

Bureau of Environmental Health
 7178 Gateway Drive Columbia, MD 21046
 (410) 313-2640 Fax (410) 313-2648
 TDD (410) 313-2323 Toll Free 1-866-313-6300
 website: www.hchealth.org

Maura J. Rossman, M.D., Health Officer

RECEIPT DATE: 10/29/14
 INSTALLATION APPROVAL DATE: 2/19/15

ONSITE SEWAGE DISPOSAL SYSTEM

P 555 293
 A _____

PERMIT
SEWER HOUSE CONNECTION

PROPERTY ADDRESS: 12225 Basslers Way
 SUBDIVISION: Walnut Creek LOT: 17 TAX ID: 05-454425
 CONTRACTOR: Freedom Septic EMAIL: _____
 CONTRACTOR ADDRESS: 2809 Liberty Road, Eldersburg, MD 21784 PHONE: 410-795-2947
 PROPERTY OWNER: Trinity Quality Homes EMAIL: _____
 OWNER ADDRESS: 3675 Park Avenue Ste 301, Ellicott City, MD 21043 PHONE: 443-324-9806

NUMBER OF BEDROOMS: _____ HOUSE SQ. FT. _____ CONNECTED TO PUBLIC WATER: YES NO

LOCATION:	INSTALL 4" SEWER LINE PER APPROVED SITE PLAN.
NOTES:	

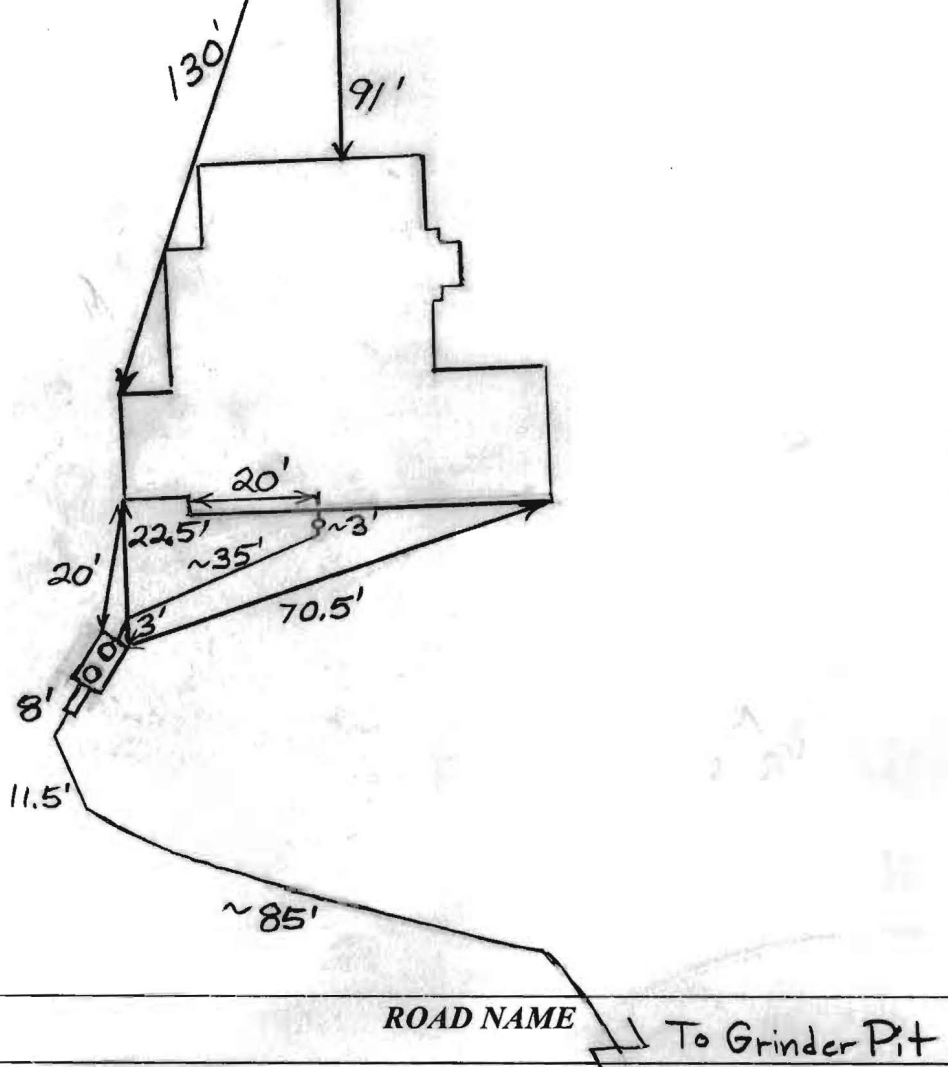
ISSUED BY: Jeff Williams ISSUE DATE: 10/29/14 EXPIRATION DATE: 10/29/15

- NOTE: HOWARD COUNTY BUREAU OF UTILITIES APPROVAL OF GRINDER PUMP INSTALLATION IS REQUIRED PRIOR TO SEPTIC PERMIT APPROVAL
- NOTE: CONTRACTOR MUST SCHEDULE AN INSPECTION AND GAIN APPROVAL OF ALL COMPONENTS PRIOR TO COVERING
- NOTE: AN ELECTRICAL PERMIT IS REQUIRED FOR INSTALLATION OF ANY ELECTRICAL COMPONENTS OF THE SYSTEM

NEITHER THE HOWARD COUNTY COUNCIL NOR THE HEALTH DEPARTMENT IS RESPONSIBLE FOR THE SUCCESSFUL OPERATION OF ANY SYSTEM. PERMITTEE RESPONSIBLE FOR OBTAINING FINAL APPROVAL ON THIS PERMIT. CALL 410-313-1771 FOR INSPECTION OF SEPTIC SYSTEM.

HO-95-1397

NOT TO SCALE



TRENCH/DRAINFIELD DATA		
WIDTH	INLET	BOTTOM
_____	_____	_____
NUMBER OF TRENCHES _____		
TOTAL LENGTH _____		
ABSORPTION AREA _____		
DISTRIBUTION BOX LEVEL _____		
DISTRIBUTION BOX BAFFLE _____		
DISTRIBUTION BOX PORT _____		

SEPTIC TANK DATA	
SEPTIC TANK I LEVEL	N/A
MANUFACTURER	_____
CAPACITY	_____ GAL
SEAM LOC	_____
TANK LID DEPTH	_____
BAFFLES	_____
BAFFLE FILTER	_____
MANHOLE LOC	_____
6" PORT LOC	_____
WATERTIGHT TEST	_____
SLOTTED	_____
DATE ON LID	_____
PUMP/SEPTIC TANK LEVEL	Yes
MANUFACTURER	Babylon
CAPACITY	1000 GAL
SEAM LOC	Top
TANK LID DEPTH	1.5'-3'
BAFFLES	No
BAFFLE FILTER	No
MANHOLE LOC	Front+Rear
6" PORT LOC	None
WATERTIGHT TEST	No
SLOTTED	No
DATE ON LID	8/24/2014

PRE-CONSTRUCTION:

10/29/2014 Install tank at staked location. (BB)

INSTALLATION: 10/31/2014 Tank set. House connection made and covered without inspection. (BB)

11/3/2014 Working on connection from pump tank to grinder pit. O.K. to finish and cover rest of pump line. (BB)

FINAL INSPECTOR

DATE OF APPROVAL 2/19/15

Geisert, Andrew

From: Geisert, Andrew
Sent: Friday, April 18, 2014 10:30 AM
To: Rob Vogel
Cc: 'tkeane@trinityhomes.com'
Subject: Walnut Creek Lot 17

Rob,

I have reviewed the floor plans for Lot 17. The floor plans are good. After looking at the Plot Plan, I did see a 1000 gallon pump chamber was proposed. We will need to see a cross section of that pump chamber. In addition, we will need to see the grinder pump design spec, model number, calculations on dose and head, etc. When you get everything together for that pump chamber we will take a look at it.

Andrew Geisert
Environmental Sanitarian Supervisor
Howard County Health Department
Bureau of Environmental Health
Office: 410-313-6287
Fax: 410-313-2648
ageisert@howardcountymd.gov

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PUMP COMPANY

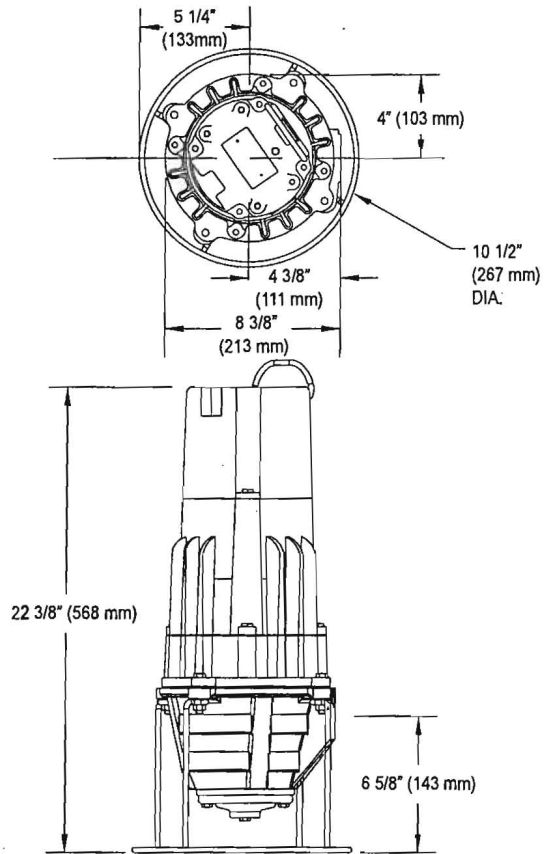
Zoeller Family of Water Solutions™

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

TECHNICAL DATA SHEET
SEWAGE WASTE SERIES
 Models **810, 815** Progressing Cavity Grinder Pumps

PRODUCT SPECIFICATIONS

MOTOR	Horse Power	1 (810), 2 (815)
	Voltage	230
	Phase	1 Ph
	Hertz	60 Hz
	RPM	1725
	Type	Permanent split capacitor
	Insulation	Class B
	Amps	7.0 (810), 10.5 (815)
PUMP	Operation	Nonautomatic
	Discharge Size	1-1/4" NPT horizontal
	Cord Length	20' (6 m) standard
	Cord Type	SOW or SOOW, multi-wire neoprene
	Max. Head	810: 150' (45.7 m), 815: 240' (73.1 m)
	Max. Flow Rate	15.6 GPM (59 LPM)
	Max. Operating Temp.	130°F (54°C)
	Cooling	Oil filled
Motor Protection	Auto reset thermal overload	
MATERIALS	Cap	Cast iron
	Motor Housing	Cast iron
	Adapter	Cast iron
	Pump Housing	Cast iron
	Upper Bearing	Ball bearing
	Lower Bearing	Ball bearing
	Mechanical Seals	Carbon/ceramic
	Hydraulic Rotor	Stainless steel
	Hydraulic Stator	Buna-N
	Hardware	Stainless steel
	Motor Shaft	Stainless steel
	Gasket & Square Ring	Neoprene
	Cutter	Hardened stainless steel, Rockwell C55-60



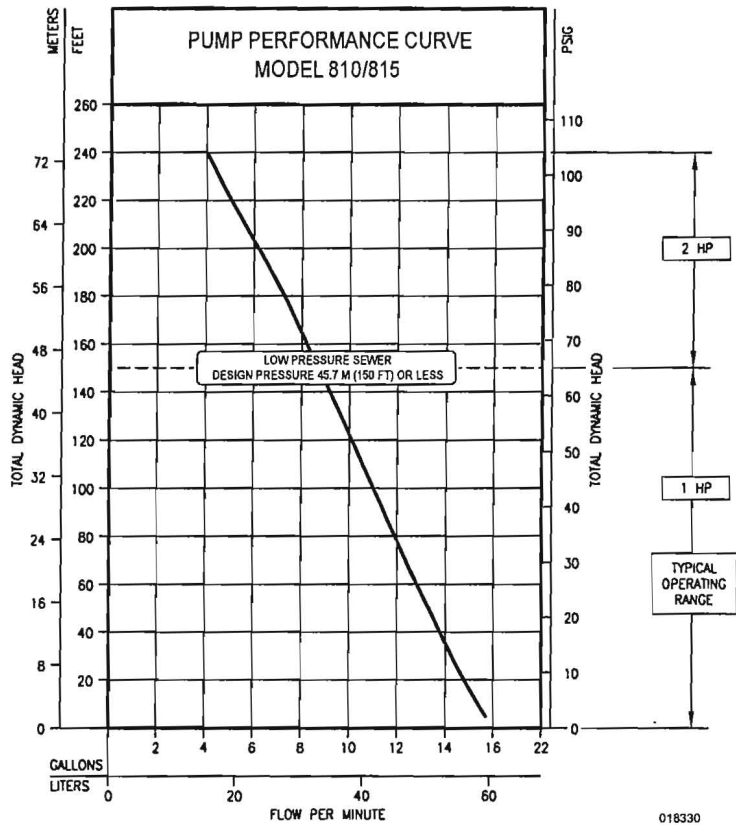
SK2533

NOTE: See model comparison chart for specific details.



**TOTAL DYNAMIC HEAD
FLOW PER MINUTE**

	Feet	Meters	Gal.	Liters
MODEL 810	5	1.5	15.6	59
	10	3.0	15.3	58
	20	6.1	14.7	56
	30	9.1	14.2	54
	40	12.2	13.8	52
	50	15.2	13.2	50
	60	18.3	12.8	48
	70	21.3	12.3	47
	80	24.4	11.9	45
	90	27.4	11.5	44
	100	30.5	11.0	42
	110	33.5	10.5	40
	120	36.6	10.1	38
	130	39.6	9.6	36
	140	42.6	9.2	35
150	45.7	8.7	33	
MODEL 815	160	48.7	8.2	31
	170	51.8	7.8	30
	180	54.8	7.3	28
	190	57.9	6.8	26
	200	60.9	6.2	23
	210	64.0	5.7	22
	220	67.0	5.0	19
	230	70.1	4.5	17
	240	73.1	4.0	15



Model	MODEL COMPARISON								
	Seal	Mode	Volts	Ph	Amps	HP	Hz	Lbs.	Kg.
E810	Single	Non	230	1	7.0	1	60	88	40
E815	Single	Non	230	1	10.5	2	60	91	41

CAUTION All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

GRINDER SYSTEMS

(A) GRINDER

STANDARD FEATURES:

- 1/4" NPT discharge
- Carbon/ceramic tandem seals
- Thermal overload protection
- Hydraulic stainless steel rotor and Buna-N stator
- Stainless steel cutter plate / cutter
- Stainless steel shaft
- Stainless steel hardware
- Corrosion-resistant, powder coated epoxy paint
- 20' (6 m) Power cord

Options:

- 25' (8 m) Long cords
- 35' (11 m) Long cords
- 50' (15 m) Long cords

**(A) 810 & 815 PROGRESSING CAVITY GRINDERS
1 OR 2 HP
1/4" N.P.T. DISCHARGE**

	P/N	WGT.	MODEL	VOLTS	PH	HP	AMP
<input type="checkbox"/>	810-0004	88 lb (39.9 kg)	E810	230	1	1	7.0
<input type="checkbox"/>	815-0004	91 lb (41.3 kg)	E815	230	1	2	10.5

Maximum operating temperature 130°F (54°C).

CAUTION To ensure proper pump operation, a swing or flapper style check valve must be installed in the pump discharge line. A faulty or non-functional check valve when combined with a pressure sewer may prevent the pump from starting.

Note: All variable level float switches in this section are mechanically activated and do not contain mercury.

QWIK BOX w/ FLOAT SWITCH

B) ALARM PANEL

- P/N 10-0623 Indoor/Outdoor high water alarm with 15' (5 m) control switch.
- P/N 10-0126 NEMA 4X high water alarm with 15' (5m) control switch and dry contact.
- P/N 10-1494 Indoor high water alarm with 15' (5m) control switch.

C) PUMP SWITCH AND WEIGHT -
1 pump switch required
 Single piggy-back type 230 volt 13 amp

- P/N 10-0035 with 15' (5 m) cord
- P/N 10-0689 weight for alarm float (Indoor systems only)

D) JUNCTION BOX -
1 required

- P/N 10-0580 Qwik-Box, NEMA 4X with 230 volt receptacle

PLUGGER PANEL

B) CONTROL PANEL

- P/N 10-2006 Plugger panel, NEMA 4X with high water alarm and 230 volt receptacle.

C) FLOAT SWITCHES -
2 required
 Pump: One pump switch
 Alarm: One control switch

- P/N 10-0706 piggy-back pump switch with 20' (6 m) cord
- P/N 10-0311 piggy-back pump switch with 25' (8 m) cord
- P/N 10-1956 piggy-back pump switch with 35' (11 m) cord
- P/N 10-0744 mechanical control switch with 20' (6 m) cord
- P/N 10-1877 mechanical control switch with 25' (8 m) cord
- P/N 10-1878 mechanical control switch with 35' (11 m) cord

D) JUNCTION BOX
 J-Box not recommended with this type control.

SIMPLEX PANEL

B) CONTROL PANEL

- P/N 10-1212 Simplex panel, NEMA 4X, with high water alarm and pump circuit breaker, less float switches.

C) FLOAT SWITCHES -
2 required
 Pump: One pump switch
 Alarm: One control switch

- P/N 10-0706 piggy-back pump switch with 20' (6 m) cord
- P/N 10-0311 piggy-back pump switch with 25' (8 m) cord
- P/N 10-1956 piggy-back pump switch with 35' (11 m) cord
- P/N 10-0744 mechanical control switch with 20' (6 m) cord
- P/N 10-1877 mechanical control switch with 25' (8 m) cord
- P/N 10-1878 mechanical control switch with 35' (11 m) cord

D) JUNCTION BOX - optional

- P/N 10-2145 NEMA 4X with 3 cord seals and conduit connection.

E) INDOOR AND OUTDOOR PACKAGED SYSTEMS - PUMP AND CONTROLS NOT INCLUDED

OUTDOOR SYS. w/ SQUARE GRS

FIBERGLASS BASIN AND COVER
SQUARE GUIDERAIL SYSTEM

- P/N 33-0491 24" x 48" (61 x 122 cm)
- P/N 33-0492 24" x 60" (61 x 152 cm)
- P/N 33-0493 24" x 72" (61 x 183 cm)

SK2589

- Fiberglass basin with anti-flotation ring
- 1 1/4" galvanized pump discharge piping to disconnect
- 1 1/4" PVC discharge pipe from disconnect
- 1 1/4" Adaptaflex discharge pipe seal
- Stainless steel square guide rail system
- 1' (0.3 m) pull rod
- 8' (2.4 m) stainless steel lifting cable
- 1 1/4" PVC ball valve
- 1 1/4" brass check valve
- 1 1/4" brass anti-siphon device
- PVC float tree
- 1-4" rubber inlet pipe seal (field inst.)
- Fiberglass cover

OUTDOOR SYS. w/ FLEX HOSE DC

FIBERGLASS BASIN AND COVER
1.25" FLEXIBLE HOSE w/ DISCONNECT

- P/N 35-0006 24" x 48" (61 x 122 cm)
- P/N 35-0007 24" x 60" (61 x 152 cm)
- P/N 35-0008 24" x 72" (61 x 183 cm)

SK2540

- Fiberglass basin with anti-flotation ring
- Flex-hose discharge with disconnect
- 1 1/4" PVC discharge pipe from disconnect
- 1" Pull rod and 8' (2.4 m) stainless steel lifting cable
- 1 1/4" PVC ball valve(s), 1 1/4" brass check valve(s), and 1 1/4" brass anti-siphon device
- 1-4" Rubber inlet pipe seal (field inst.)
- Fiberglass cover

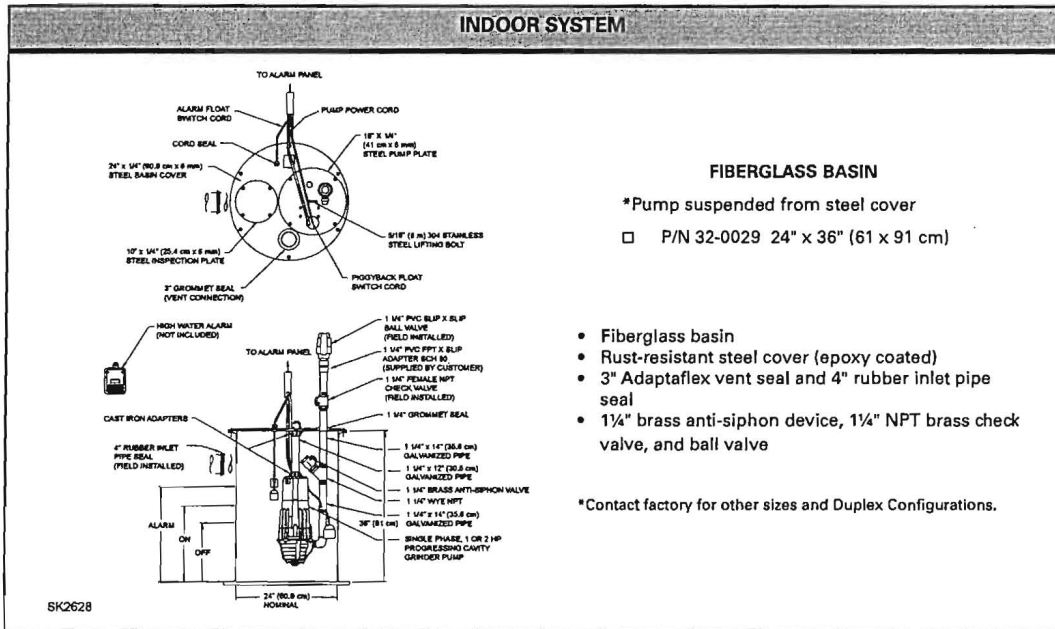
OUTDOOR SYSTEM w/ Z-Rail

FIBERGLASS BASIN AND COVER
Z-RAIL DISCONNECT SYSTEM

- 24" x 60" (61 x 152 cm)
- 24" x 72" (61 x 183 cm)
- 24" x 84" (61 x 213 cm)
- 24" x 96" (61 x 244 cm)

SK3019

- Fiberglass basin with anti-flotation ring
- 1 1/4" Schedule 80 PVC discharge piping
- 1 1/4" H x 1 1/4" Z-rail disconnect system, epoxy coated ductile iron
- 3/4" Rail pipes
- Stainless steel lifting cable
- 1 1/4" PVC ball valve
- 1 1/4" brass check valve
- 1 1/4" brass anti-siphon device
- PVC float tree
- 1-4" rubber inlet pipe seal (field inst.)
- Fiberglass cover



PREPACKAGED AND JOB READY SYSTEMS

F) ACCESSORIES FOR FIELD-ASSEMBLED SYSTEMS

FLEX-HOSE DISCHARGE ASM.

- P/N 10-2038 with 30" (76 cm) hose

SQUARE GUIDE RAIL SYSTEM

- P/N 39-0106 - 48" (122 cm) deep basin
- P/N 39-0107 - 60" (152 cm) deep basin
- P/N 39-0108 - 72" (183 cm) deep basin
- P/N 39-0070 - Rail extension bracket

Z-RAIL DISCONNECT SYSTEM

- P/N 39-0137 1 1/4" (3.2 cm) H x 1 1/4" (3.2 cm) V Ductile Iron
- P/N 39-0138 1 1/4" (3.2 cm) H x 1 1/4" (3.2 cm) V with stainless steel upper bracket
- P/N 39-0139 Intermediate bracket stainless steel

STAINLESS STEEL LIFTING CABLES AND ROD

- P/N 39-0031 8' (2.4 m) Cable
- P/N 39-0032 12' (3.7 m) Cable
- P/N 39-0069 1" (0.3 m) Rod
- P/N 10-0789 Stainless steel lifting ball

GALVANIZED 1.25" DISCH. ELBOW

- P/N 018386

CHECK VALVE

- P/N 30-0223 1.25" NPT Brass

BALL VALVE

- P/N 30-0165 1.25" PVC
- P/N 30-0213 1.25" NPT Brass

PREWIRED CONDUIT

- (10-0580 Qwik Box Required)**
- P/N 5100-0016 - 25' (8 m)
- P/N 5100-0017 - 35' (11 m)
- P/N 5100-0018 - 50' (15 m)

FIELD-MOUNT SYSTEMS

SIMPLEX	
REQ.	REQ.
1 810 or 815 Grinder	P/N ____ (A)
1 Control panel/Alarm system	P/N ____ (B)
1 Piggyback pump switch	P/N ____ (C)
1 Control switch (if required)	P/N ____ (C)
1 Weight for alarm float (if required)	P/N ____ (D)
1 Junction Box (Optional)	P/N ____ (F)
1 Optional accessories	P/N ____ (F)
	P/N ____ (F)
	P/N ____ (F)
	P/N ____ (F)

INDOOR	
REQ.	REQ.
1 810 or 815 Grinder	P/N ____ (A)
1 Alarm panel	P/N ____ (B)
1 Piggyback pump switch	P/N ____ (C)
1 Weight for alarm float	P/N ____ (C)
1 Basin, cover and hardware	P/N ____ (F)

OUTDOOR	
REQ.	REQ.
1 810 or 815 Grinder	P/N ____ (A)
1 Control panel/Alarm system	P/N ____ (B)
1 Piggyback pump switch	P/N ____ (C)
1 Control switch (if required)	P/N ____ (C)
1 Junction Box (if required)	P/N ____ (D)
1 Basin, cover and hardware	P/N ____ (F)

Oswald, Hank

From: Rob Vogel [rvogel@vogeleng.com]
Sent: Tuesday, August 26, 2014 11:14 AM
To: Williams, Jeffrey
Cc: Oswald, Hank; Tim Keane
Subject: RE: Walnut Creek lots 15, 16, 17
Attachments: EONE.pdf

Jeff

The discharge line from any individual E One grinder pump is 1-1/4" (see attached catalog detail). The line size becomes larger when multiple pump discharges are incorporated into a single low pressure main. For our situation there is an individual line for each proposed E One up to the installed E-One units located at the road.

From my history with grinder pumps, the size of the discharge is kept to 1-1/4" so that the discharge is forced to move a certain amount. If they designed the discharge larger the effluent would have more of an opportunity to harden/dehydrate in the line.

Please let me know if you have any other questions.

Thanks. Rob

Robert H. Vogel, P.E., M.ASCE
vogeleng.com
Robert H. Vogel Engineering, Inc.
8407 Main Street
Ellicott City, Maryland 21043
Phone: 410-461-7666
FAX: 410-461-8961

From: Williams, Jeffrey [mailto:jewilliams@howardcountymd.gov]
Sent: Tuesday, August 26, 2014 9:45 AM
To: Rob Vogel
Cc: Oswald, Hank
Subject: Walnut Creek lots 15, 16, 17

Hi Rob. I'm reviewing the septic plans for WC lots 15 and 16 and noticed something I missed on lot 17, approved in July. The force main for all is shown at 1.25". My instinct is that this is too small a diameter for a grinder pump with the solids involved. I would guess a 2" diameter is minimum for a grinder. Do you want me to change the plan to indicate 2" force main, or do you have something from the pump manufacturer stating that 1.25" is sufficient? Thanks

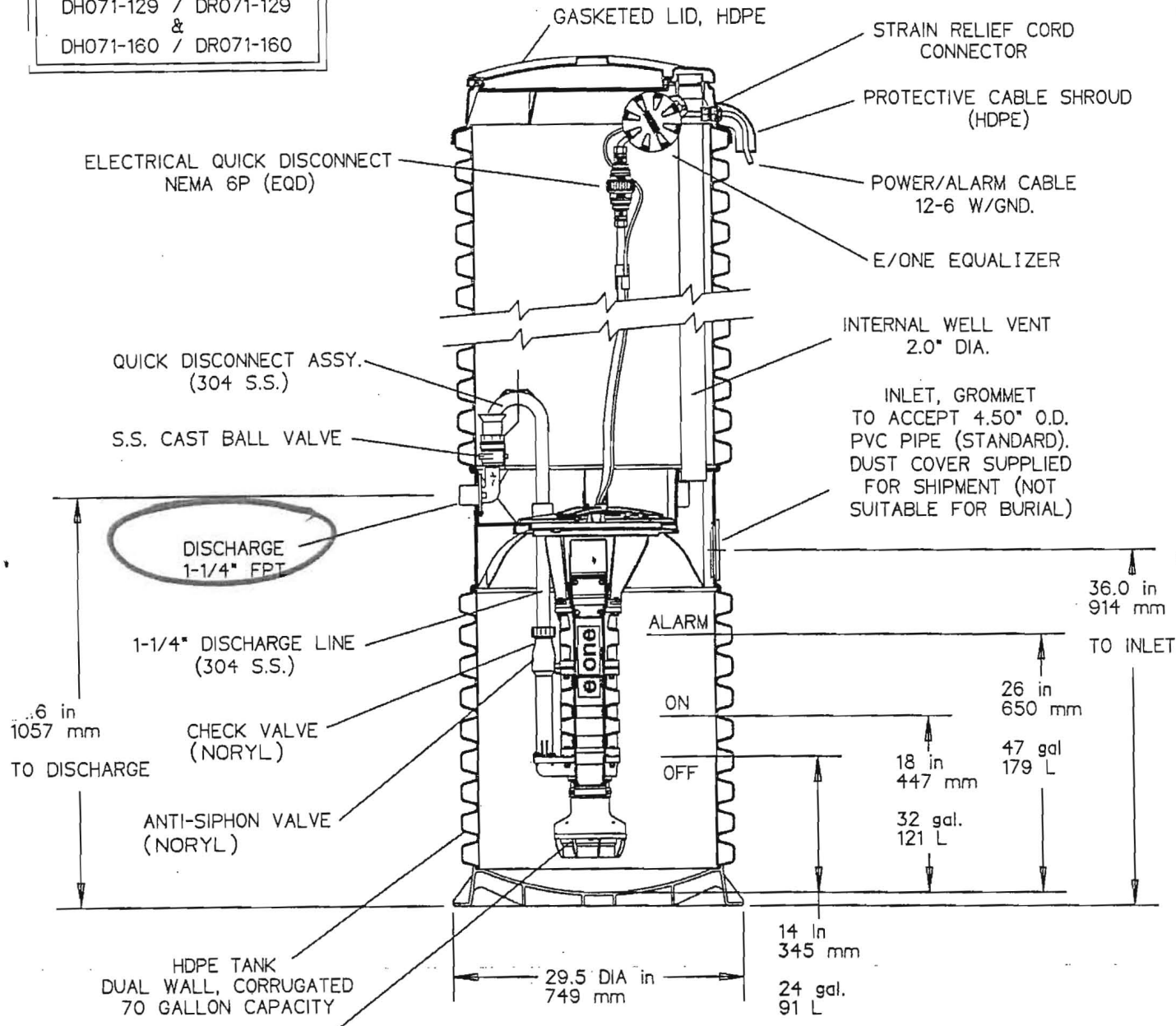
Jeff Williams
Program Supervisor, Well & Septic Program
Bureau of Environmental Health
Howard County Health Dept.
410-313-4261
jewilliams@howardcountymd.gov

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OPTIONS : **DH071** (HARD WIRED LEVEL CONTROLS)
 DR071 (WIRELESS LEVEL CONTROLS)

FIELD JOINT REQUIRED FOR MODELS
 DH071-129 / DR071-129
 &
 DH071-160 / DR071-160



SEMI-POSITIVE DISPLACEMENT TYPE PUMP. EACH DIRECTLY DRIVEN BY A 1 HP MOTOR

CONCRETE BALLAST MAY BE REQUIRED
 SEE INSTALLATION INSTRUCTION
 FOR DETAILS



AD	CH	10/20/10	C	
DR BY	CHK'D	DATE	ISSUE	SCALE



MODEL DH071 / DR071
 DETAIL SHEET

NA0050P02

Geisert, Andrew

From: Geisert, Andrew
Sent: Monday, April 28, 2014 8:14 AM
To: 'Jeremiah Reynolds'
Subject: RE: Walnut Creek Lot 17
Attachments: image001.jpg

Jeremiah,

I reviewed the design specs. It all looks good. I will just need a better visual quality of the specs sheet, I had trouble reading it at first. I will need a cross-sectional diagram of the tank with elevations and piping connections with slope percentages from the house to the tank, and from the tank to the grinder pump. The high water alarm will need to be placed on the cross-section. The pump curve that you supplied to me will work, unless you just want to put it all on the same document.

Let me know if you have any questions.

Andrew Geisert
Environmental Sanitarian Supervisor
Howard County Health Department
Bureau of Environmental Health
Office: 410-313-6287
Fax: 410-313-2648
ageisert@howardcountymd.gov

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From: Jeremiah Reynolds [mailto:jreynolds@vogeleng.com]
Sent: Thursday, April 24, 2014 3:23 PM
To: Geisert, Andrew
Cc: Rob Vogel
Subject: Walnut Creek Lot 17

Andrew,

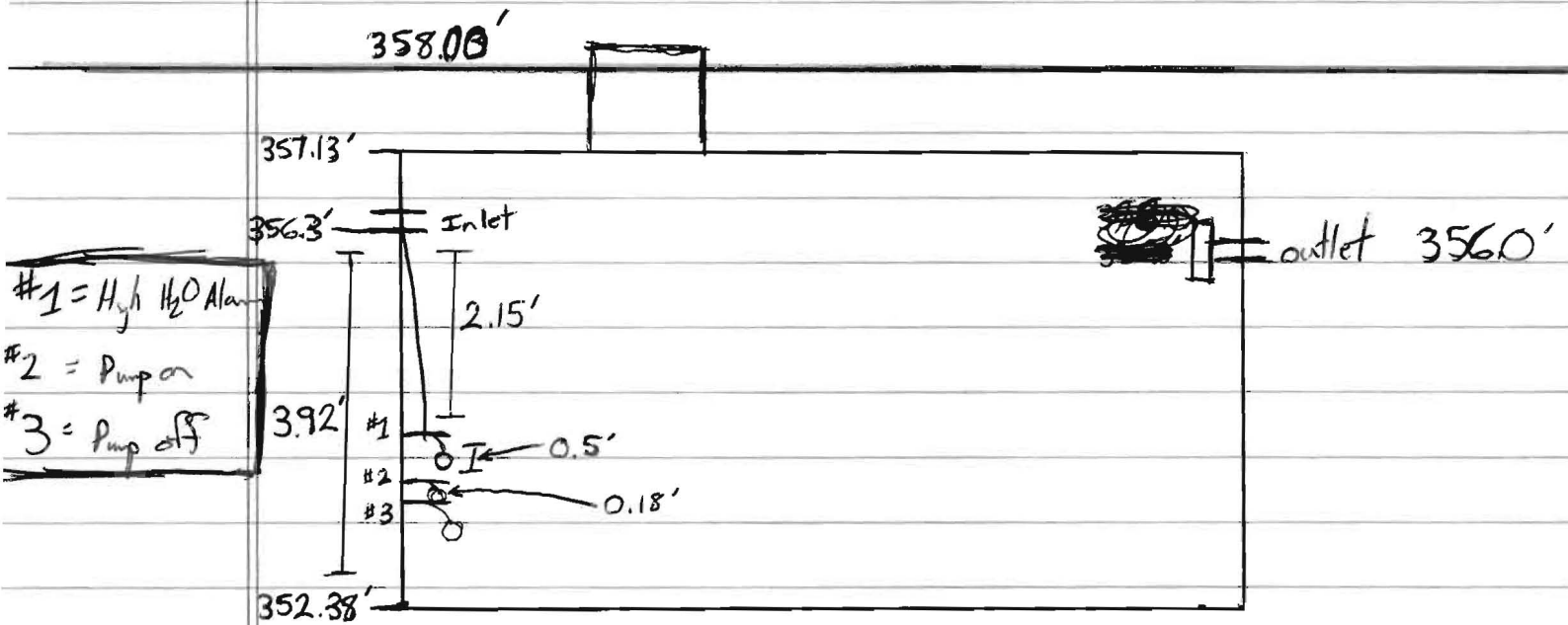
I have attached the information that you requested concerning the proposed pump chamber located on lot 17 at Walnut Creek. Please let us know if you need anything else.

Thanks,

Jeremiah Reynolds
Cad Drafter

1=20' 0

* 4 bedroom = 600 gpd + ~~8120~~
~~413~~



Exterior Dimensions = 8' 10" x 5' 3" (8.83' x 5.25')

Interior Dimensions = 8.16' x 4.58'

Interior Dimensions = 37.37 ft²

Interior Reservoir Volume = 80.35 ft³

Interior Reservoir gallons = 601.02 gallons (1 day flow)

Pump curve

~~Provide~~ site layout cross-section with 7% SHC, tank, pump, grinder pit

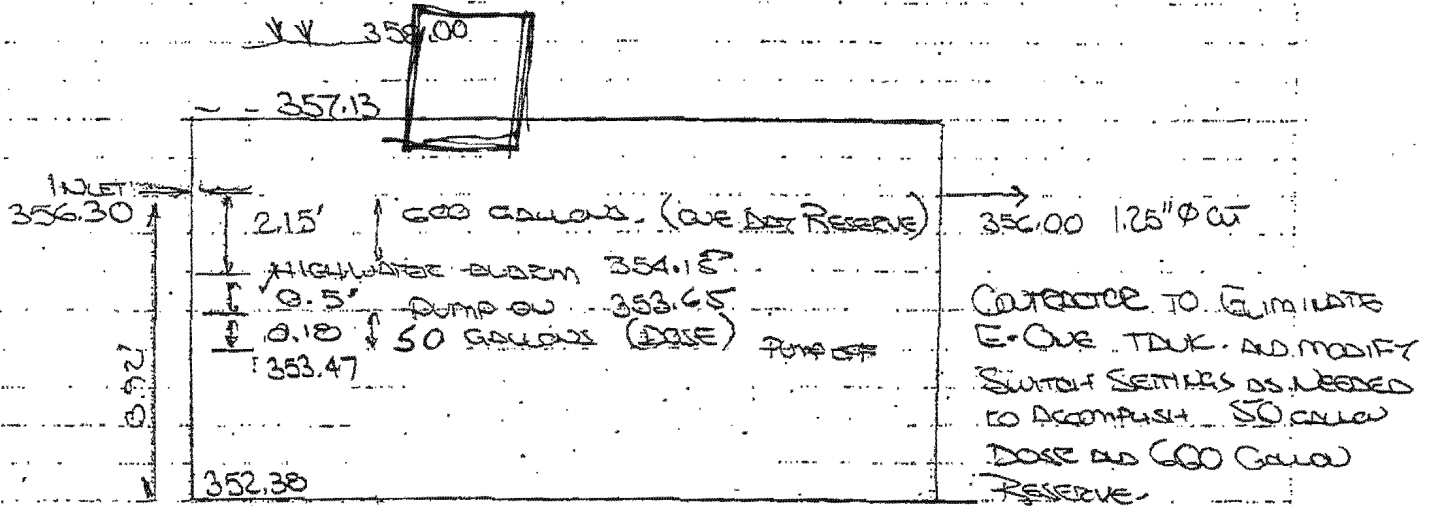
elevations

High water alarm

specs

1,000 Gallon Pump Chamber. Wabnet Creek #17
 w/ E-One Model DH-071 Grinder Pump

OUTSIDE TO OUTSIDE DIM 8'-10" x 5'-3"
 INSIDE TO INSIDE DIM 8.15' x 4.58'
 INSIDE CROSS SECTIONAL AREA = 37.37 SF



$$600 \text{ GALLONS} / 7.48 \text{ GALLONS/FT}^3 = 80.21 \text{ FT}^3$$

$$80.21 \text{ FT}^3 / 37.37 \text{ SF} = 2.15'$$

$$50 \text{ GALLONS} / 7.48 \text{ GALLONS/FT}^3 = 6.68 \text{ FT}^3$$

$$6.68 \text{ FT}^3 / 37.37 \text{ SF} = 0.18'$$

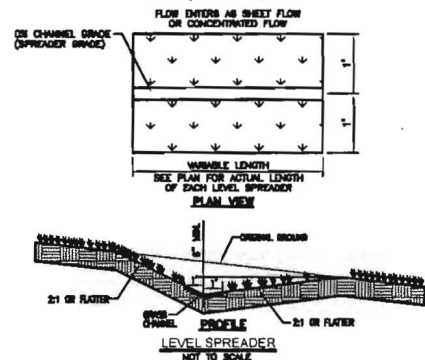
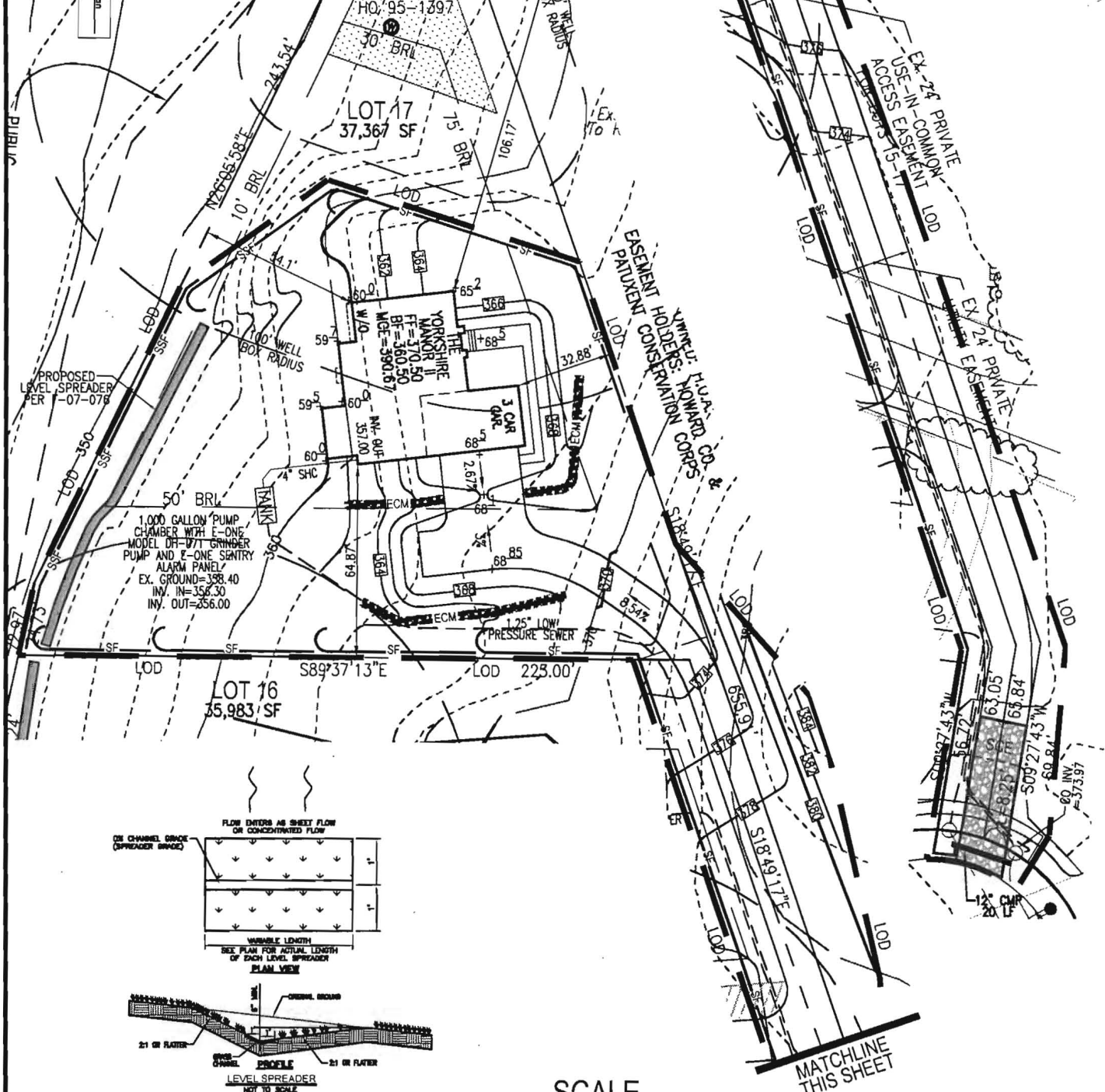
USE E-ONE PUMP 1 HP PUMP CURVE E-ONE

$$\frac{(50' \times 10')}{(2900)(0.4)} = 1.0 \text{ HP}$$

$$Q = 17.8 \text{ GPM}$$

TDH
 FRICTION LOSS $70' + (2.4 \times 4) = 79.5' = 32'$ $4/100$
 STATIC $373.97 - 356.00 = 18.0'$

$$TDH = 32' + 18' = 50'$$



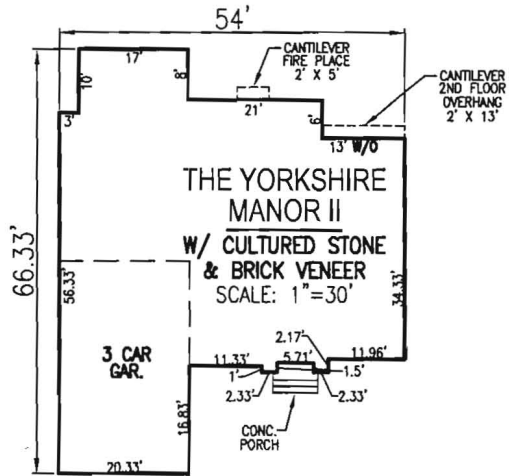
SCALE
1"=50'

THE EXISTING WELL SHOWN ON LOT 17 TAG NO. 95-1397 HAS BEEN FIELD LOCATED BY FISHER, COLLINS, & CARTER, INC., AND IS ACCURATELY SHOWN.

BUILDING OF LOT 17 FLOOR AREAS:
 BASEMENT FLOOR AREA: _____
 FIRST FLOOR AREA: _____
 SECOND FLOOR AREA: _____
 BEDROOMS: _____

NOTE: STORMWATER MANAGEMENT (WQv AND CPv) IS PROVIDED BY EXTENDED DETENTION FACILITY, ONE RAIN GARDEN, ROADWAY GRASS CHANNELS, AND ON-LOT LEVEL SPREADERS (F-07-076). LOT 3 DOES NOT REQUIRE ANY ADDITIONAL PRACTICES.

BUILDING PERMIT NO. _____



SCALE: _____ AS SHOWN

PLOT PLAN

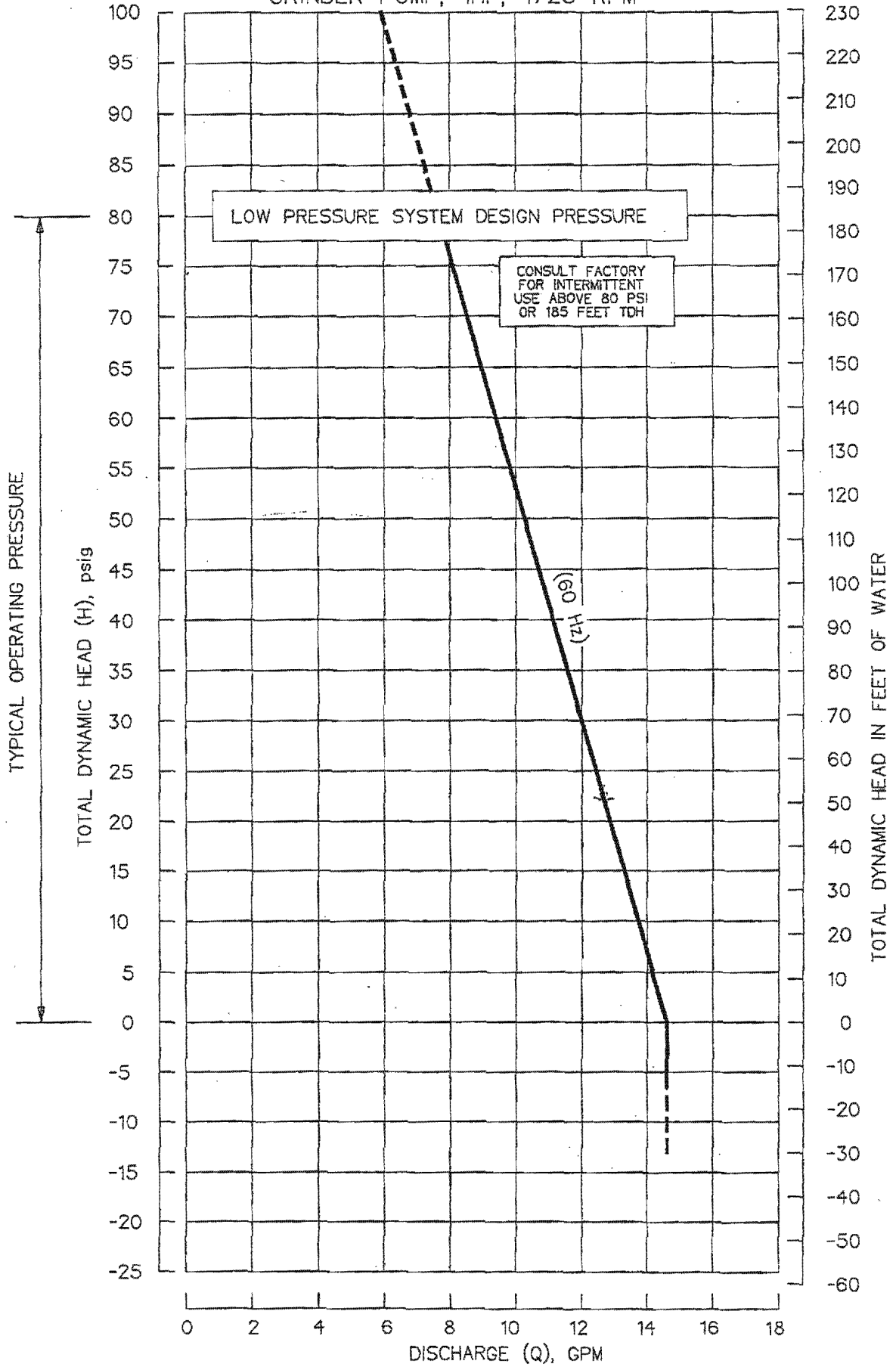
ADDRESS
12225 BASSLERS WAY
ELLICOTT CITY, MD 21042

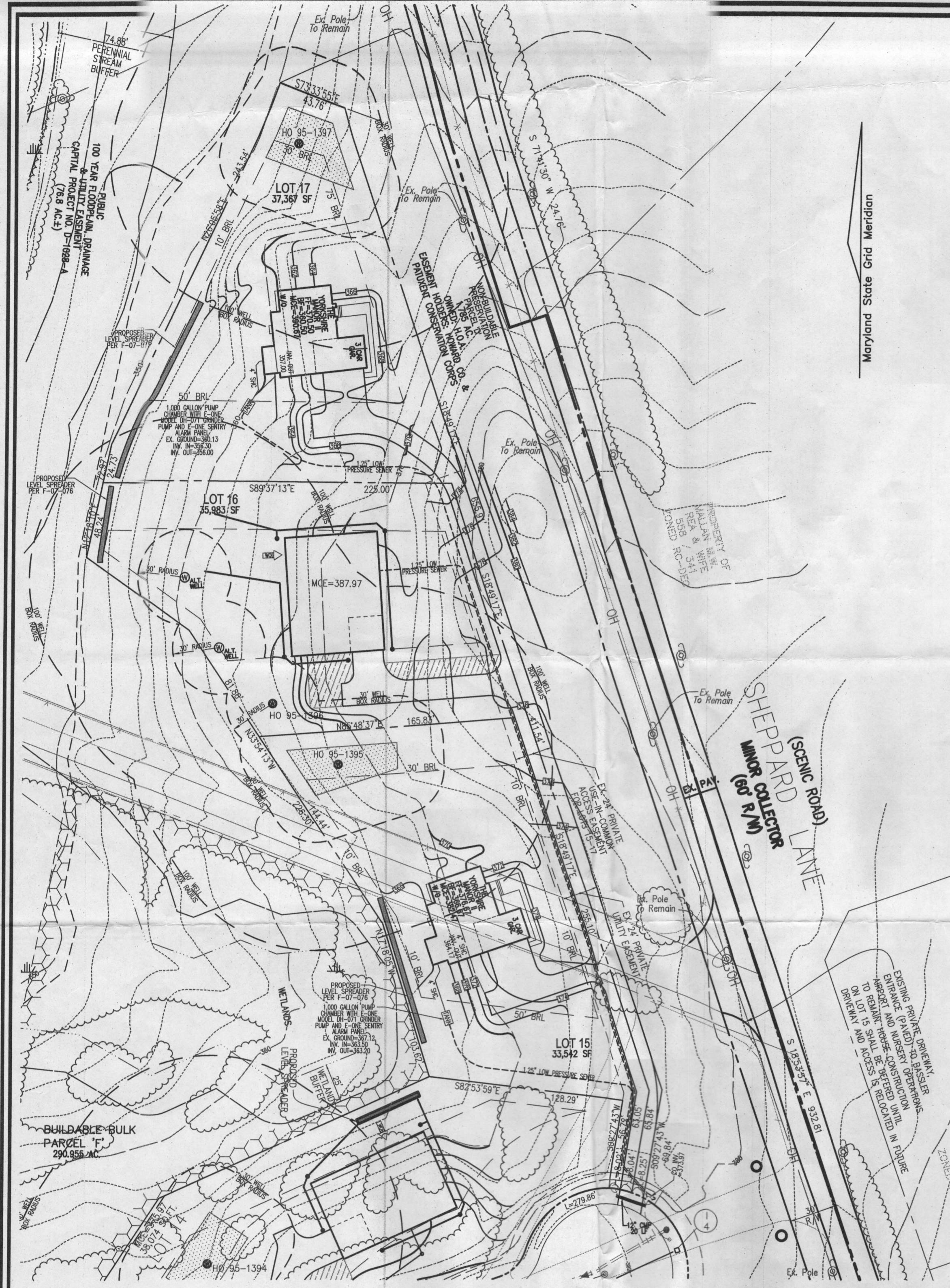
OWNER
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE SUITE 301

Walnut Creek Lot 17

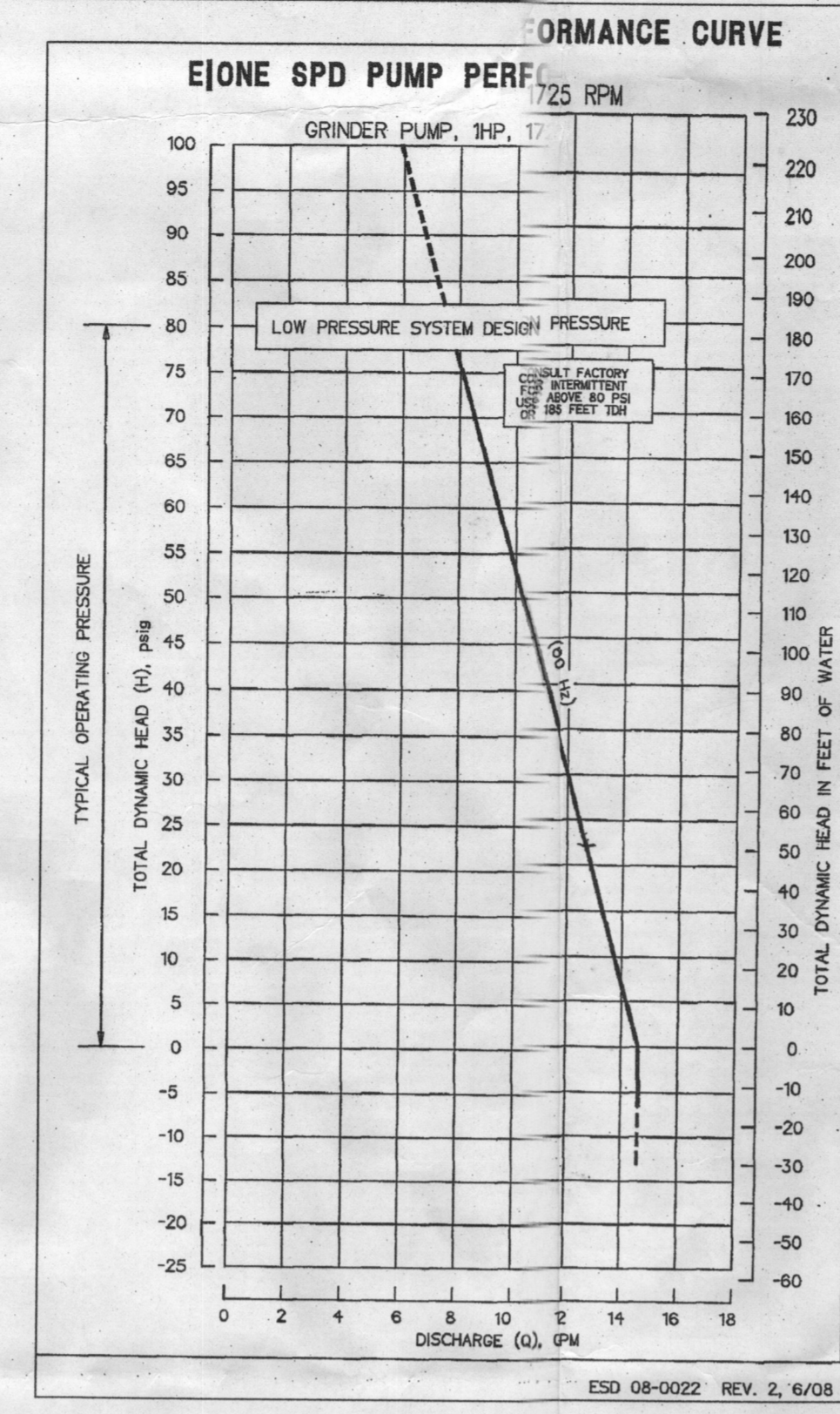
E|ONE SPD PUMP PERFORMANCE CURVE

GRINDER PUMP, 1HP, 1725 RPM

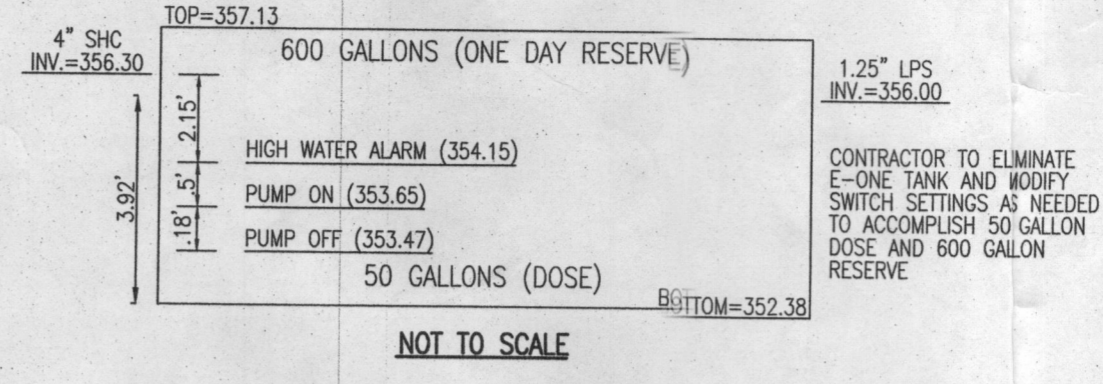




PLAN
SCALE: 1"=50'



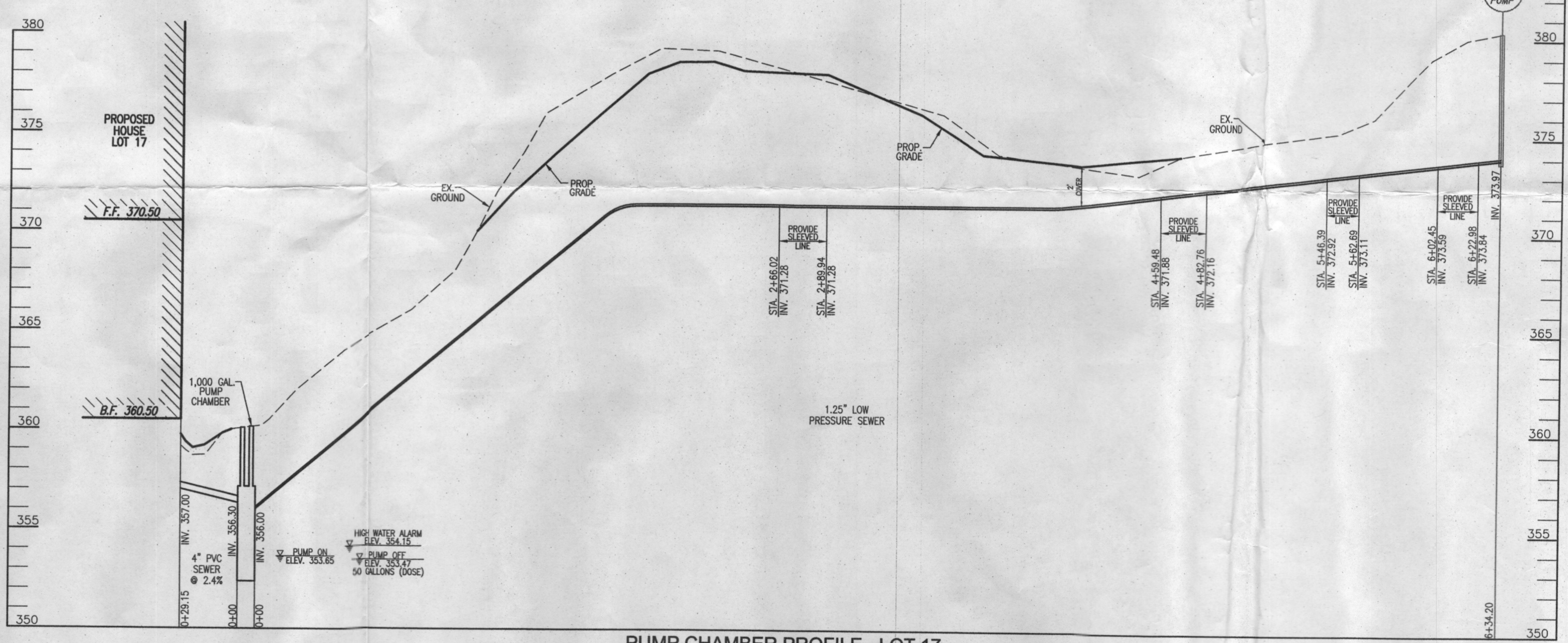
1,000 GALLON PUMP CHAMBER W/ E-ONE MODEL DH-071 GRINDER PUMP
 OUTSIDE TO OUTSIDE DIM: 8.83' x 5.25'
 INSIDE TO INSIDE DIM: 8.16' x 4.58'
 INSIDE CROSS SECTIONAL AREA: 37.37 SF



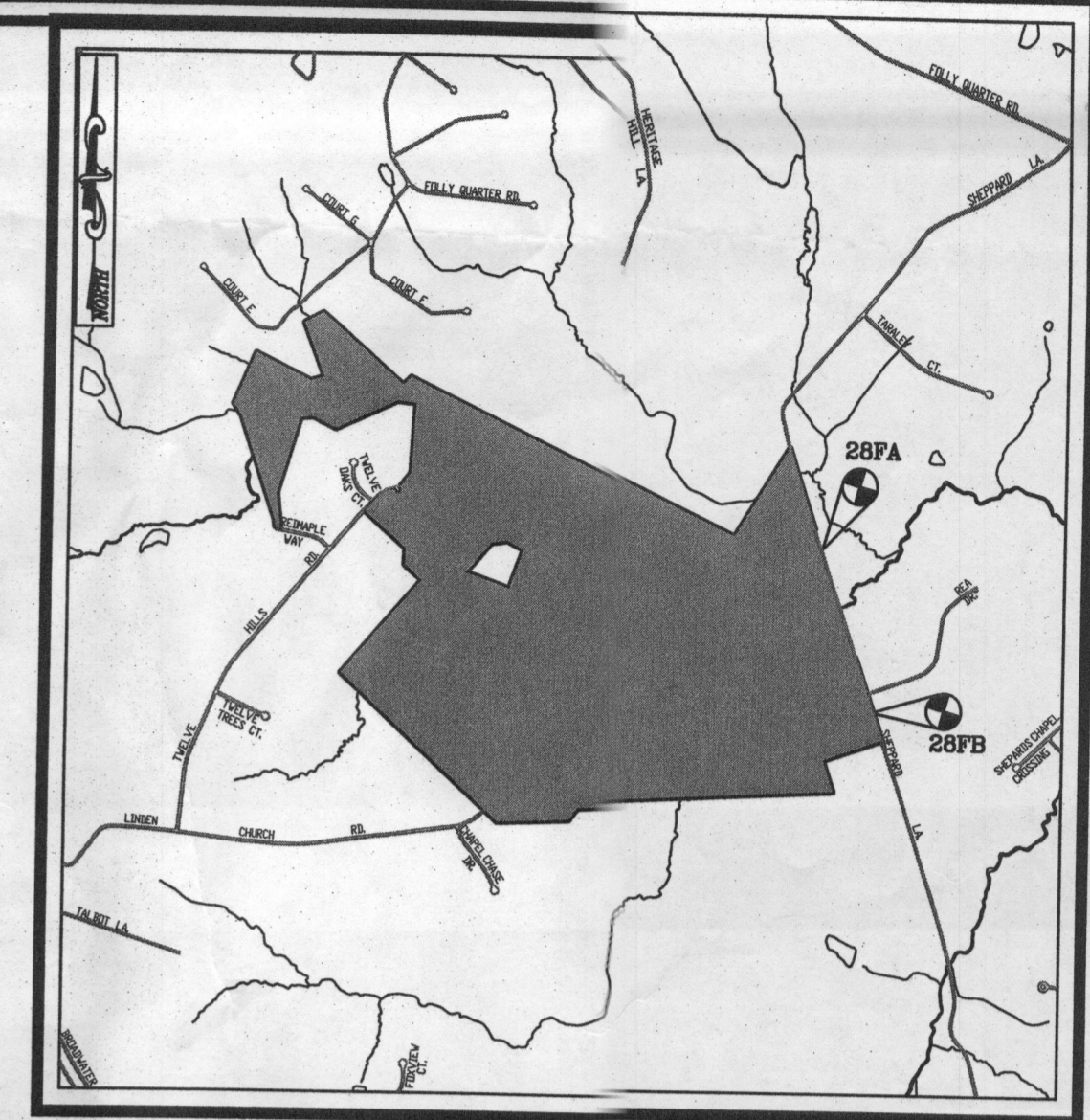
600 GALLONS / 7.48 GAL./FT³ = 80.21 FT³
 80.21 FT³ / 37.37 SF = 2.15'
 50 GALLONS / 7.48 GAL./FT³ = 6.68 FT³
 6.68 FT³ / 37.37 SF = 0.18'

USE E-ONE PUMP - 1 HP PUMP CURVE
 $(50)(1.0) / (3,960)(0.4) = 1.0$ HP
 FRICTION: $785 + (2.4 \times 4) = 795' = 7/100 = 32'$
 STATIC: $373.97 - 356.00 = 18.0'$
 TDH = $32' + 18' = 50'$
 QH = 17.8 GPM

* pump test must be done simultaneously with lot 16 to avoid overload of duplex grinder pit.



PUMP CHAMBER PROFILE - LOT 17
 SCALE: HORIZONTAL - 1"=50'
 VERTICAL - 1"=5'



VICINITY MAP
 SCALE: 1"=2000'
 ADC MAP: 14, E2

LEGEND

EXISTING 2' CONTOUR	---
EXISTING 10' CONTOUR	----
RIGHT-OF-WAY	=====
BOUNDARY	-----
ADJACENT BOUNDARY	-----
EXISTING WELL FIELD LOCATED	(W)
APPROVED WELL AREA	[Hatched Box]

OWNER/DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

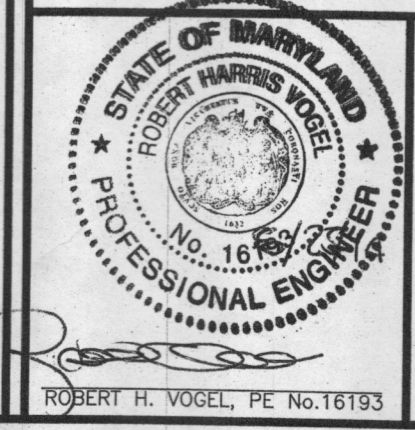
Approved Septic System Plan
 Howard County Health Department
 Signature: *[Signature]* Date: 7/14/14

SEPTIC INFORMATION

WALNUT CREEK - LOT 17
 12225 BASSLERS WAY
 ELLICOTT CITY, MD 21042

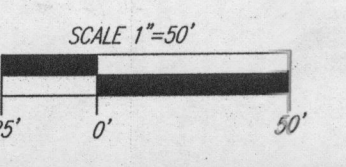
TAX MAP: 28 BLOCK: 11 PARCEL: 49
 5TH ELECTION DISTRICT ZONED: RR-DEO & RC-DEO
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961



PROFESSIONAL CERTIFICATE

DESIGN BY: RHV	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2014.
DRAWN BY: JMR	
CHECKED BY: RHV	
DATE: MAY 2014	
SCALE: 1"=30'	
W.O. NO.: 13-21	



K:\Projects\1518\DWG\SEPTIC\PLAN\LOT 17.dwg, 8/26/2014, 4:02:37 PM

NOTE: PLUMBER
 PASSIVE RADON SYSTEM
 3" PVC PIPE W/ TEE VENTED
 THROUGH ROOF (LOCATION PER
 PLUMBER)

HYAC: EQUIPMENT - AMANA
 ZONE 1: 90% EFFICIENCY NATURAL
 GAS FURNACE WITH 13 SEER A/C UNIT
 ZONE 2: 13 SEER HEAT PUMP
 VENT RANGE HOOD TO OUTSIDE

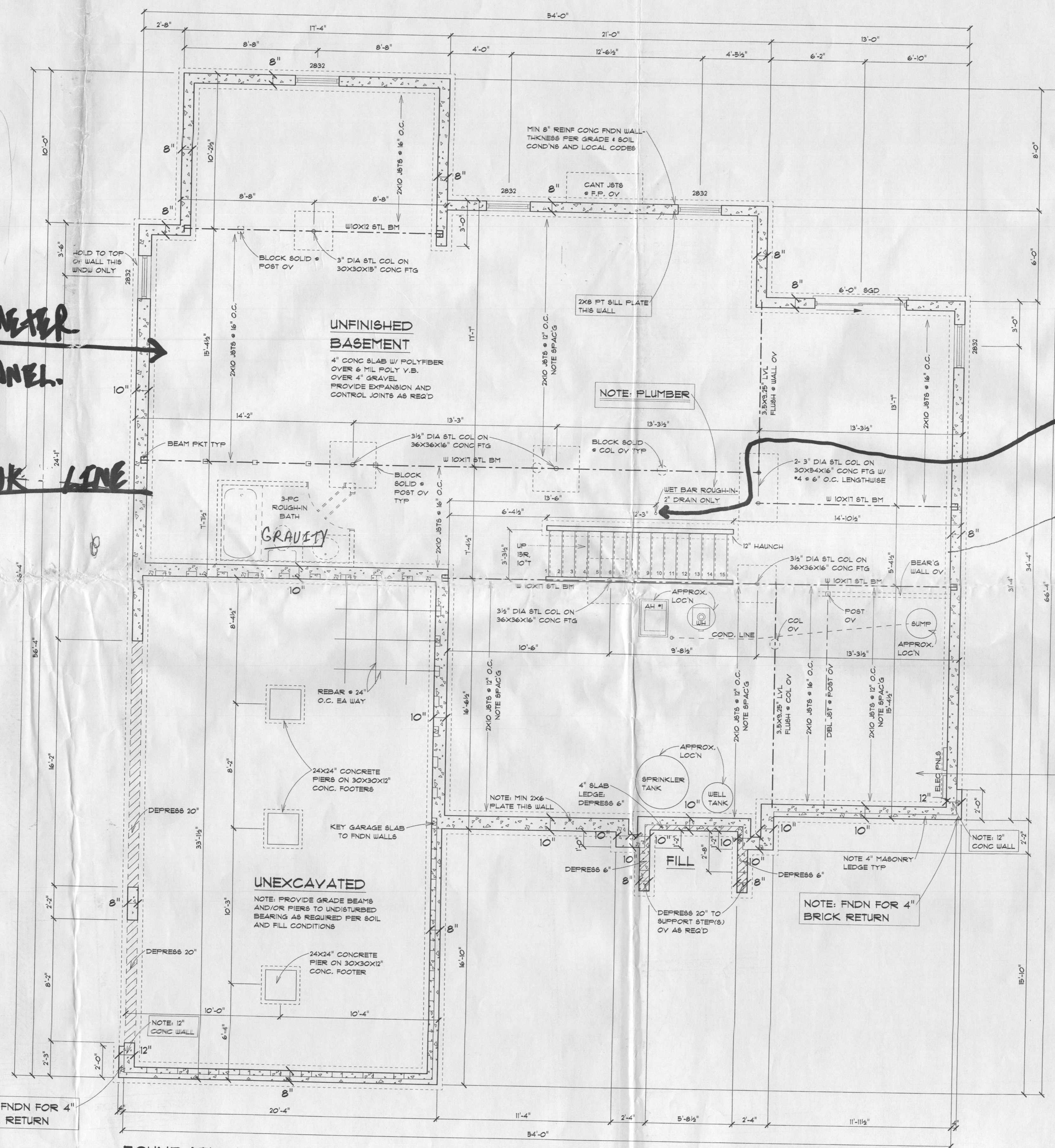
E-ONE SEPTIC SYSTEM

NOTE PLUMBER
 WET BAR
 ROUGH IN

ELECTRIC METER
 TO E-ONE PANEL.

HOLDING TANK LINE

WELL LINE



FOUNDATION PLAN
 NOTE: 9'-0" FOUNDATION WALLS

- NOTES**
1. 3000 PSF SOIL BEARING CAPACITY ASSUMED.
 2. BEAMS, JOISTS, HEADERS AND RAFTERS TO BE S-P-F #1/2 OR EQUAL TYPICAL THROUGHOUT UNLESS OTHERWISE NOTED.
 3. VERIFY SIZE AND LOCATIONS OF DOORS AND WINDOWS THIS PLAN PER GRADE AND BUILDER.

Gas: Natural -	
Gas Furnace Zones:	
ZONE 1	YES
Fire Place	YES
Cook Top	YES

0 E-1 pump*
 70 gallons
 700 gal
 WH-101
 Robert Vogel
 410 461 7666

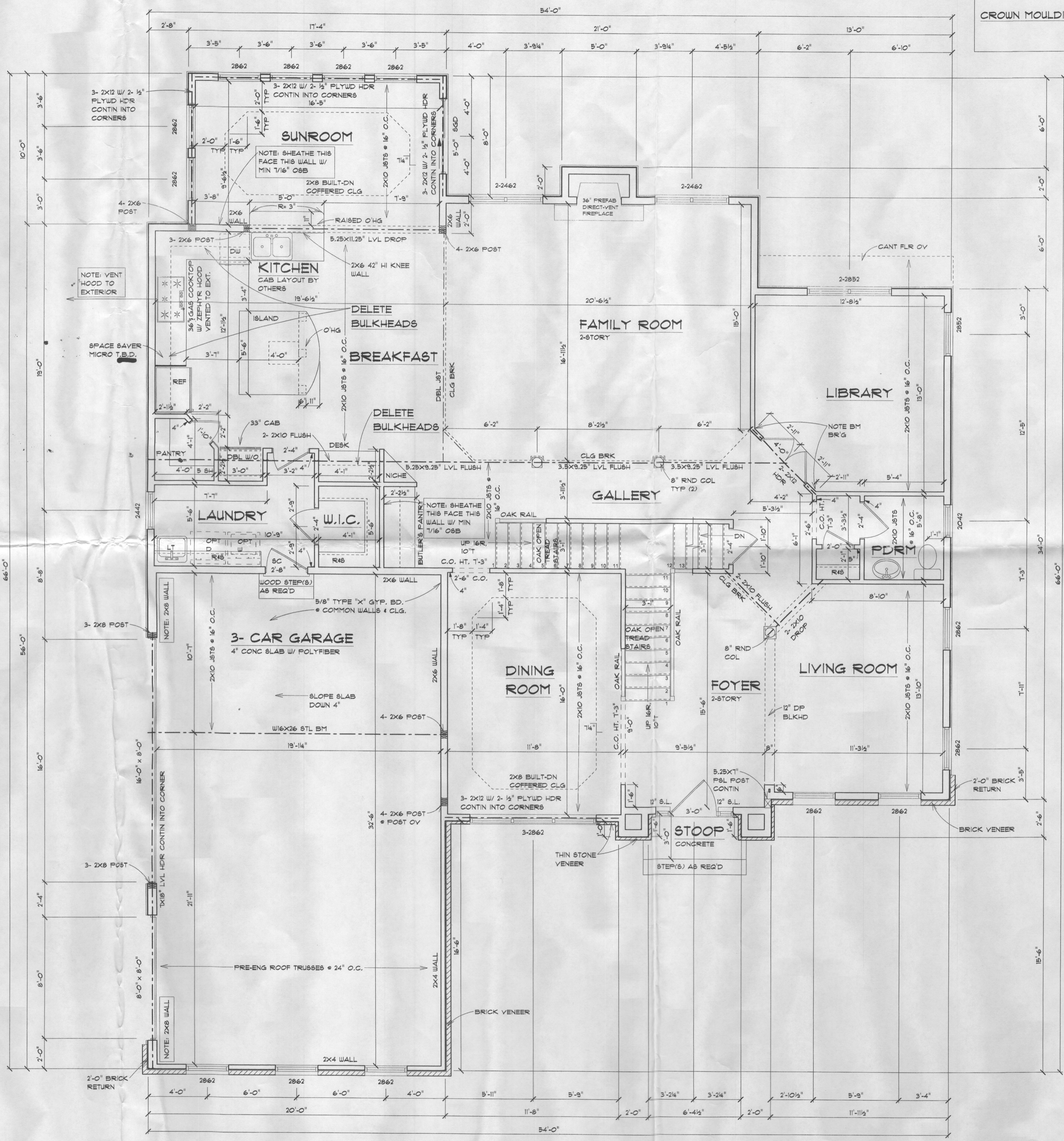
FAMILY ROOM FIREPLACE: LENNOX MILLIVOLT EDV4035 NATURAL GAS PRE ENGINEERED DIRECT VENT FIREPLACE
 F.P. ROUGH OPENING, LENNOX MILLIVOLT EDV4035: 41"W x 40 1/2"H x 23"D

WALNUT CREEK INTERIOR TRIM PACKAGE
DOORS: 1ST & 2ND FLOORS - FRIEDRICH MASONITE, RAISED CAMDEN
DOOR HARDWARE: SATIN NICKEL STOPS, KNOBS, HINGES, AND HANDLES
DOOR TRIM: 1ST & 2ND FLOORS - 3/4" BEADED EDGE CASING, FINGER JOINT
BASE: 1ST & 2ND FLOORS - 5/4" WM-163E
CHAIR RAIL: TWO PIECES WM-302 W/ 4/4" BEADED BOTTOM BACKER IN DINING ROOM
 * WOOD EXTENSIONS & CASINGS AROUND ALL WINDOWS EXCEPT IN THE GARAGE
CROWN MOULDING: THREE PIECE 4 5/8" CROWN W/ BEADED BOTTOM BACKER W/ #183 TRIM IN LIVING ROOM, DINING ROOM, FOYER, SECOND FLOOR HALL, AND STUDY
 COFFERED CEILINGS: TWO PIECE 4 5/8" CROWN W/ BOTTOM BACKER

NOTE: CARPENTER
 ALLOW 4" FOR 3/4" CASING ON 1ST FLOOR & 2ND FLOOR

NOTE: ISLAND 5'-6" WIDE

2 GARAGE DOOR OPENERS
 LIFTMASTER 3265

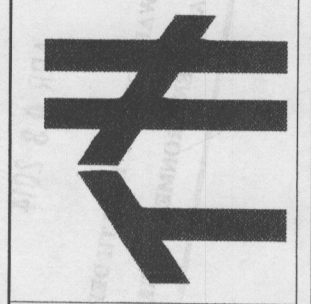


FIRST FLOOR PLAN
 NOTE: 9'-1/4" WALL HGT
 ANGLES 45 DEGREES TYP U.O.N.

NOTE: INTERIOR STAIRS SHALL CONFORM TO THE FOLLOWING GEOMETRY:
STRAIGHT:
 RISER HEIGHT 7.75" MAX
 TREAD DEPTH 10" MIN
 NOSING .75" MIN 1.25" MAX
 (NOTE: NOSING MAY BE OMITTED * TREAD DEPTH OF 11" OR GREATER)

NOTE: 9' CEILINGS U.O.N.
 2X6 EXTERIOR WALLS U.O.N.

TRINITY HOMES
 TRINITY QUALITY HOMES, INC. T/A



THE YORKSHIRE MANOR II - 3 CAR

SCALE: 1/4" = 1'-0"
 OR AS NOTED

REVISIONS

NO.	DATE	DESCRIPTION

DATE: 03-13-2014
 SHEET NO.

A-4

2012 CODE

