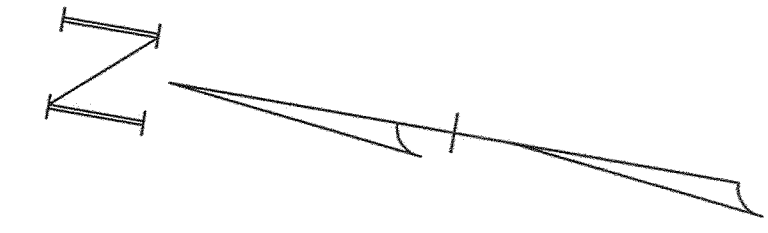


The Village Shoppes of North Reading

#303 Main Street

North Reading, MA



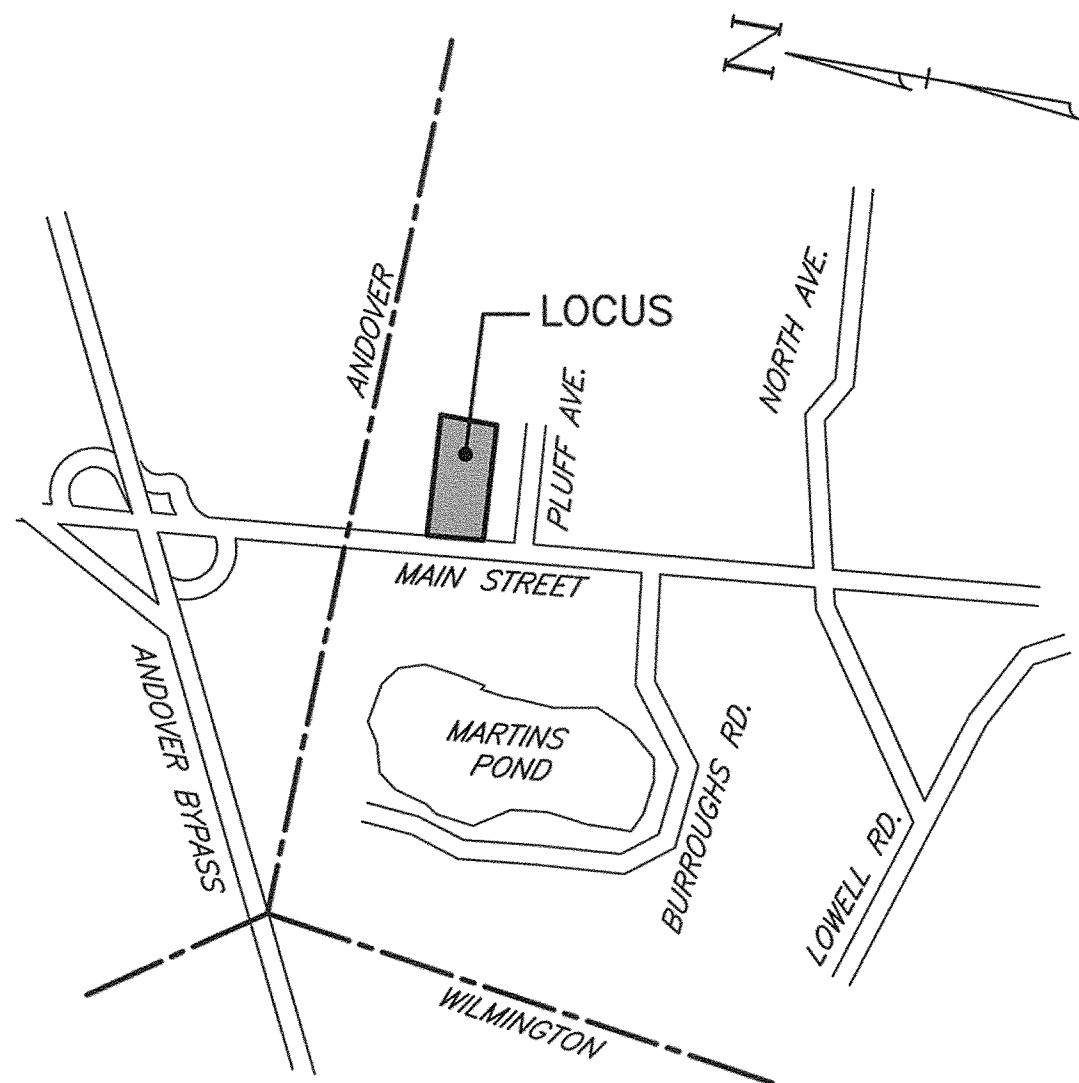
OWNER:
 D.O.B. REALTY, INC.
 303 MAIN STREET
 NORTH READING, MASSACHUSETTS

ASSESSORS MAP 12 LOT 129

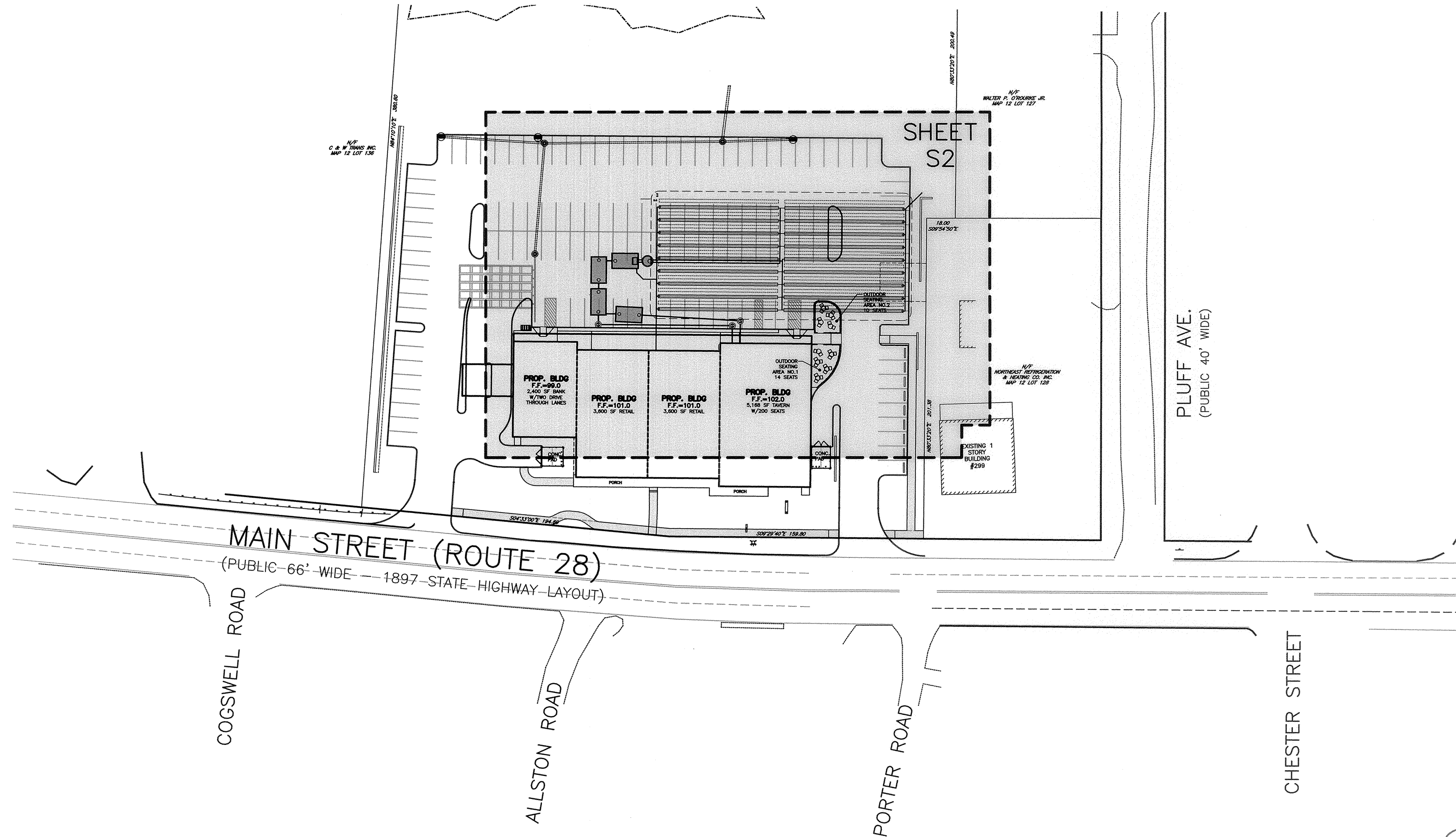
PROJECT NOTES:

1. PROPERTY LIES WITHIN THE AQUIFER PROTECTION DISTRICT, BUT DOES NOT LIE WITHIN A ZONE II TO A PUBLIC WATER SUPPLY.
2. PROPERTY LIES WITHIN THE COUNTRY ROAD MAIN STREET OVERLAY DISTRICT.
3. PORTIONS OF THE PROPERTY LIE WITHIN A SPECIAL FLOOD HAZARD AREA. BASE FLOOD ELEVATION=81, SEE FIRM PANEL 0002D, MAP NUMBER 2502090002D, MAP REVISED JUNE 14, 2004. NONE OF THE SEPTIC SYSTEM COMPONENTS LIE WITHIN A FLOOD HAZARD AREA.

SHEET INDEX	
PLAN TITLE	SHEET DESIGNATION
INDEX PLAN	S1
SYSTEM PLAN	S2
SYSTEM PROFILE / SECTION	S3
SYSTEM DETAILS	S4
SYSTEM DETAILS	S5



LOCUS MAP
 SCALE: 1"=1300'±



Prepared For:

Applicant
 D.O.B. Realty, Inc.
 154 Broadway
 Somerville, MA
 Tel: 617 592 7800

Prepared By:

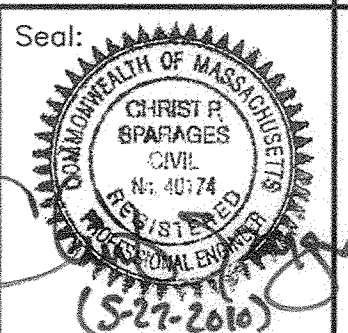
Hayes Engineering, Inc.
 603 Salem Street
 Wakefield, MA 01880
 Ph: 781.246.2800
 Fax: 781.246.7596
 www.hayeseng.com

Design By: EES
 Drawn By: MEM
 Checked By: CPS
 Job No: NOR-0182A
 Comp. No: NOR49
 Issued For Permit
 Issued For Review
 Issued For Bid
 Issued For Construction
 Not For Construction

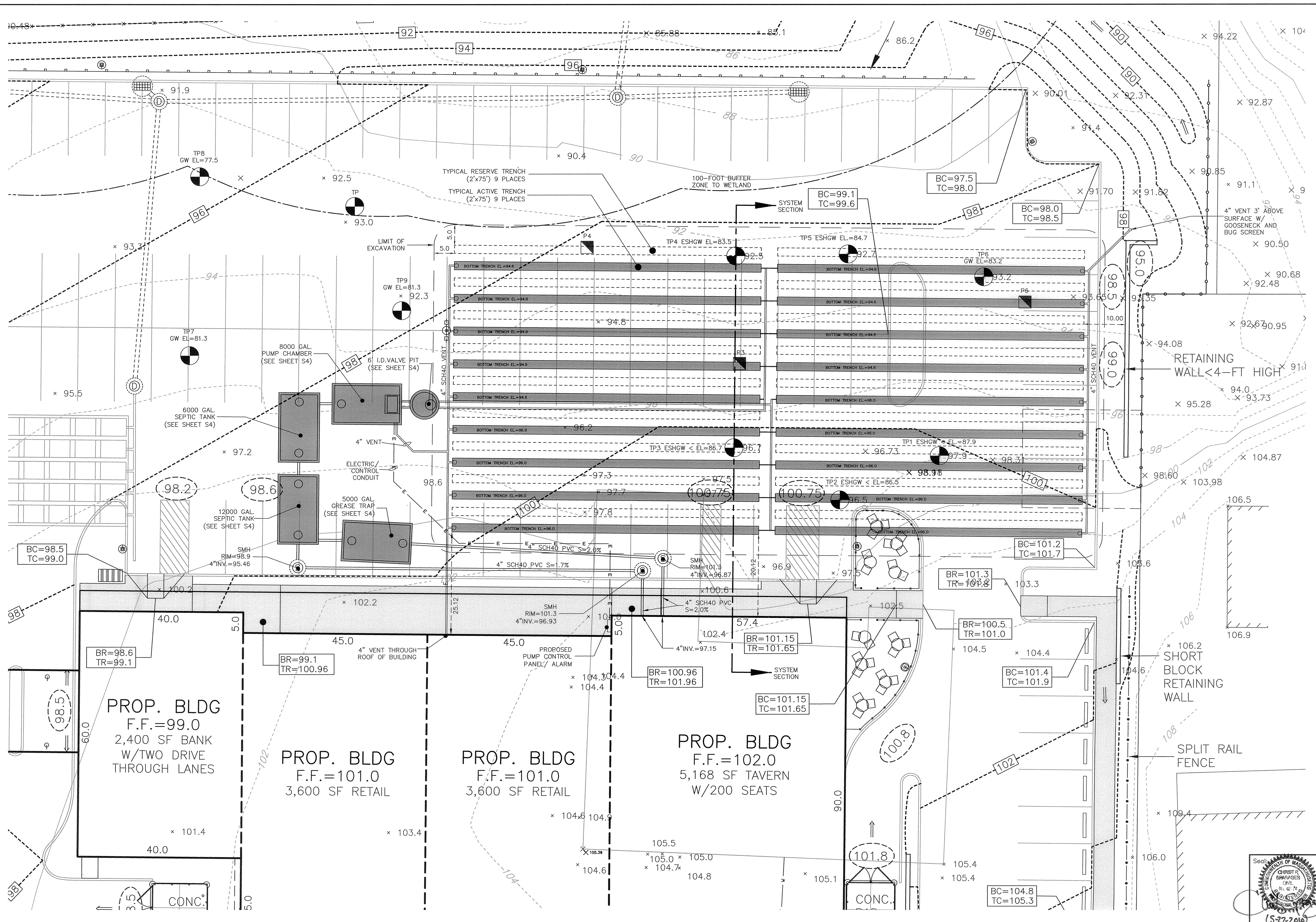
No.	Revision	Date
10		
9		
8		
7		
6		
5		
4		
3	Change in Sewage Flow Design Flow	5/27/2010
2	BOH Comments	5/12/2008
1		

Scale: 1"=40'
 0' 20' 40' 80'
 Date: March 17, 2008

Drawing Title:
 SANITARY DISPOSAL SYSTEM
 INDEX PLAN
 THE VILLAGE SHOPPES OF
 NORTH READING, MASS.



Drawing No.:
 S1
 SHEET 1 OF 5



Prepared For:

Applicant: D.O.B. Realty, Inc.
154 Broadway
Somerville, MA
Tel: 617 592 7800

Prepared By: Hayes Engineering, Inc.
603 Salem Street
Woburn, MA 01880
Ph: 781 246 2800
Fax: 781 246 7596
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Design By: EES
Drawn By: MEM
Checked By: CPS
Job No: NOR-0182A
Comp. No: NOR49
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No.	Change in Sewage Flow Design	Flow	Date
1	Change in Sewage Flow Design	Flow	5/12/2008
2	BOH Comments		
3	Revisions		

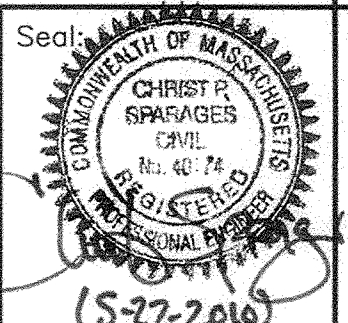
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0' 5' 10' 20'

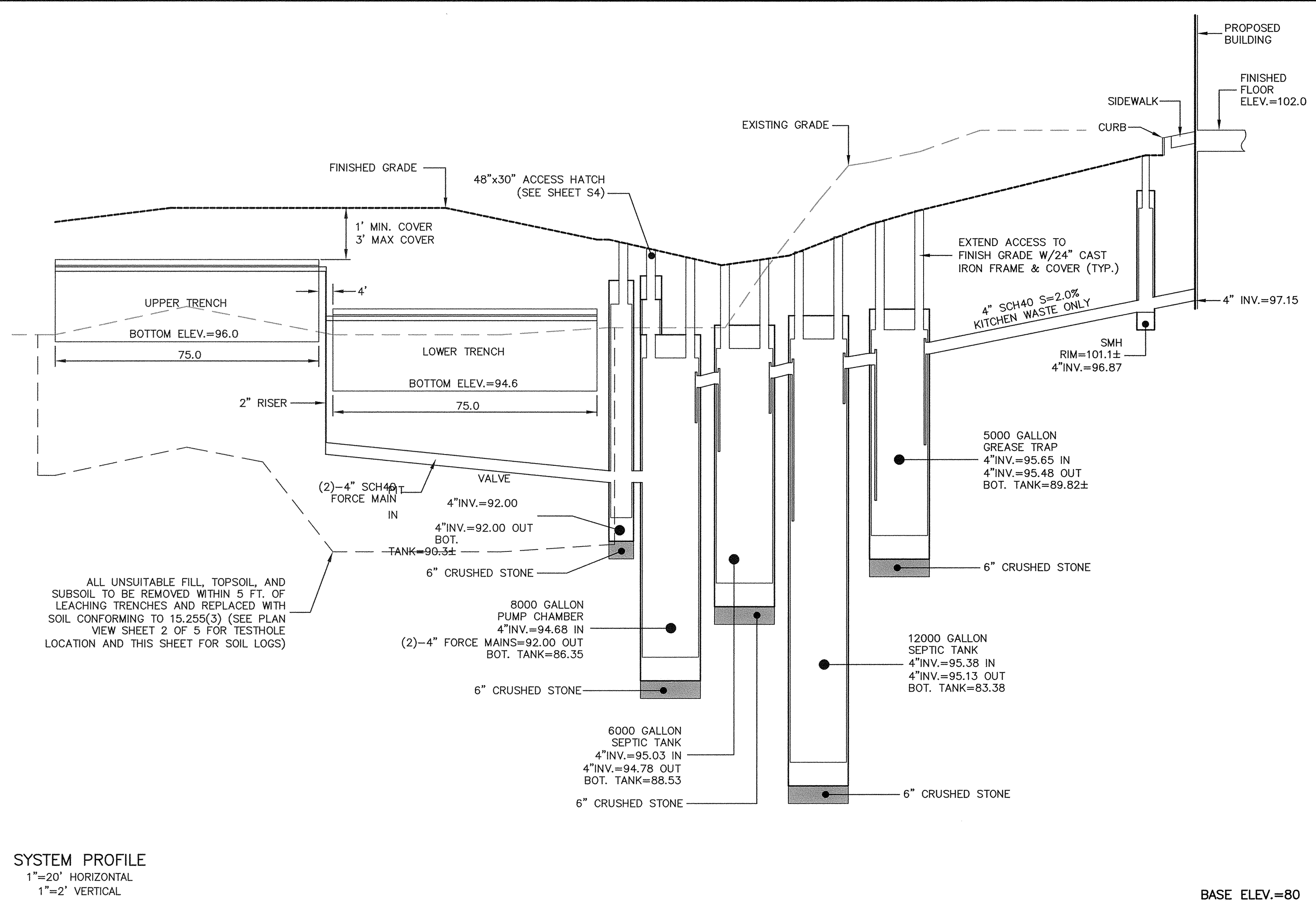
Date: March 17, 2008

Drawing Title: SANITARY DISPOSAL SYSTEM SYSTEM PLAN THE VILLAGE SHoppes OF NORTH READING, MASS.

Drawing No.: S2

SHEET 2 OF 5





SYSTEM PROFILE
 1"=20' HORIZONTAL
 1"=2' VERTICAL

DESIGN DATA:

SEWAGE FLOW:
 TAVERN: (200 SEATS) * (20 GAL/SEAT/DAY) = 4000 GPD
 RETAIL: (7200 SF) * (50 GAL/1000 SF/DAY) = 360 GPD
 BANK: (2400 SF) * (75 GAL/1000 SF/DAY) = 180 GPD
 ADDITIONAL AVAILABLE FLOW = 1,440 GPD
 TOTAL: (4000 + 360 + 180 + 1,440) = 5980 GPD

SEWAGE TANKS:
 REQUIRED FIRST COMPARTMENT: (2) * (5980) = 11960 GAL
 REQUIRED SECOND COMPARTMENT: (1) * (5980) = 5980 GAL
 PROVIDED FIRST COMPARTMENT = (1) 12000 GAL TANK
 PROVIDED SECOND COMPARTMENT = (1) 6000 GAL TANK

GREASE TRAP:
 REQUIRED: (140 SEATS) * (15 GAL/SEAT) = 2100 GAL
 PROVIDED: (1) 5000 GAL TANK (MIN. SIZE REQUIRED BY N. READING BOH)

LEACHING AREA:
 REQUIRED LEACH AREA = (5980 GPD) / (0.74 GPD/SF) = 8081 SF
 REQUIRED LENGTH OF 2 FT WIDE X 2 FT EFF. DEPTH TRENCH:
 (8081 SF) / (6.0 SF/FT) = 1347 FT
 PROVIDED LEACH AREA W/(18)-75 FT LONG TRENCHES:
 (18) * (75 FT) * (6.0 SF/FT) = 8100 SF

DOSE VOLUME:
 DOSE: 10 x VOLUME OF LATERALS (1-1/2" LATERALS)
 (10) * [(2.06 IN³)/(144 IN³/SF) * (9 LAT.) * (75 FT/LAT.) * (7.48 GAL/CF)] = 722 GAL
 DOSE PROVIDED = 894 GAL

LEACHING AREA ELEVATIONS:
UPPER TRENCH:
 MAXIMUM ESHWT < 87.9 FT
 MOUNDING = 0.8 FT
 TOTAL = (87.9 FT) + (0.8 FT) = 88.7 FT
 MINIMUM BOTTOM TRENCH ELEV. = (88.7 FT) + (5 FT) = 93.7
 MINIMUM BOTTOM TRENCH ELEV. PROVIDED = 96.0
LOWER TRENCH:
 MAXIMUM ESHWT < 86.7 FT
 MOUNDING = 0.8 FT
 TOTAL = (86.7 FT) + (0.8 FT) = 87.5 FT
 MINIMUM BOTTOM TRENCH ELEV. = (87.5 FT) + (5 FT) = 92.5
 MINIMUM BOTTOM TRENCH ELEV. PROVIDED = 94.6

REQUIRED SEWAGE PUMPING RATE:
 HOLES PER TRENCH = (75 FT) / (5 FT/HOLE) = 15 HOLES
 HOLES TO BE DOSED = (15 HOLES/TRENCH) * (9 TRENCHES) = 135 HOLES
 PUMPING RATE = (135 HOLES) * (1.28 GPM/HOLE) = 173 GPM (Hd = 3.0 FT)

TOTAL DYNAMIC HEAD:
 MAX TDH @ 173 GPM W/4" SCH40:
 Hs = (98.12 FT - 87.71 FT) = 10.41 FT
 Hd = (3.0) * (1.31) = 3.93 FT
 Hf = [(100 FT + 35 FT (minor losses)) * (1.6 FT)] / (100 FT) = 2.16 FT
 Hv = (4.43) / (64.4) = 0.30 FT
 TDH = (10.41 FT) + (3.93 FT) + (2.16 FT) + (0.30 FT) = 16.80 FT

PUMP SELECTION:
 USE BARNES MODEL 4SE2824L
 2.8 HP, 230 VOLT, 1 PH, 1750 RPM, W/5.75" IMPELLER
 (IF 3 PHASE POWER AVAILABLE, USE BARNES MODEL 4SE2894L)

HAYES ENGINEERING, INC. HAS BEEN RETAINED TO FURNISH A SEPTIC SYSTEM DESIGN PLAN TO THE CLIENT BUT HAS NOT BEEN RETAINED TO CONSTRUCT OR SUPERVISE CONSTRUCTION OF THE SYSTEM.

IN VIEW OF SAME, NO GUARANTEE OR WARRANTY, EXPRESS OR IMPLIED, IS MADE TO THE CLIENT OR TO THE ULTIMATE USER RELATIVE TO ANY SYSTEM INSTALLED PURSUANT TO THE PLAN.

HAYES DOES REPRESENT THAT THE PLAN MEETS THE REQUIREMENTS OF THE STATE CODE, TITLE 5, EXCEPT WHERE VARIANCES ARE NOTED.

- The general contractor is to be responsible for horizontal and vertical control of all system components.
- This plan is to show the design of the subsurface sewage disposal system only. The system is designed for flows estimated under design criteria.
- System is designed only to accommodate sanitary sewage associated with normal domestic usage and consisting of water-carried putrescible waste.
- The system is not designed for garbage grinders.
- The system shall be vented through building plumbing as required by building code.
- Property lines and building locations are graphic only, property lines not having been verified, no representation as to the accuracy or certification of those shown is implied or intended.
- Applicable zoning regulations shall be confirmed by the owner prior to construction.
- The plan shows only those features that were visually apparent on the date of topography and the absence of subsurface structures, utilities, etc. does not mean that they do not exist.
- The installer of this system must be licensed by the local board of health.
- There are no existing wells within 100 feet of the proposed sewage disposal system, to the best of our knowledge.
- Disposal system areas are to be raked (scarified) before installation of stone, all stones exceeding 2 inches in diameter and all foreign material encountered during excavation are to be removed from the leaching area bed surface.
- Finished surface of the leaching area shall be graded to assure water runoff (2% minimum slope).
- All disturbed areas to be loamed, seeded, and maintained to prevent erosion.
- The septic tank shall be periodically inspected and maintained and should be pumped when sludge in the bottom exceeds 1/4 of the depth.
- Alternate manufacturers for concrete structures and equipment shown on these plans may be used upon the written approval of the design engineer. alternate manufacturers will not be used if the use of their equipment requires design changes.
- If any part of this design is to be altered in any way, the design engineer as well as the approving authorities shall be notified in writing before construction.
- All work is to comply with the commonwealth of Massachusetts department of environmental protection state sanitary code, title 5 and any local board of health supplementary regulations.
- The local board of health agent will conduct periodic inspections as needed.
- These plans and specifications are intended to be explanatory of the work to be done and of each other, but should any omission, errors, or discrepancies appear, they shall be subject to correction and interpretation by the design engineer thereby defining and fulfilling the intent of the plans.
- Contractor to notify engineer of any site condition differing from those indicated.
- All work and materials shall conform to the applicable sections of title 5 of the state environmental code.
- Designer to submit an as-built plan of system within two weeks from final inspection.
- General contractor to check between benchmarks shown on this plan.
- All system components shall be marked with magnetic marking tape or a comparable means in order to locate them once buried.
- The soil absorption system shall have a minimum of 18 inspection ports consisting of a perforated four (4) inch pipe placed vertically down into the stone to the naturally occurring soil or sand fill below the stone. The pipe shall be capped with a screw type cap and accessible to within three (3) inches of finish grade.

Prepared For:

Applicant: D.O.B. Realty, Inc.
 154 Broadway
 Somerville, MA
 Tel: 617 592 7800

Prepared By: Hayes Engineering, Inc.
 603 Salem Street
 Wakefield, MA 01880
 Phone: 781.246.2800
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 Not For Construction

Date	Revision
5/27/2010	Change in Sewage Flow Design Flow
5/12/2008	BOH Comments
1	

MATERIAL NOTES:

Leach Bedding:

- Clean double washed stone shall be free of iron, fines, dust and organic matter as laid.
- Bottom stone in leach bed shall be 3/4" to 1-1/2" double washed stone as indicated in note 1 above.
- Top stone in leach bed shall be 1/8" to 1/2" double washed peastone as indicated in note 1 above.

CONSTRUCTION NOTES:

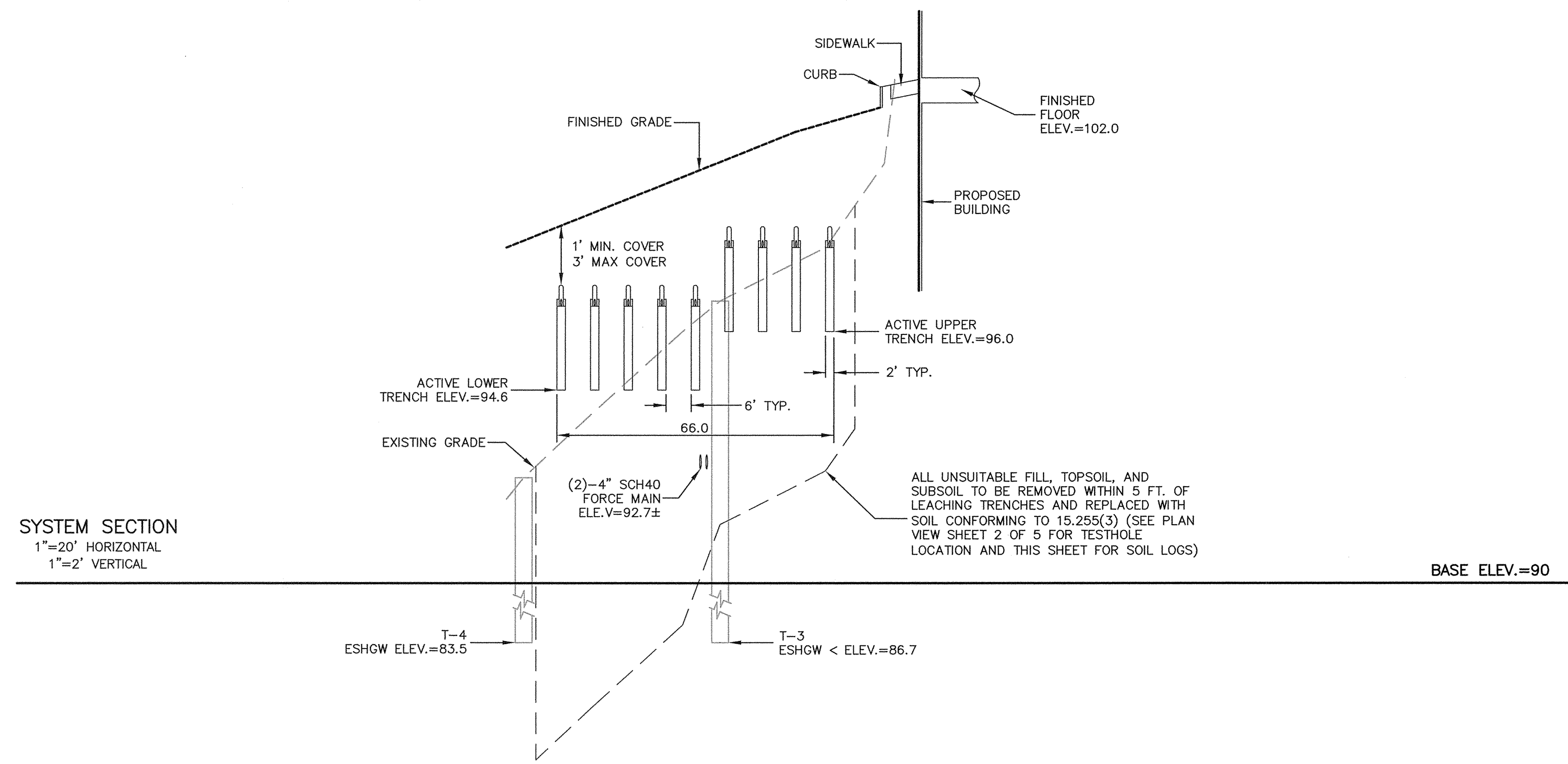
- Excavate all topsoil, subsoil, and any other unsuitable material within the limits of excavation and replace to top of peastone elevation with select on-site or imported soil material, consisting of clean granular sand, free from organic matter and deleterious substances.
- Fill material shall not contain any material larger than two (2) inches. The fill material shall comply with title 5, state environmental code 310 cmr 15.255 (3) as revised.
- Contractor to supply to the town a current sieve test analyses report at their own expense if required by the local approving authority.
- Contractor shall follow all applicable OSHA regulations with respect to all aspects of the job, including confined space entry requirements.

Scale: As Shown

Date: March 17, 2008

Drawing Title:

SANITARY DISPOSAL SYSTEM SYSTEM PROFILE/SECTION OF THE VILLAGE SHOPPES OF NORTH READING, MASS.



SYSTEM SECTION
 1"=20' HORIZONTAL
 1"=2' VERTICAL

SOIL LOGS									
DEPTH (In.)	SOIL HORIZON/LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)	SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME	SOIL STRUCTURE	SOIL CONSISTENCY (MOIST)	DESCRIPTION OF HORIZONS	
								TEXTURE	STRUCTURE
ESTIMATED DEPTH TO HIGH GROUNDWATER @ > 120" @ ELEVATION = 87.9'									
0"-27"	fill			vy cos s	40/0/0	l sg	mvfr	grovel	q
27"-120"	C	2.5Y 5/6						very coarse sand	vcos
ESTIMATED DEPTH TO HIGH GROUNDWATER @ > 120" @ ELEVATION = 92.5'									
0"-12"	A	10YR 3/4		sl	0/0/0	gr	mfr	loamy coarse sand	lcos
12"-120"	C	2.5Y 5/6		vy cos s	40/10/0	l sg	mvfr	loamy sand	lcs
ESTIMATED DEPTH TO HIGH GROUNDWATER @ > 120" @ ELEVATION = 86.5'									
0"-8"	A	10YR 3/4		sl	0/0/0	gr	mfr	loamy fine sand	lfs
8"-16"	C1	2.5Y 7/3		s	20/5/0	m	mvfr	loamy sand	lcs
16"-36"	C2	2.5Y 5/6		vy cos s	35/0/0	l sg	mvfr	sandy loam	sl
36"-48"	Apb	10YR 3/2		sl	0/0/0	gr	mfr	fine sandy loam	fsl
48"-54"	Bw	10YR 4/6		sl	0/0/0	gr	mfr	very fine sand loam	vfs
54"-120"	C	2.5Y 5/6		vy cos s	40/5/0	l sg	mvfr	loose	l
ESTIMATED DEPTH TO HIGH GROUNDWATER @ > 120" @ ELEVATION = 83.2'									
0"-60"	fill			sl	0/0/0	gr	mfr	nonsticky	wso
60"-70"	Apb	10YR 3/2		sl	0/0/0	gr	mfr	slightly sticky	wss
70"-84"	Bw	10YR 4/6		sl	0/0/0	gr	mfr	friable	wf
84"-120"	C	2.5Y 5/6		vy cos s	40/10/0	l sg	mvfr	very sticky	wvs
ESTIMATED DEPTH TO HIGH GROUNDWATER @ > 120" @ ELEVATION = 84.7'									
0"-60"	fill			vy cos s	40/10/0	l sg	mvfr	nonplastic	wpo
60"-120"	C	2.5Y 5/6		vy cos s	40/10/0	l sg	mvfr	slightly plastic	wps
ESTIMATED DEPTH TO HIGH GROUNDWATER @ > 120" @ ELEVATION = 83.2'									
0"-60"	fill			vy cos s	40/10/0	l sg	mvfr	very plastic	wvp
60"-120"	C	2.5Y 5/6		vy cos s	40/10/0	l sg	mvfr	loose	wl

SOIL LOGS:

DATE OF TESTING: JUNE 11, 1999

PRESENT AT TESTING:

HEI SOIL EVALUATOR: GORDON ROGERSON

BOARD OF HEALTH: TOM MURPHY

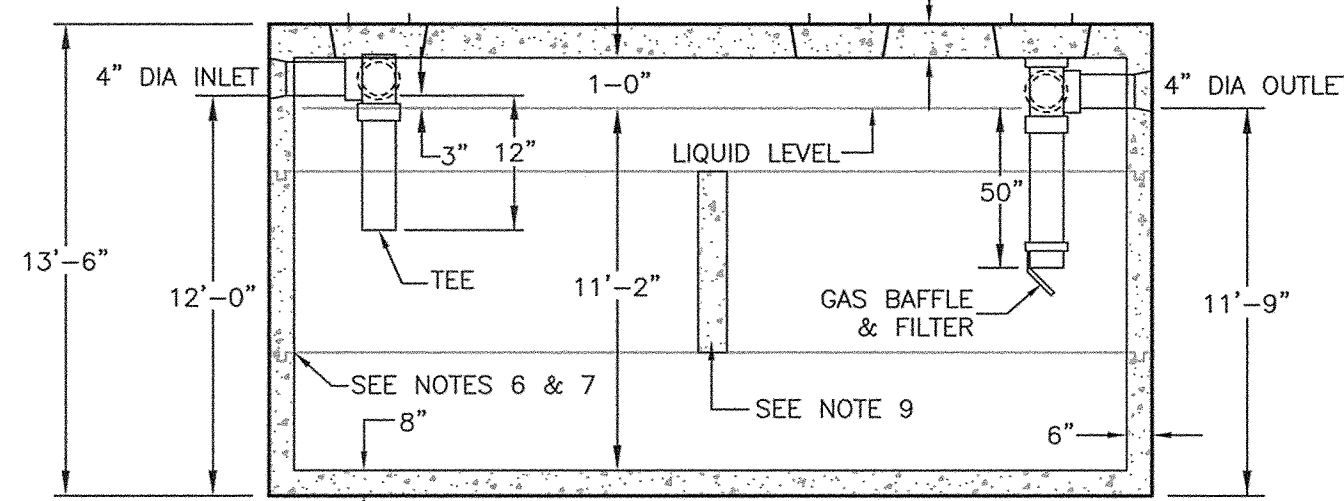
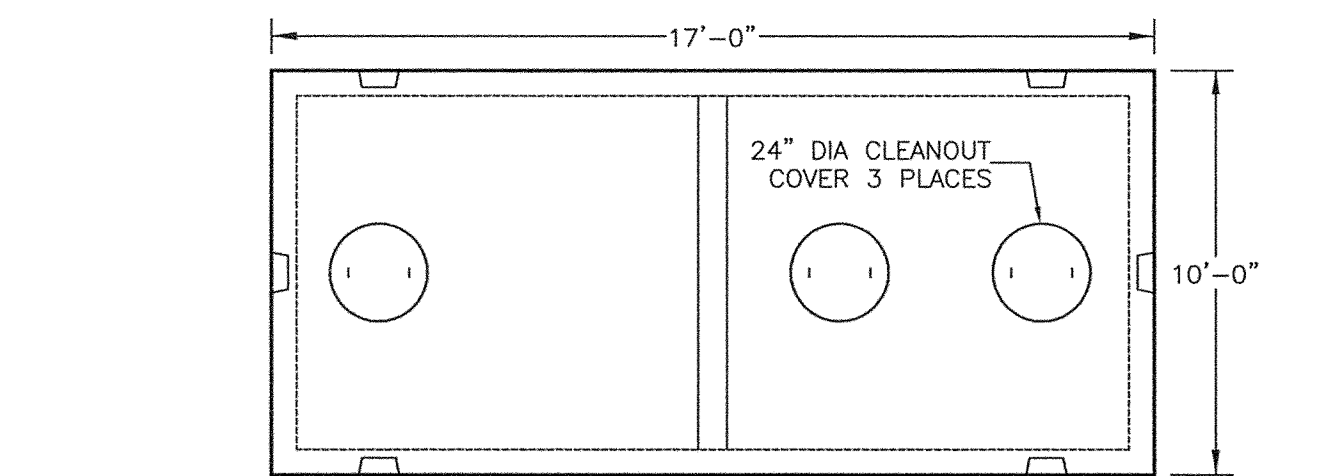
PERCOLATION RATE: P3: < 2 min./in. @ 84"
 P4: < 2 min./in. @ 104"
 P6: < 2 min./in. @ 68"

Seal: [Professional Engineer Seal for Gordon Rogerson, State of Massachusetts, No. 42174, Exp. 12/31/2010]

Drawing No.:

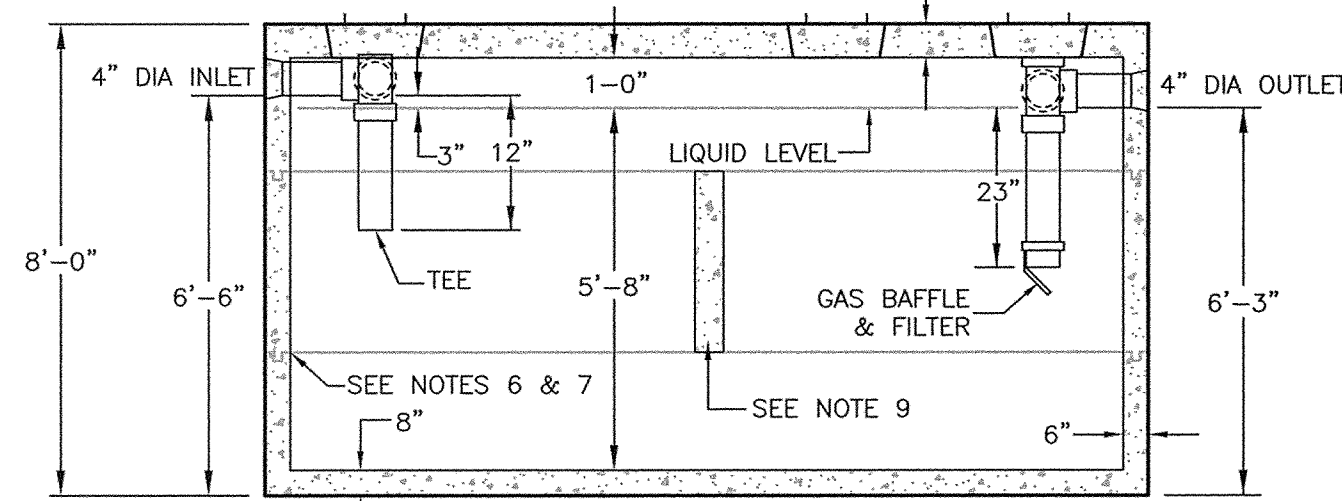
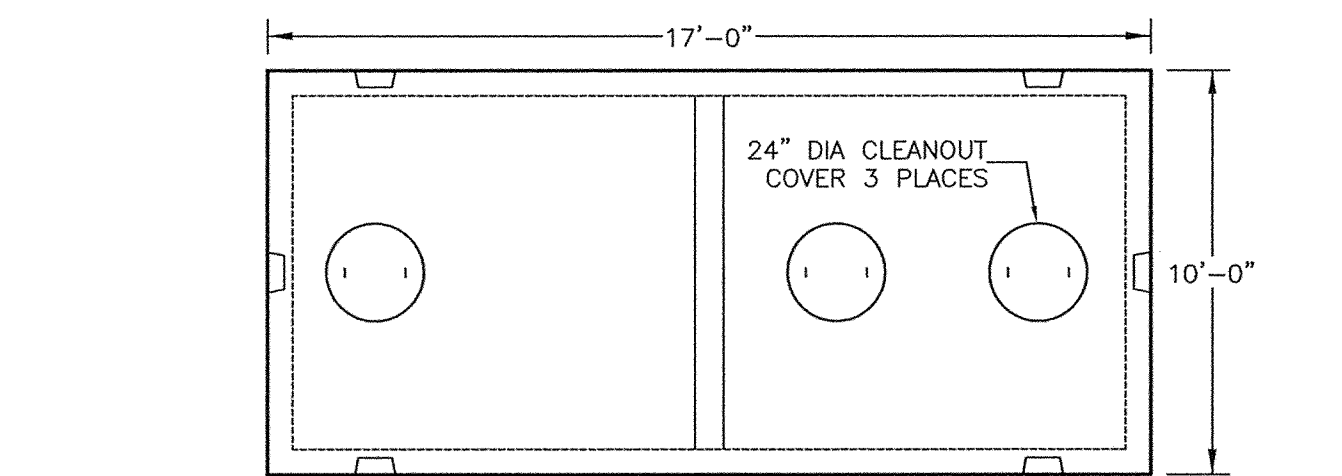
S3

SHEET 3 OF 5



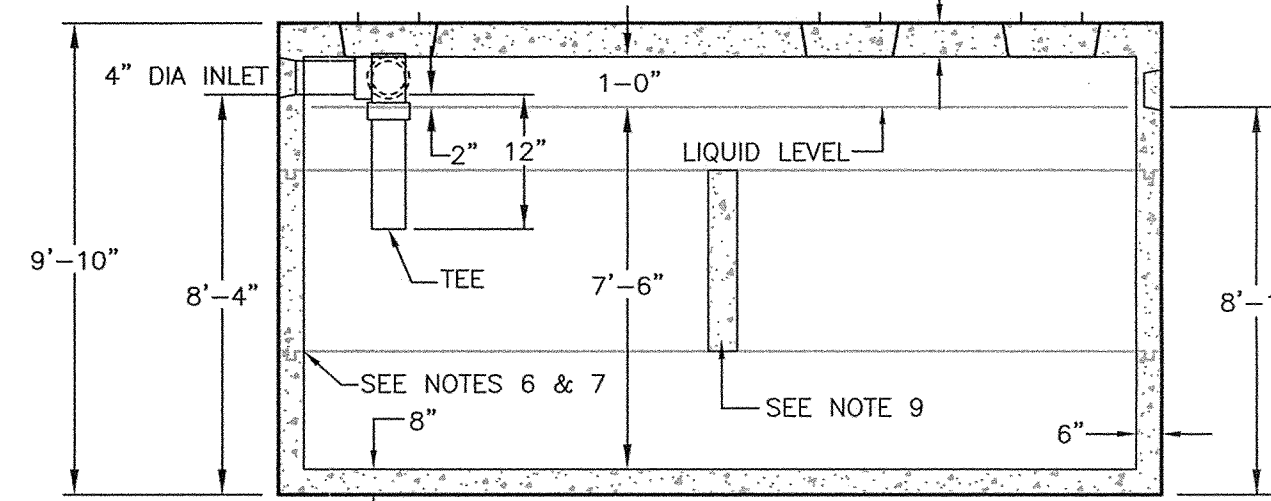
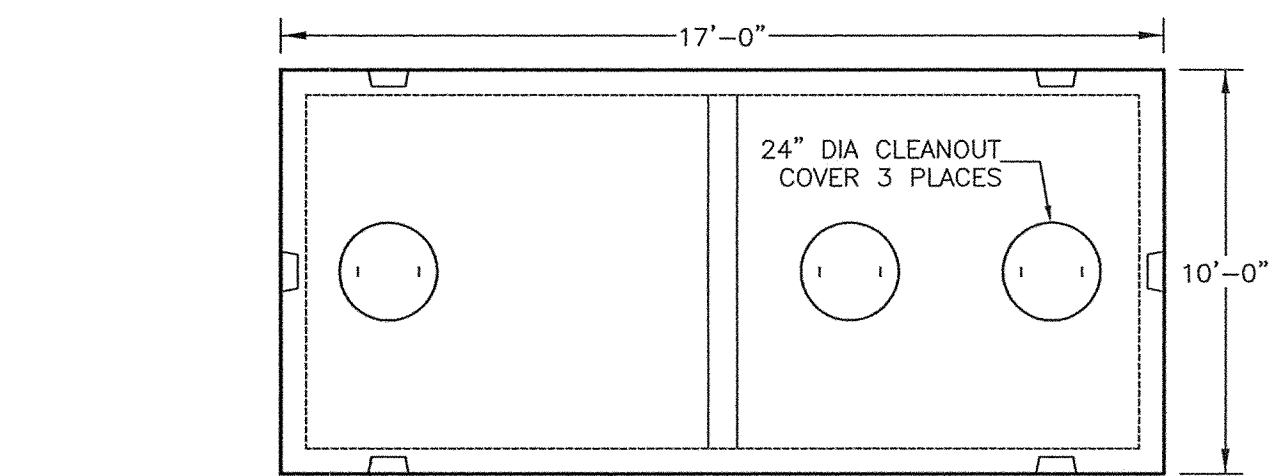
PRECAST 12,000 GALLON COMMERCIAL SEPTIC TANK
NOT TO SCALE

- NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
 2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS, FOR SEPTIC TANKS.
 3. ALL REINFORCEMENT PER ASTM C1227-93.
 4. BAFFLE WALL OPTIONAL FOR TWO COMPARTMENT TANKS.
 5. DESIGNED FOR H-20 LOADING, COVER 1-5 FT.
 6. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN.
 7. INLET HEIGHT MAY INCREASE SLIGHTLY DUE TO THE BUTYL RESIN USED.
 8. TEES AND BAFFLES SOLD SEPARATELY.
 9. SPANNERS USED IN CENTER SECTIONS FOR TANKS GREATER THAN 7000 GALLONS.
 10. TANK TO BE SET ON 6" OF 3/4" TO 1-1/2" CRUSHED STONE.
 11. EQUIVALENT PRODUCT MAY BE SUBSTITUTED WITH APPROVAL OF DESIGN ENGINEER.
 12. EXTEND THE TWO END ACCESS COVERS TO FINISH GRADE.



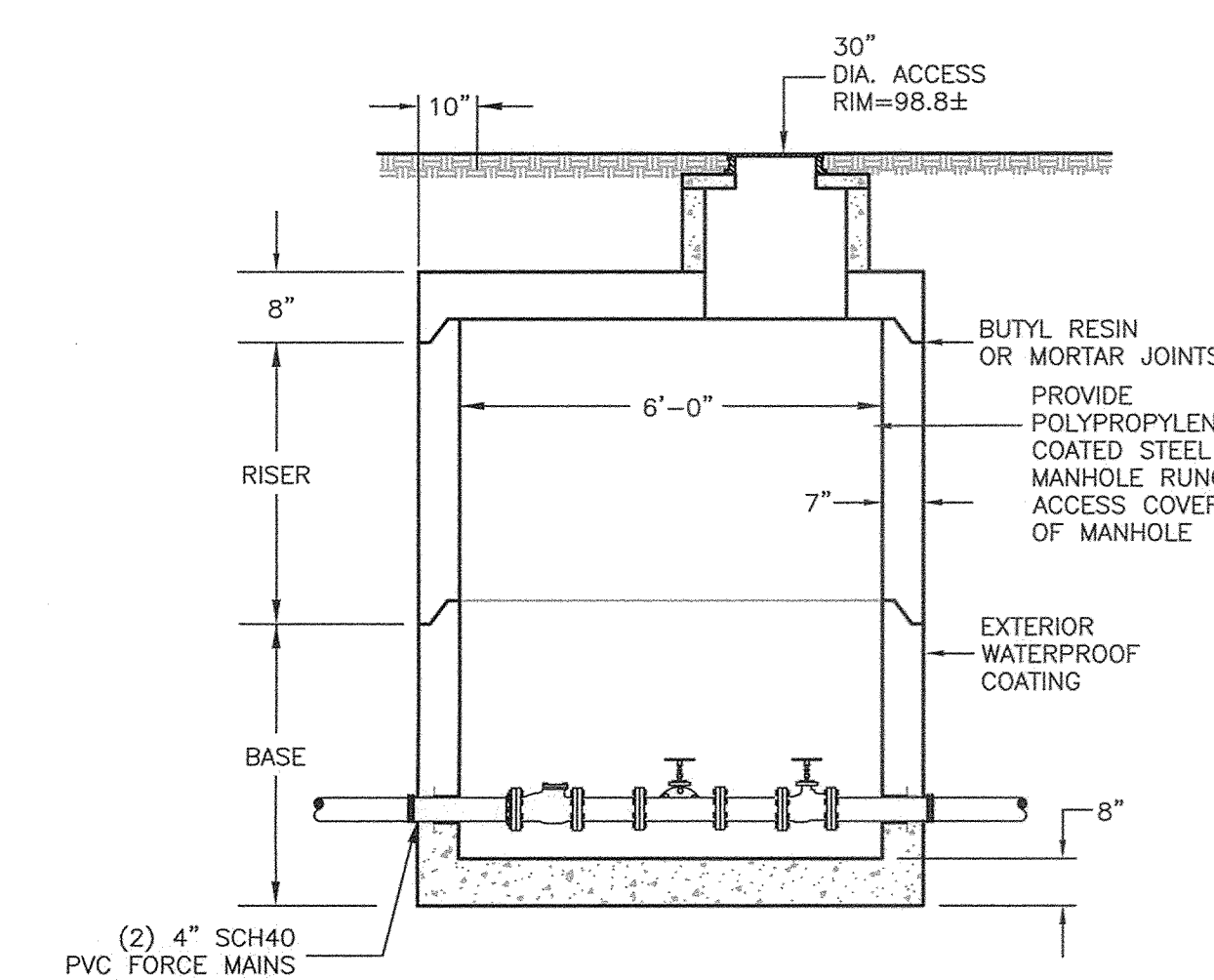
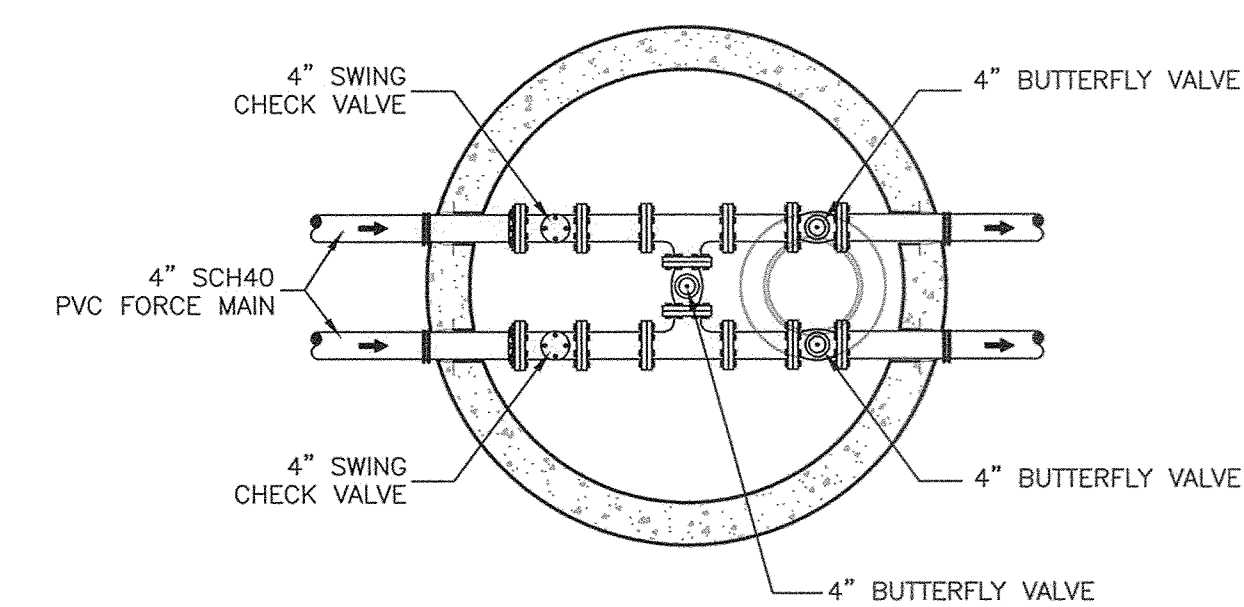
PRECAST 6,000 GALLON COMMERCIAL SEPTIC TANK
NOT TO SCALE

- NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
 2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS, FOR SEPTIC TANKS.
 3. ALL REINFORCEMENT PER ASTM C1227-93.
 4. BAFFLE WALL OPTIONAL FOR TWO COMPARTMENT TANKS.
 5. DESIGNED FOR H-20 LOADING, COVER 1-5 FT.
 6. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN.
 7. INLET HEIGHT MAY INCREASE SLIGHTLY DUE TO THE BUTYL RESIN USED.
 8. TEES AND BAFFLES SOLD SEPARATELY.
 9. SPANNERS USED IN CENTER SECTIONS FOR TANKS GREATER THAN 7000 GALLONS.
 10. TANK TO BE SET ON 6" OF 3/4" TO 1-1/2" CRUSHED STONE.
 11. EQUIVALENT PRODUCT MAY BE SUBSTITUTED WITH APPROVAL OF DESIGN ENGINEER.
 12. EXTEND THE TWO END ACCESS COVERS TO FINISH GRADE.



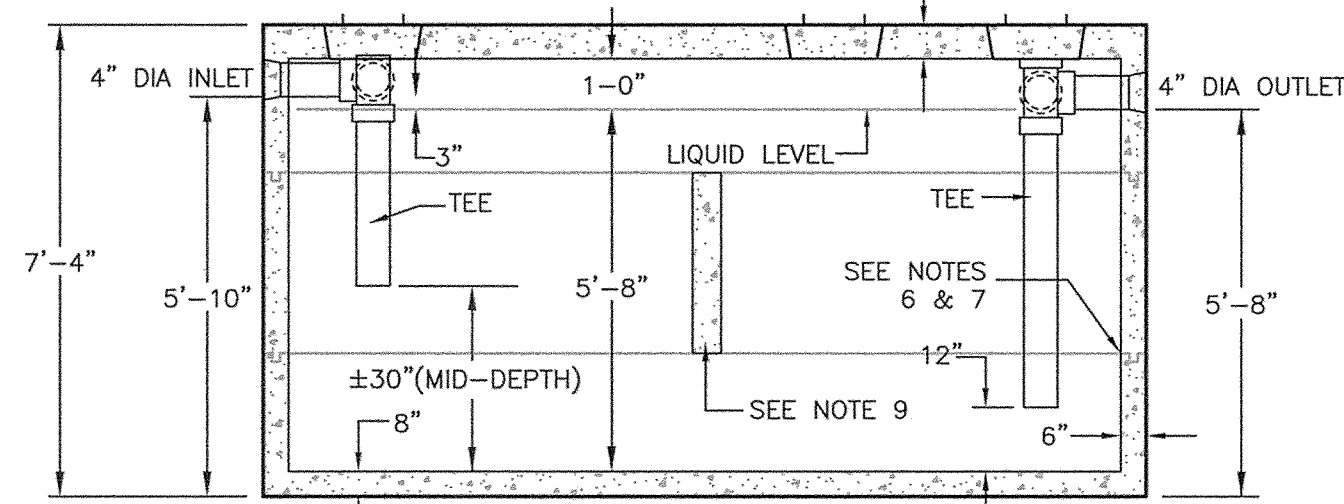
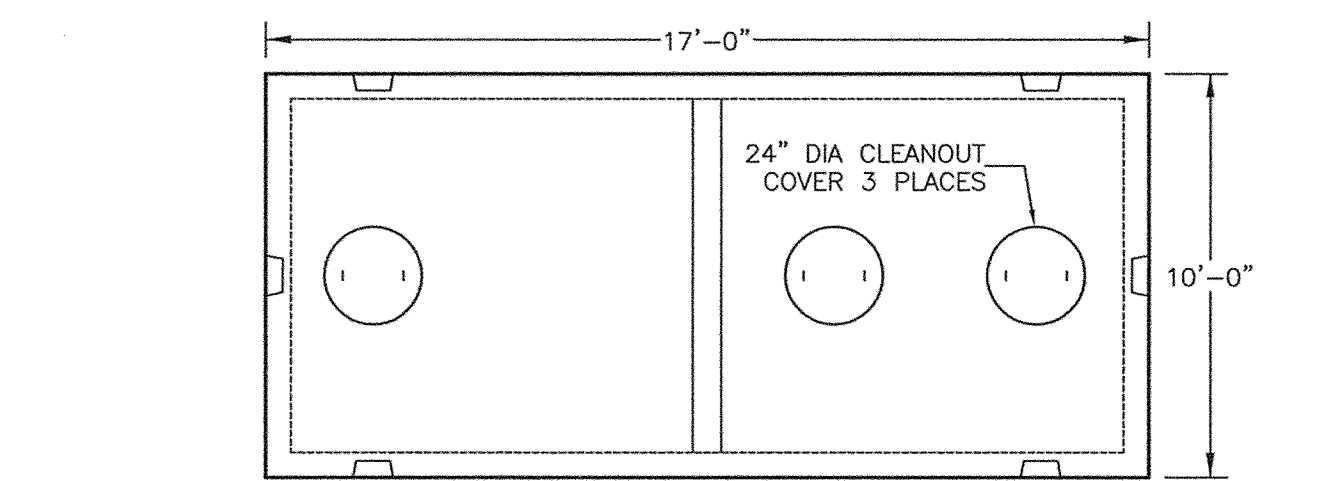
PRECAST 8,000 GALLON TANK (PUMP CHAMBER)
NOT TO SCALE

- NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
 2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS, FOR SEPTIC TANKS.
 3. ALL REINFORCEMENT PER ASTM C1227-93.
 4. BAFFLE WALL OPTIONAL FOR TWO COMPARTMENT TANKS.
 5. DESIGNED FOR H-20 LOADING, COVER 1-5 FT.
 6. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN.
 7. INLET HEIGHT MAY INCREASE SLIGHTLY DUE TO THE BUTYL RESIN USED.
 8. TEES AND BAFFLES SOLD SEPARATELY.
 9. SPANNERS USED IN CENTER SECTIONS FOR TANKS GREATER THAN 7000 GALLONS.
 10. TANK TO BE SET ON 6" OF 3/4" TO 1-1/2" CRUSHED STONE.
 11. EQUIVALENT PRODUCT MAY BE SUBSTITUTED WITH APPROVAL OF DESIGN ENGINEER.
 12. EXTEND ACCESS COVERS TO FINISH GRADE AS SHOWN IN DETAIL DESIGN.
 13. PUMP CHAMBER SHALL BE VENTED. SEE SYSTEM PLAN VIEW.



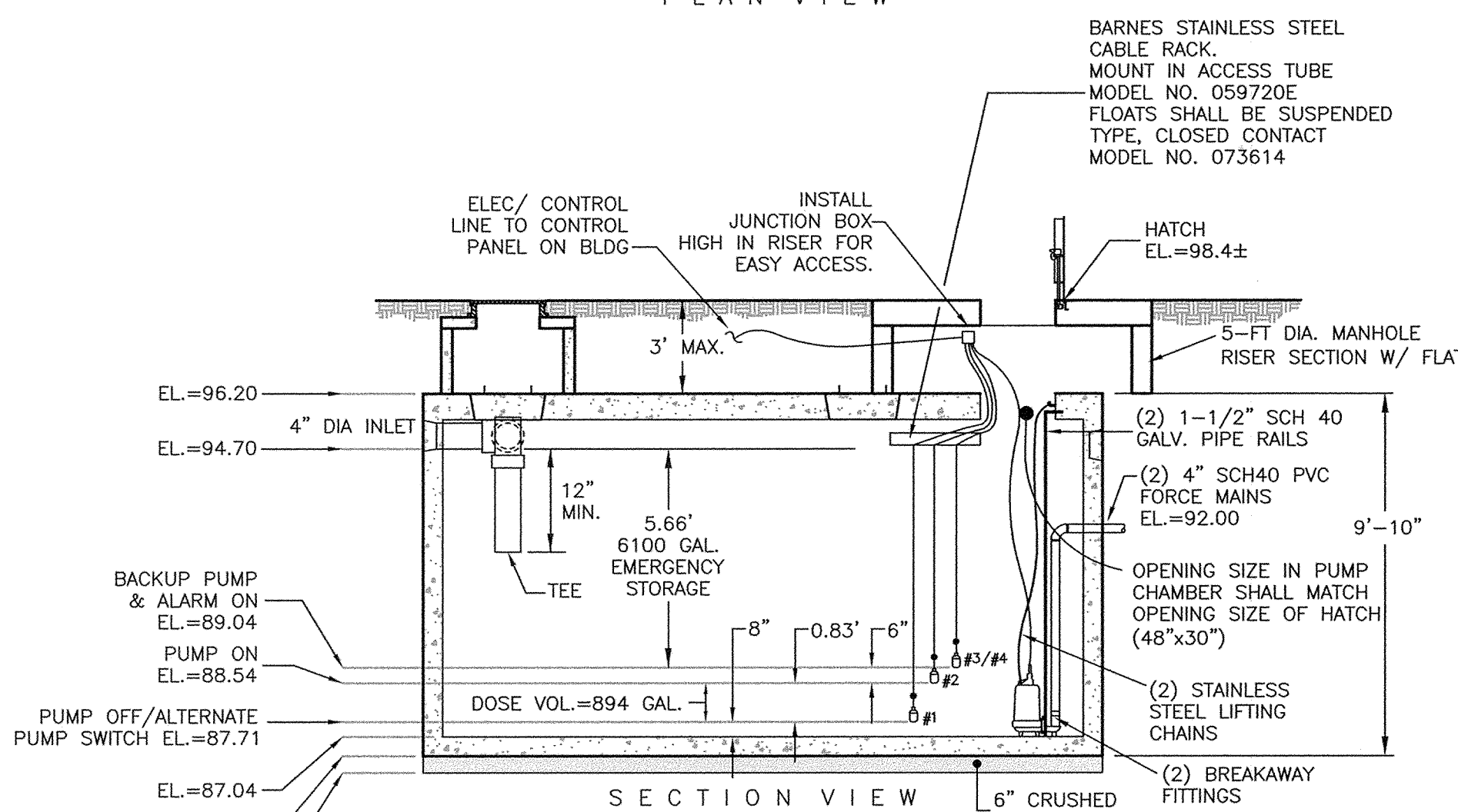
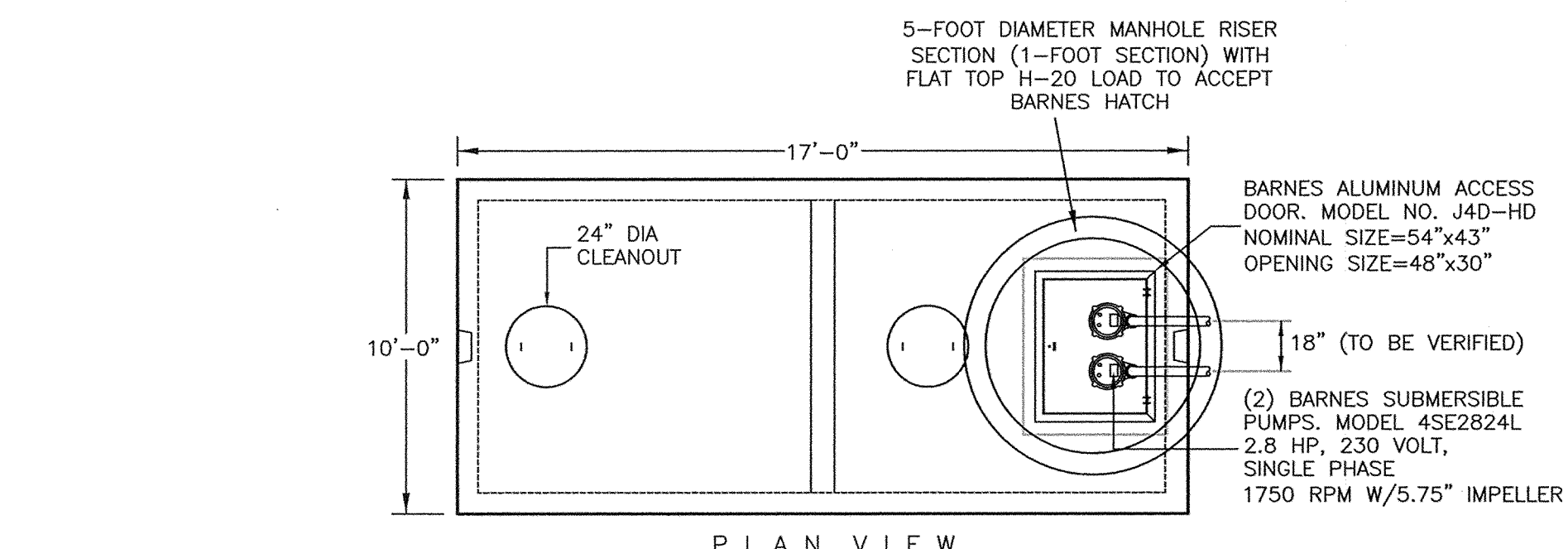
PRECAST 72" VALVE PIT
NOT TO SCALE

- NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
 2. REINFORCED STEEL CONFORMS TO LATEST ASTM A185 SPEC.
 3. 0.18 SQ. IN./LINEAL FT. AND 0.18 SQ. IN. (BOTH WAYS) BASE BOTTOM.
 4. H-20 DESIGN LOADING PER AASHTO HS-20-44. ASTM 0478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."



PRECAST 5000 GALLON GREASE TRAP
(COMMERCIAL SEPTIC TANK)
NOT TO SCALE

- NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
 2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS, FOR SEPTIC TANKS.
 3. ALL REINFORCEMENT PER ASTM C1227-93.
 4. BAFFLE WALL OPTIONAL FOR TWO COMPARTMENT TANKS.
 5. DESIGNED FOR H-20 LOADING, COVER 1-5 FT.
 6. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN.
 7. INLET HEIGHT MAY INCREASE SLIGHTLY DUE TO THE BUTYL RESIN USED.
 8. TEES AND BAFFLES SOLD SEPARATELY.
 9. SPANNERS USED IN CENTER SECTIONS FOR TANKS GREATER THAN 7000 GALLONS.
 10. TANK TO BE SET ON 6" OF 3/4" TO 1-1/2" CRUSHED STONE.
 11. EQUIVALENT PRODUCT MAY BE SUBSTITUTED WITH APPROVAL OF DESIGN ENGINEER.
 12. EXTEND THE TWO END ACCESS COVERS TO FINISH GRADE.



PRECAST 8,000 GALLON PUMP CHAMBER
NOT TO SCALE

- NOTES:
1. ALARM CONDITIONS REMAIN IN EFFECT UNTIL MANUALLY SHUT OFF.
 2. PUMPS MUST ALTERNATE BETWEEN DOSES.
 3. INLET AND OUTLET HOLES MAY BE CORED ONSITE TO ALLOW FOR ANY FINAL ADJUSTMENTS.
 4. PUMP CHAMBER SHALL BE VENTED. SEE SYSTEM PLAN VIEW.
 5. ALL FITTINGS/ MOUNTING BRACKETS FOR PIPE RAILS AND CHAIN HOOKS SHALL BE STAINLESS STEEL.
 6. PUMP CHAMBER TO BE VENTED. SEE PLAN VIEW FOR LOCATION.

SYSTEM NOTES:

- 1) PUMP CONTROL PANEL SHALL BE MOUNTED ON BUILDING (SEE PLAN VIEW). VERSATROL STANDARD DUPLEX CONTROL PANEL (OR APPROVED EQUAL) WITH ALARM LIGHT. PUMP CONTROLS SHALL BE LIQUID LEVEL CONTROL AND ALARM SWITCHES SHALL BE SINGLE PHASE, DUPLEX PUMP CONTROL/ALARM SYSTEM. OUTSIDE OF BOX SHALL BE LABELED WITH A SCREW-ON RED PLACARD W/ WHITE LETTERS CONTAINING THE WORDS, "WASTEWATER PUMP CONTROL PANEL". PANEL SHALL BE FITTED WITH SEPARATE PUMP RUN TIME CLOCKS FOR EACH PUMP.
- 2) CONTROL PANEL SHALL BE EQUIPPED WITH AN AUTO OFF MANUAL SWITCH, AND PUMP ACTIVATION LIGHT (OPERATION LIGHT).
- 3) BEFORE SYSTEM IS PUT INTO OPERATION, CHECK AND ADJUST LEVEL CONTROLS.
- 4) AFTER DOSE IS PUMPED TO ONE SIDE OF FIELD, PUMPS MUST ALTERNATE SO OTHER SIDE IS DOSED NEXT. THIS CYCLE REPEATS AFTER EACH DOSE.
- 5) PUMP CHAMBER TO BE VENTED. SEE PLAN VIEW FOR LOCATION.
- 6) NO GARBAGE DISPOSALS ALLOWED.

Prepared For:

Applicant
D.O.B. Realty Inc.
154 Broadway
Somerville, MA
Tel: 617 592 7800

Prepared By:

Hayes
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Design By: EES
Drawn By: MEM
Checked By: CPS
Job No: NOR-0182A
Comp. No: NOR49
 Issued For Permit
 Issued For Review
 Issued For Bid
 Issued For Construction
 Not For Construction

No.	Revision	Date
10		
9		
8		
7		
6		
5		
4		
3	Change in Sewage Flow Design Flow	5/27/2010
2	BOH Comments	5/12/2008
1		

Scale: None
Date: March 17, 2008

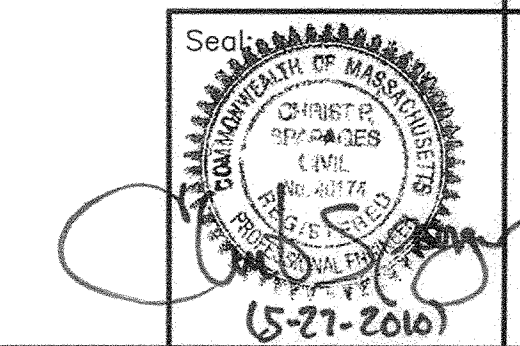
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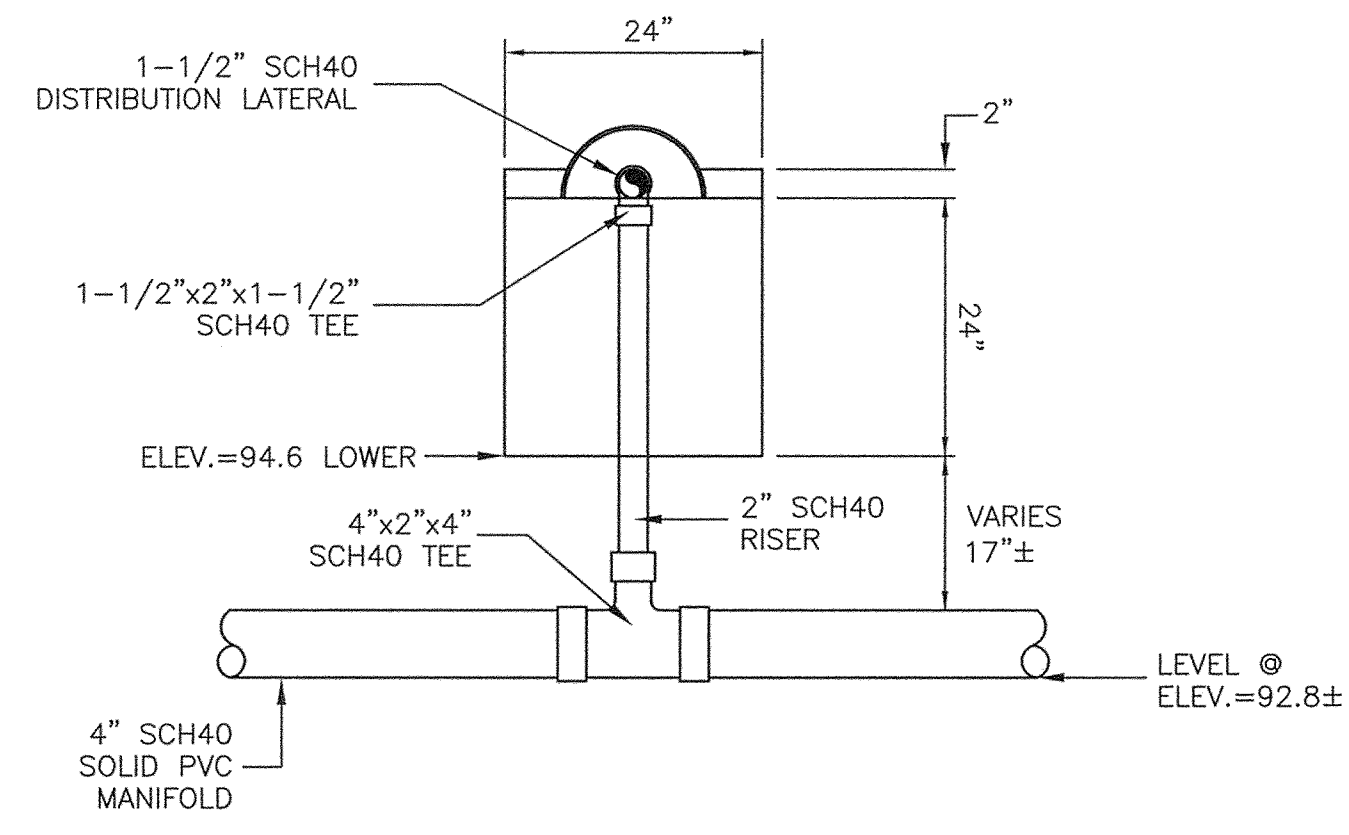
SANITARY DISPOSAL SYSTEM
SYSTEM DETAILS
THE VILLAGE SHoppes OF
NORTH READING, MASS.

Drawing No.:

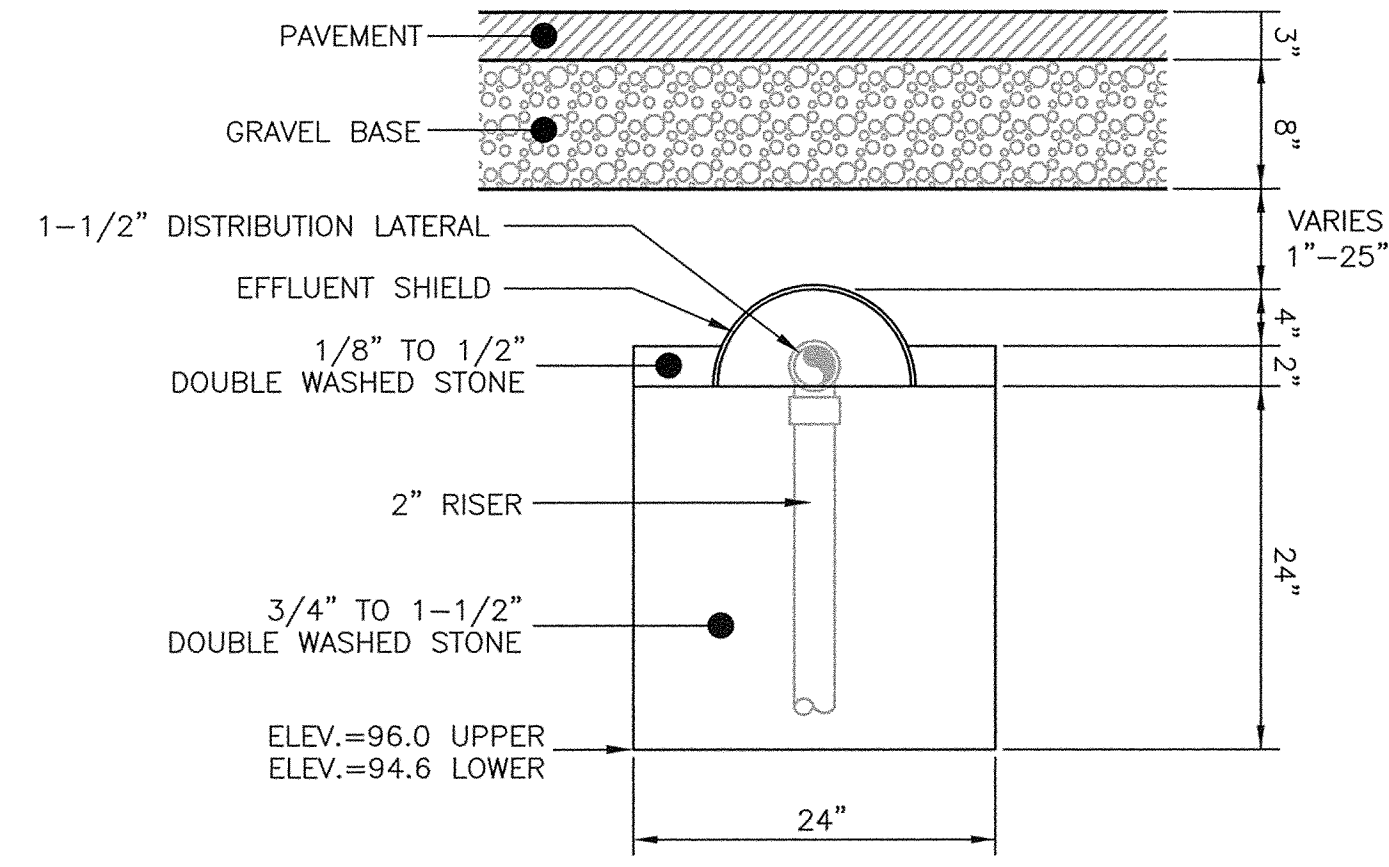
S4

SHEET 4 OF 5

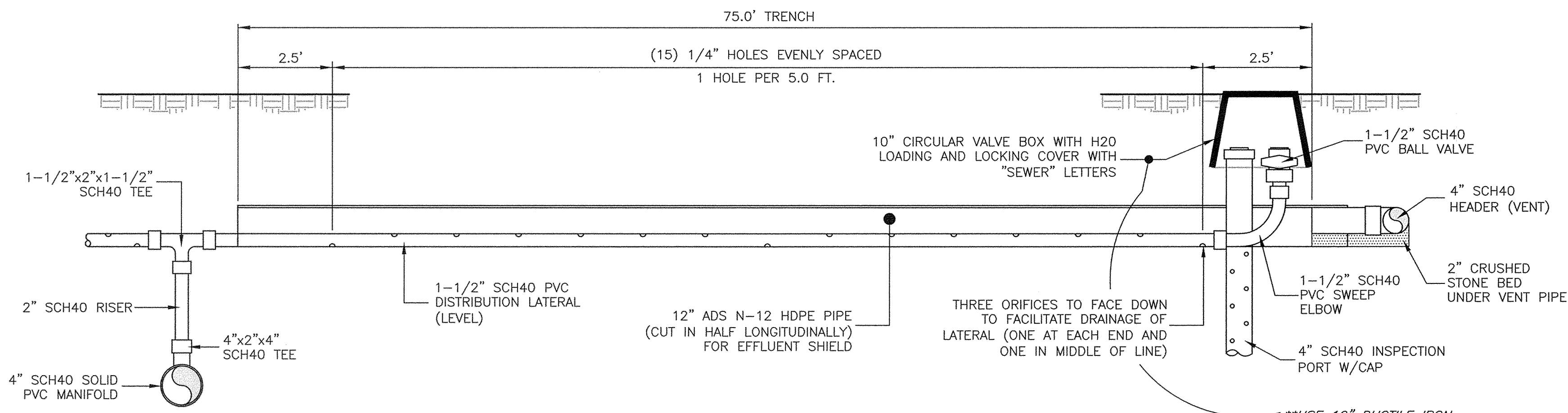




TYPICAL PVC LATERAL CROSS SECTION @ TRENCH
NOT TO SCALE



TRENCH DETAIL
NOT TO SCALE



DISTRIBUTION LATERAL/MANIFOLD WITH CLEANOUT/INSPECTION PORT
NOT TO SCALE

- NOTE:
1. INSTALL FLUSHING VALVE AT END OF EVERY DISTRIBUTION LATERAL (18 VALVES)
 2. INSTALL INSPECTION PORT AT END OF EVERY DISTRIBUTION LATERAL (18 PORTS)

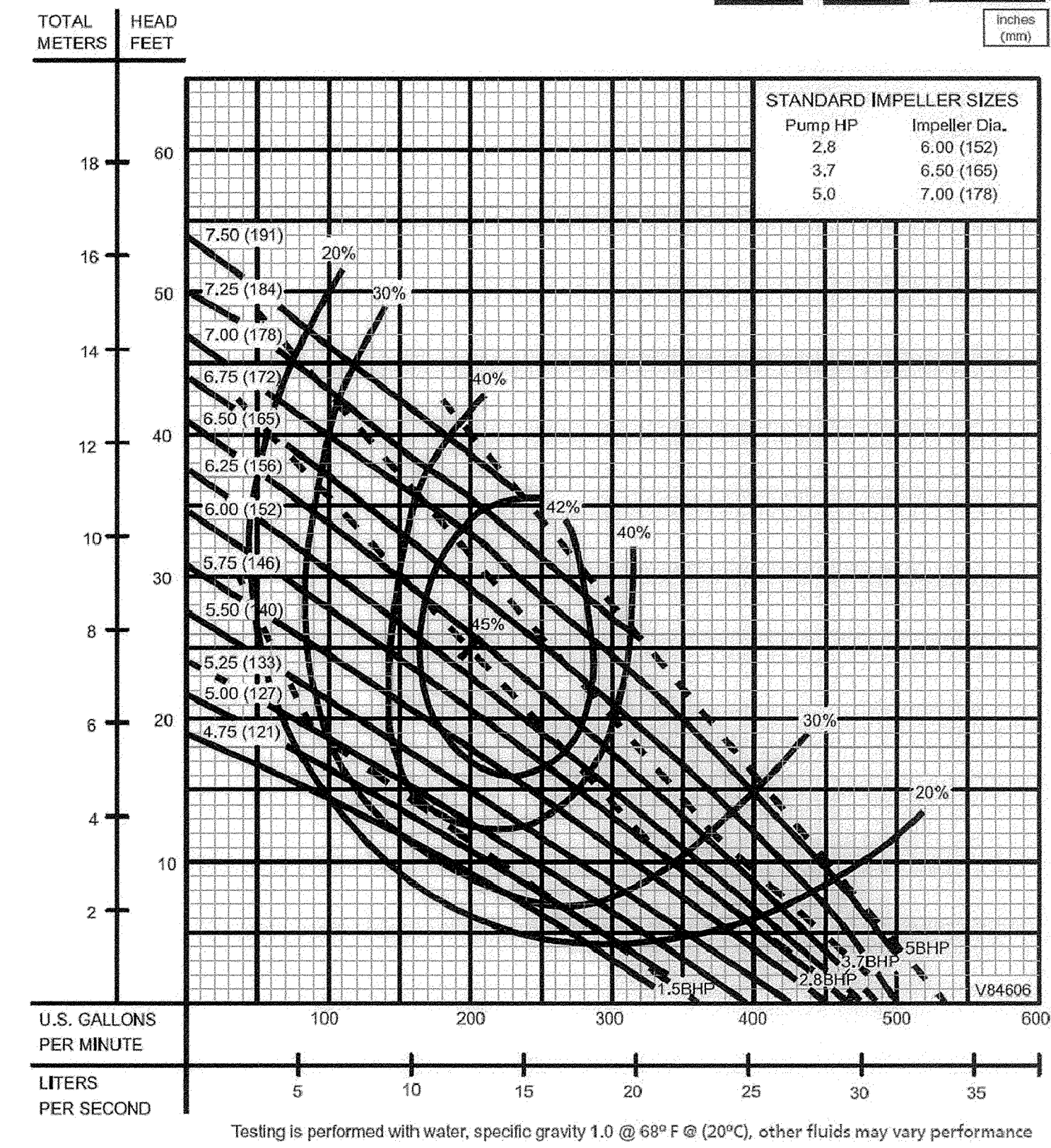
****USE 10" DUCTILE IRON CLEANOUT COVER W/ "SEWER" LETTERS UNDER PAVED AREAS AS MANUFACTURED BY QWP OF SO. BARRE, MA OR APPROVED EQUAL (W/ LOCK BOLT).**

Series 4SE-L
Performance Curve
2.8, 3.7 & 5.0HP, 1750RPM, 60Hz

BARNES
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4" Horizontal Discharge - Submersible Non-Clog Pumps

MENU HOME I&O Manual



SECTION 1D
PAGE 10
DATE 1/05

CRANE

PUMPS & SYSTEMS

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PUMP CURVE

(2) BARNES SUBMERSIBLE PUMPS, MODEL 4SE2824L
2.8 HP, 230 VOLT, SINGLE PHASE
1750 RPM W/5.75" IMPELLER

NOT TO SCALE

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Scale: As Shown

Date: March 17, 2008

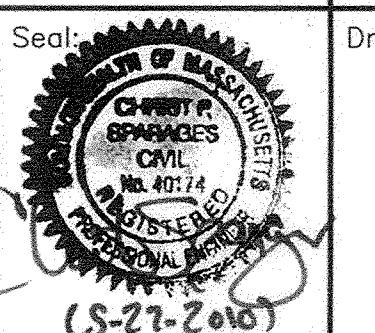
Drawing Title:

SANITARY DISPOSAL SYSTEM SYSTEM DETAILS THE VILLAGE SHOPPES OF NORTH READING, MASS.

Drawing No.:

SS

SHEET 5 OF 5



(S-21-2016)