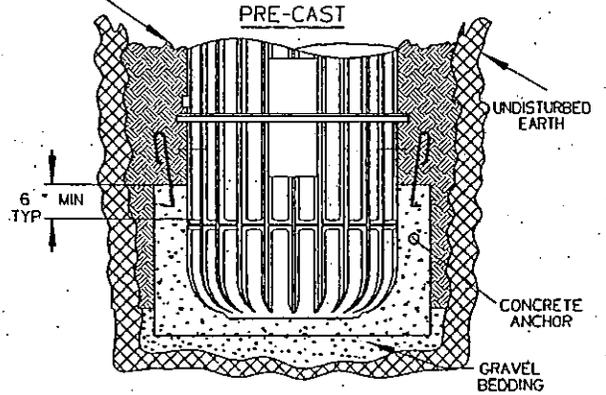
SIKA TAPE -FIELD LOCATE- DETAIL, FIELD JOINT

# 2014-160

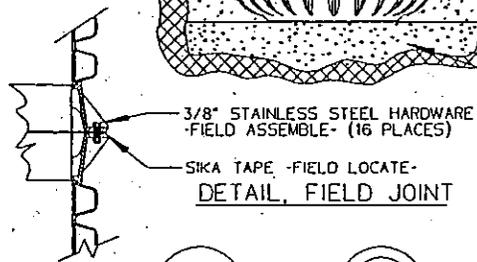
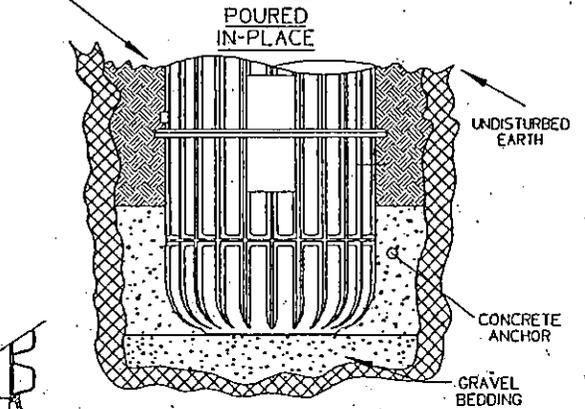
**\*\*SEE INSTALLATION INSTRUCTIONS FOR SPECIFIC DIAMETERS AND HEIGHTS REQUIRED FOR PROPER CONTAINMENT WHEN USING 2014 PRE-CAST BALLASTS**

**NOTE: A CONCRETE ANCHOR OF 6700 lbs. (44.4 cu ft) IS REQUIRED ON ALL MODEL 2014 160° STATIONS:**

FILL TO GRADE WITH CLEAN, COMPACTABLE BACKFILL, SUCH AS PEA GRAVEL OR CRUSHED STONE, 1/8" - 3/4" IN SIZE. CLAY AND SILTS ARE NOT ACCEPTABLE BACKFILL.



FILL TO GRADE WITH CLEAN, COMPACTABLE BACKFILL, SUCH AS PEA GRAVEL OR CRUSHED STONE, 1/8" - 3/4" IN SIZE. CLAY AND SILTS ARE NOT ACCEPTABLE BACKFILL.



SGS	CAH	1/25/99	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE



MODEL 2014-160

PA 1337 P05

158.2"

113" COVER OVER DISCH

125" INVERT DEPTH

40.3"

31.5"

BALLAST CONTAINMENT RING

DISCHARGE: 1-1/4 FEMALE PIPE THREAD

Ø 38.8"

INLET: EPCM GROMMET FOR 4" DWV PIPE (STANDARD)

GRADE

GRADE

GRADE MUST SLOPEAWAY FROM STATION

# City of Rancho Palos Verdes

30940 HAWTHORNE BOULEVARD  
 RANCHO PALOS VERDES, CA 90275-5391  
 (310) 377-0360

Purchase Order No. 31337

## PURCHASE ORDER

ALL MATERIALS FURNISHED ON THIS ORDER WILL BE SUBJECT TO TEST AND INSPECTION. THE CITY OF RANCHO PALOS VERDES WILL NOT BE RESPONSIBLE FOR MATERIAL OF SUPPLIES FURNISHED WITHOUT AN ORDER FROM THIS DIVISION PROPERLY APPROVED.

CITY IS EXEMPT FROM FEDERAL EXCISE TAX.

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Multi W Systems, Inc  
 2615 Strozier Ave  
 El Monte, CA 91733

626) 401-2627 fax (626) 442-0839

INVOICE IN DUPLICATE TO:  
 CITY OF RANCHO PALOS VERDES  
 ATTN: ACCOUNTS PAYABLE  
 30940 HAWTHORNE BOULEVARD  
 RANCHO PALOS VERDES, CA 90275-5391  
 (310) 377-0360

95-4226760

TYPE OF BUSINESS:  SOLE PROPRIETOR  CORPORATION  PARTNERSHIP  OTHER (SPECIFY)

DATE

12-5-02

PURCHASE REQUESTED BY:

Dean Allison

DELIVER TO Public Works/Do Not Mail

QUANTITY ORDERED	DESCRIPTION	UNIT PRICE	AMOUNT
	1/1/2003 - 7/1/2003 Inspection/Regular Maintenance of "in-street" pump stations at Abalone Cove Sewer System  Informal Bid		

PRICE VERIFICATION	BATCH NUMBER	VENDOR NUMBER	DATE ENTERED		
AMOUNT	AMOUNT	ACCOUNT	AMOUNT		
25-325-530-00.35	\$2600.00			SUBTOTAL	
AMOUNT	AMOUNT	ACCOUNT	AMOUNT	SHIPPING	
AMOUNT	AMOUNT	ACCOUNT	AMOUNT	SALES TAX	
AMOUNT	AMOUNT	ACCOUNT	AMOUNT	TOTAL	\$2600.00

BY \_\_\_\_\_  
 DEPARTMENT

BY \_\_\_\_\_  
 FINANCE

THE PURCHASE ORDER NUMBER MUST BE SHOWN ON INVOICE, DOCUMENTS AND SHIPPING TICKETS. NO GOODS WILL BE ACCEPTED UNLESS ACCOMPANIED BY A PACKING SLIP SHOWING PURCHASE ORDER NUMBER.

PURCHASE 31337



2615 Strozier Avenue  
El Monte, CA 91733  
Tel: (626) 401-2627  
Fax: (626) 442-0839

Quotation# 6102R1  
Date: November 18, 2002

To: Ed Duranzo  
Company: Harris and Associates

Tel: 949-3787318  
Fax: 310-5141873

Subject: Sewer Pump Station Service Contract, City of Rancho Palos Verdes

Dear Ed:

In reference to the above subject job, I am pleased to offer the following proposal for your consideration:

Annual Service/Maintenance contract for total four(4) Home Pump stations  
Service/Maintenance trip will be made monthly to all four pump stations, visually inspect the mechanical and electrical components, run each pump by hand, measure amperage of each pump, clean the wet well if any abnormal debris gets into the pump station.  
Annual cost ----- \$5,200.00

- \*The above price includes three emergency calls for every contracted year.
- \*Each additional emergency call is \$500.00 after these three calls.
- \*Repair parts and labor are free for the first year, because they are under factory warranty.
- \*At the end of each contracted year, all pumps will be lifted out of the wet well for oil change and inspection. If necessary, repair will be done. Parts & Labor are extra and not included in our proposal. Estimated cost for parts and labor shall not exceed \$1,000.00 on each pump for the first five years. Sales tax is not included for any material used.

Emergency responding time:

Weekday: within 2 -6 hours to get to the job site.  
Weekend and holidays: 6 to 10 hours

Please note:

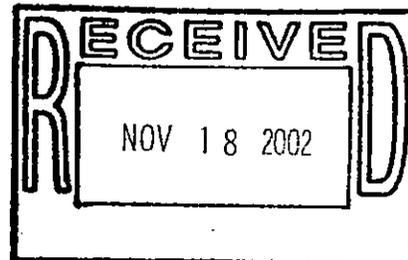
1. Multi W Systems will not be responsible for any claim against any damages due to the failure of pump stations.
2. Normal power supply to the pump station is a must for Multi W Systems to serve and maintain the pump station properly.

Thanks for your interest in our products and please do not hesitate to contact us should you need any further help!

Sincerely,

Wen C. Wang, P.E.  
Multi W Systems, Inc.  
Email: info@multiwssystem.com

*Water & Wastewater Equipment Supplier  
Pumps, Motors, Controls and Process Equipment*



### Facsimile Cover Sheet



MULTI W SYSTEMS, INC.

Multi W Systems, Inc  
2615 Strozier Avenue  
El Monte, CA 91733

www.multiwssystem.com

tel 626-401-2627  
fax 626-442-0839

<b>To:</b> Ed Duranzo	<b>From:</b> Beatrice Leung
<b>Company:</b> Harris & Associates	<b>Company:</b> Multi W Systems, Inc.
<b>Phone:</b> 310-514-1087	<b>Phone:</b> 626-401-2627
<b>Fax:</b> 310-514-1873	<b>Fax:</b> 626-442-0839
<b>Date:</b> 10/18/02	<b>Total # of pages:</b> 3 pages

**Subject:** Attached Price Quote & Wiring Diagram  
Ref. Sewer Pump Station, City of Rancho Palos Verdes

Dear Ed,

Good afternoon. Regarding of the above subject project, please see the attached price quotation for your review and wiring diagram per your request. As for the O&M manuals, we did mail out a few copies to Michael Yepiz on 4/22/02; but anyway, Wen will bring you in person a few more copies as doing the training class.

Please do give us a call if you have any questions or need anything in further.

Thank you very much for your attention.

Sincerely,

Beatrice Leung  
Multi W Systems, Inc.

Encl.

# City of Rancho Palos Verdes

30940 HAWTHORNE BOULEVARD  
 RANCHO PALOS VERDES, CA 90275-5391  
 (310) 377-0360

Purchase Order No. 31338

## PURCHASE ORDER

ALL MATERIALS FURNISHED ON THIS ORDER WILL BE SUBJECT TO TEST AND INSPECTION, THE CITY OF RANCHO PALOS VERDES WILL NOT BE RESPONSIBLE FOR MATERIAL OR SUPPLIES FURNISHED WITHOUT AN ORDER FROM THIS DIVISION PROPERLY APPROVED.  
 CITY IS EXEMPT FROM FEDERAL EXCISE TAX.

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Advanced Sewer Technologies  
 4617 Brazil St  
 Los Angeles, CA 90039

(800) 800-0510 fax (818) 553-6619

INVOICE IN DUPLICATE TO:  
 CITY OF RANCHO PALOS VERDES  
 ATTN: ACCOUNTS PAYABLE  
 30940 HAWTHORNE BOULEVARD  
 RANCHO PALOS VERDES, CA 90275-5391  
 (310) 377-0360

PO # 95-2055196

TYPE OF BUSINESS:  SOLE PROPRIETOR  CORPORATION  PARTNERSHIP  OTHER (SPECIFY)

DELIVER TO Public Works/Do Not Mail

DATE  
12-5-02

PURCHASE REQUESTED BY:  
Dean Allison

QUANTITY ORDERED	DESCRIPTION	UNIT PRICE	AMOUNT
	1/1/2003 - 7/1/2003 Maintenance & Inspection of Sewer System (excluding pumps) for Abalone Cove Sewer System.  Informal Bid	\$10880/yr	

ACCOUNT	AMOUNT	ACCOUNT	AMOUNT	
25-325-530-00.35	\$5440.00			SUBTOTAL
				SHIPPING
				SALES TAX
				TOTAL
				\$5440.00

BY \_\_\_\_\_  
DEPARTMENT

BY \_\_\_\_\_  
FINANCE

PURCHASE ORDER NUMBER MUST BE SHOWN ON INVOICE, DOCUMENTS AND SHIPPING TICKETS. NO GOODS WILL BE ACCEPTED UNLESS ACCOMPANIED BY A PACKING SLIP SHOWING PURCHASE ORDER NUMBER.

PURCHASE 31338

# City of Rancho Palos Verdes

30940 HAWTHORNE BOULEVARD  
 RANCHO PALOS VERDES, CA 90275-5391  
 (310) 377-0360

Purchase Order No. **31339**

## PURCHASE ORDER

ALL MATERIALS FURNISHED ON THIS ORDER WILL BE SUBJECT TO TEST AND INSPECTION. THE CITY OF RANCHO PALOS VERDES WILL NOT BE RESPONSIBLE FOR MATERIAL OR SUPPLIES FURNISHED WITHOUT AN ORDER FROM THIS DIVISION PROPERLY APPROVED.

CITY IS EXEMPT FROM FEDERAL EXCISE TAX.

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Advanced Sewer Technologies  
 4617 Brazil St  
 Los Angeles, CA 90030

(800) 800-0510 fax (818) 553-6619

INVOICE IN DUPLICATE TO:  
 CITY OF RANCHO PALOS VERDES  
 ATTN: ACCOUNTS PAYABLE  
 30940 HAWTHORNE BOULEVARD  
 RANCHO PALOS VERDES, CA 90275-5391  
 (310) 377-0360

D# 95-2055196

TYPE OF BUSINESS:  SOLE PROPRIETOR  CORPORATION  PARTNERSHIP  OTHER (SPECIFY)

DELIVER TO Public Works/Do Not Mail

DATE  
12-5-02

PURCHASE REQUESTED BY:  
Dean Allison

QUANTITY ORDERED	DESCRIPTION	UNIT PRICE	AMOUNT
	Regular cleaning of in-street pump stations at Abalone Cove \$1560/cycle  Informal Bid		

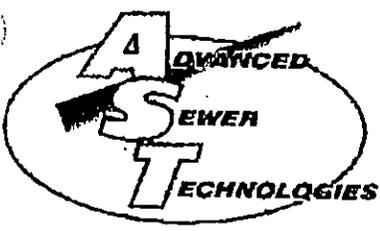
INVOICE VERIFICATION	BATCH NUMBER	VENDOR NUMBER	DATE ENTERED	
AMOUNT	AMOUNT	ACCOUNT	AMOUNT	SUBTOTAL
25-325-530-00.35	\$5000.00			
AMOUNT	AMOUNT	ACCOUNT	AMOUNT	SHIPPING
AMOUNT	AMOUNT	ACCOUNT	AMOUNT	SALES TAX
T	AMOUNT	ACCOUNT	AMOUNT	TOTAL \$5000.00

BY \_\_\_\_\_  
DEPARTMENT

BY \_\_\_\_\_  
FINANCE

PURCHASE ORDER NUMBER MUST BE SHOWN ON INVOICE, DOCUMENTS AND SHIPPING TICKETS. NO GOODS WILL BE ACCEPTED UNLESS ACCOMPANIED BY A PACKING SLIP SHOWING PURCHASE ORDER NUMBER

PURCHASE 01000



# Fax

4617 Brazil Street  
 Los Angeles, CA 90039  
**Fax (818) 553-6619**  
 Tel (800) 800-0510  
 State License No. A-803638

**To:** EDWARD DURAZO  
 HARRIS AND ASSOCIATE

**From:** MIKE ASHKER

---

**Fax:** 949-655-3995      **Pages:** 3

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**Phone:** 949-655-3900      **Date:** 10/29/02

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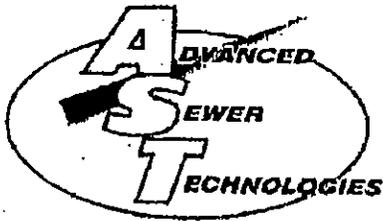
**Re:** ABALONE SEWER      **CC:**

---

Urgent     For Review     Please Comment     Please Reply     Please Recycle

---

• **Comments:**



4617 Brazil Street  
Los Angeles, CA 90039  
Fax (818) 553-6619  
Tel (800) 800-0510  
State License No. A- 803638

## PROPOSAL

October 29, 2002

Harris and Associates  
Attn: Mr. Edward Durazo  
34 Executive Park, Suite 150  
Irvine, CA 92614-4705

Project: City of Rancho Palos Verdes  
Abalone Sewer Maintenance/Emergency Program

Advanced Sewer Technologies proposes to perform the following scope of work:

- 1.) Perform visual inspections quarterly on the following:
  - a. Above ground sewer laterals.
  - b. High pressure and low pressure sewer systems.
  - c. Manholes (check for crustation) (71 holes).
  - d. Air vacuum units.
  - e. Cleanouts
  - f. Check valve/back flow valves.

All inspections will be done by a technician and be completed within a week.  
\$2720.00 quarterly

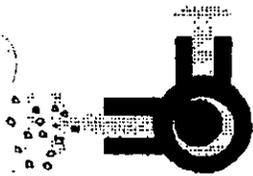
- 2.) Pressure wash and pump out 4 sewer lift stations on a monthly basis. A.S.T. will dispose off site after cleaning.  
Price includes Jet-Vac combo truck, 2 men and disposal: \$1,560.00 per service.

- 3.) A yearly cleaning and video inspection of all 8" main sewer lines. A.S.T. will provide color video with typed log sheets (2 copies).  
\$1.15 per linear foot

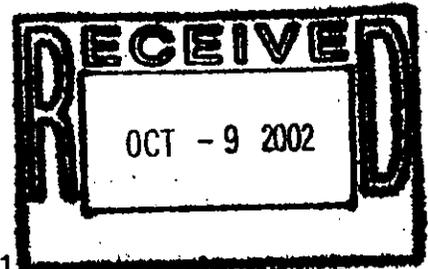
- 4.) A.S.T. will be on a 24 hour emergency response call out for repairs and stoppages. All work will be done on a time and material basis. Labor will be charged out as follows:

Technicians straight time: \$ 85.00  
Technicians on overtime: \$125.00  
Laborer on straight time: \$ 45.00  
Laborer on overtime: \$65.00

All charges for labor will be charged from portal to portal.



**Liquid Handling Systems**  
Pump & System Specialists



# Telefax Message

PAGE 1 OF 1 ENCLOSURE COVER PAGE

DATE: October 9, 2002

TO: Rancho Palos Verdes

FROM: Bryan Fassauer

ATTN: Dean Allison

Fax No: 310-544-5292

- SEND IMMEDIATELY
- SEND AFTER HOURS

- URGENT
- PLEASE RESPOND

BY: \_\_\_\_\_  
 NO REPLY NECESSARY

SUBJECT: E One

Dean,

Per our meeting regarding preventative maintenance of the E one units at Abalone Cove it is our assessment that it will take a minimum of 2 days and possibly three to take and record readings for the total E One population. Our hourly on-site rate is \$85.00/hour. This equates to a charge of \$1,360.00 – \$2,040.00. The recommended frequency is quarterly, semi-annually or annually.

The 2010-74 simplex unit for the three apartments which was tripping the high alarm can be remedied by placing part # PA1786G02 – Alarm Delay Kit in the control panel for this unit. This kit consists of a delay relay, delay relay adjuster and mounting bracket. This delays the high level alarm from tripping for 1-100 minutes. I would recommend this if indeed the trip was caused by only the surge of the large bathtub draining. This allows the pump to continue running and "catch-up" with the inflow. Price for the kit is \$145.00 + installation @ \$85.00/hour or by your electrician.

Regards,  
Bryan Fassauer  
Sr. Account Manager

cc: *Harris + Asso. / EDUARDO DURAZO*