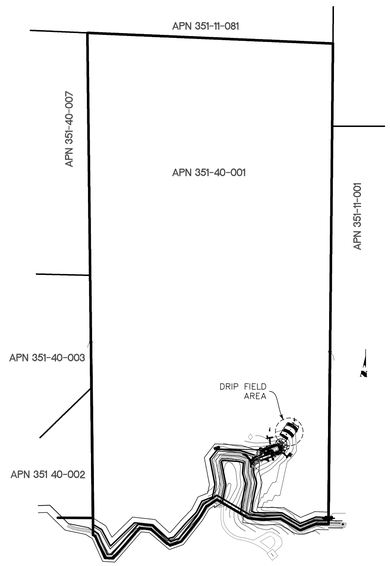
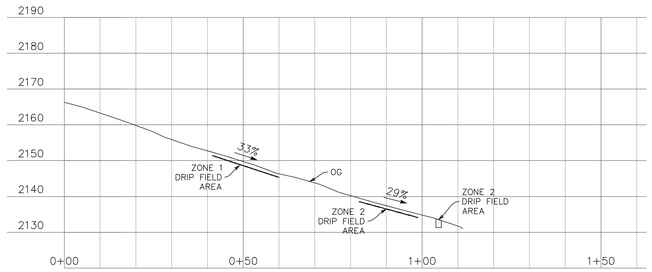
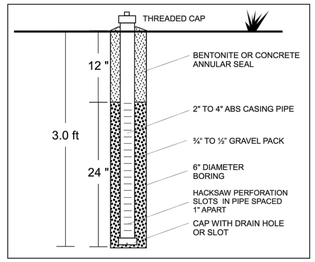



SITE PLAN
1" = 400'

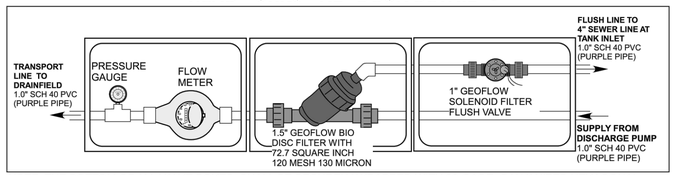



CROSS-SECTION S-S OF DRAINFIELD AREA
1" = 20'

## INSPECTION WELL CONSTRUCTION DETAIL (8)

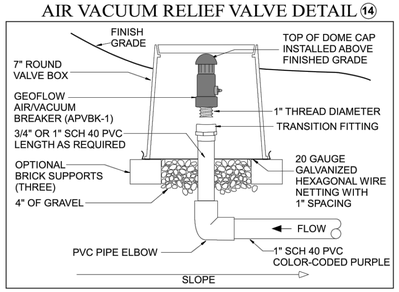



## HEADWORKS VALVE BOX DETAIL (7)

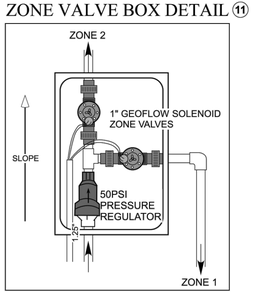



*NOTE: THE BOTTOM OF ALL VALVE BOXES SHALL BE SECURELY WRAPPED WITH 20-GAGE, GALVANIZED HEXAGONAL WIRE NETTING WITH 1" TO 1-1/2" SPACING TO PREVENT BURROWING ANIMALS FROM ENTERING AND FILLING THE BOXES*

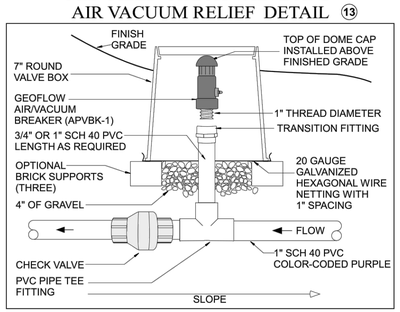
## AIR VACUUM RELIEF VALVE DETAIL (14)



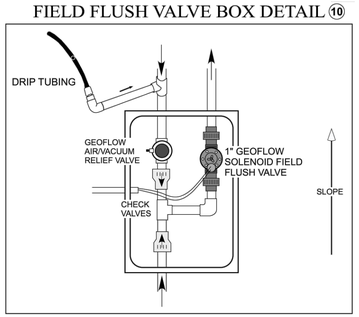

## ZONE VALVE BOX DETAIL (11)



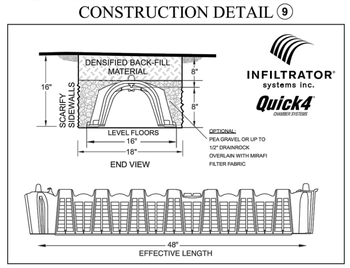

## MID-FIELD CHECK VALVE AND AIR VACUUM RELIEF DETAIL (13)

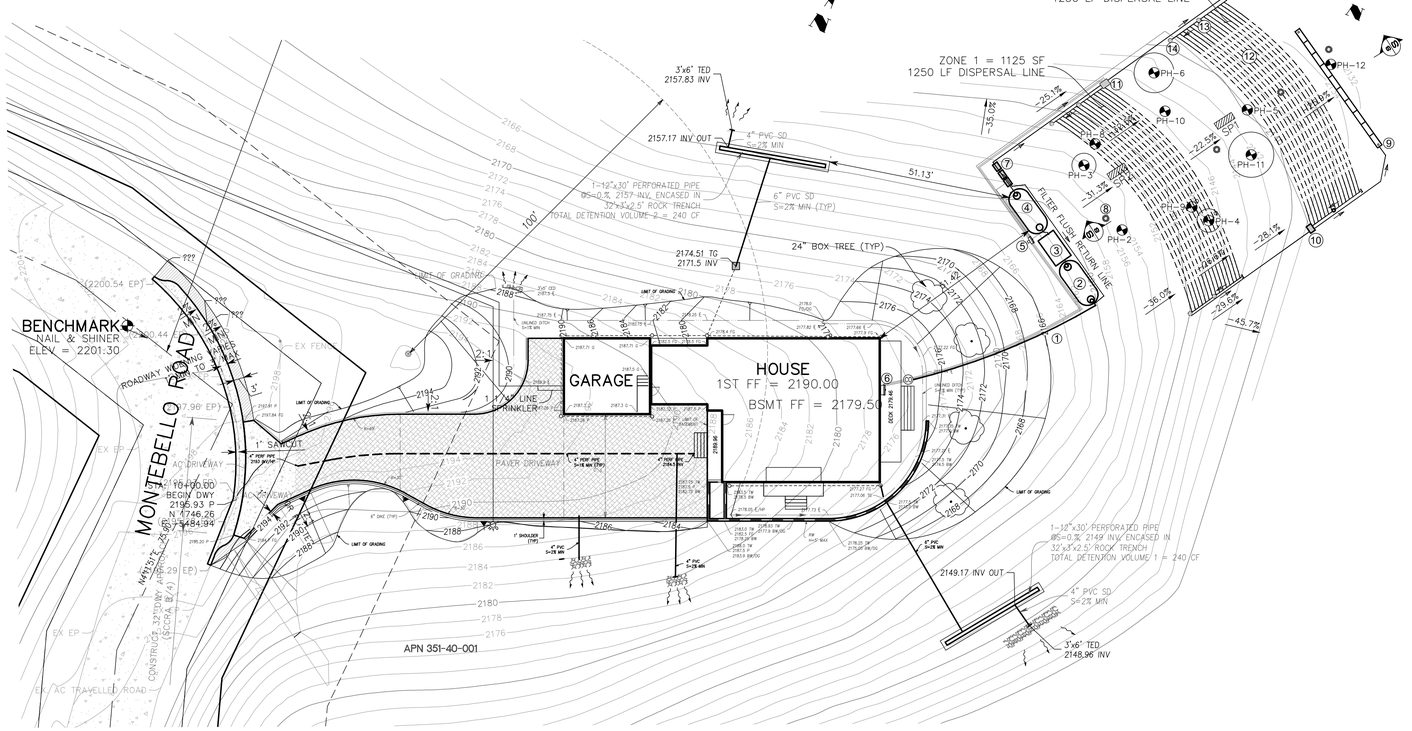



## FIELD FLUSH VALVE BOX DETAIL (10)




## INFILTRATOR QUICK4 EQUALIZER 24 LOW PROFILE DRAINFIELD TRENCH CONSTRUCTION DETAIL (9)




## NOTES:

1) 4" ABS GRAVITY SEWER LINE WITH MINIMUM 2% GRADIENT AND 2-WAY CLEANOUTS SPACED 50' APART MIN.
2) 1,500 GALLON ORENCO™ FRP SEPTIC TANK WITH EFFLUENT FILTER
3) AX25-RT ORENCO™ WASTEWATER TREATMENT SYSTEM (MODE 1A)
4) 1,500 GALLON ORENCO™ FRP PUMP TANK WITH PF1005 DISCHARGE PUMP AND ANTI-SIPHON VALVE
5) VERICOMM® CONTROL PANEL. REQUIRES TWO 20 AMP 230 VOLT CIRCUITS, ONE 20 AMP 120 VOLT CIRCUIT AND AN ACTIVE CAT 5 DATA LINE.
6) REMOTE AUDIBLE/VISIBLE ALARM PANEL, TYPE 4X ENCLOSURE FOR OUTDOOR USE. ORENCO PRODUCT CODE: AMSENTI-W
7) HEADWORKS VALVE BOX ASSEMBLY (SEE DETAIL)
8) 3'-DEEP INSPECTION WELL (SEE DETAIL) 7X
9) 1" SCH 40 PVC DRIP FIELD FLUSH RETURN LINE PLUMBED TO DISCHARGE TO A 40 LF TRENCH WITH 10 QUICK4 EQUALIZER 24 LOW-PROFILE INFILTRATOR CHAMBERS AND END CAPS (SEE DETAIL)
10) DRIP FIELD FLUSH VALVE BOX PROVIDING AUTOMATIC FIELD FLUSH WITH ONE SOLENOID VALVE (SEE DETAIL)
11) ZONE VALVE BOX PROVIDING AUTOMATIC DIVERSION BETWEEN PRIMARY AND SECONDARY DRAINFIELD ZONES WITH TWO SOLENOID VALVES (SEE DETAIL).
12) GEOFLOW SUBSURFACE DRIP DISPERSAL SYSTEM (ZONE 1 PRIMARY AND ZONE 2 SECONDARY) WITH A TOTAL OF 2,250 LINEAR FEET OF GEOFLOW WASTEFLOW PC SUBSURFACE DRIP TUBING WITH 0.53 GPH DRIP EMITTERS SPACED 12" APART COVERING A TOTAL OF 2,250 SQUARE FEET WITH RESULTING IN A SOIL APPLICATION RATE OF 0.6 GPD/SF BASED ON A PEAK DESIGN FLOW RATE OF 675 GPD.
13) MID-FIELD (ZONE) CHECK VALVE WITH AIR VACUUM RELIEF VALVE INSTALLED DOWNSLOPE IN 7" ROUND VALVE BOX (SEE DETAIL) 4X.
    NOTE: MAKE CERTAIN THAT CHECK VALVES ON SUPPLY AND RETURN HEADER MANIFOLDS ARE POSITIONED BETWEEN CORRELATIVE DRIP TUBE LATERALS.
14) AIR VACUUM RELIEF VALVE IN 7" ROUND VALVE BOX (SEE DETAIL) 4X

## EROSION CONTROL:

PER DIVISION C12, CHAPTER III OF THE COUNTY CODE (SEC. C12-513. TEMPORARY EROSION CONTROL.) "THE PERMITTEE AND ANY PERSON(S) DOING, CAUSING OR DIRECTING THE GRADING SHALL INSTALL AND MAINTAIN ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT ADJACENT WATERCOURSES AND PUBLIC OR PRIVATE PROPERTY FROM DAMAGE BY EROSION, FLOODING, OR DEPOSITION OF MUD OR DEBRIS ORIGINATING FROM THE SITE. PRECAUTIONARY MEASURES MUST INCLUDE PROVISIONS OF PROPERLY DESIGNED EROSION PREVENTION AND SEDIMENT CONTROL MEASURES, SO THAT DOWNSTREAM PROPERTIES ARE NOT AFFECTED BY UPSTREAM EROSION OR SEDIMENT TRANSPORT BY STORMWATER."

**IMPORTANT!** SPECIFIED WASTEWATER DRAINFIELD DISPERSAL AREAS SHALL BE FENCED OFF PRIOR TO ANY SITE DEVELOPMENT IN ORDER TO PROHIBIT ANY GRADING EQUIPMENT OR STAGING OF MATERIALS IN THESE AREAS. IT IS IMPORTANT THAT THE NATURAL SOIL CONDITIONS IN THESE AREAS BE PRESERVED FOR PROPER FUNCTION OF THE SHALLOW SOIL DISCHARGE SYSTEM. DO NOT ALLOW SOILS IN THESE AREAS TO BE COMPACTED. DO NOT ROUTE UTILITY TRENCHES THROUGH THE PROPOSED DRAINFIELDS. ALL STORMWATER LINES, INLETS/OUTLETS AND DRAINAGEWAYS SHALL MAINTAIN THE REQUIRED DEH SETBACKS TO THE PROPOSED DRAINFIELDS.

ALL BUILDING PLANS PREPARED FOR THE PROJECT SHOULD INCLUDE THIS NOTE.

REGISTERED PROFESSIONAL ENGINEER N. M. LE No. 47518 CIVIL STATE OF CALIFORNIA

| NO. | REVISIONS | BY | DATE | APP'D |
|---|---|---|---|---|
| | | | | |

| | |
|---|---|
| DB | 08/25/20 |
| DESIGNED | DATE |
| PT | 08/25/20 |
| DRAWN | DATE |
| 1" = 20' | |
| SCALE | |
| NL | 08/25/20 |
| CHECKED | DATE |

LE ENGINEERING
598 E Santa Clara St #270
San Jose, CA 95112
Phone: (408) 806-7187
Fax: (408) 583-4006

# SEPTIC SYSTEM PLAN
## LANDS OF CHEN
## 17085 MONTEBELLO ROAD
## APN 351-40-001

Cupertino California

PROJECT NO. ----
CONTRACT NO.
FILE NO.
DRAWING NO. SS1
SHT NO. 1 OF 2

APPLICANT: CHEN ROAD NAME : MONTEBELLO ROAD COUNTY FILE NO. : 11191-18BA-18DR

## PROJECT DESCRIPTION

AN ONSITE WASTEWATER SYSTEM SPECIFYING ENHANCED TREATMENT USING ALTERNATIVE TECHNOLOGY IS PROPOSED TO SERVE NEW DEVELOPMENT OF UP TO A SIX BEDROOM DWELLING TO BE CONSTRUCTED AT 17085 MONTEBELLO ROAD, CUPERTINO, SANTA CLARA COUNTY, CALIFORNIA. AN "ALTERNATIVE"SYSTEM WITH SHALLOW, SUBSURFACE DRIP DISPERSAL IS SPECIFIED TO PROVIDE SUPPLEMENTAL TREATMENT OF THE WASTEWATER DISCHARGED ON THE SITE TO MITIGATE SLOW (FAILED) SOIL PERCOLATION RATES FROM DEEPER SOILS ON THE SUBJECT PROPERTY.

## CONSTRAINTS & DESIGN CRITERIA

1) THE PROPOSED SYSTEM IS DESIGNED TO SERVE UP TO A 6 BEDROOM DWELLING WITH A DESIGN WASTEWATER FLOW OF 675 GALLONS PER DAY (GPD) PER COUNTY DEH GUIDELINES. THE ADVANTEX WASTEWATER TREATMENT SYSTEM SPECIFIED IS SIZED FOR AVERAGE WASTEWATER FLOWS OF 675 GPD WITH OCCASIONAL PEAK FLOWS OF UP TO 1000 GPD.
2) SOIL PROFILES DID NOT EXHIBIT ANY EVIDENCE OF SEASONALLY HIGH GROUNDWATER CONDITIONS AT THE SITE. ANY SEASONALLY HIGH GROUNDWATER IS ESTIMATED TO OCCUR AT GREATER THAN 8' BELOW GRADE.
3) NO WELLS, SPRINGS OR WATERCOURSES ARE SITUATED WITHIN 100' OF THE PROPOSED ONSITE WASTEWATER TREATMENT SYSTEM (OWTS).
4) THERE DRIPFIELD DESIGNED ON THE SLOPE LESS THAN 50% ON THE EAST FLANK OF THE RIDGE SITUATED OVER 100' FROM THE PROPOSED DRAINFIELD.

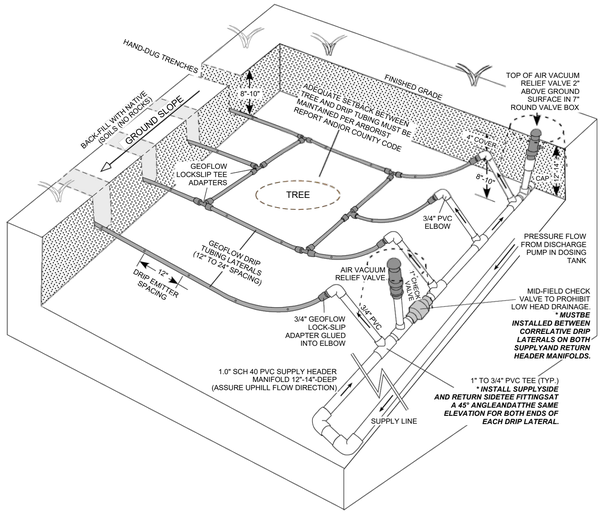
## SPECIFICATION

1. BUILDING SEWER LINES, & PROPOSED PROCESSING TANK.
   - 1.1. A 4" ABS BUILDING SEWER LINE SHALL BE INSTALLED TO CONVEY ALL RAW SEWAGE FROM DWELLING TO THE PROCESSING TANK. ALL GRAVITY SEWER PIPING MUST MAINTAIN A MINIMUM 2% CONTINUOUS GRADIENT. ALL WASTEWATER INCLUDING GRAYWATER SHALL BE DISCHARGED TO THE PROCESSING TANK.
   - 1.2. LOCATE A 2–WAY, 4" ABS CLEANOUT FITTINGS ON THE BUILDING SEWER TO FACILITATE SNAKING AND LINE LOCATION.
   - 1.3. A 1,500 GALLON, WATERTIGHT, FIBERGLASS REINFORCED POLYESTER (FRP) TANK, FROM ORENCO SYSTEMS, INC. (OSI), IS SPECIFIED FOR USE AS A PROCESSING TANK WITH THE PROPOSED ADVANTEX (MODE 1) TREATMENT SYSTEM. THE TANK SHALL HAVE 24" DIAMETER OSI ACCESS RISERS WITH FIBERGLASS, BOLT–DOWN LIDS. THE TANK SHALL BE INSTALLED ACCORDING THE MANUFACTURERS GUIDELINES INCLUDING THE 6" CONCRETE COLLAR ABOVE TANK FLANGE TO PREVENT FLOATATION.
   - 1.4. THE TANK HOLE SHALL BE EXCAVATED SO THAT THE TANK SITS LEVEL. INSTALL THE ACCESS RISERS WITH A WATERTIGHT JOINT USING THE ADHESIVES SUPPLIED BY MANUFACTURER.
   - 1.5. INSTALL THE TANK INLET FITTING WITH A WATERTIGHT JOINT. CAP OFF OR USE A TEST PLUG ON THIS FITTING AND FILL THE TANK WITH CLEAN WATER 2" ABOVE THE JOINT BETWEEN THE RISER AND THE TANK TOP. REPAIR ANY LEAKS.
   - 1.6. OBTAIN A WATERTIGHT TANK INSPECTION BY DEH AND DISTRIBUTOR WITH 24 HOURS NOTICE TO EACH.
2. ADVANTEX TREATMENT SYSTEM
   - 2.1. AN ADVANTEX™AX25–RT TREATMENT SYSTEM INCLUDES A BIOTUBE®PUMP PACKAGE FOR RECIRCULATION, PACKED–BED FILTER POD, AND TELEMETRY–ENABLED VERICOMM®CONTROL PANEL.
   - 2.2. INSTALL THE ADVANTEX™SYSTEM ACCORDING TO THE INSTALLATION INSTRUCTIONS AND IN THE LOCATION SHOWN ON THE PLAN. THE TREATMENT SYSTEM SHALL BE INSTALLED WITH THE LID 4" ABOVE FINAL GRADE.
3. DISCHARGE PUMP TANK AND FILTRATE PUMPING
   - 3.1. A 1,500 GALLON OSI PUMP TANK SHALL BE INSTALLED ADJACENT TO THE AX25–RT PROCESSING TANK.
   - 3.2. THE PUMP TANK SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND BE MADE WATERTIGHT.
   - 3.3. THE PUMP TANK SHALL BE INSTALLED WITH A CONCRETE COLLAR (TO PREVENT FLOATATION) AND BE FILLED WITH CLEAN WATER IMMEDIATELY AFTER INSTALLATION.
   - 3.4. INSTALL THE PUMP AND FLOAT TREE ACCORDING TO THE INSTRUCTIONS PROVIDED BY MANUFACTURER/DEALER.
   - 3.5. A 1/2 HP EFFLUENT PUMP (PF1005) IS SPECIFIED FOR PRESSURIZED DISPERSAL DISCHARGE.
   - 3.6. THE FILTRATE TRANSPORT PIPE TO DISPERSAL SYSTEM SHALL BE 1.0" SCHEDULE 40 PVC (COLOR CODED PURPLE).
4. SUBSURFACE DRIP DISPERSAL SYSTEM
   - 4.1. APPROXIMATELY 2,250 LINEAR FEET OF GEOFLOW PC DRIP TUBING (5 ROLLS WITH 0.5GPH EMITTERS SPACED 12" APART) SHALL BE INSTALLED IN TWO ZONES COVERING A TOTAL AREA OF AT LEAST 2,250 SQUARE FEET IN THE CONFIGURATION SHOWN ON PLAN.
   - 4.2. THE DRIP DISPERSAL FIELD SHALL BE INSTALLED ACCORDING TO THE INSTRUCTIONS IN THE GEOFLOW INSTALLATION MANUAL. INSTALLER SHALL ASSURE THAT EACH DRIP LATERAL BE INSTALLED IN SUCH A MANNER AS TO REDUCE THE POTENTIAL OF LOW HEAD DRAINAGE AS DESCRIBED IN THE INSTALLATION MANUAL.
   - 4.3. THE DRIP TUBING LATERALS SHALL BE BURIED 8"–10" DEEP AND SPACED NO CLOSER THAN 12" APART. THE SUPPLY HEADER SHALL BE INSTALLED 12" – 18" BELOW GRADE. IT MAY BE EASIER TO INSTALL THE DRIP TUBING FIRST, AND THE SUPPLY AND RETURN HEADERS AFTERWARDS. GREAT CARE MUST BE TAKEN TO KEEP DIRT OUT OF THE DRIP TUBING AND SUPPLY AND RETURN PIPING. ALL PIPING SHALL BE THOROUGHLY FLUSHED AND PRESSURE–TESTED PRIOR TO USE. THE 8 AIR/VACUUM RELIEF VALVES SPECIFIED SHALL BE SUPPLIED BY GEOFLOW.
   - 4.4. THE DRIP FIELD FLUSH RETURN LINE IS SPECIFIED TO BE PLUMBED INTO A 40'–LONG, 1.5'–WIDE AND 1.5'–DEEP TRENCH WITH 10 QUICK4 EQUALIZER 24 LOW–PROFILE INFILTRATOR CHAMBERS. TRENCH FLOOR SHALL BE INSTALLED LEVEL.
   - 4.5. ALL PRESSURIZED PIPING SHALL BE SCHEDULE 40 PVC AND COLOR–CODED PURPLE AND LABELLED ACCORDING TO CURRENT UPC REQUIREMENTS "RECLAIMED WATER – DO NOT DRINK".
   - 4.6. DRAINFIELD SHALL MEET SANTA CLARA COUNTY GUIDELINES FOR TREE PROTECTION AND PRESERVATION FOR LAND USE APPLICATIONS.
5. INSTALLER QUALIFICATIONS AND RESPONSIBILITIES
   - 5.1. THE SYSTEM INSTALLER SHALL BE LICENSED BY THE STATE OF CALIFORNIA, DEPARTMENT OF CONSUMERAFFAIRS, TO INSTALL SEPTIC SYSTEMS. INSTALLER CERTIFICATION IS REQUIRED BY THE LOCAL ADVANTEX™DEALER. THE INSTALLER IS REQUIRED TO FULLY READ AND UNDERSTAND THE ADVANTEX™ AND GEOFLOW MANUALS PRIOR TO THE COMMENCEMENT OF WORK.
   - 5.2. ALL PIPING SHALL CONFORM TO THE CURRENT EDITION OF THE CALIFORNIA PLUMBING CODE.
   - 5.3. THE INSTALLER SHALL BE RESPONSIBLE FOR LOCATING ANY PROPERTY LINES, UNDERGROUND UTILITIES OR PIPING. ANY DAMAGE TO THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE INSTALLER.
   - 5.4. CONSTRUCTION INSPECTIONS, WATERTIGHT TANK TEST INSPECTION, ADVANTEX™ INSTALLATION INSPECTION, AND FINAL OPERATION OF SYSTEM SHALL BE MADE BY THE DEALER/SERVICE PROVIDER AND THE COUNTY OF SANTA CLARA DEPARTMENT OF ENVIRONMENTAL HEALTH. THE INSTALLER SHALL GIVE AT LEAST 24 HOURS NOTICE TO EACH PARTY FOR ALL INSPECTIONS. DESIGNER SHALL PROVIDE AS–BUILT AND FINAL LETTER PER DEH REQUIREMENTS.
6. ELECTRICALWORK
   - 6.1. THE VERICOMM®CONTROL PANEL SHALL BE INSTALLED IN THE LOCATION SHOWN ON THE MAP WITH THE BOTTOM OF THE PANEL BOX AT 51" FROM THE GROUND SURFACE.
   - 6.2. TWO, 20 AMP, 230V AND ONE 20 AMP, 120V ELECTRICAL CIRCUITS SHALL BE EXTENDED TO THE VERICOMM®PANEL IN A SINGLE CONDUIT. UNDERGROUND CIRCUITS IN SEPARATE CONDUITS SHALL BE INSTALLED FROM THE PANEL TO THE RECIRCULATION PUMP AND DISCHARGE PUMP. A SEPARATE UNDERGROUND CONDUIT CONTAINING A LIVE CAT5 PHONE LINE SHALL BE INSTALLED TO THE VERICOMM® PANEL. THE SYSTEM WILL NOT BE INSTALLED UNTIL EVERYTHING (INCLUDING PANEL TELEMETRY) IS FUNCTIONAL. LOW VOLTAGE ELECTRICAL LINES SHALL BE RUN TO AUTOMATIC SOLENOID VALVES POSITIONED AT DRAINFIELD.
   - 6.3. ALL WORK SHALL CONFORM TO THE CALIFORNIA ELECTRICAL CODE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY ELECTRICAL PERMITS REQUIRED.

## SYSTEM OPERATION AND MAINTENANCE

1) THE OWNER SHOULD READ AND OPERATE THE SYSTEM ACCORDING TO THE ADVANTEX & GEOFLOW OPERATION AND MAINTENANCE LITERATURE.
2) ORENCO REQUIRES BIANNUAL MAINTENANCE SERVICING OF THE ADVANTEX BY A QUALIFIED TECHNICIAN.
3) COUNTY ENVIRONMENTAL HEALTH WILL ISSUE AN OWTS ANNUAL OPERATING PERMIT AND REQUIRES THAT THE PROPERTY OWNER MAINTAIN A SYSTEM SERVICE AGREEMENT/CONTRACT WITH A QUALIFIED THIRD–PARTY SERVICE PROVIDER. THIS REQUIREMENT WILL BE PLACED ON THE TITLE DEED FOR THE PROPERTY.
4) THE DRIP FIELDS SHALL BE AUTOMATICALLY FLUSHED ONE ZONE AT A TIME EVERY 12 MONTHS AT A MINIMUM. THIS IS DONE BY THE CONTROL PANEL SOFTWARE. NO DRIP ZONE SHOULD BE LEFT DORMANT (UN–DOSED) FOR MORE THAN A FEW WEEKS AT A TIME.
5) THE TREATMENT TANK IS ALIVE WITH IMPORTANT MICROORGANISMS. DO NOT ADD ANY MATERIALS (PAINT THINNER, PAINT, MOTOR OIL, UNUSED MEDICINE, ETC.) THAT MAY DISRUPT THE BIOLOGIC TREATMENT PROCESS. THE PRIMARY TANK SHOULD BE PUMPED WHEN THE TOTAL OF THE SCUM/SLUDGE THICKNESS IS GREATER THAN 1/3 OF THE TOTAL LIQUID LEVEL DEPTH.
6) DO NOT ROUTE WATER SOFTENER BACKFLUSH DISCHARGE TO TREATMENT SYSTEM! THIS DISCHARGE MAY BE ROUTED DIRECTLY TO A DRAINFIELD TRENCH OR AN APPROVED DISPERSAL FIELD.
7) REPAIR ALL PLUMBING LEAKS (ESPECIALLY TOILET LEAKS) PROMPTLY.

## SUBSURFACE DRIP SYSTEM HEADER/MANIFOLD DETAIL




## DISCHARGE PUMP SELECTION CHART

Diaz

**Parameters**

| | | |
|---|---|---|
| Discharge Assembly Size | 1.00 | inches |
| Transport Length | 10 | feet |
| Transport Pipe Class | 40 | |
| Transport Line Size | 1.00 | inches |
| Distributing Valve Model | None | |
| Max Elevation Lift | 0 | feet |
| Design Flow Rate | 9.9 | gpm |
| Flow Meter | None | inches |
| 'Add-on' Friction Losses | 69.4 | feet |

**Calculations**

| | | |
|---|---|---|
| Transport Velocity | 3.7 | fps |

**Frictional Head Losses**

| | | |
|---|---|---|
| Loss through Discharge | 3.2 | feet |
| Loss in Transport | 0.5 | feet |
| Loss through Valve | 0.0 | feet |
| Loss through Flowmeter | 0.0 | feet |
| 'Add-on' Friction Losses | 69.4 | feet |

**Pipe Volumes**

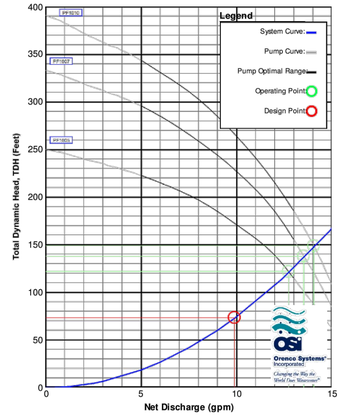
| | | |
|---|---|---|
| Vol of Transport Line | 0.4 | gals |

**Minimum Pump Requirements**

| | | |
|---|---|---|
| Design Flow Rate | 9.9 | gpm |
| Total Dynamic Head | 73.2 | feet |

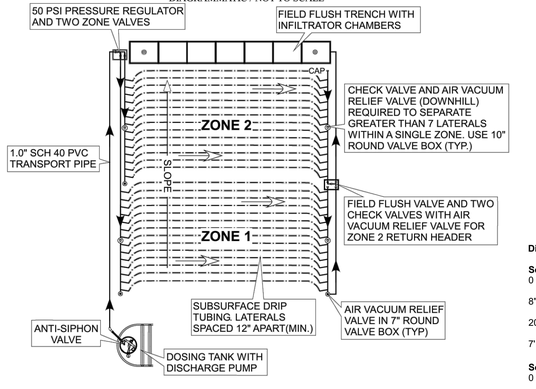
**PumpData**

PF1005 High Head Effluent Pump
1/2 GPM, 1/2HP
230 V 1Ø 60Hz, 2.00V 3Ø60Hz

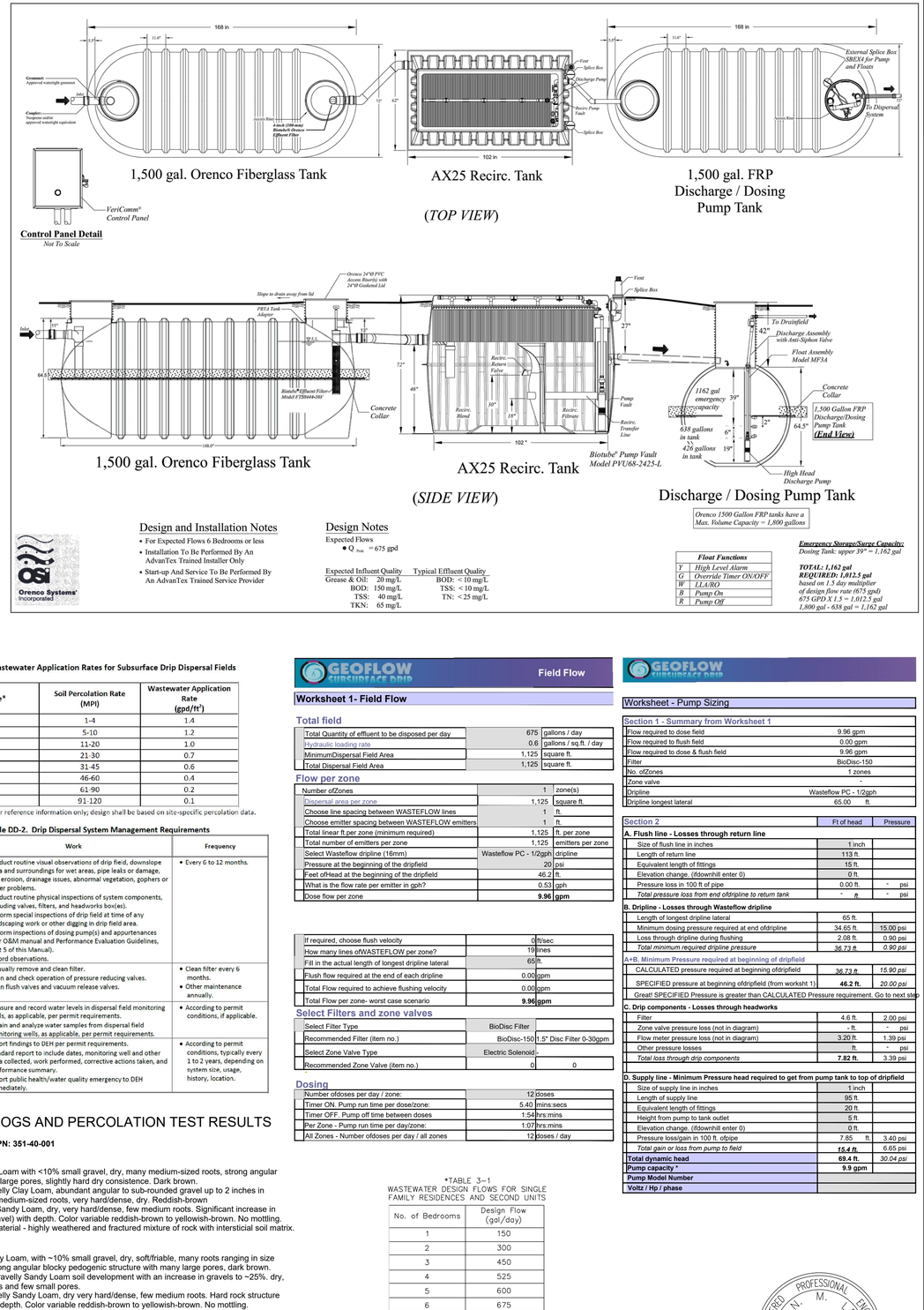



## DRAINFIELD LAYOUT SCHEMATIC

DIAGRAMMATIC / NOT TO SCALE




## ADVANTEX TREATMENT SYSTEM DETAIL




Orenco 1500 Gallon FRP tanks have a Max. Volume Capacity = 1,800 gallons

### Design and Installation Notes

- For Expected Flows 6 Bedrooms or less
- Installation To Be Performed By An AdvanTex Trained Installer Only
- Start-up And Service To Be Performed By An AdvanTex Trained Service Provider

### Design Notes

Expected Flows
$\bullet Q_{Peak} = 675$ gpd

| Expected Influent Quality | | Typical Effluent Quality | |
|---|---|---|---|
| Grease & Oil: | 20 mg/L | BOD: | < 10 mg/L |
| BOD: | 150 mg/L | TSS: | < 10 mg/L |
| TSS: | 40 mg/L | TN: | < 25 mg/L |
| TKN: | 65 mg/L | | |

| Float Functions | |
|---|---|
| Y | High Level Alarm |
| G | Override Timer ON/OFF |
| W | LLARO |
| B | Pump On |
| R | Pump Off |

***Emergency Storage/Surge Capacity:***
*Dosing Tank: upper 39" = 1,162 gal*

***TOTAL: 1,162 gal***
***REQUIRED: 1,012.5 gal***
*based on 1.5 day multiplier of design flow rate (675 gpd)*
*675 GPD X 1.5 = 1,012.5 gal*
*1,800 gal - 638 gal = 1,162 gal*

**Table DD-1. Wastewater Application Rates for Subsurface Drip Dispersal Fields**

| Soil Type* | Soil Percolation Rate (MPI) | Wastewater Application Rate (gpd/ft²) |
|---|---|---|
| Coarse Sand | 1-4 | 1.4 |
| Fine Sand | 5-10 | 1.2 |
| Sandy Loam | 11-20 | 1.0 |
| Loam | 21-30 | 0.7 |
| Clay Loam | 31-45 | 0.6 |
| Silt-Clay Loam | 46-60 | 0.4 |
| Clay, non-swell | 61-90 | 0.2 |
| Clay, swell | 91-120 | 0.1 |

*Soil types listed for reference information only; design shall be based on site-specific percolation data.

**Table DD-2. Drip Dispersal System Management Requirements**

| | Work | Frequency |
|---|---|---|
| Inspection | • Conduct routine visual observations of drip fied, downslope area and surroundings for wet areas, pipe leaks or damage, soil erosion, drainage issues, abnormal vegetation, gophers or other problems.<br>• Conduct routine physical inspections of system components, including valves, filters, and headworks box(es).<br>• Perform special inspections of drip field at time of any landscaping work or other digging in drip field area.<br>• Perform inspections of dosing pump(s) and appurtenances (per O&M manual and Performance Evaluation Guidelines, Part 5 of this Manual).<br>• Record observations. | • Every 6 to 12 months. |
| Maintenance | • Manually remove and clean filter.<br>• Clean and check operation of pressure reducing valves.<br>• Clean flush valves and vacuum release valves. | • Clean filter every 6 months.<br>• Other maintenance annually. |
| Water Monitoring & Sampling | • Measure and record water levels in dispersal field monitoring wells, as applicable, per permit requirements.<br>• Obtain and analyze water samples from dispersal field monitoring wells, as applicable, per permit requirements. | • According to permit conditions, if applicable. |
| Reporting | • Report findings to DEH per permit requirements.<br>• Standard report to include dates, monitoring well and other data collected, work performed, corrective actions taken, and performance summary.<br>• Report public health/water quality emergency to DEH immediately. | • According to permit conditions, typically every 1 to 2 years, depending on system size, usage, history, location. |

## SOIL PROFILE LOGS AND PERCOLATION TEST RESULTS

**Diaz - 17085 Montebello Rd APN: 351-40-001**

**Soil Profile Log 1 (SP-1)**
0 - 8" "A" soil horizon – Clay Loam with <10% small gravel, dry, many medium-sized roots, strong angular blocky structure, many large pores, slightly hard dry consistence. Dark brown.
8" - 20" "B" soil horizon – Gravelly Clay Loam, abundant angular to sub-rounded gravel up to 2 inches in diameter (~25%), few medium-sized roots, very hard/dense, dry. Reddish-brown
20" - 7' "C" horizon - Gravelly Sandy Loam, dry, very hard/dense, few medium roots. Significant increase in hard rock structure (gravel) with depth. Color variable reddish-brown to yellowish-brown. No mottling.
7' - 8' Franciscan melange material - highly weathered and fractured mixture of rock with interstitial soil matrix.

**Soil Profile Log 2 (SP-2)**
0 - 18" "A/B" soil horizon – Clay Loam, with ~10% small gravel, dry, soft/friable, many roots ranging in size from small to large, strong angular blocky pedogenic structure with many large pores, dark brown.
18" - 36" Gradual transition in Gravelly Sandy Loam soil development with an increase in gravels to ~25%. dry, few medium-sized roots and few small pores.
36" - 48" "C" soil horizon – Gravelly Sandy Loam, dry very hard/dense, few medium roots. Hard rock structure (gravel) increases with depth. Color variable reddish-brown to yellowish-brown. No mottling.
48" - 8' Franciscan melange material - highly weathered and fractured mixture of rock with interstitial soil matrix.

## SOILPERCOLATION TEST SUMMARYTABLE 9-28-16

| HOLE | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DEPTH | | 1.8' | 2.1' | 1.7' | 1.84' | 1.67' | 1.96' | 0.91' | 1.06' | 0.91' | 0.80' | | 0.97' |
| Stabilized MPI | R | FAILED | 20.80 | FAILED | FAILED | 6.80 | FAILED | FAILED | 9.30 | 2.50 | 6.90 | FAILED | 1.50 |
| Adjusted Stabilized MPI | $R_a$=R x 1.4 | | 29.12 | | | 9.52 | | | 13.02 | 3.50 | 9.66 | | 2.10 |
| Avg. Adj. Stabilized MPI | $R_a$=(ΣR$_a$)/#Holes | | | | | | | | | | | | 11.15 |
| # Bedrooms: | | | | | | | | | | | | | |

*TABLE 3–1
WASTEWATER DESIGN FLOWS FOR SINGLE FAMILY RESIDENCES AND SECOND UNITS

| No. of Bedrooms | Design Flow (gal/day) |
|---|---|
| 1 | 150 |
| 2 | 300 |
| 3 | 450 |
| 4 | 525 |
| 5 | 600 |
| 6 | 675 |
| >6 | +75 per bedroom |

*COUNTY OF SANTA CLARA – DEH ONSITE SYSTEM MANUAL – MAY 2014

GEOFLOW SUBSURFACE DRIP — Field Flow

### Worksheet 1- Field Flow

**Total field**

| | | |
|---|---|---|
| Total Quantity of effluent to be disposed per day | 675 | gallons / day |
| Hydraulic loading rate | 0.6 | gallons / sq.ft. / day |
| MinimumDispersal Field Area | 1,125 | square ft. |
| Total Dispersal Field Area | 1,125 | square ft. |

**Flow per zone**

| | | |
|---|---|---|
| Number ofZones | 1 | zone(s) |
| Dispersal area per zone | 1,125 | square ft. |
| Choose line spacing between WASTEFLOW lines | 1 | ft. |
| Choose emitter spacing between WASTEFLOW emitters | 1 | ft. |
| Total linear ft.per zone (minimum required) | 1,125 | ft. per zone |
| Total number of emitters per zone | 1,125 | emitters per zone |
| Select Wasteflow dripline (16mm) | Wasteflow PC - 1/2gph | dripline |
| Pressure at the beginning of the dripfield | 20 | psi |
| Feet ofHead at the beginning of the dripfield | 46.2 | ft. |
| What is the flow rate per emitter in gph? | 0.53 | gph |
| Dose flow per zone | **9.96** | **gpm** |

| | | |
|---|---|---|
| If required, choose flush velocity | 0 | ft/sec |
| How many lines ofWASTEFLOW per zone? | 19 | lines |
| Fill in the actual length of longest dripline lateral | 65 | ft. |
| Flush flow required at the end of each dripline | 0.00 | gpm |
| Total Flow required to achieve flushing velocity | 0.00 | gpm |
| Total Flow per zone- worst case scenario | **9.96** | **gpm** |

**Select Filters and zone valves**

| | | |
|---|---|---|
| Select Filter Type | BioDisc Filter | |
| Recommended Filter (item no.) | BioDisc-150 | 1.5" Disc Filter 0-30gpm |
| Select Zone Valve Type | Electric Solenoid | - |
| Recommended Zone Valve (item no.) | 0 | 0 |

**Dosing**

| | | |
|---|---|---|
| Number ofdoses per day / zone: | 12 | doses |
| Timer ON. Pump run time per dose/zone: | 5.40 | mins:secs |
| Timer OFF. Pump off time between doses | 1.54 | hrs:mins |
| Per Zone - Pump run time per day/zone: | 1.07 | hrs:mins |
| All Zones - Number ofdoses per day / all zones | 12 | doses / day |

GEOFLOW SUBSURFACE DRIP

### Worksheet - Pump Sizing

**Section 1 - Summary from Worksheet 1**

| | | |
|---|---|---|
| Flow required to dose field | 9.96 | gpm |
| Flow required to flush field | 0.00 | gpm |
| Flow required to dose & flush field | 9.96 | gpm |
| Filter | BioDisc-150 | |
| No. ofZones | 1 | zones |
| Zone valve | - | |
| Dripline | Wasteflow PC - 1/2gph | |
| Dripline longest lateral | 65.00 | ft. |

**Section 2**

| | Ft of head | Pressure |
|---|---|---|
| **A. Flush line - Losses through return line** | | |
| Size of flush line in inches | 1 inch | |
| Length of return line | 113 ft. | |
| Equivalent length of fittings | 15 ft. | |
| Elevation change. (ifdownhill enter 0) | 0 ft. | |
| Pressure loss in 100 ft of pipe | 0.00 ft. | - psi |
| *Total pressure loss from end ofdripline to return tank* | - *ft* | - psi |
| **B. Dripline - Losses through Wasteflow dripline** | | |
| Length of longest dripline lateral | 65 ft. | |
| Minimum dosing pressure required at end ofdripline | 34.65 ft. | 15.00 psi |
| Loss through dripline during flushing | 2.08 ft. | 0.90 psi |
| *Total minimum required dripline pressure* | *36.73 ft.* | *0.90 psi* |
| **A+B. Minimum Pressure required at beginning of dripfield** | | |
| CALCULATED pressure required at beginning ofdripfield | *36.73 ft.* | *15.90 psi* |
| SPECIFIED pressure at beginning ofdripfield (from worksht 1) | **46.2 ft.** | *20.00 psi* |
| Great! SPECIFIED Pressure is greater than CALCULATED Pressure requirement. Go to next step | | |
| **C. Drip components - Losses through headworks** | | |
| Filter | 4.6 ft. | 2.00 psi |
| Zone valve pressure loss (not in diagram) | - ft. | - psi |
| Flow meter pressure loss (not in diagram) | 3.20 ft. | 1.39 psi |
| Other pressure losses | ft. | - psi |
| *Total loss through drip components* | **7.82 ft.** | 3.39 psi |
| **D. Supply line - Minimum Pressure head required to get from pump tank to top of dripfield** | | |
| Size of supply line in inches | 1 inch | |
| Length of supply line | 95 ft. | |
| Equivalent length of fittings | 20 ft. | |
| Height from pump to tank outlet | 5 ft. | |
| Elevation change. (ifdownhill enter 0) | 0 ft. | |
| Pressure loss/gain in 100 ft. ofpipe | 7.85 ft. | 3.40 psi |
| *Total gain or loss from pump to field* | ***15.4 ft.*** | 6.65 psi |
| **Total dynamic head** | **69.4 ft.** | *30.04 psi* |
| **Pump capacity *** | **9.9 gpm** | |
| **Pump Model Number** | | |
| **Voltz / Hp / phase** | | |

| NO. | REVISIONS | BY | APP'D | DATE |
|---|---|---|---|---|
| | | | | |

| | | |
|---|---|---|
| DESIGNED | PT | 08/25/20 |
| DRAWN | | 08/25/20 |
| AS NOTED | SCALE | |
| NL | CHECKED | 08/25/20 |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**SEPTIC SYSTEM PLAN**
**LANDS OF CHEN**
**17085 MONTEBELLO ROAD**
**APN 351-40-001**

**Cupertino** **California**

PROJECT NO. ----
CONTRACT NO.

REGISTERED PROFESSIONAL ENGINEER — N. M. LE — No. 47518 — CIVIL — STATE OF CALIFORNIA

DRAWING NO. SS2
SHT NO. 2 OF 2
FILE NO.

APPLICANT: CHEN ROAD NAME : MONTEBELLO ROAD COUNTY FILE NO. : 11191–18BA–18DR