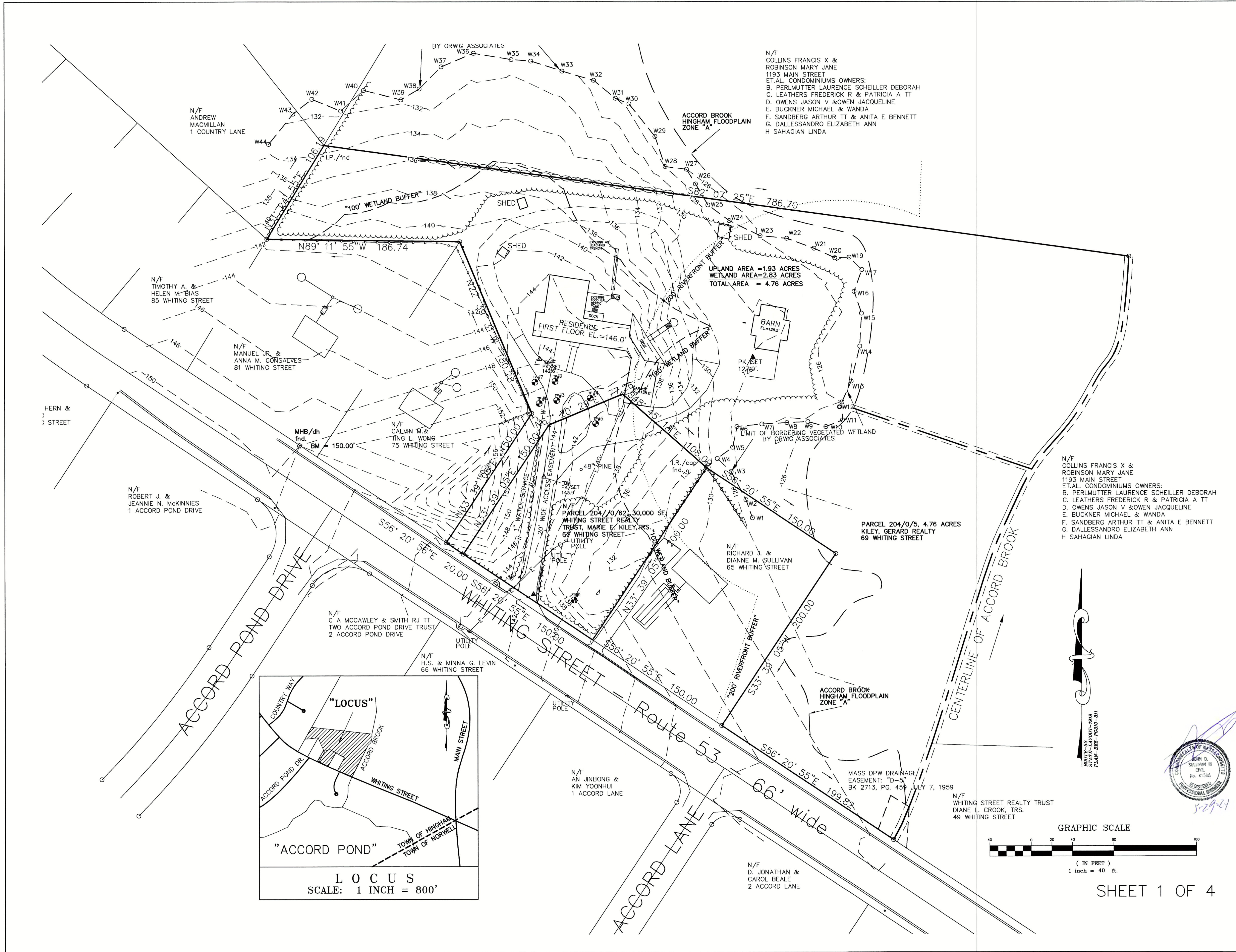




" KILEY FAMILY RESIDENCE "

67 WHITING STREET,
HINGHAM, MA.

MARIE E. KILEY, TR. OF WHITING STREET REALTY TRUST-II

67 WHITING STREET,
HINGHAM MA. 02043



ORWIG Associates

Engineering
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Landscape Architecture

9 South Pasture Lane
P.O. Box 2132
Duxbury, MA 02331
Phone: (781)934-6039
E-mail: Dan_orwig@hotmail.com

EXISTING CONDITIONS

NO.	REVISION	DATE
1	BRD. OF HEALTH REVIEW	4/10/2024
2	BRD. OF HEALTH REVIEW	5/08/2024
3	CONSERVATION REVIEW	5/29/2024

DRAWING TITLE:

EXISTING CONDITIONS

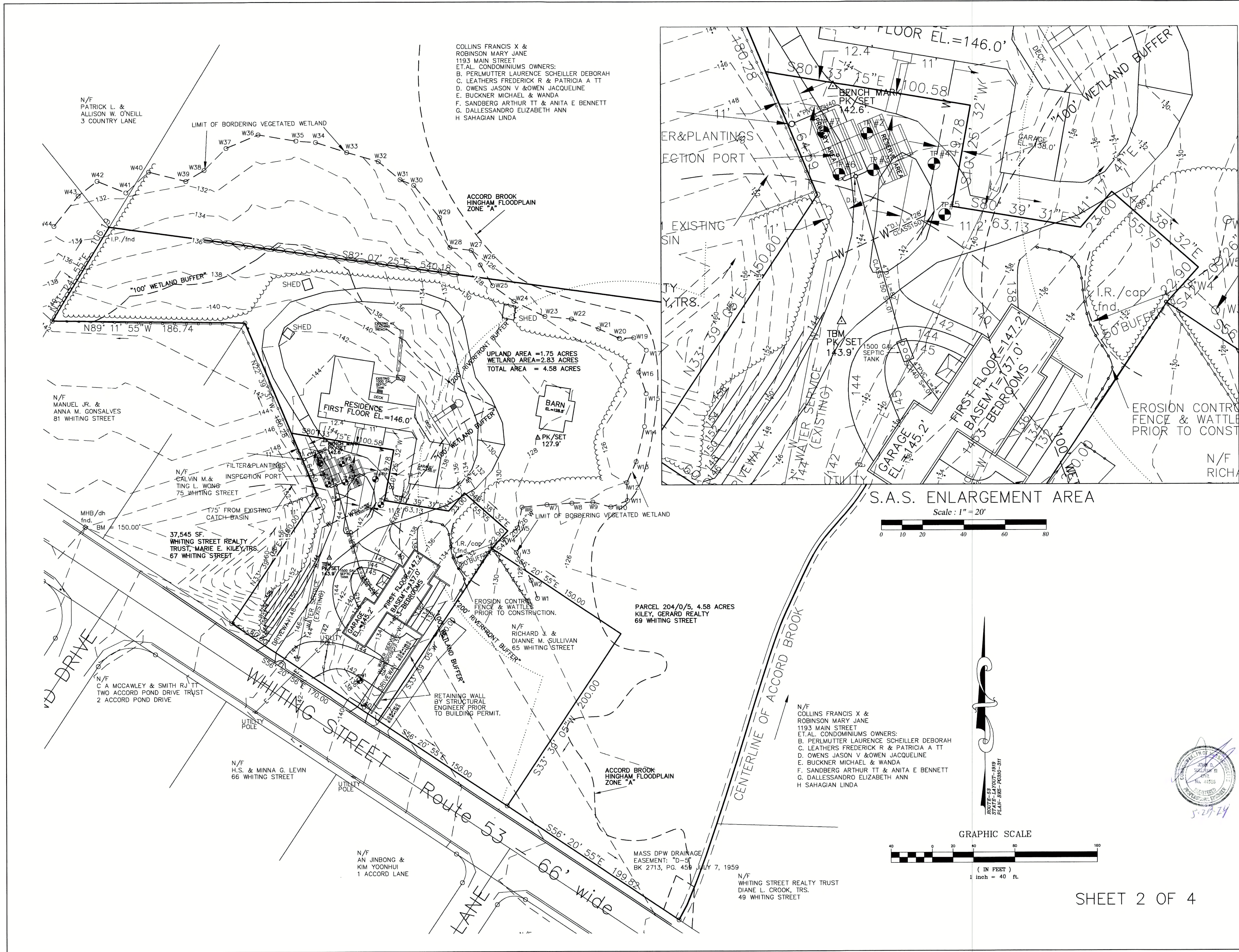
PROFESSIONAL DRAWING NO.

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1"=40'
PRIMARY SCALE

2/1/2024
DRAWING DATE

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SEWAGE DISPOSAL PLAN		
NO.	REVISION	DATE
1	BRD. OF HEALTH REVIEW	4/10/2024
2	BRD. OF HEALTH REVIEW	5/7/2024
3	BRD. OF HEALTH REVIEW	5/9/2024
4	CONSERVATION REVIEW	5/29/2024

DRAWING TITLE:
SEWAGE DISPOSAL PLAN

PROFESSIONAL

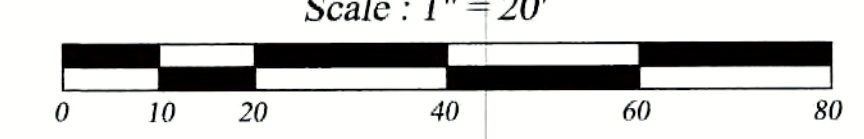
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D.C. ORWIG
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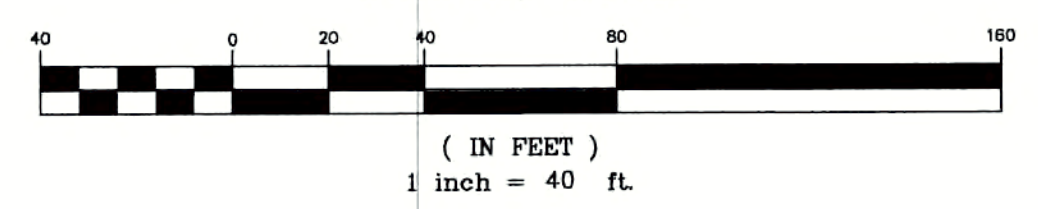
1"=40'
PRIMARY SCALE

2/1/2024
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S.A.S. ENLARGEMENT AREA
Scale: 1" = 20'

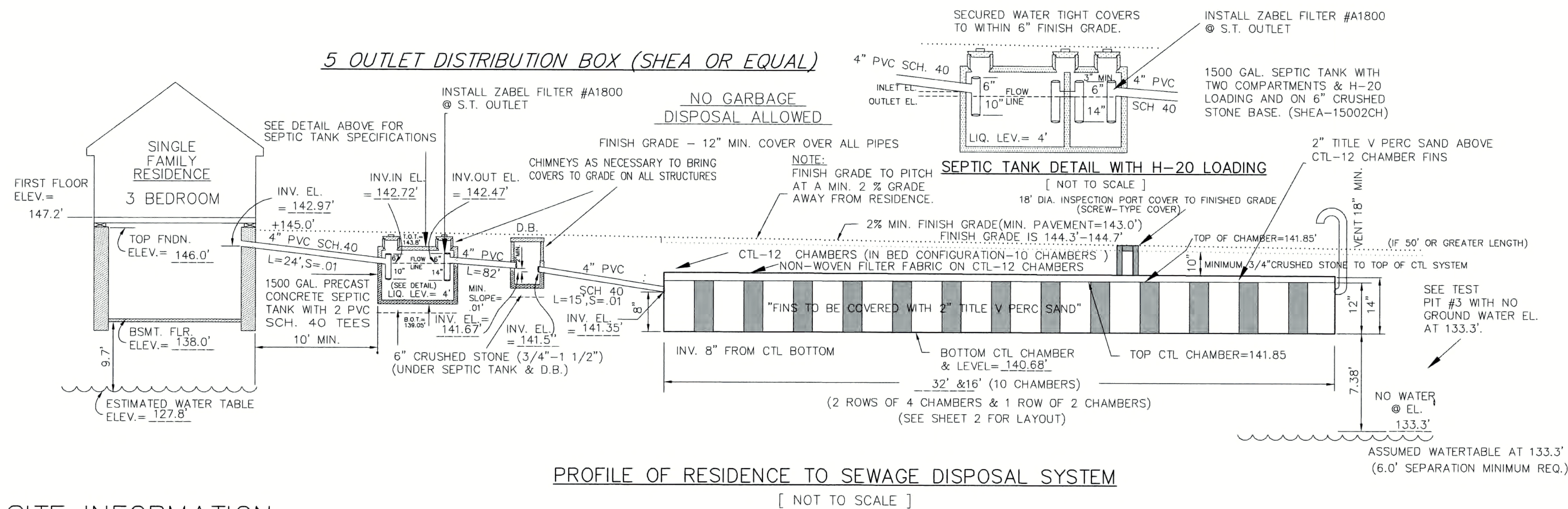


GRAPHIC SCALE



SHEET 2 OF 4

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SITE INFORMATION

- 67&69 WHITING ST. IS SHOWN ON ASSESSORS PARCELS 204/0/5 & 204/0/62, OWNED BY WHITING STREET REALTY TRUST II, AND GERARD KILEY.
- DEED TO PARCEL RECORDED IN PLYMOUTH COUNTY REGISTRY OF DEEDS: BOOK 51405, PAGE 189 & BOOK 51452, PAGE 253.
- TOPOGRAPHIC SURVEY BY ORWIG ASSOCIATES.
- THE SUBJECT PROPERTY IS LOCATED IN ZONE X ON FIRM MAP #25023C0092J DATED JULY 17, 2012.
- THE SUBJECT PROPERTY IS LOCATED IN A ZONE II & NOT IN A IWPA.
- THE PROPERTY IS NOT LOCATED IN A PRIORITY HABITAT OR ESTIMATED HABITAT AS SHOWN ON THE MA. NATURAL HERITAGE ATLAS 15TH EDITION., EFFECTIVE DATE OF AUGUST 1, 2021.
- THERE ARE NO KNOWN WETLANDS WITHIN 160' OF THE PROPOSED SAS AND NO KNOWN RIVERS, BROOKS, OR STREAMS WITHIN 200' OF THE PROPOSED SAS.

SEWAGE DISPOSAL CONSTRUCTION NOTES

- REQUIRED CONSTRUCTION DETAILS:
 - FILL REQUIREMENTS:

REMOVE ALL TOP AND SUBSOIL FROM WITHIN 5' FOOT PERIMETER AROUND LEACHING FACILITIES AS SHOWN ON THE PLAN. PLACE WELL COMPACTED FILL TO ELEVATION AT TOP OF TRENCH. FILL MUST BE SUITABLE UNDER SECTION 15.255, SUBSECTION (3) OF TITLE V. FILL MUST BE FREE OF ORGANIC MATERIALS, FINES, OR DEBRIS.
 - ALL PIPES, TRENCHES, SEPTIC TANK, AND D-BOX MUST BE SET ON A COMPACTED FIRM BASE.
 - ALL FINISHED GRADES AND DISTURBED AREAS ARE TO BE LOAMED AND SEEDED.
 - NO GRADE CHANGES ARE PROPOSED.
- NO WATER SUPPLIES OR IRRIGATION WELLS ARE WITHIN 150' OF THE PROPOSED LEACHING FACILITY ON THIS PLAN.
- LOCATION OF ALL BURIED UTILITIES MUST BE DETERMINED BY THE CONTRACTOR.
- OFFSETS ARE NOT TO BE USED FOR REPRODUCTION OF PROPERTY LINES.
- FOR PROPER PERFORMANCE, SEPTIC TANK SHOULD BE INSPECTED AT LEAST ONCE A YEAR AND PUMPED WHEN THE TOTAL DEPTH OF SOLIDS EXCEEDS 1/3 THE LIQUID DEPTH OF THE TANK.
- ALL CONSTRUCTION TO CONFORM TO TITLE V OF THE MASSACHUSETTS STATE ENVIRONMENTAL CODE, AND THE BOARD OF HEALTH REQUIREMENTS FOR THE TOWN OF HINGHAM.

TEST SPEC'S:

OBSERVATION HOLES AND PERC TESTS PERFORMED BY JOHN D. SULLIVAN III SE 2378, SOIL EVALUATOR FROM SULLIVAN ENGINEERING GROUP, LLC AT PO. BOX 2004, WOBURN MA 01888 ON 12/16/2021, 1/4/2022, & 7/12/2023. SOIL TESTING WAS OBSERVED BY JOHN CHESSIA & PATRICK BRENNAN, FOR THE TOWN OF HINGHAM BOARD OF HEALTH AS PROFESSIONAL REVIEW ENGINEERS.

CALCULATIONS:

PERC RATE .10 MIN/INCH
NO. OF BEDROOMS 3 AT 110 GAL./BR./DAY
DESIGN FLOW REQUIRED 330 GAL./DAY
SEPTIC TANK REQUIRED 1500 GAL. EACH

LEACHING PROVIDED BY CTL-12 CHAMBERS

DEP HAS CERTIFIED THAT THE CTL-12, H2O CHAMBERS ARE ALLOWED 10.57 SF./LF. OF CHAMBER. THE SOIL RATE IS 0.60 GPD/SF. EACH CHAMBER PROVIDES 10.57 SF./LF X .60 = 52.0341 LF. OF CHAMBERS. 52.0341 / 8 LF. = 6.5043 CHAMBERS REQUIRED BY CTL. MINIMUM REQUIRED BY MASS DEP=10 CHAMBERS & 64 LF. OF FINS IS 10X32 SF.+ 64 LF X1.65SF.=425.6 SF. OF BED AREA WHICH IS GREATER THAN THE REQUIRED BY 25.6 SF. AND THEREFORE COMPLIES WITH DEP MINIMUM.

BREAKOUT CALCULATION:
RELATIVELY LEVEL SITE WITH NO BREAKOUT.

LEGEND:

- TP TEST HOLE LOCATION
- EXISTING CONTOUR
- PROPOSED CONTOUR OR GRADE

NOTES:

SEWAGE EXCAVATION MUST BE INSPECTED BY ENGINEER AND HEALTH DEPARTMENT PRIOR TO INSTALLATION.

BENCH MARK:

ALL ELEVATIONS REFER TO NAD83, WITH A MHB/DH @ EL. 150.0' ON WHITING STREET.

SOIL LOGS:

SOIL TESTING ON 12/16/2021, 1/4/2022, AND 7/12/2023
SOIL TESTING BY JOHN SULLIVAN P.E. & S.E. AND OBSERVATION BY JOHN CHESSIA & PATRICK BRENNAN FOR THE TOWN OF HINGHAM BOARD OF HEALTH AS PROFESSIONAL REVIEW ENGINEERS

TP# 7 ELEV. 144.7' WATER NONE @ 28.4' REFUSAL NONE	TP# 6 ELEV. 144.5' WATER NONE @ 134.5' REFUSAL NONE	TP# 2 ELEV. 144.6' WATER NONE @ 133.6' REFUSAL NONE	TP# 3 ELEV. 144.3' WATER NONE @ 133.3' REFUSAL NONE
0-3" FILL	0-8" AP 10YR 3/3 SL	0-3" PAVEMENT	0-3" PAVEMENT
3-8" A 10YR 3/3 SL		3-10" FILL	3-11" FILL
8-32" B 10YR 6/8 LS	8-32" BW 10YR 6/8 LS	10-14" A 10YR 3/3 LS	1-14" A 10YR 3/3 LS
		14-24" B 10YR 4/6 LS	14-27" B 10YR 4/6 LS
32-120" C 2.5Y 5/4 SAND PERC @ 48-66" 2 MIN./INCH	32-120" C 2.5Y 5/4 MED. SAND PERC @ 40-58" 2 MIN./INCH	24-132" C 10Y 5/3 LS PERC @ 40-58" 9 MIN./INCH	27-56" C-1 10Y 5/4 LS
			56-132" C-2 10Y 5/3 LS PERC @ 58-76" 10 MIN./INCH
120" BOTTOM OF HOLE NO MOTTLES NO WATER THIS HOLE	120" BOTTOM OF HOLE NO MOTTLES NO WATER THIS HOLE	132" BOTTOM OF HOLE NO MOTTLES NO WATER THIS HOLE	132" BOTTOM OF HOLE NO MOTTLES NO WATER THIS HOLE

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CONSTRUCTION DETAILS

NO.	REVISION	DATE
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2	BRD. OF HEALTH REVIEW	5/08/2024
3	CONSERVATION REVIEW	5/29/2024

DRAWING TITLE:

CONSTRUCTION DETAILS

PROFESSIONAL

DRAWING NO.

3

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2/1/2024
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DETAILS

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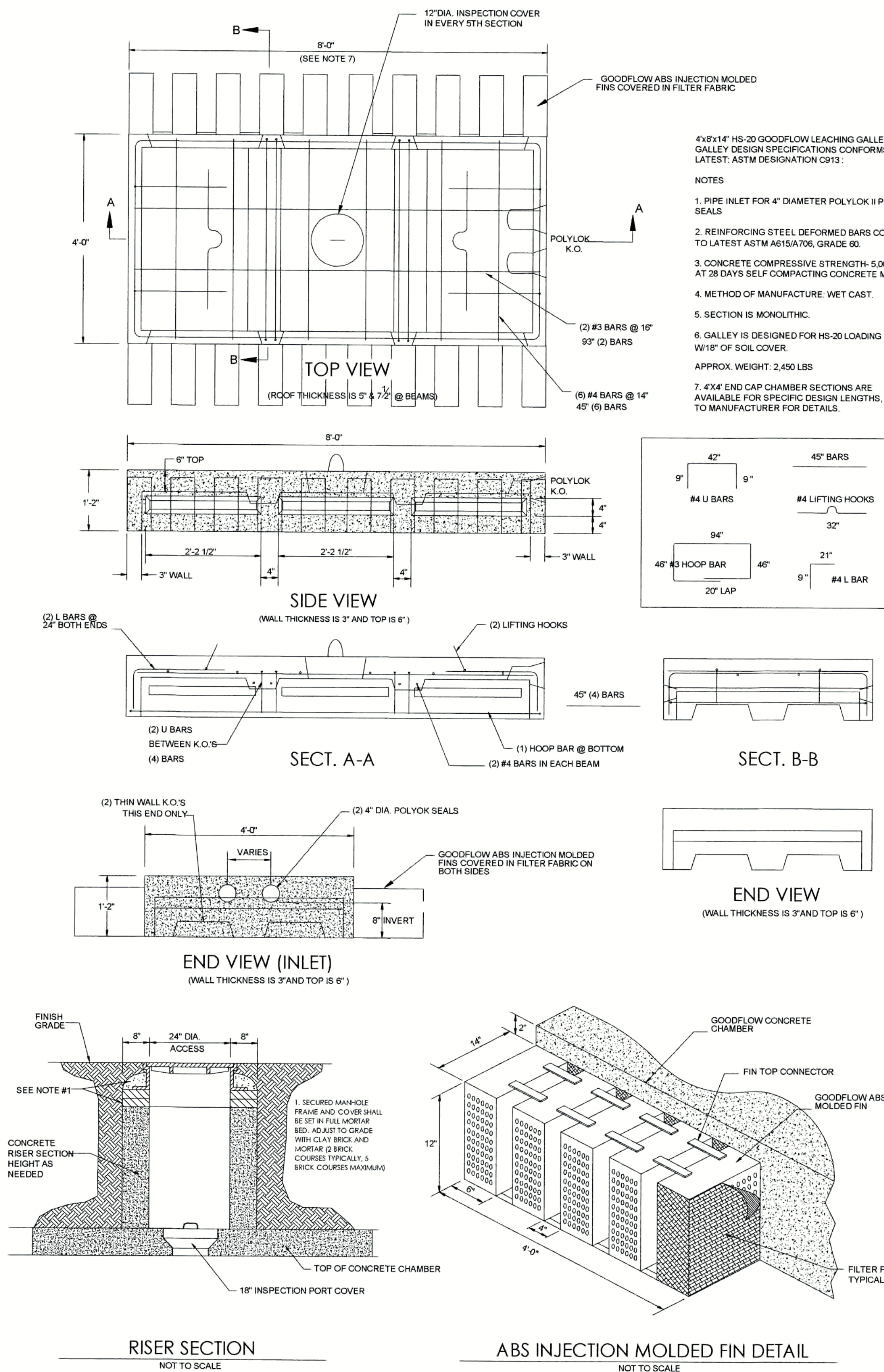
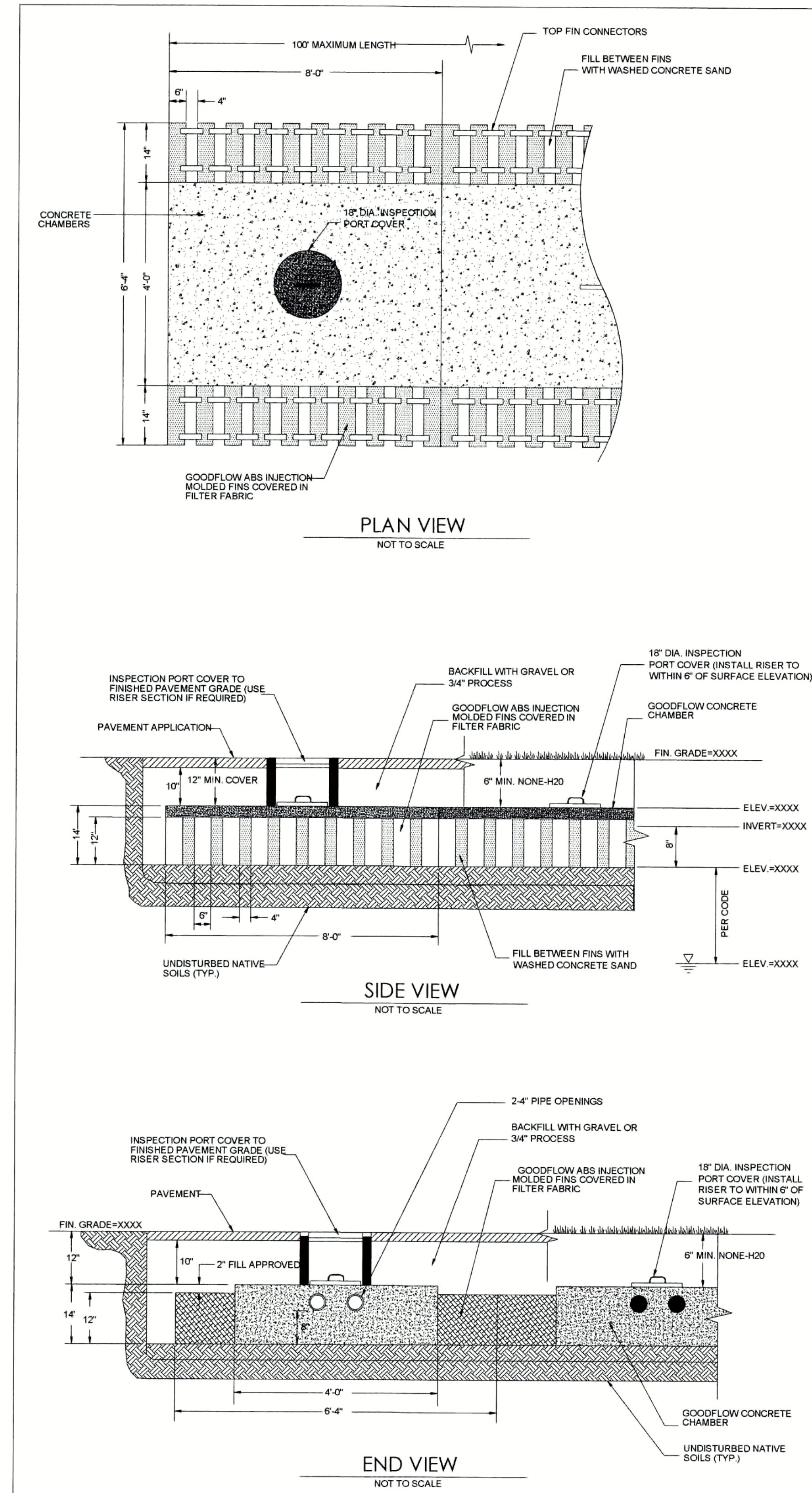
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PRIMARY SCALE

2/1/2024
DRAWING DATE

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GOODFLOW CTL CHAMBER PRODUCT SPECIFICATION

GENERAL:
CUR-TECH CTL 12 CHAMBERS ARE DESIGNED AS AN ALTERNATIVE SOIL ABSORPTION SYSTEM
CHAMBER PARAMETERS

1. THE CHAMBERS DIMENSIONS OF THE GOODFLOW CTL 12 SHALL BE 14 INCHES TALL, 48 INCHES WIDE AND 8 FEET LONG. THESE ARE THE DIMENSIONS WITHOUT THE INJECTION MOLD FINS.
2. THE CHAMBERS DIMENSIONS OF THE GOODFLOW CTL 12 WITH INJECTION MOLD FINS SHALL BE 14 INCHES TALL, 76 INCHES WIDE AND 8 FEET LONG.
3. THE DIMENSIONS OF THE INJECTION MOLD FINS FOR THE CTL 12 CHAMBERS SHALL BE 12 INCHES TALL, 14 INCHES LONG AND 6 INCHES WIDE.
4. THE INJECTION MOLD FINS ARE TO BE ATTACHED TO THE CTL 12 CHAMBERS BEFORE SYSTEM IS TO BE BACK FILLED.
5. THE INVERT TO THE GOODFLOW CTL 12 CHAMBERS ARE 8 INCHES TO THE BOTTOM OF THE PIPE.
6. EACH GOODFLOW CTL 12 WILL HAVE AN 18 INCH INSPECTION PORT IN THE CENTER OF THE CHAMBERS.
7. EACH ROW OF CUR-TECH CTL CHAMBERS WILL HAVE A MAXIMUM LENGTH OF 100 FT.

GOODFLOW CTL CHAMBER PRODUCT INSTALLATION SPECIFICATION

TRENCH INSTALLATION PARAMETERS

1. LENGTH (EACH TRENCH) 100 FEET MAXIMUM (310 CMR 15.251(1)(a)).
2. ONE ROW OF CTL CHAMBER SYSTEM WHEN CALCULATED BY BOTTOM AREA ONLY THE DESIGN CALCULATIONS ARE 10.57 SQ FT PER LINEAR FOOT IF SEPARATE SINGLE ROWS ARE INSTALLED AT THE SAME ELEVATIONS THE SEPARATION BETWEEN ROWS IS 10 FEET.
3. THE MINIMUM SEPARATION DISTANCE BETWEEN ANY TWO TRENCHES SHALL BE TWO TIMES THE EFFECTIVE WIDTH OR DEPTH OF EACH TRENCH, WHICHEVER IS GREATER, OR WHERE THE AREA BETWEEN TRENCHES IS DESIGNATED AS RESERVE AREA, THREE TIMES THE EFFECTIVE WIDTH OR DEPTH OF EACH TRENCH, WHICHEVER IS GREATER (310 CMR 15.251(1)(b)).
4. THE EFFECTIVE LEACHING AREA SHALL BE CALCULATED USING THE BOTTOM AREA AND A MAXIMUM OF TWO FEET (PER SIDE) OF SIDE WALL AREA FOR EACH TRENCH (310 CMR 15.251(1)(c)).
5. TRENCHES SHALL BE SITUATED, WHERE POSSIBLE, WITH THEIR LONG DIMENSION PERPENDICULAR TO THE SLOPE OF THE NATURAL SOIL. WHERE POSSIBLE THEY SHALL FOLLOW THE CONTOUR LINES (310 CMR 15.251(2)).
6. TRENCHES CONSTRUCTED AT DIFFERENT ELEVATIONS SHALL BE DESIGNED TO PREVENT EFFLUENT FROM THE HIGHER TRENCH(ES) FLOWING INTO THE LOWER TRENCH(ES) (310 CMR 15.251(3)).
7. THE AREA BETWEEN TRENCHES MAY BE DESIGNATED AS SYSTEM RESERVE AREA ONLY WHERE THE SEPARATION DISTANCE BETWEEN THE EXCAVATION SIDEWALLS OF THE PRIMARY TRENCHES IS AT LEAST THREE TIMES THE EFFECTIVE WIDTH OR DEPTH OF EACH TRENCH, WHICHEVER IS GREATER (310 CMR 15.251(4)) - CUR-TECH, SHALL BE SEPARATED BY THREE TIMES THE ACTUAL WIDTH AND ARE SUBJECT TO OTHER SPECIAL CONDITIONS AND LIMITATIONS
8. EFFLUENT DISTRIBUTION LINES EXCEEDING WIDTH 50 FEET IN LENGTH SHALL BE CONNECTED AND VENTING PROVIDED IN ACCORDANCE WITH 310 CMR 15.241 (310 CMR 251 (11)).

GOODFLOW CTL CHAMBER PRODUCT INSTALLATION SPECIFICATION

BED INSTALLATION PARAMETERS

1. GOODFLOW SYSTEMS ARE EXEMPT FROM ANY DISTRIBUTION PIPING ON SYSTEMS UP TO 5,000 GPD.
2. THE USE OF LEACHING BED OR FIELDS IS RESTRICTED TO SYSTEMS WITH A CALCULATED DESIGN FLOW OF LESS THAN 5,000 GPD PER LEACHING BED OF FIELD (310 CMR 15.252(1)).
3. THE MAXIMUM LENGTH OF CHAMBERS IN SERIES SHALL BE 100 FEET (310 CMR 15.252(2)(b)).
4. SEPARATION DISTANCE BETWEEN ADJACENT BEDS/FIELDS SHALL BE TEN FEET (310 CMR 15.252(2)(f)).
5. THE EFFECTIVE LEACHING AREA SHALL INCLUDE ONLY THE BOTTOM AREA, NOT THE SIDEWALLS (310 CMR 15.252(2)(g)).
6. FOR SYSTEMS CONSTRUCTED IN FILL AND INSTALLED, THE SYSTEM SHALL BE INSTALLED AS SPECIFIED IN 310 CMR 15.255 CONSTRUCTION IN FILL, EXCEPT THE MINIMUM 15 FOOT HORIZONTAL SEPARATION DISTANCE TO BE PROVIDED BETWEEN THE SOIL ABSORPTION AREA AND THE ADJACENT SIDE SLOPE SHALL BE MEASURED HORIZONTALLY FROM THE TOP OF THE CHAMBER.
7. THE SYSTEM IS EXEMPT FROM 310 CMR 15.287, SPECIFICALLY ITEMS: (5) REQUIRING WRITTEN NOTIFICATION OF ALTERNATIVE SYSTEM PRIOR TO PROPERTY TRANSFER, (6) NEED FOR A CERTIFIED OPERATOR, (9) NEED FOR AN OPERATION AND A MAINTENANCE CONTRACT WITH AN OPERATOR AND (10) DEED NOTICE REQUIREMENT

GOODFLOW CTL 12 SYSTEM
HEIGHT OF CONCRETE CHAMBER IN INCHES = 14"
LIQUID STORAGE CAPACITY PER 8' IN GALLONS = 172 GALLONS
TRENCH CONFIGURATION EFFECTIVE LEACHING AREA SF/LF = 7.24
FIELD CONFIGURATION EFFECTIVE LEACHING AREA SF/LF = 10.57

NOT TO SCALE DATE: 6-13-19 DEP TRANSMITTAL NUMBER: X268026

GOODFLOW
23 RYAN STREET
STAMFORD CT 06907

P (203)-869-2969
F (203)-869-2977

CTL-12 CHAMBER DETAILS

SHEET 4 OF 4