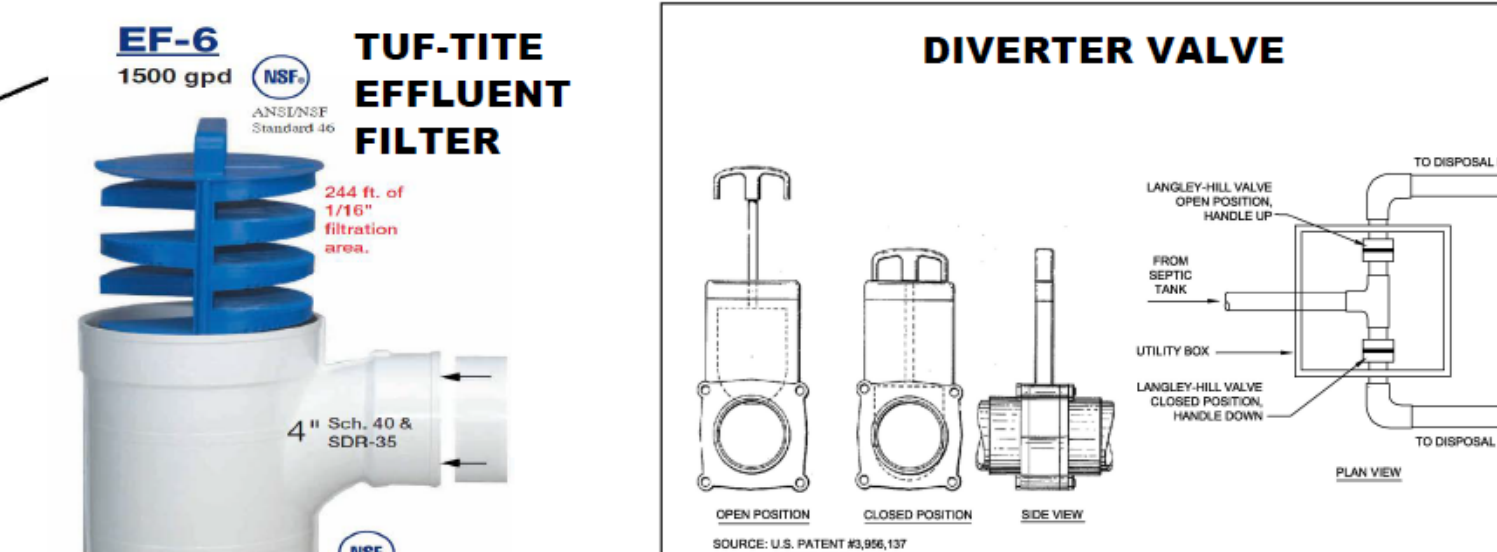
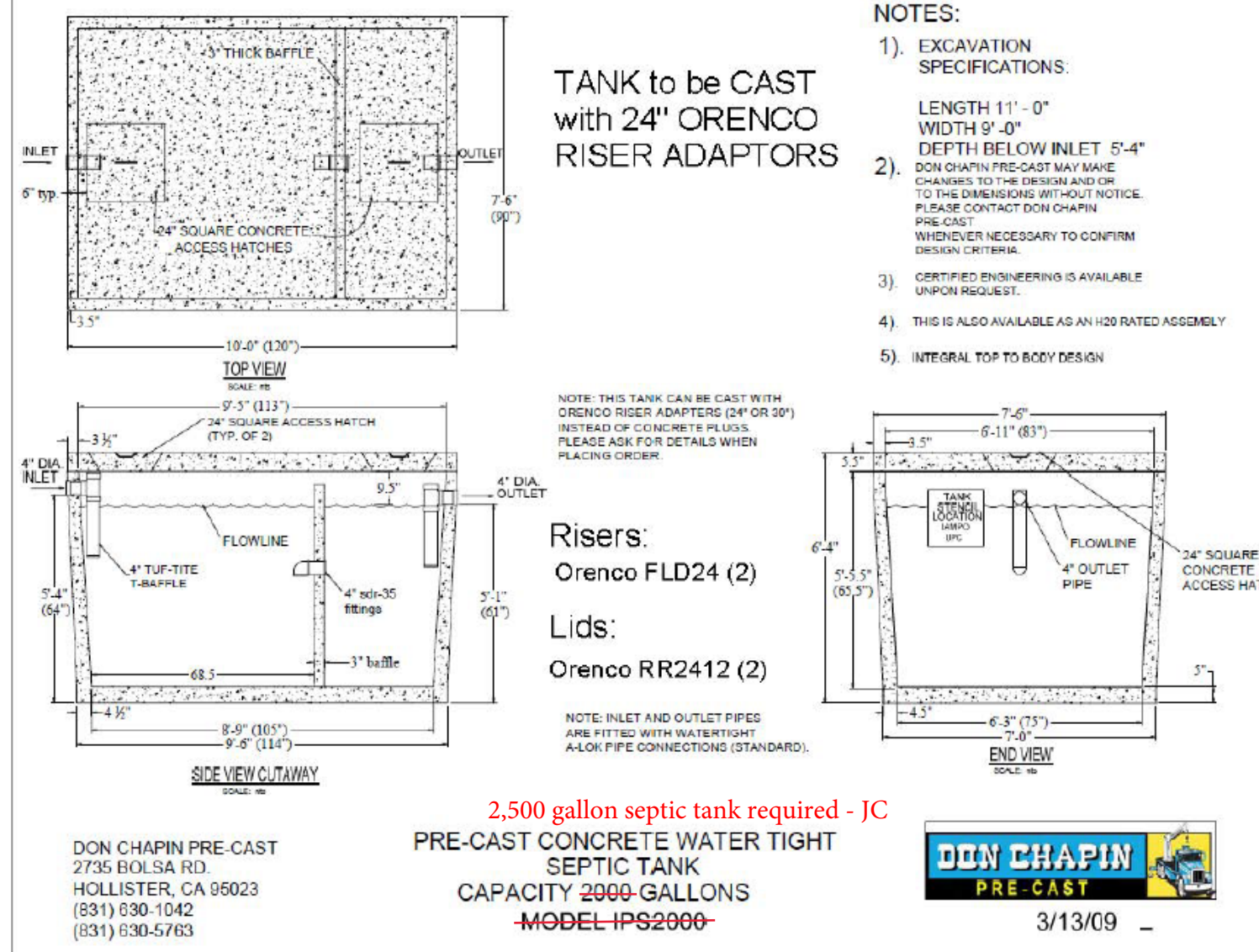


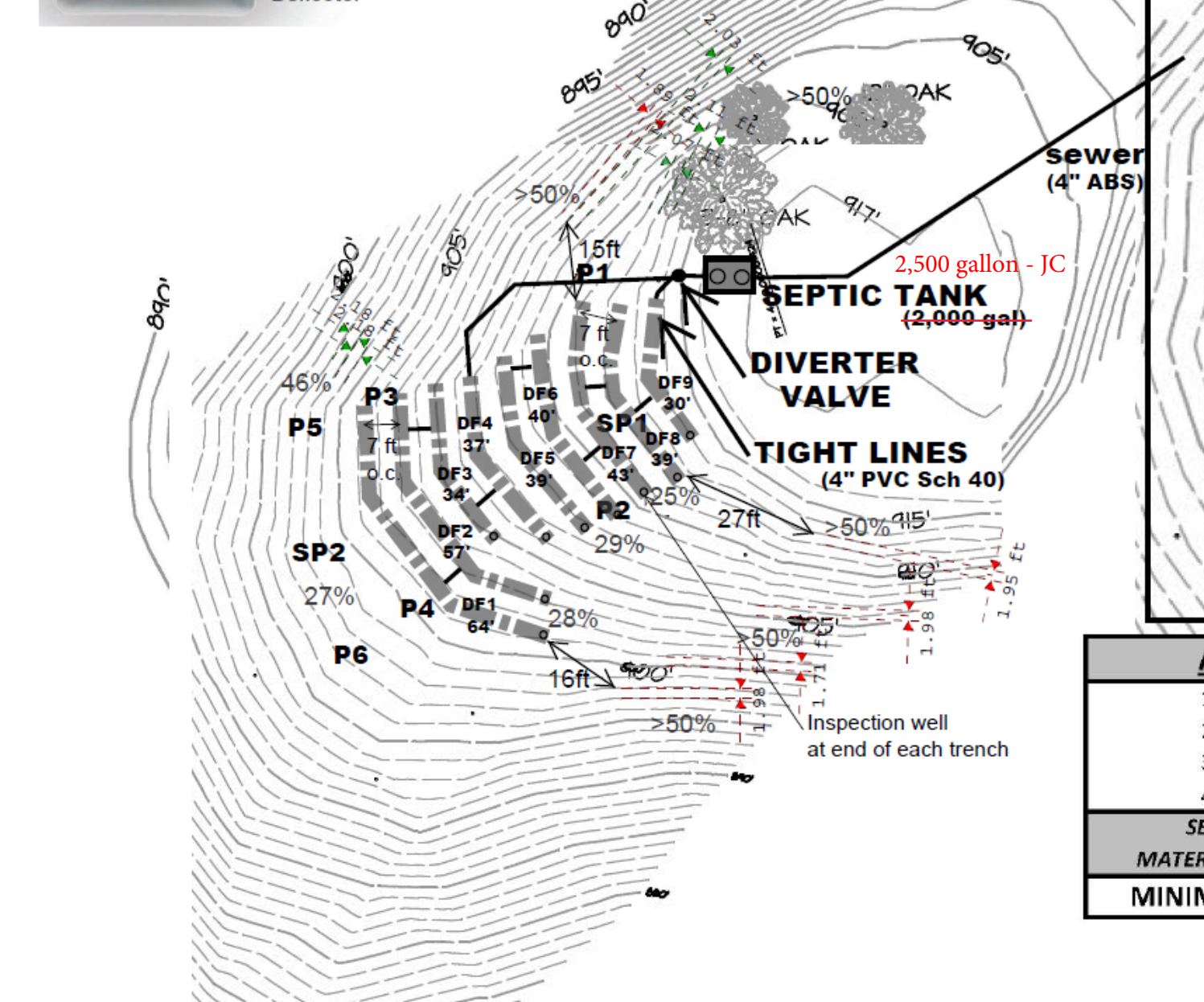
**SEPTIC TANK:**



E GEOTECH REPORT BY DAN DYKEMA AND ASSOCIATES, INC. (DAN DYKEMA AND ASSOCIATES, INC. is a professional engineering firm located at 1100 GPD, Suite 100, Grand Rapids, MI 49503, and is a member of the American Society of Professional Engineers (ASPE) and the Michigan Society of Professional Engineers (MSPE).) SUBMITTED WITH THIS PLAN STATES THAT THE MINIMUM 15 FT SETBACK TO STEEP SLOPES >50% IS SUFFICIENT TO ENSURE A LOW PROBABILITY OF EFFLUENT DAYLIGHTING.

191 ft DRAINFIELD on 1st side of DV  
 192 ft DRAINFIELD

E REPORT ALSO STATES LOW PROBABILITY OF SLOPE INSTABILITY.



County of Santa Clara - Department of Environmental Health

SOL PERCOLATION TEST RECORDED MEASUREMENTS (Electronic Version by Chris Day, R.E.H.S.)

OWNER/APPLICANT:	Cody Drummond	SR#:	865734	PLN FILE#:	P 1 of 1
LOCATION:	0 Rolling Hills Rd., Morgan Hill, CA 95037			IRE#:	Jeff Cannon
CONTACT PERSON:	CHRIS DAY, R.E.H.S.	PHONE:	650-293-1045	DATE:	5/4/2021

HOLE #1		DEPTH: 5 1/2 ft.		(1-1/2" on ruler)			
TIME	WATER LEVEL						
START	FINISH	START	FINISH	Δ MIN	Δ INCH	MPI	
1:22	1:52	5 1/2	DRY	30			
1:53	2:23	5 3/4	DRY	30			
2:24	2:34	5 7/8	2 1/2	10	3 3/8	3	
2:35	2:45	6	2 1/2	10	3 1/2	3	
2:47	2:58	6 3/4	2 5/8	11	4 1/8	3	
2:59	3:09	7 1/8	3 5/8	10	3 1/2	3	
3:10	3:20	6 5/8	3 5/8	10	3	3	
3:21	3:31	6 3/4	3 1/8	10	3 5/8	3	
3:31	3:41	6	2 5/8	10	3 3/8	3	
3:42	3:52	6 1/8	2 5/8	10	3 1/2	3	
3:42	3:52	6 1/8	2 5/8	10	3 1/2	3	

HOLE #2		DEPTH: 5 1/2 ft.		(2" on ruler)			
TIME	WATER LEVEL						
START	FINISH	START	FINISH	Δ MIN	Δ INCH	MPI	
1:25	1:55	10 5/8	8 7/8	30	1 3/4	17	
1:55	2:25	10 3/4	8 3/4	30	2	15	
2:26	2:56	10 3/4	8 3/8	30	3 1/8	22	
2:57	3:27	11	8 3/4	10	1 3/4	17	
3:27	3:57	10 1/2	9 1/8	30	3 1/8	22	

HOLE #3		DEPTH: 5 1/2 ft.		(1 3/4" on ruler)			
TIME	WATER LEVEL						
START	FINISH	START	FINISH	Δ MIN	Δ INCH	MPI	
1:27	1:57	7 3/4	4 1/4	30	3 1/2	9	
1:58	2:28	8 1/4	4 1/8	30	4 1/8	7	
2:29	2:59	7 7/8	4 1/2	30	3 3/8	9	
3:00	3:30	8	4 5/8	30	3 1/8	9	
3:30	4:00	8	4 1/2	30	3 1/2	9	

HOLE #4		DEPTH: 5 1/2 ft.		(4 1/2" on ruler)			
TIME	WATER LEVEL						
START	FINISH	START	FINISH	Δ MIN	Δ INCH	MPI	
1:29	1:58	11 1/4	DRY	Δ MIN			
2:00	2:30	11 1/2	DRY	Δ MIN			
2:31	2:41	12 3/8	DRY	Δ MIN			
2:42	2:52	12 3/4	DRY	Δ MIN			
2:53	3:03	12 7/8	DRY	Δ MIN			
3:03	3:13	12 3/4	DRY	Δ MIN			
3:13	3:23	13 1/8	DRY	Δ MIN			
STOPWATCH READINGS starting at 4:03 p.m. (MIN/SEC)							
0:00	5:00	10 3/4	6	5	4 3/4	1.1	
0:00	5:00	10 1/2	6 1/8	5	4 3/8	1.1	
0:00	5:00	10 1/2	6	5	4 1/2	1.1	

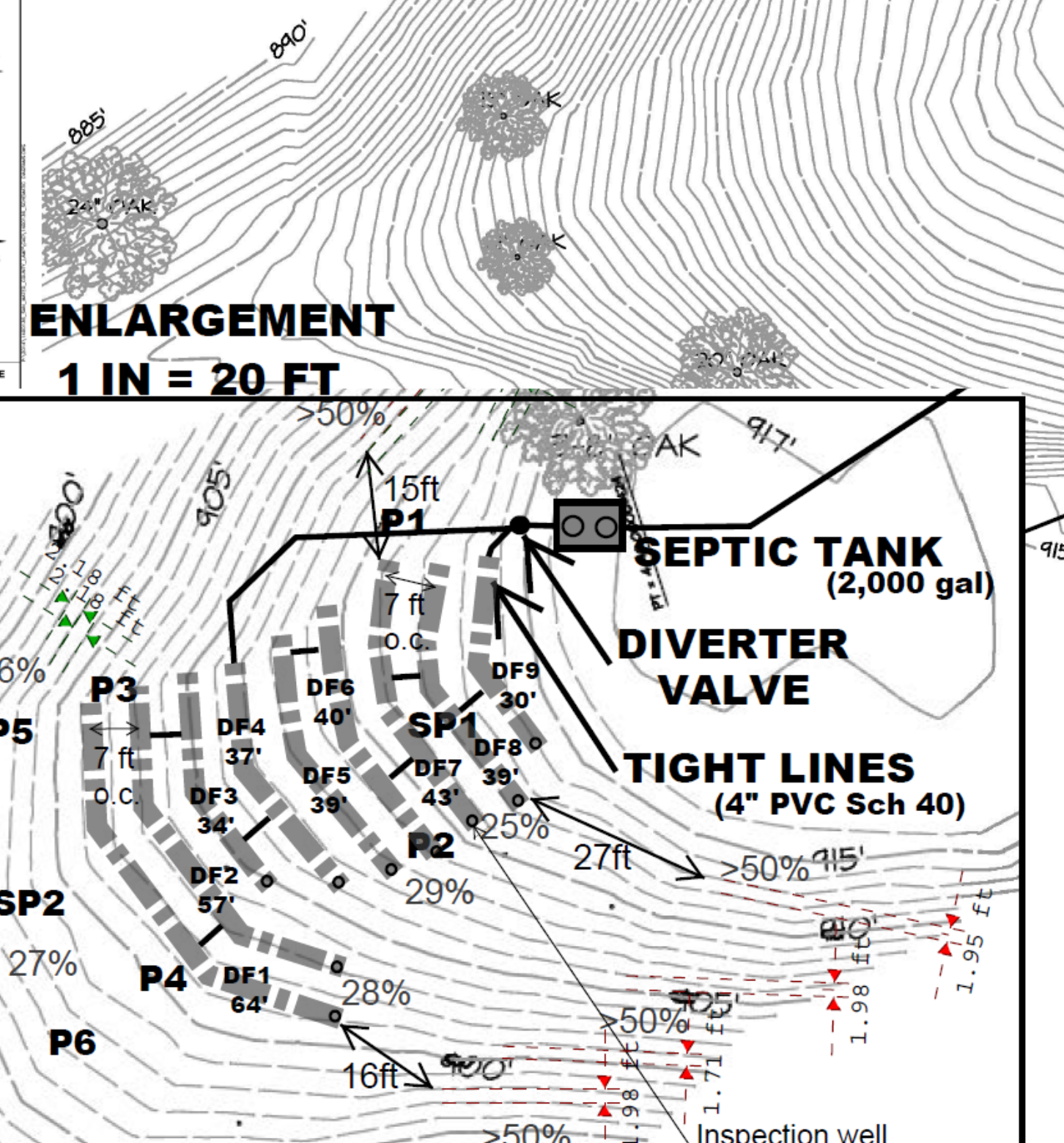
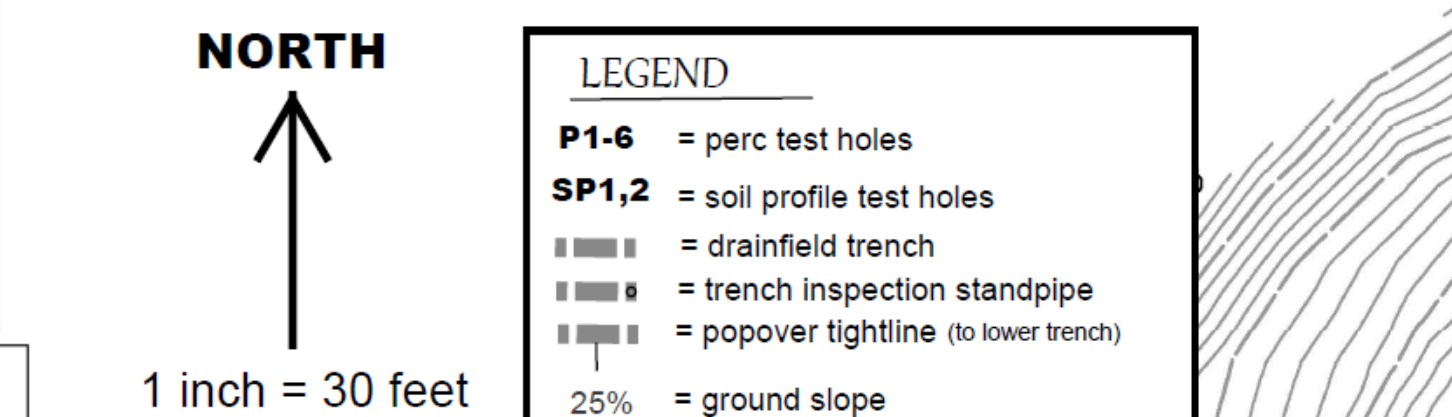
HOLE #5		DEPTH: 5 1/2 ft.		(10 3/4" on ruler)			
TIME	WATER LEVEL						
START	FINISH	START	FINISH	Δ MIN	Δ INCH	MPI	
1:31	2:01	11 1/4	DRY	30			
2:02	2:32	11 1/2	DRY	30			
2:32	2:42	12 3/8	DRY	30			
2:43	2:53	12 3/4	DRY	10			
2:54	3:13	12 7/8	DRY	9			
3:15	3:25	12 3/4	DRY	9			
STOPWATCH READINGS starting at 4:17 p.m. (MIN/SEC)							
0:00	5:00	17 1/4	12 3/4	5	4 1/2	1.1	
0:00	5:00	17 1/2	12 5/8	5	4 3/8	1.1	
0:00	5:00	17	12 1/2	5	4 1/2	1.1	

HOLE #6		DEPTH: 4 ft.		(22 3/4" on ruler)			
TIME	WATER LEVEL						
START	FINISH	START	FINISH	Δ MIN	Δ INCH	MPI	
1:32	2:02	27 7/8	DRY	Δ MIN			
2:03	2:33	29	DRY	30			
2:34	2:44	29 1/8	23 1/4	10	5 7/8	2	
2:45	2:55	29 7/8	23 5/8	10	6 1/4	2	
2:56	3:06	29 3/4	22 7/8	9	6 7/8	1.3	
3:07	3:17	29 3/4	23	10	6 3/4	1.5	
3:18	3:28	29 1/2	22 7/8	10	7	1.4	
3:29	3:59	29 7/8	23	10	6 7/8	1.5	

HOLE	1	2	3	4	5	6
Adjusted MPI	R	3	20	9	1.1	1.1
Stabilized MPI	R <sub>s</sub> = R x 1.4	4	28	13	1.5	1.5
Average Adjusted Stabilized MPI	R <sub>2</sub> = (Σ R <sub>s</sub> )/# Holes	8				
# Bedrooms	3+9	FOR OFFICE USE ONLY		Tank Size (Gall)	Leach Line (ft)	

**ANNUAL SEPTIC TANK INSPECTION REQUIRED:**

- 1) Access risers & lids in good condition.
- 2) Structural Integrity - probe interior walls/baffles, inlet/outlet T-pipes.
- 3) Check Tuf-Tite effluent filter and clean if needed.
- 4) Septic tank liquid level - should be at outlet invert in tank.

**SEPTIC TANK SHALL BE PUMPED OUT WHENEVER SOLIDS or FLOATING**

**MINIMUM SEPTIC TANK PUMPING FREQUENCY IS 3 TO 5 YEARS.**

ON-SITE WATER TIGHTNESS TESTING

(REQUIRED PRIOR TO SEPTIC TANK USE)

1. FILL TANK TO 2" INTO BOTTOM OF RISER
2. LET TANK SIT FOR 1 HOUR
3. OBSERVE WATER LEVEL IN RISER BEFORE AND AFTER 1 HR PERIOD
4. IF LEVEL HAS FALLEN , INSPECT FOR LEAKS
5. REPAIR ANY LEAKS AND REPEAT TEST

### INFILTRATIVE AREA CALCULATIONS & SPECIFICATIONS

**TYPE OF SEPTIC SYSTEM:** Conventional Gravity Flow with Infiltration Chambers

## DESIGN CALCULATIONS:

Average Percolation Rate : **8 MPI** (HOLES 1-6)  
 Design Application Rate : **0.96 gal/sq. ft./day**  
 Peak Wastewater Flow : **1,050 gpd** (5 + 3 BR)  
 Req. Infiltrative Area : **1,094 ft<sup>2</sup>** (1050 gpd/0.96 gpd/ft<sup>2</sup>)  
 Infiltrative Area per Linear Ft Trench : **4 sq. ft.**  
 Trench Length (each side DV) : **273 ft** (1094 ft<sup>2</sup>/4 ft/ft<sup>2</sup>)  
 Reduced Length for chambers : **191 ft** (273 - 0.3x273)  
 DV=Diverter Valve

## DRAINFIELD TRENCH SPECIFICATIONS:

Drainfield Dimensions: **3 ft width x 5.5 ft depth**  
High Cap Chamber Height: **1.5 ft**  
Slope in Drainfield Area: **< 30%**  
Horizontal Drainfield Spacing: **7 ft o.c. (minimum)**  
Depth to GW Below Trenches: **> 8 1/2 ft (SP1&2)**

Required Depth to GW: 8 ft

### Soil Analysis Test Data

APN	764-04-007
Address:	0 Rolling Hills Rd MH
Owner	Cody Drummond

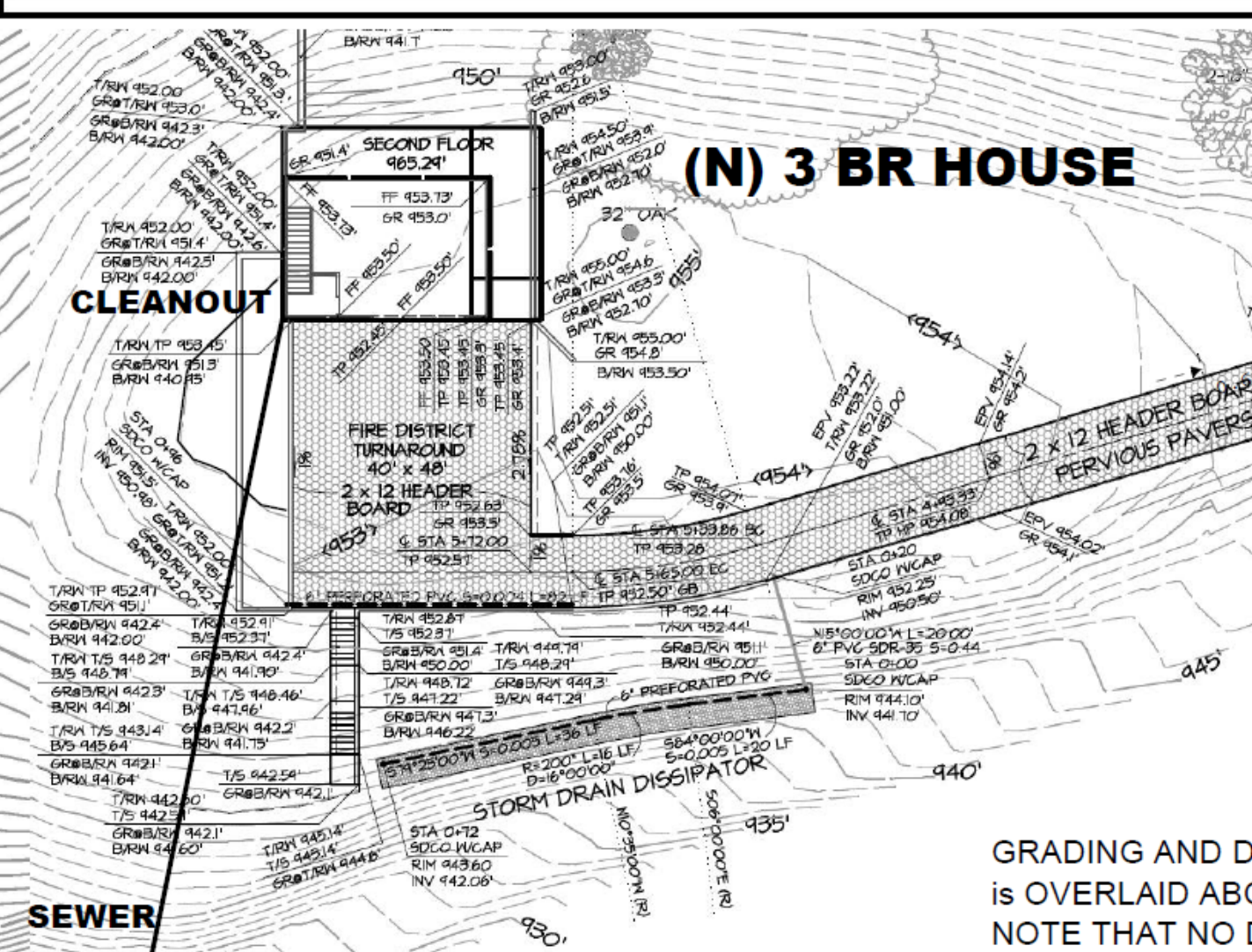
Test Conducted on 20-Apr-21  
By Chris Day, R.E.H.S. Tel. 650-293-1045  
Witnessed by Jeff Camp

<b>Soil Profile Test Hole #1</b>	<b>Depth: 14 ft.</b>
----------------------------------	----------------------

0 to 1 ft	<p>Silty Sandy Loam</p> <p>Roots Fine &amp; Common</p> <p>Pores Coarse &amp; Common</p> <p>Weak Subangular Structure</p> <p>Less Than 15% Rock</p> <p>Dry Condition of Soil</p> <p>Color Medium Brown</p> <p>No Mottling</p>	Not Restrictive
1 to 14 ft	<p>Sandy Clay (increasing sand below 5 ft)</p> <p>Roots None</p> <p>Pores Coarse &amp; Common</p> <p>Weak Subangular Structure</p> <p>About 50% Rock (weathered sandstone)</p> <p>Moist Condition of Soil</p> <p>Color Light Brown</p> <p>No Mottling</p>	Not Restrictive

Soil Profile Test Hole #2	Depth: 14 ft.
---------------------------	---------------

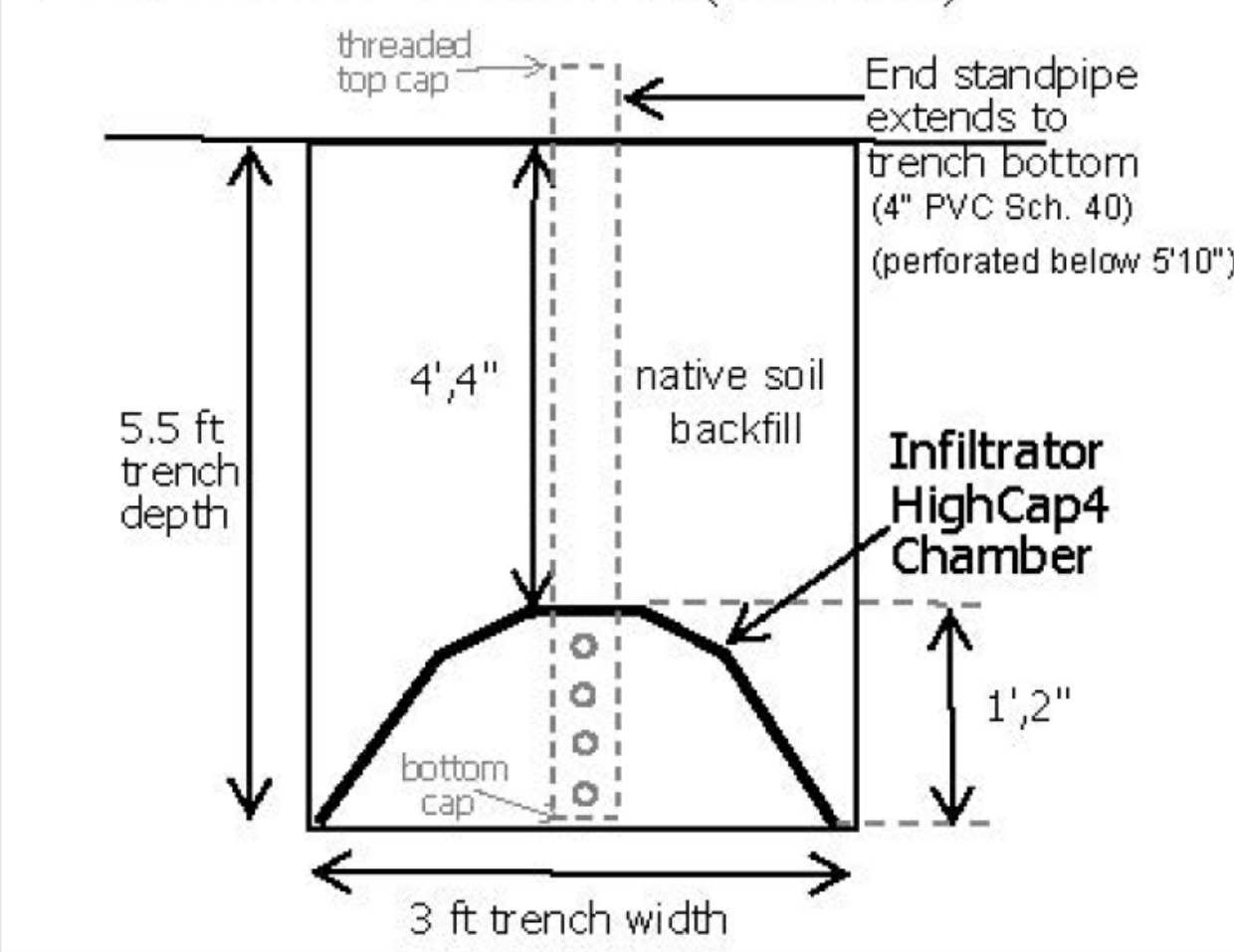
0 to 1.5 ft	Same Characteristics as Horizon 1 (SP1)	Not Restrictive
1.5 to 14 ft	Same Characteristics as Horizon 2 (SP1), except Color Medium Brown	Not Restrictive



GRADING AND DRAINAGE PLAN  
is OVERLAID ABOVE.  
NOTE THAT NO DRAINAGE OR  
GRADING FEATURES ARE  
WITHIN 100 FT OF SEPTIC.

### **DRAINFIELD TRENCH:**

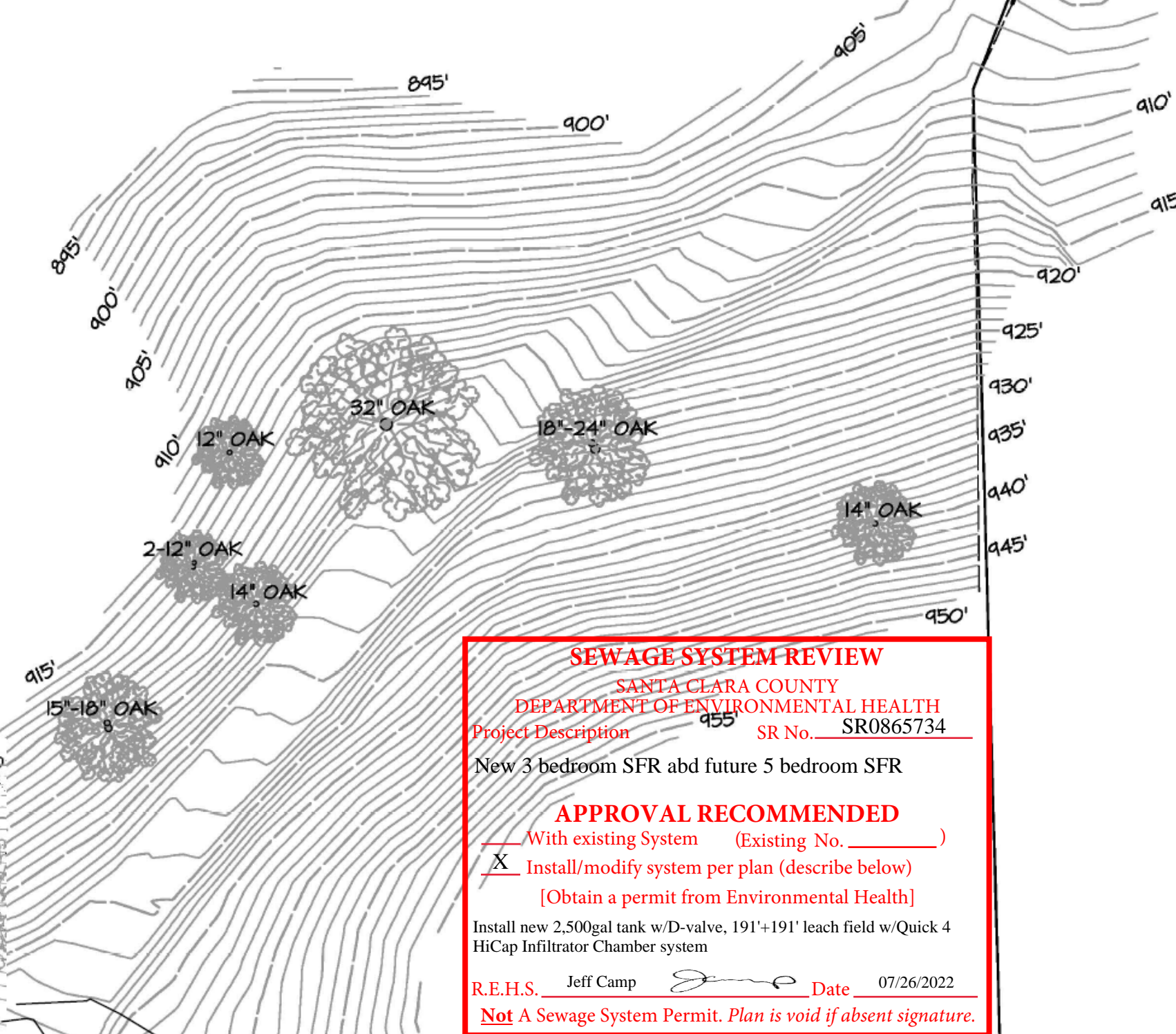
INFILTRATOR TRENCH DIAGRAM: (not to scale)



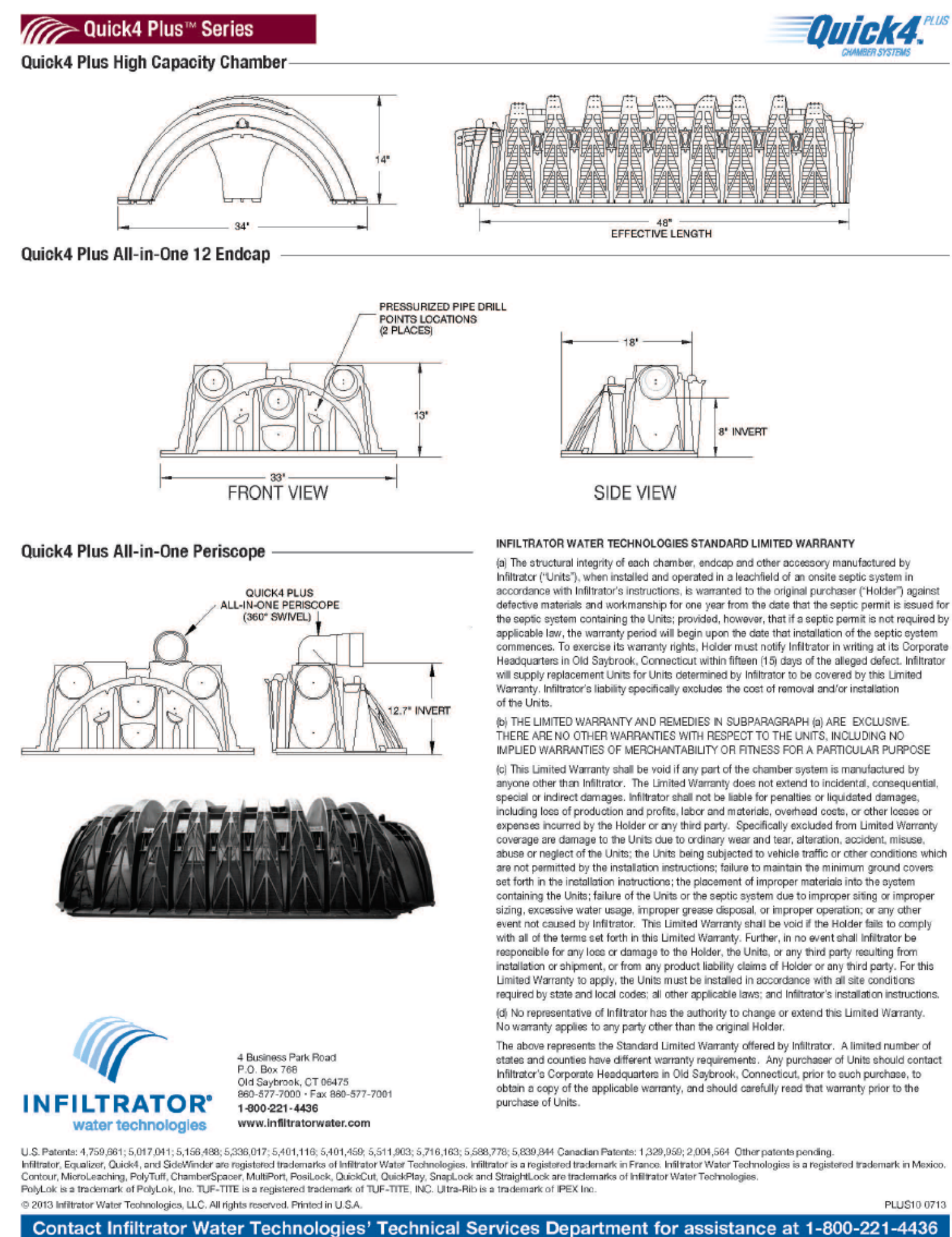
## PROJECT SCOPE & RATIONALE:

This project is to construct a 3 BR house served by a conventional septic system. A conventional system design was selected due to sufficient area with slope < 30%, perc test results (8 MPI), and adequate separation (>8 ft) to potential high groundwater. Infiltration chambers are included to reduce the overall length of required drainfield. The proposed system is sized to serve an additional 5 BR residence in the future.

SITE &amp; SURVEY PLAN by Gilbert A. Fitch &amp; Associates, Inc.



## INFILTRATION CHAMBERS:





File: 221239

August 6, 2021

Mr. and Mrs. Drummond  
1997 McKean Road  
San Jose, CA 95120

**REVIEWED**

**By Jeff Camp at 1:17 pm, Jul 26, 2022**

Subject: **Drummond Property  
2295 Rolling Hills Road  
Morgan Hill, California  
LEACH FIELD INVESTIGATION**

Mr. and Mrs. Drummond:

This report has been prepared to address the geotechnical aspects of the proposed leach field construction on your property off 2295 Rolling Hills Road (approximate location as shown on Figure 3). We understand that the new leach field is proposed on the nose of a roughly east-west trending ridge line to the northwest of Chesbro Reservoir. As the grades in the area of the proposed leach field range from 17 to 24 percent, Santa Clara County requires a geotechnical investigation to assess the potential slope stability hazards for the proposed leachfield area.

## **Investigation**

In order for us to address the potential stability of the slopes, we have performed the following scope of investigation:

- 1 – visited the site to observe the geotechnically relevant site conditions;
- 2 – reviewed published geologic maps;
- 3 – reviewed historical photographic images;
- 4 – observed several percolation pits excavated in the leach field area; and,
- 5 – reviewed logs of test pits excavated on the level pad above the leach field.

The findings of this work are discussed in the following sections of this report.

## **Site Description**

The proposed leach field will be constructed off the end of an ovular graded pad on a secondary crest of a generally southwest-northeast trending ridge line. The graded pad has a couple of moderately aged oak trees and a sparse covering of native grasses.

The leach field is to be located off the southwestern end of the pad where the ridge line continues down towards the reservoir. The dispersal trenches will consist of infiltrator chambers embedded roughly 5.5 feet below existing grades across the nose of the ridgeline (as indicated on Figure 1). The axis of the ridge (where the field is proposed) has a slope gradient ranging from 17 to 24 percent. However, the side slopes of the ridge line are steeper, with gradients ranging from 50 percent (southeast face) to 68 percent (northwest face).

The ground surface in the area of the leach field is covered by low scrub bushes and native grasses. There were no signs of water loving plants in the vicinity of the leach field or graded pad to suggest significant sources of ground water.

### **Geologic Map Review**

We reviewed the *Geologic Map of the Mount Maddona Quadrangle, Santa Clara and Santa Cruz Counties, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-178, scale 1:24,000*, by T.W. Dibblee and J.A. Minch (2005), and the *State of California Earthquake Zones of Required Investigation: Mt. Madonna Quadrangle*. The relevant portion of the Dibblee & Minch map is reproduced in Figure 4. The Earthquake Zone of Required Investigation map indicated that the site area has not yet been mapped.

The Dibblee and Minch map indicates that the site is underlain by Franciscan Greenstone, map symbol "fg". These materials are described as "greenish black, weathered dark brown, massive, amorphous, contains calcite veinlets locally, includes lenses of light gray limestone".

### **Aerial Photographs**

We reviewed several aerial images from Google Earth spanning the period between 1993 and 2020. While the site vicinity appears generally to have remained unchanged during this time frame, the 2017 photo indicates that there was some localized surface sloughing of the slope materials approximately 250 feet downslope of the proposed leachfield area. The roughly 30 by 50 foot swath of mobilized soils is located in a secondary swale area above a cut for a graded roadway (dirt) which runs across the hillside.

### **Investigatory Pits**

As noted above, we have observed the pits for the percolation testing recently completed at the site, along with reviewing logs of borings from a 2010 investigation of the site area by Friar Associates.

Our observations of the percolation pits indicated that the ridge line area is underlain by about a foot of silty gravelly sand in a medium dense condition, underlain by either weathered Greenstone bedrock. The bedrock took the form of fractured rock pieces with some sands between the hard fractured rock pieces. The materials looked to be intact and unaffected by previous slope movements.

The test pits by Friar generally encountered thin veneers of gravelly silty sand over sandstone or greenstone bedrock. At the edges of the graded pads, these materials had been used to extend the pads as non-engineered fills in some locations. The fills were less than 5 feet thick where encountered.

### **Conclusions**

The proposed leachfield will be located across the nose of a resistant ridgeline underlain at shallow depth by permeable fractured bedrock. As demonstrated by the high percolation rates, these materials should provide a good location in which to dispose of effluent.

File: 221239  
August 6, 2021

Although the leachfield will be located in an area with very gentle slope gradients (17 to 24%), the leach field will be proximate to slopes with gradients between 50 and 68 percent. Therefore, we recommend that the leach lines be set back a minimum of 15 feet from slopes in excess of 50%.

Based upon our investigation, it is our opinion that the proposed leachfield constructed in conformance with the project REHS design and the above setbacks, is unlikely to destabilize the hillside slopes, degrade water quality, create a public nuisance, allow effluent to surface downslope, or present a threat to the public health or safety.

Should you have any questions please contact the undersigned.

Respectfully Submitted:  
**GeoForensics, Inc.**



Daniel F. Dyckman, PE, GE  
Senior Geotechnical Engineer, GE 2145



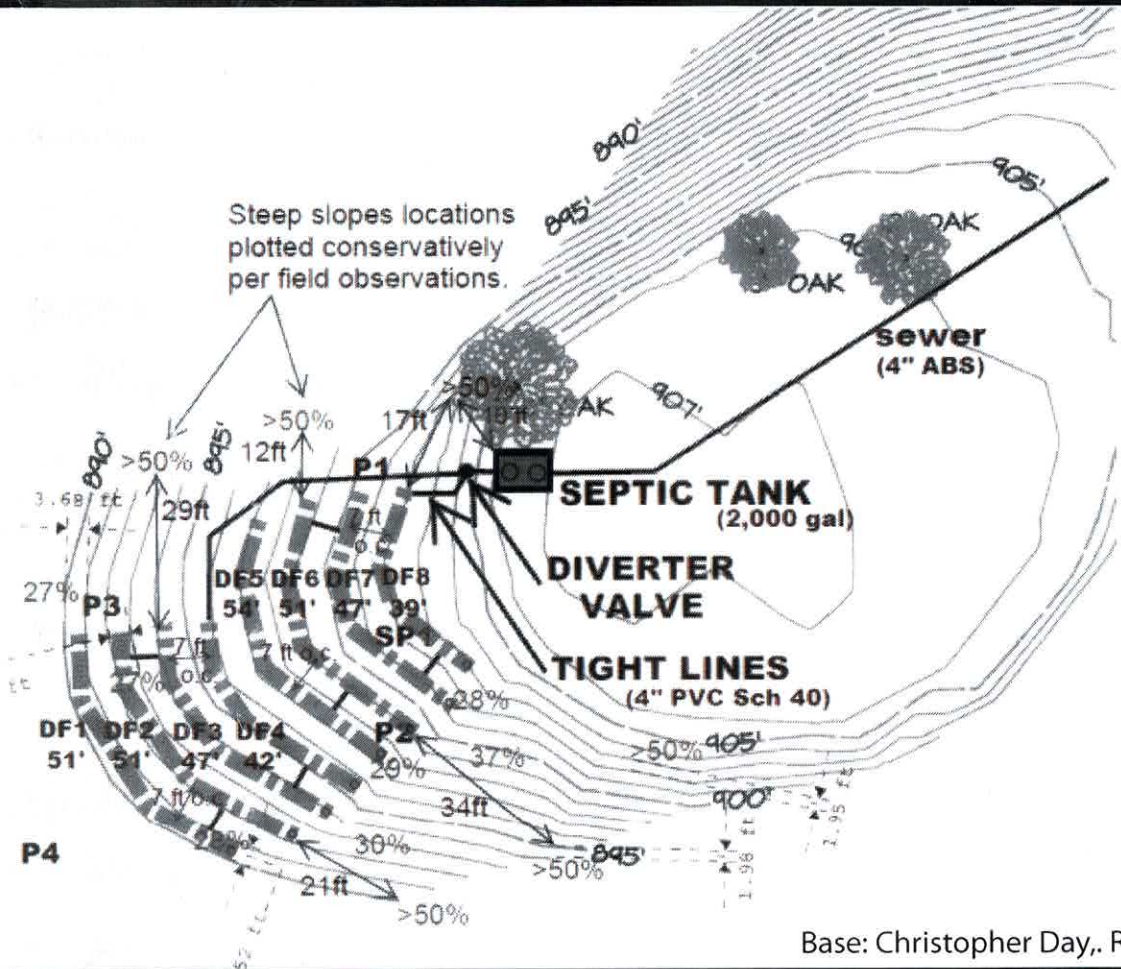
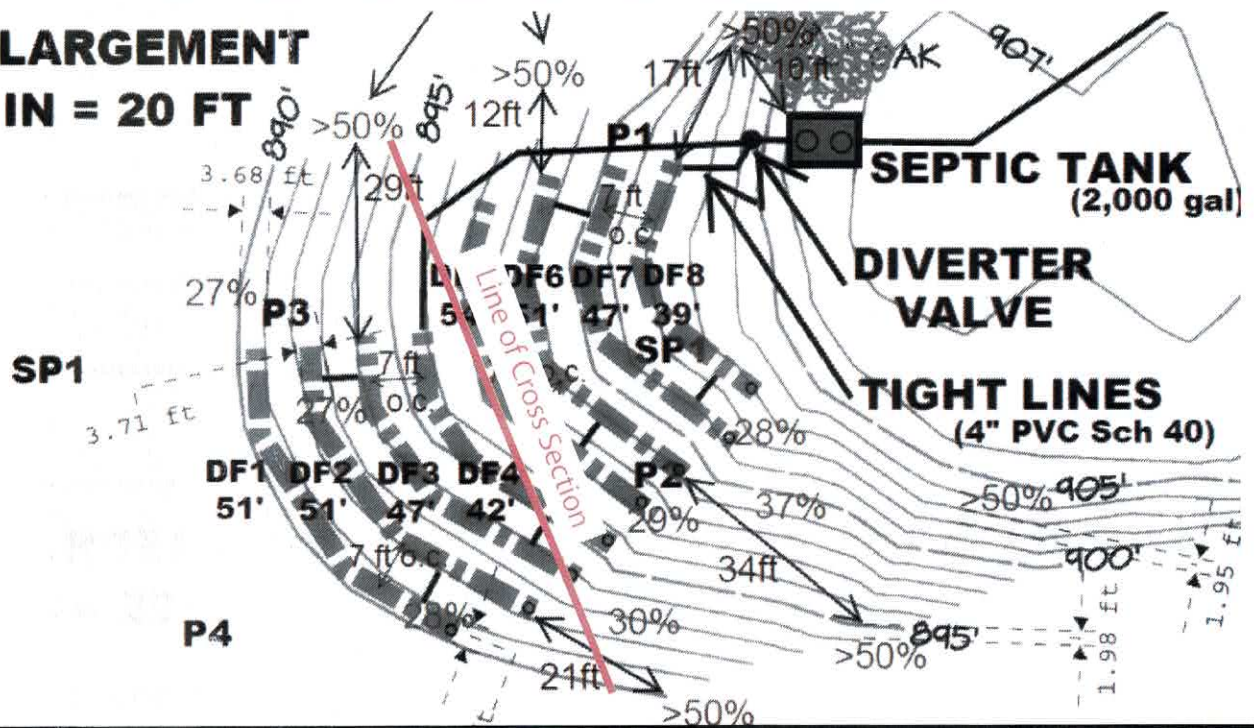
Email cc: 1 to addressee

**REVIEWED**

**By Jeff Camp at 1:17 pm, Jul 26, 2022**



# ENLARGEMENT 1 IN = 20 FT



Base: Christopher Day, REHS

GEOFORENSICS, INC.

303 Vintage Park Dr., #220, Foster City, CA 94404

Tel: (650) 349-3369 Fax: (650) 571-1878

Figure 1 - Leach Field Topography

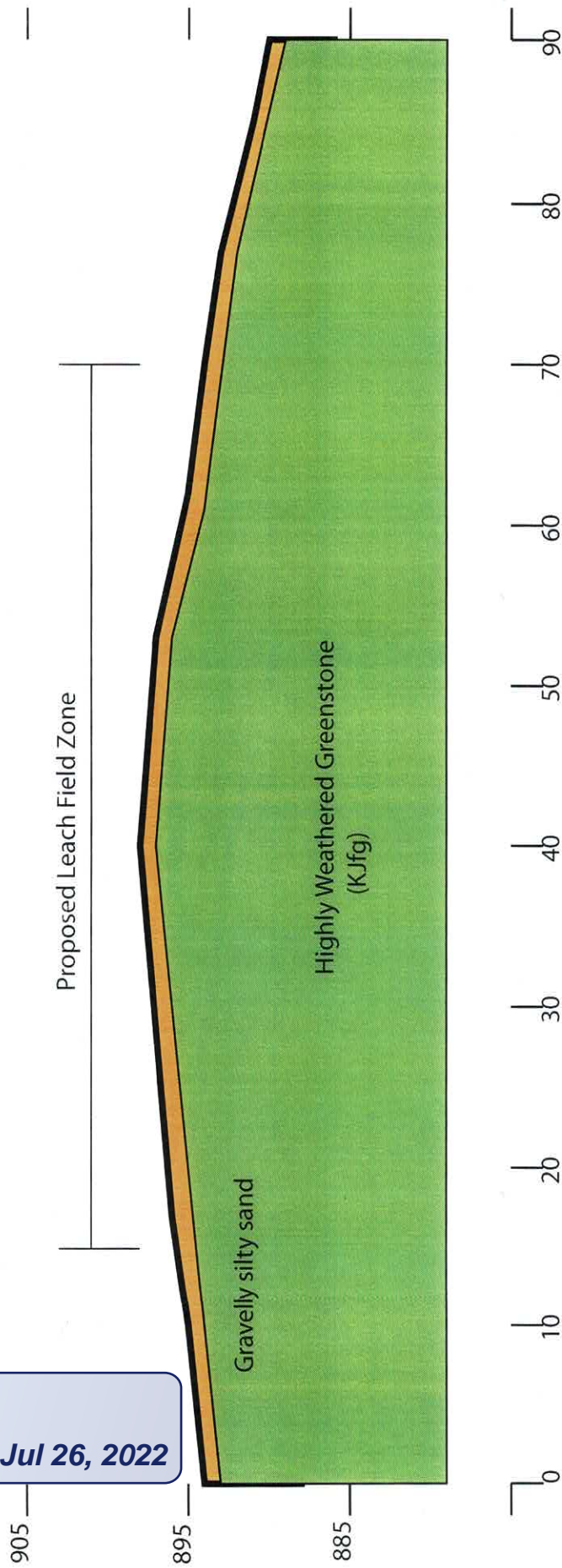
**REVIEWED**

By Jeff Camp at 1:18 pm, Jul 26, 2022



**REVIEWED**

*By Jeff Camp at 1:18 pm, Jul 26, 2022*



**GEOFORENSICS, INC.**

303 Vintage Park Dr., #220, Foster City, CA 94404

Tel: (650) 349-3369 Fax: (650) 571-1878

**Figure 2 - Geotechnical  
Section at Leach Field**





**REVIEWED**

**By Jeff Camp at 1:18 pm, Jul 26, 2022**

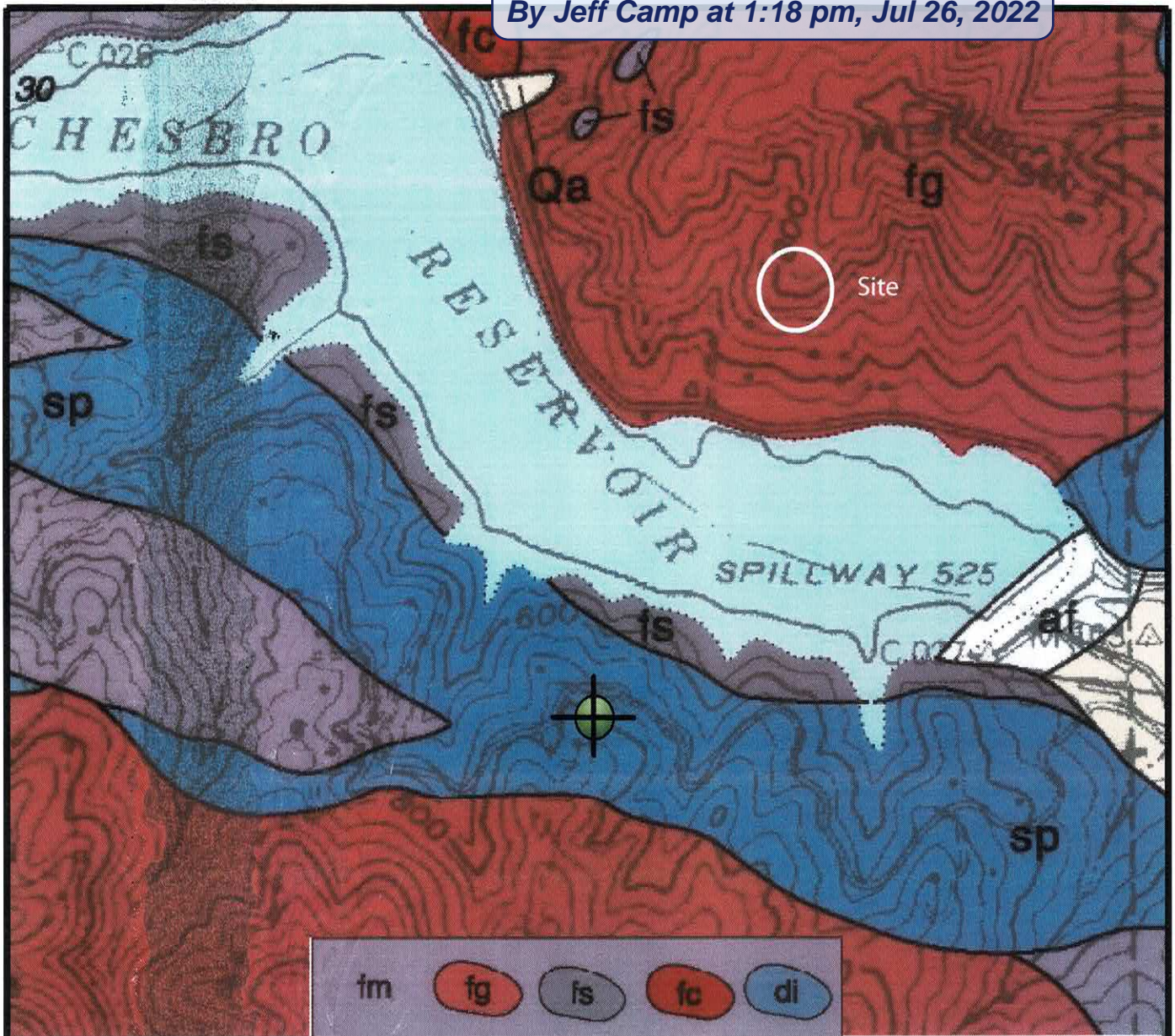
**GEOFORENSICS, INC.**

303 Vintage Park Dr., #220, Foster City, CA 94404

Tel: (650) 349-3369 Fax: (650) 571-1878

Figure 3 - Proposed Leach Field Location





### FRANCISCAN ASSEMBLAGE

*Submetamorphosed eugeosynclinal sedimentary and mafic igneous rocks, marine clastic, lithified; age late Jurassic and Cretaceous*

**fm** Melange (mixture) of mostly dark gray claystone, pervasively sheared, and graywacke or metagraywacke, gray, massive, fine grained, hard but fractured, brecciated and sheared, contains numerous tectonic fragments of mostly graywacke (**fs**) and others of chert or metachert (**fc**), greenstone (**fg**) and limestone (**fl**)

**fs** Graywacke or metagraywacke sandstone, gray, fine grained, massive to bedded, hard but fractured, locally includes gray claystone

**fg** Greenstone (metabasalt), greenish black, weathered dark brown, massive, amorphous, contains calcite veinlets locally, includes lenses of light gray limestone (**fl**), mostly massive, fine grained

Source: Geologic Map of the Mt. Maddona Quadrangle - Dibblee & Minch 2005

**GEOFORENSICS, INC.**

303 Vintage Park Dr., #220, Foster City, CA 94404

Tel: (650) 349-3369 Fax: (650) 571-1878

Figure 4 - Geologic Map

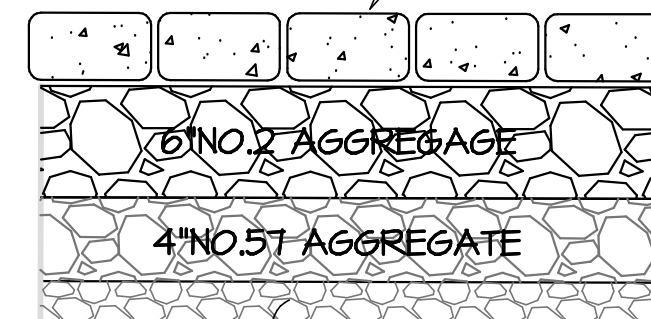


# NOTE

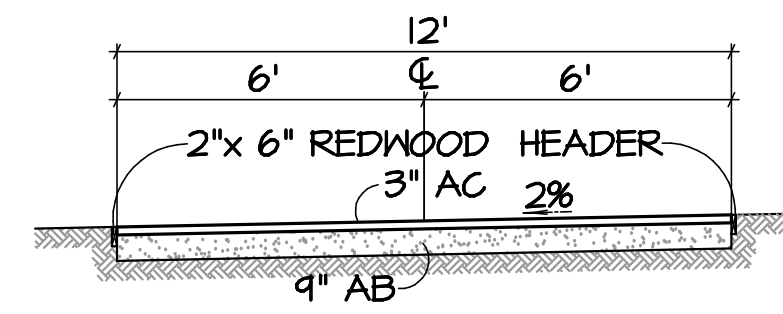
CONSTRUCTION ENTRANCE  
MIN. 40 FT. LONG USING MIN. 8"  
THICK LAYER CRUSHED ROCK IN  
1" TO 3" SIZE.  
SEE CONSTRUCTION ENTRANCE  
PER DETAIL SHEET 9

40' EASEMENT

BELGARD PERVIOUS  
PAVERS (OR EQUAL)



TYPICAL DETAIL  
PERVIOUS PAVERS  
PRIVATE DRIVEWAY  
NO SCALE



TYPICAL SECTION  
AC PAVEMENT  
PRIVATE DRIVEWAY  
NO SCALE

## LEGEND

GR	GROUND
EX	EXISTING
EP	EDGE OF PAVEMENT
TP	TOP OF PAVEMENT
EC	EDGE OF CONCRETE
TC	TOP OF CONCRETE
EPV	EDGE OF PAVERS
TPV	TOP OF PAVERS
HP	HIGH POINT
LP	LOW POINT
EPV	EDGE OF PAVERS
TPV	TOP OF PAVERS
PE	PAD ELEVATION
LFF	LOWER FINISHED FLOOR
MFF	MIDDLE FINISHED FLOOR
UFF	UPPER FINISHED FLOOR
EX 1' CONTOUR	
EX 5' CONTOUR	
PROPOSED 1' CONTOUR	
PROPOSED 5' CONTOUR	

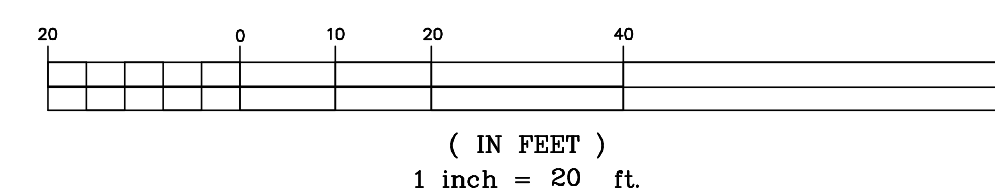
## EARTHWORKS

CUT	3681 CYS
FILL	336 CYS
EXPORT	3345 CYS

## REVIEWED

By Jeff Camp at 1:18 pm, Jul 26, 2022

## GRAPHIC SCALE



CITY APPROVAL		REVISIONS	
BY	DATE	DESCRIPTIONS	



GILBERT A. FITCH & ASSOCIATES, INC.

CONSULTING ENGINEERS  
PO BOX 21542

PHONE (925) 643-5122  
CONCORD, CA 94521

SCALE 1"=20'

DATE 4/15/2022

REG. CIVIL ENGINEER NO. 48421

DRAWN BY  
CHECKED BY  
APPROVED BY

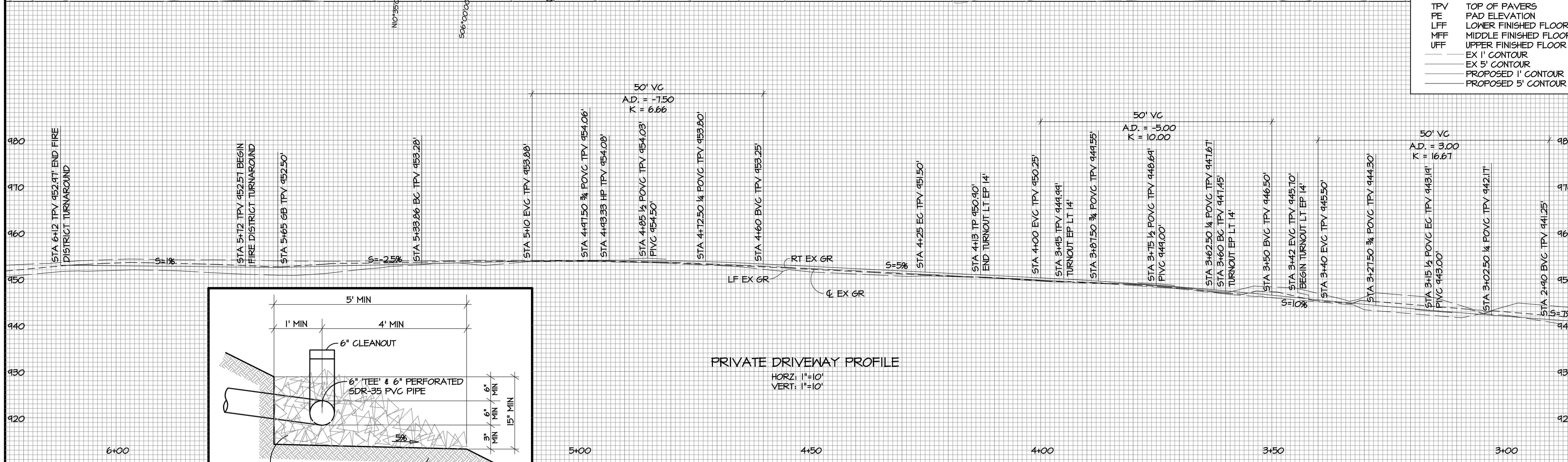
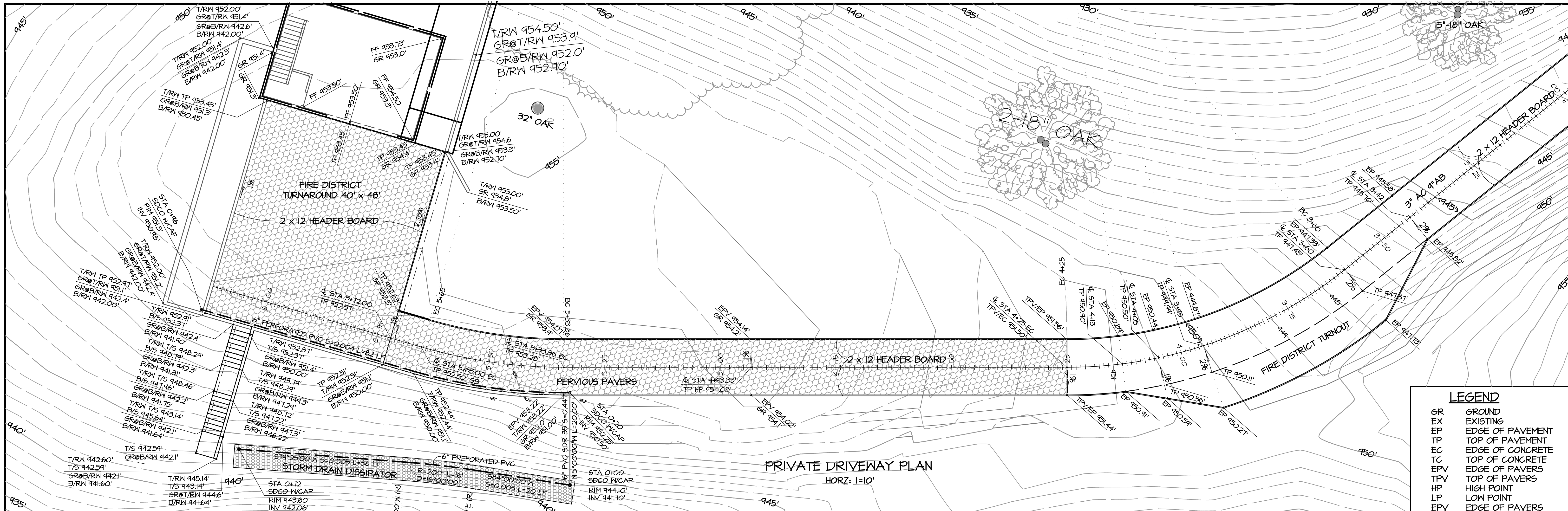
## GRADING PLAN

for CODY DRUMMOND  
OAK GLEN AVENUE  
MORGAN HILL, CALIFORNIA

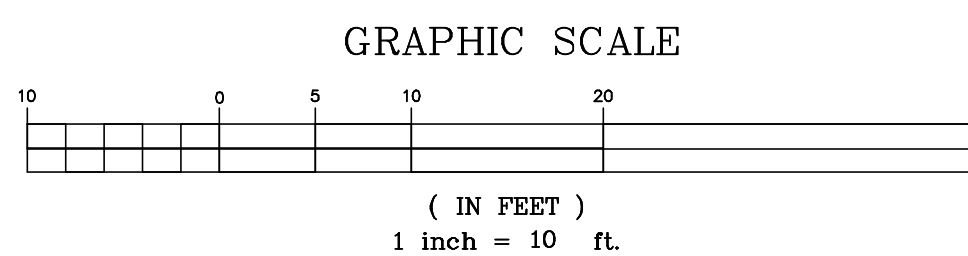
SHEET 3 OF 9

JOB NO.  
7-2021





**REVIEWED**  
By Jeff Camp at 1:18 pm, Jul 26, 2022



CITY APPROVAL		REVISIONS	
BY	DATE	DESCRIPTIONS	

**GAF GILBERT A. FITCH & ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
2120 MT. DIABLO STREET  
CONCORD, CA 94520

SCALE 1"=10'

DATE 4/15/2022

REG. CIVIL ENGINEER NO. 48427

DRAWN BY: DWF  
CHECKED BY:  
APPROVED BY:

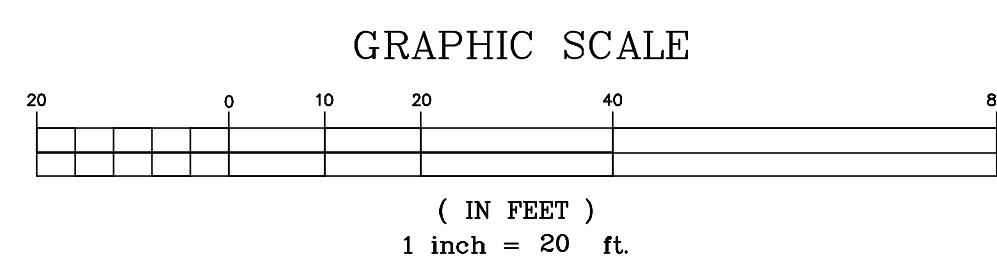
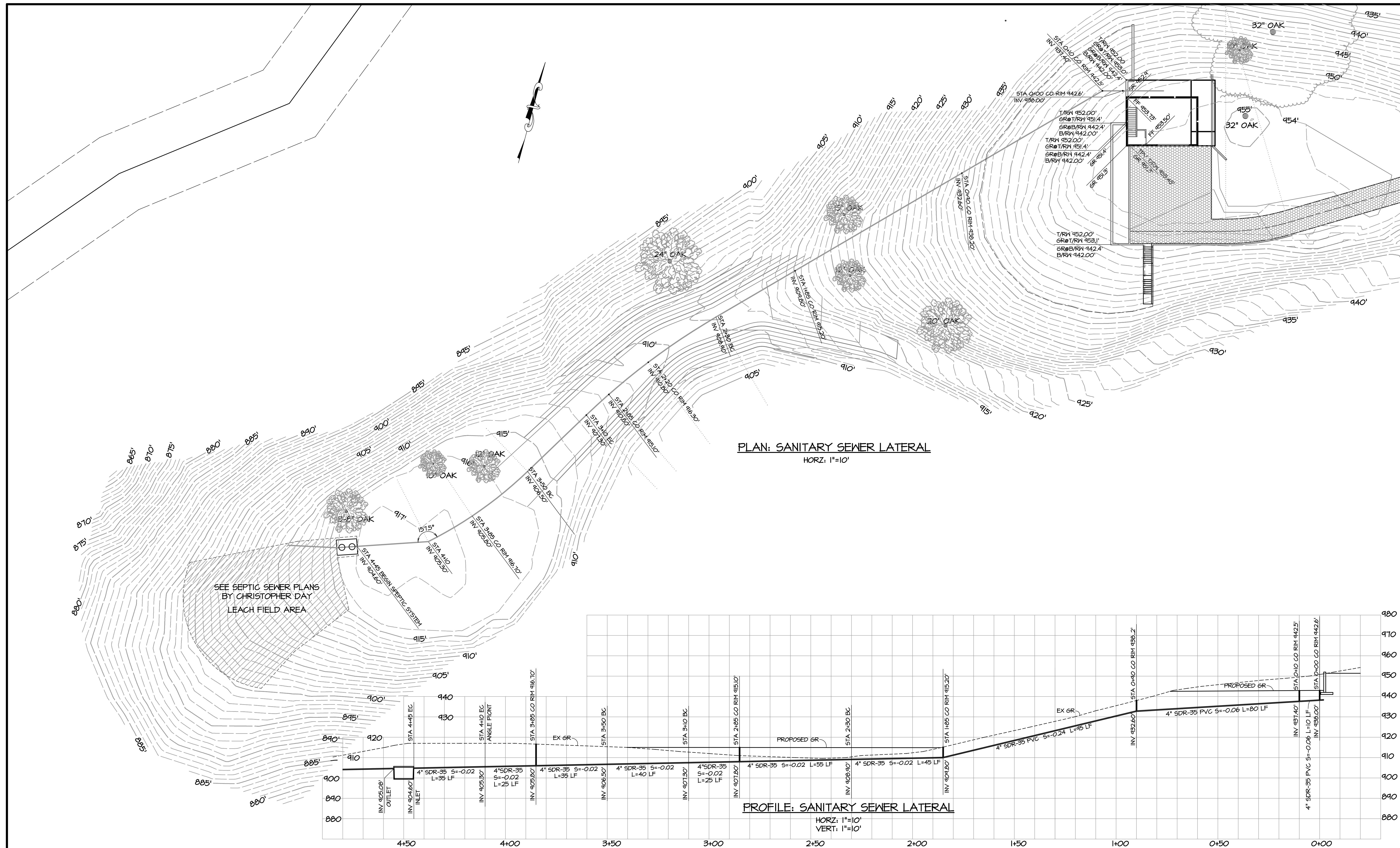
**IMPROVEMENT PLANS**

For CODY DRUMMOND  
OAK GLEN AVENUE  
MORGAN HILL, CALIFORNIA


SHEET 5 OF 9

JOB NO. 7-2021





**REVIEWED**  
By Jeff Camp at 1:18 pm, Jul 26, 2022

		<b>REVISIONS</b>		 <b>GILBERT A. FITCH &amp; ASSOCIATES, INC.</b> CONSULTING ENGINEERS PO BOX 21542 PHONE (925) 643-5122 CONCORD, CA 94521	<b>SEPTIC SYSTEM</b>	
<b>CITY APPROVAL</b>		<b>DESCRIPTIONS</b>			for CODY DRUMMOND	
BY _____	DATE _____				OAK GLEN AVENUE	
					MORGAN HILL, CALIFORNIA	
		SCALE 1"=20'		DATE 4/15/2022		
		REG. CIVIL ENGINEER NO. 48427	DRAWN BY DWF	CHECKED BY _____	SHEET 7 OF 9	JOB NO. 7-2021
		APPROVED BY _____				



CODY DRUMMOND  
(PROPERTY OWNER)

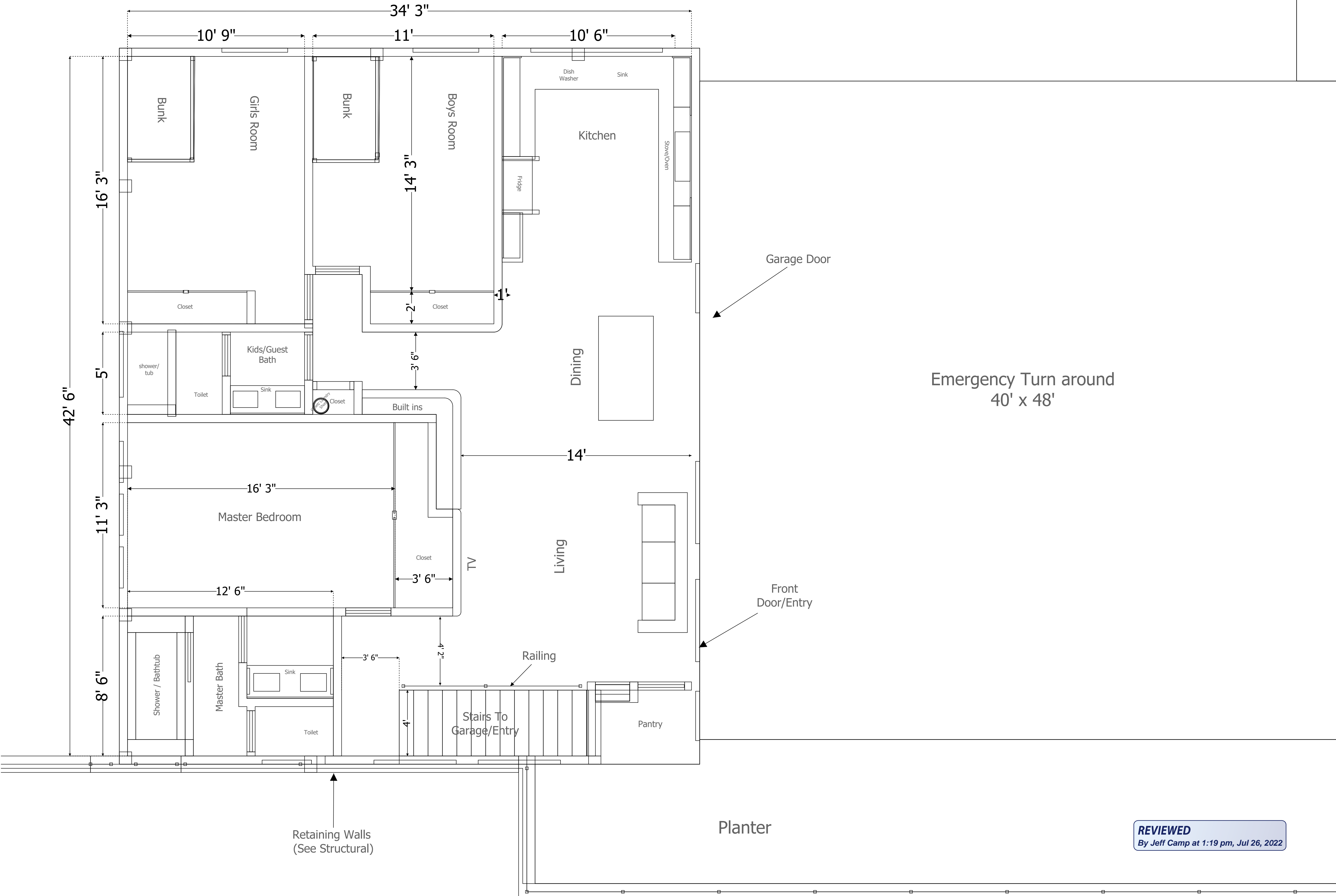
408-661-3195  
CODY@DASPOOLS.COM

DRUMMOND RESIDENCE

APN 764-04-007

MAIN FLOOR LAYOUT  
(UPPER FLOOR)

This is not for construction. This is an approximate layout of the (NEW) home floor plans. To be built upon the unoccupied plot of land beyond the top of Rolling Hills Road.





CODY DRUMMOND  
(PROPERTY OWNER)

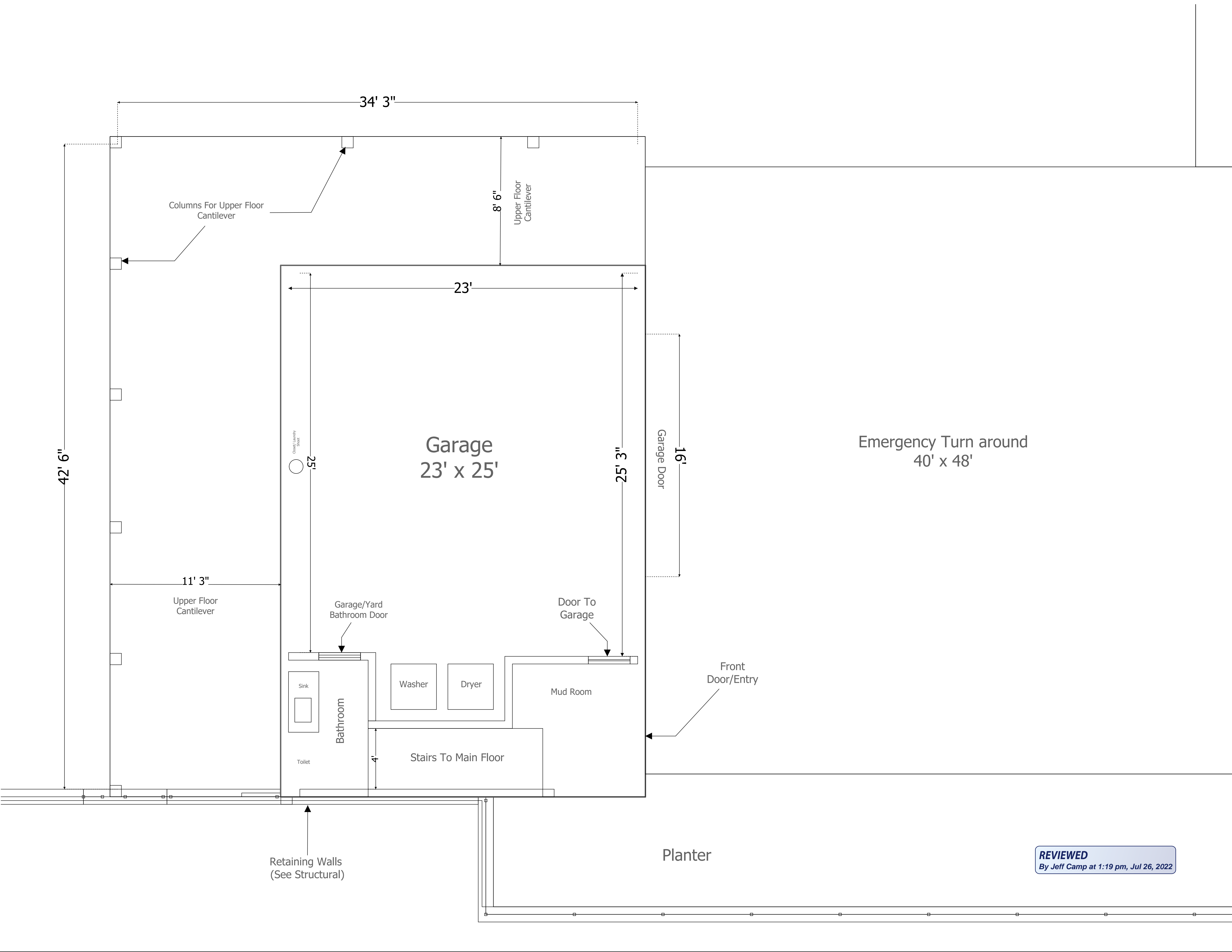
408-661-3195  
CODY@DASPOOLS.COM

DRUMMOND RESIDENCE

APN 764-04-007

GARAGE LAYOUT  
(LOWER FLOOR)

This is not for construction. This is an approximate layout of the (NEW) home floor plans. To be built upon the unoccupied plot of land beyond the top of Rolling



REVIEWED  
By Jeff Camp at 1:19 pm, Jul 26, 2022