GENERAL NOTES

PROJECT DESCRIPTION:
The parcel is unimproved and the project consists of building a new residence, septic system, retaining walls, elevated driveway, detention facility, and drainage features. The property has an average slope of 29.7%.

This project shall comply with Title 24, the 2013 California Residential Code, and the California Building Code

CUT/FILL:
IMPORTED FILL BEHIND THE RETAINING WALLS = 145.0 CUBIC YARDS
IMPORTED FILL BELOW RESIDENCE =637.5 CUBIC YARDS
MINOR CUTS = 9.5 CUBIC YARDS

TOTAL PROJECT CUT/FILL = 692.0 CUBIC YARDS

EXCAVATION AND BACKFILL:
Project Geotechnical Engineer: Butano Geotechnical Engineering Inc., Phone: 1(831)724-2612.

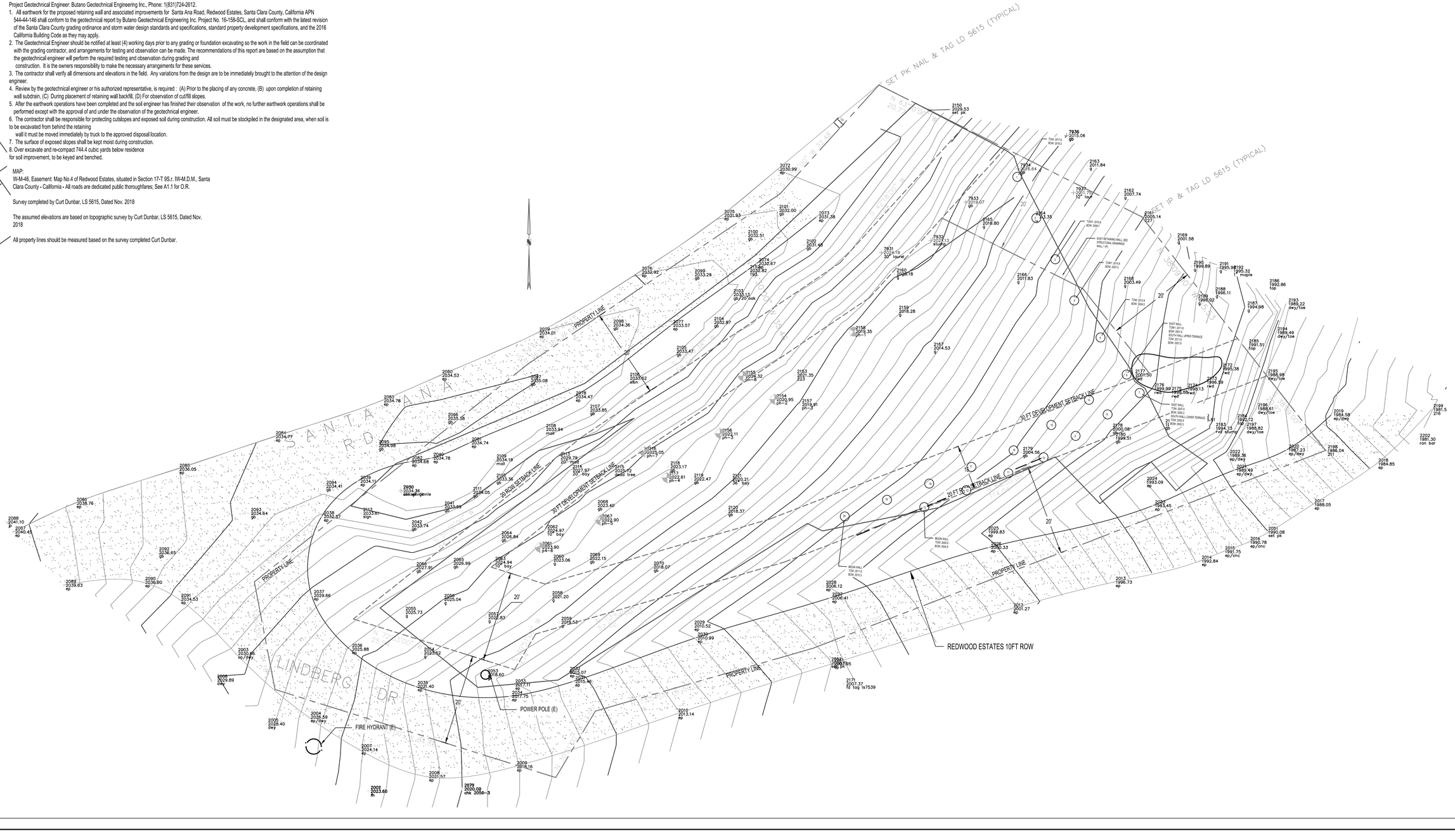
1. All earthwork for the proposed retaining wall and associated improvements for Santa Ana Road, Redwood Estates, Santa Clara County, California APN 544-44-146 shall conform to the geotechnical report by Butano Geotechnical Engineering Inc. Project No. 16-158-SCL, and shall conform with the latest revision of the Santa Clara County grading ordinance and storm water design standards and specifications, standard property development specifications, and the 2016 California Building Code as they may apply.
2. The Geotechnical Engineer should be notified at least (4) working days prior to any grading or foundation excavating so the work in the field can be coordinated with the grading contractor, and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the geotechnical engineer will perform the required testing and observation during grading and construction. It is the owners responsibility to make the necessary arrangements for these services.
3. The contractor shall verify all dimensions and elevations in the field. Any variations from the design are to be immediately brought to the attention of the design engineer.
4. Review by the geotechnical engineer or his authorized representative, is required : (A) Prior to the placing of any concrete, (B) upon completion of retaining wall subdrain, (C) During placement of retaining wall backfill, (D) For observation of cut/fill slopes.
5. After the earthwork operations have been completed and the soil engineer has finished their observation of the work, no further earthwork operations shall be performed except with the approval of and under the observation of the geotechnical engineer.
6. The contractor shall be responsible for protecting cutslopes and exposed soil during construction. All soil must be stockpiled in the designated area, when soil is to be excavated from behind the retaining wall it must be moved immediately by truck to the approved disposal location.
7. The surface of exposed slopes shall be kept moist during construction.
8. Over excavate and re-compact 744.4 cubic yards below residence for soil improvement, to be keyed and benched.

MAP:
W-M-46, Easement: Map No.4 of Redwood Estates, situated in Section 17-T 9S.r. IW-M.D.M., Santa Clara County - California - All roads are dedicated public thoroughfares; See A1.1 for O.R.

Survey completed by Curt Dunbar, LS 5615, Dated Nov. 2018

The assumed elevations are based on topographic survey by Curt Dunbar, LS 5615, Dated Nov. 2018

All property lines should be measured based on the survey completed Curt Dunbar.



BY	REVISION	DATE
PE	1	8/19/2020
PE	2	11/05/2020
PE	3	2/2/2021

REGISTERED PROFESSIONAL ENGINEER PHILIP T. EDWARDS C66451 CIVIL STATE OF CALIFORNIA

BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY RD, SUITE E
FREEDOM, CALIFORNIA 95019
OFFICE: 831.724.2612

PROPOSED RESIDENCE - EXISTING CONDITIONS
REDWOOD ESTATES-NO SITUS
CORNER OF SANTA ANA RD. AND LINDBERG DR.
SANTA CLARA COUNTY, CALIFORNIA
APN 544-44-146

PROJECT: 16-158-SCL
DATE: OCT.27.2017
DRAWN: PE/GAB
SCALE: 1"=10'

SHEET
C-0

LEGEND

- ○ - ¾" IP, Tagged LS 5615 per surveyors map
- Major Contour
- Minor Contour
- Proposed Countour
- Arrow Indicates Drainage Direction , Minimum 2% for 5 ft.
- Asphalt Pavement
- Concrete
- Elevated Driveway

DRAINAGE CALCULATIONS AND QUANTITIES:

DRAINAGE:

1. Surface drainage should include provision for positive gradients so that run-off is not permitted to pond adjacent to foundations and pavements. Surface runoff should be diverted away from foundations. A minimum slope of 2 percent for 5 feet is recommended around structures.
2. **Maintenance of the drainage system is the sole responsibility of the owner.**
3. A detention facility has been designed keep the discharge of storm water to pre-development standards for the 100 year storm based off the 10 year pre-development flow rates. The rational method was used in accordance with the Santa Clara County Drainage Manual.
4. The system was designed using new impervious area of 5107 ft². This area includes the residence and driveway surfaces.

QUANTITIES:

1. The storage device consists of a 12 feet long by 12 inch diameter sealed ADS pipe or equivalent. Drainage into the detention facility shall be from impervious surfaces created during construction.
2. The retaining wall backdrain shall consist of 100 feet of 4 inch diameter perforated SDR 35 or equivalent pipe. Cleanouts shall be provided at both ends of the backdrain.
3. Solid 4 inch SDR 35 pipe shall be used as conduit from the rain leaders and retaining wall backdrain.

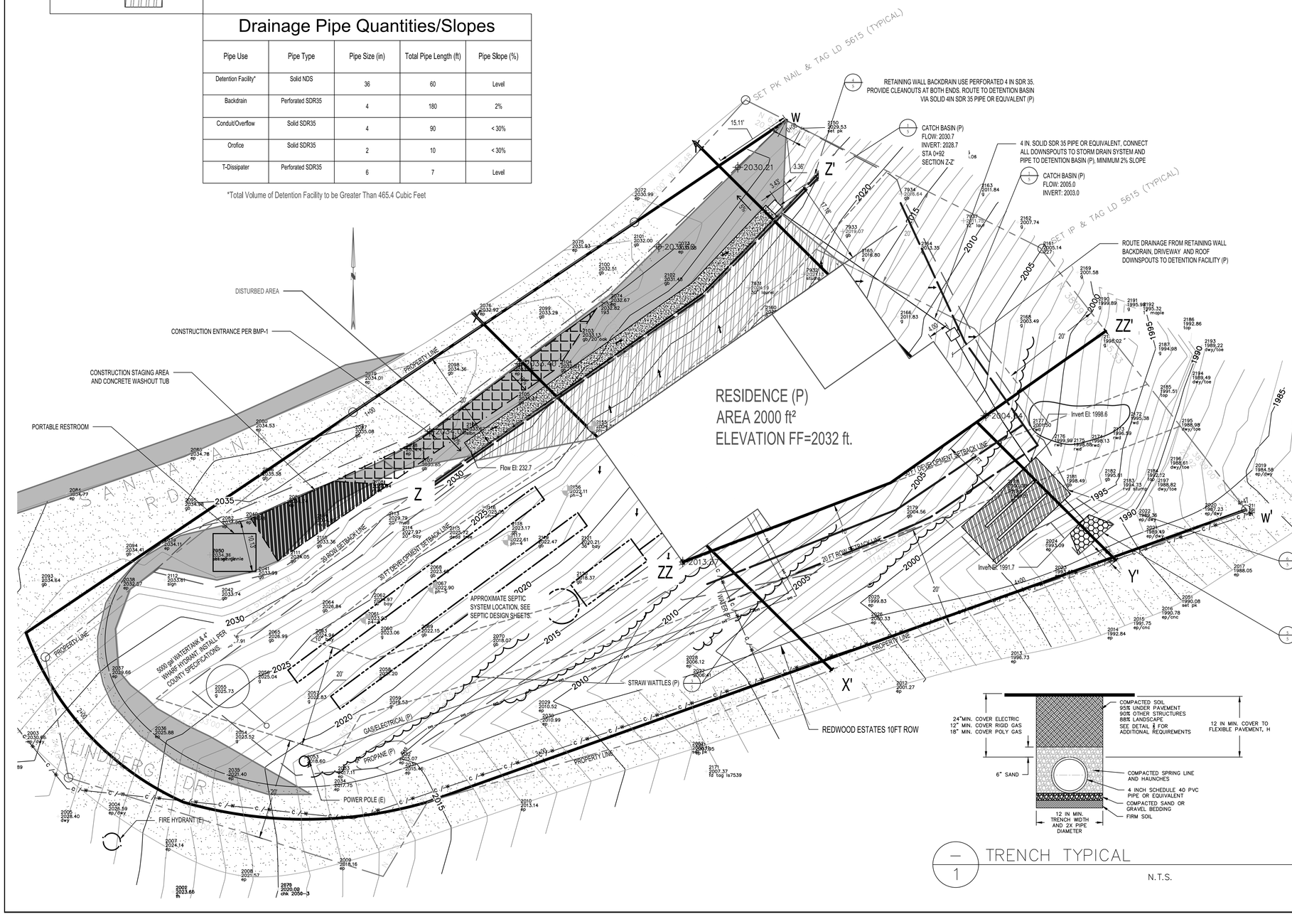
Impervious Area	
AREA	QUANTITY (sq/ft)
Existing	0
Residence	2000
Raised Driveway	847
New AC	2260
Total	5107

Note: Total disturbed area is approximately 9,753 square feet.

Drainage Pipe Quantities/Slopes

Pipe Use	Pipe Type	Pipe Size (in)	Total Pipe Length (ft)	Pipe Slope (%)
Detention Facility*	Solid NDS	36	60	Level
Backdrain	Perforated SDR35	4	180	2%
Conduit/Overflow	Solid SDR35	4	90	< 30%
Orofice	Solid SDR35	2	10	< 30%
T-Dissipater	Perforated SDR35	6	7	Level

*Total Volume of Detention Facility to be Greater Than 465.4 Cubic Feet



1 — TRENCH TYPICAL

N.T.S.

EROSION CONTROL:

1. Best Management Practices (BMP's) (Materials and Their Installation) shall be applied according to the County of Santa Clara's BMP.
2. Between October 15th and April 15th, exposed soil shall be protected from erosion at all times. Hay bales, filter berms, bioswales or other means shall be employed to prevent turbid runoff to the drainage area or to adjoining properties. These measures are intended to be used for interim erosion and sediment water pollution control only and are not to be used for final elevations or permanent improvements.
3. Unnecessary grading and disturbing of soil shall be avoided.
4. Actual grading shall begin within 30 days of vegetation removal or the area shall be planted to control erosion.
5. Contractor shall be responsible for monitoring erosion and sediment control prior to, during, and after storm events, and shall promptly correct any deficiencies noted.
6. Any excess material shall be disposed of off-site or stockpiled in a manner to avoid runoff onto adjoining properties.
7. Any material stockpiled during construction shall be covered with plastic.
8. Reasonable care shall be taken when hauling any earth, sand, gravel, stone, debris, paper, or any other substance over any public street, alley or other public place. Should any blow, spill or track over and upon said public or adjacent private property, immediately remedy shall occur.
9. Construction operations shall be carried out in such a manner that erosion and water pollution will be minimized. State and local laws concerning pollution abatement shall be complied with.
10. Contractor shall provide dust control as required by federal, state, and local agency requirements.
11. Provide temporary "effective soil cover" on all inactive disturbed areas (areas which have not been disturbed for at least 14 days) prior to installation of final landscaping, if required due to project scheduling. All areas exposed during construction, if not permanently landscaped per plans, shall be seeded with the following native California erosion control seed mixture and protected with erosion control blankets.
    Seed Mixture (or equivalent as approved):
    -Prostrate Hordeum Californicum (Prostrate California Barley) @ 16 lb/acre
    -Elymus Glaucus (Berkeley Blue Wildrye) @ 12 lb/acre
    -Bromus Carinatus (SF Bay Area California Brome) @ 10 lb/acre
    -Vulpia Microstachys (Three-weeks Fescue) @ 5 lb/acre
12. Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site (straw wattles where indicated on plans).

REQUIRED INSPECTION:

1. Special inspections shall be performed per the approved geotechnical report, and the construction documents prepared by the design professionals shall be used to determine compliance.

SITE HOUSEKEEPING:

Note: No on-site storage of materials or supplies. All materials and construction shall be kept on this property. At no time shall materials or construction enter the adjacent parcel.

1. Construction Materials:
- All chemicals shall be stored in water tight containers off-site.
- Exposure of construction materials shall be minimized.
- Best Management Practices to prevent the off-site tracking of loose construction and landscape materials shall be implemented.
2. Waste Management:
- Disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system shall be prevented.
- Sanitaton facilities shall be contained (e.g. portable toilets), and shall be located 20 ft from an inlet, street or driveway, stream, riparian area or other drainage facility.
- Sanitaton facilities shall be inspected regularly for leaks and spills and cleaned or replaced as necessary.
- Cover waste disposal containers ant the end of every business day and during a rain event.
- Discharges from waste disposal containers to the storm water drainage system or receiving water shall be prevented.
- Stockpiled waste materials shall be contained and securely protected from wind and rain at all times unless actively being used.
- Procedures that effectively address hazardous and non-hazardous spills shall be implemented.
- Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly.
- All concrete shall be poured using self contained concrete trucks.
- A stabilized construction entrance per BMP-2/3 shall be maintained at all times.
- A suitable portable restroom shall be maintained on-site at all times during construction.
- A water tank shall be on-site at all times for washing down vehicles prior to leaving site.
3. Vehicle Storage and Maintenance:
- No more than two contractors vehicles allowed on-site.
- No more than two pieces of heavy equipment allowed on-site.
- Measures shall be taken to prevent oil, grease, or fuel to leak into the ground, storm drains or surface waters.
- All equipment or vehicles, which are to be fueled, maintained and stored onsite shall be in a designated area fitted wit appropriate BMPs as approved by the project civil engineer.
- Leaks shall be immediately cleaned and leaked materials shall be disposed of properly.

LANDSCAPE MATERIALS:

- Contain stockpiled materials such as mulches and topsoil when they are not actively being used.
- Contain fertilizers and other landscape materials when they are not actively being used.
- Discontinue the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.
- Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specification.
- Stack erodible landscape material on pallets and covering or storing such materials when not being used or applied.

CONSTRUCTION WASTE:

All construction waste including but not limited to the concrete wash basin shall be discarded in a county approved location. It is the responsibility of the contractor to comply with all county and state regulations for disposal of construction materials. The contractor shall track waste and provide the county with the applicable Cal Green Construction Waste Management Form. These forms can be found on the CalGreen website: http://www.hcd.ca.gov/calgreen.html

UTILITIES:

1. All pipe systems shall be installed in accordance with ASTM D2321.
2. Where the trench bottom is unstable the contractor shall excavate to a depth required by the geotechnical engineer and replace with suitable material as specified.
3. Tracer wires shall be installed on all thermoplastic utilities. Caution tape shall be run above all bedding sand.
4. Utilities in joint trenches to be separated per state and county standards.

DUST CONTROL:

Compliance with standard dust control measures set forth by land engineering and Bay Area Air Quality Management

BY	REVISION	DATE
PE	1	3/13/2019
PE	2	8/19/2020
PE	3	11/05/2020
PE	4	2/2/2021

REGISTERED PROFESSIONAL ENGINEER PHILIP T. EDWARDS C86461 CIVIL STATE OF CALIFORNIA

BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY RD, SUITE E
FREEDOM, CALIFORNIA 95019
OFFICE: 831.724.2612

PROPOSED RESIDENCE - EROSION CONTROL, DRAINAGE PLAN

REDWOOD ESTATES-NO SITUS
CORNER OF SANTA ANA RD. AND LINDBERG DR.
SANTA CLARA COUNTY, CALIFORNIA
APN 544-44-146

PROJECT: 16-158-SCL
DATE: OCT.27.2017
DRAWN: PE/GAB
SCALE: 1"=10'

SHEET
C-1

LEGEND

Major Contour

Minor Contour

Proposed Countour

Arrow Indicates Drainage Direction , Minimum 2% for 5 ft.

Asphalt Pavement

Concrete

Elevated Driveway

Note: A separate permit from the Building Inspection office is required for the retaining wall exceeding 4.0 ft in height not associated with this permit.

Note: The lower and south wall were added to this version of the plans.

Note: Total disturbed area is approximately 10,329 square feet.

MINIMUM DRIVEWAY DISTANCE CONFORMS TO SANTA CLARA COUNTY FIGURE SD-2

CONCRETE V-GUTTER (P)

NEW ASPHALT DRIVEWAY (P)
984 AREA ft²
± 10% SLOPE

ASPHALT RAISED DRIVE (P)
DESIGNED BY OTHERS
AREA 781 ft²
2% SLOPE AWAY FROM RESIDENCE

RESIDENCE (P)
AREA 2000 ft²
ELEVATION FF=2032 ft.

GARAGE (P)
17ftx18ft, SEE ARCHITECTURAL PLANS

NORTH RETAINING WALL (P)

EAST RETAINING WALL, SEE STRUCTURAL DRAWINGS WALL 1 (P)

SOUTH RETAINING WALL (P)

EAST WALL
TOW1: 2011.8
BOW: 2001.8
SOUTH WALL UPPER TERRACE
TOW: 2011.8
BOW: 2007.9

EAST WALL
TOW: 2007.9
BOW: 2000.3
SOUTH WALL LOWER TERRACE
TOW: 2005.9
BOW: 2000.3

BEGIN WALL
TOW: 2032.0
BOW: 2031.0

BEGIN WALL
TOW: 2005.9
BOW: 2004.9

BEGIN WALL
TOW: 2011.8
BOW: 2010.3

TOW: 2031.2
BOW: 2026.2

TOW: 2031.0
BOW: 2026.0

TOW: 2031.0
BOW: 2025.8

TOW: 2026.0
BOW: 2024.5

TOW: 2017.8
BOW: 2016.3

TOW1: 2016.8
BOW: 2013.1

TOW1: 2015.8
BOW: 2009.7

TOW1: 2014.8
BOW: 2007.0

TOW: 2012.8
BOW: 2004.5

30 FT DEVELOPMENT SETBACK LINE

20 ROW SETBACK LINE

PROPERTY LINE

GAS/ELECTRICAL (P)

REDWOOD ESTATES 10FT ROW

SET IP & TAG LD 5615 (TYP)

BY	REVISION	DATE
PE	1	3/13/2019
PE	2	8/19/2020
PE	3	11/05/2020
PE	4	2/2/2021

REGISTERED PROFESSIONAL ENGINEER PHILIP T. EDWARDS C86451 CIVIL STATE OF CALIFORNIA

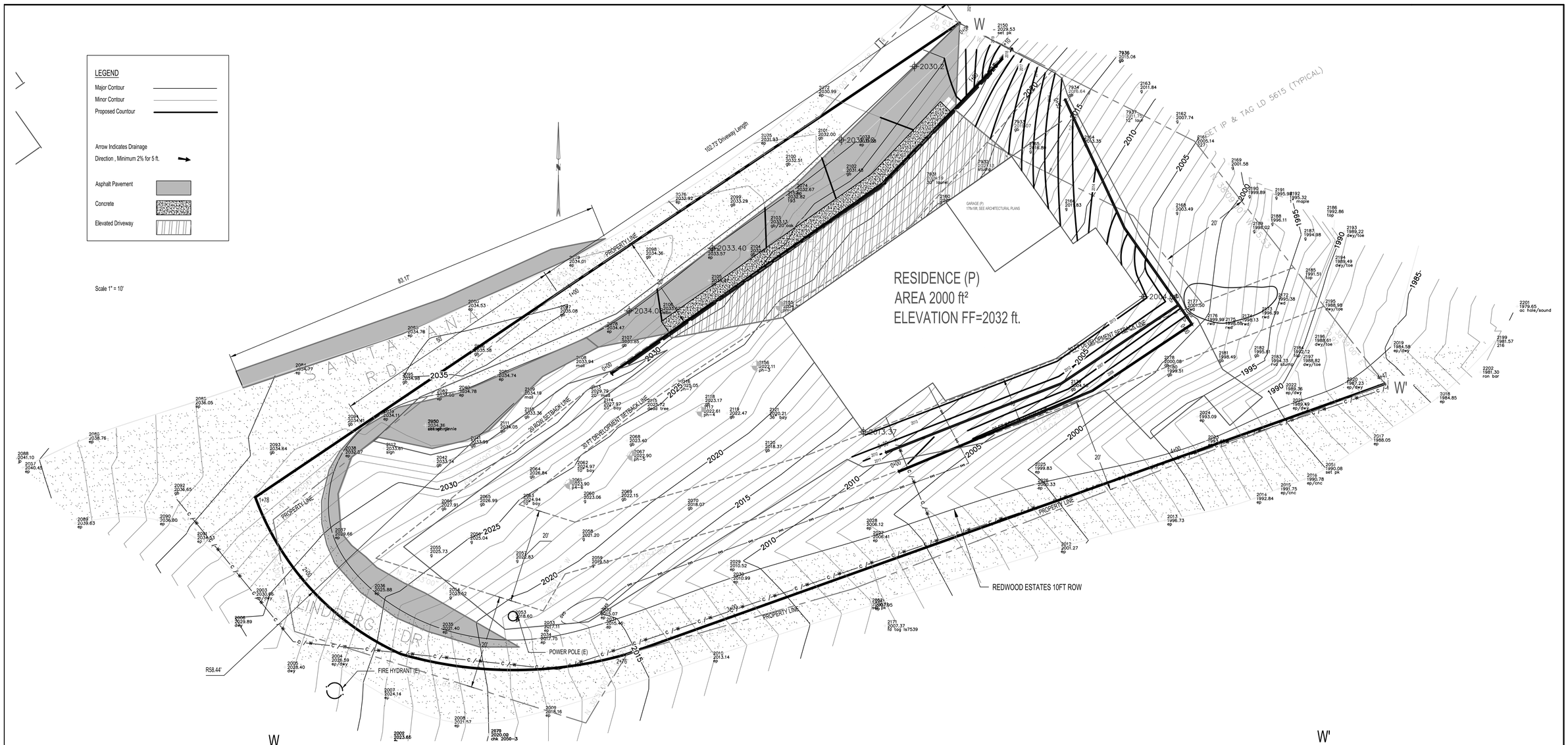
BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY RD, SUITE E
FREEDOM, CALIFORNIA 95019
OFFICE: 831.724.2612

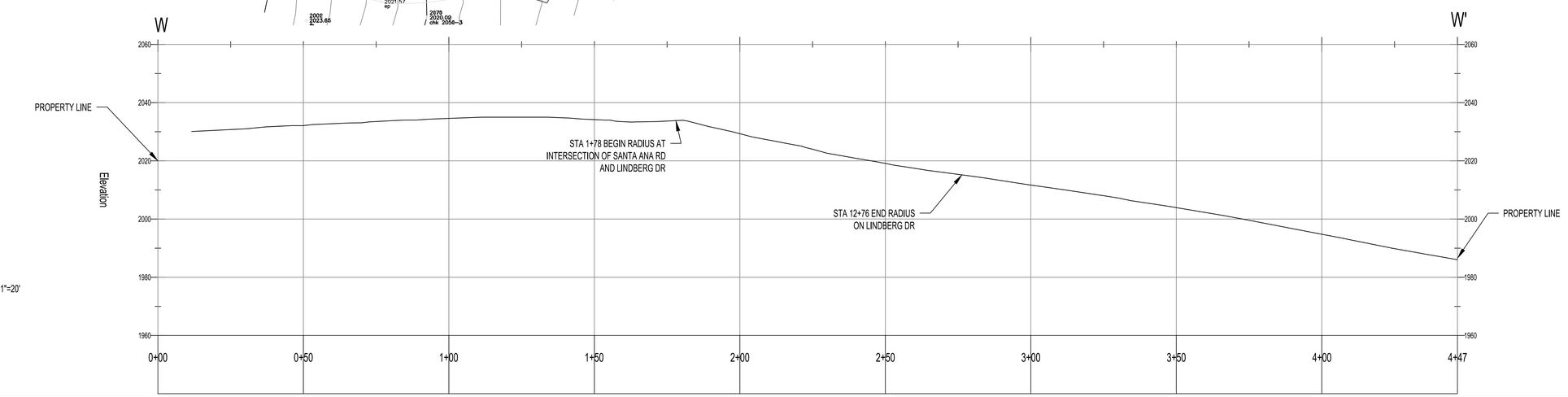
PROPOSED RESIDENCE - GRADING PLAN & WALL LAYOUT

REDWOOD ESTATES-NO SITUS
CORNER OF SANTA ANA RD. AND LINDBERG DR.
SANTA CLARA COUNTY, CALIFORNIA
APN 544-44-146

PROJECT:	16-158-SCL
DATE:	OCT.27.2017
DRAWN:	PE/GAB
SCALE:	1"=5'

SHEET
C-2





Driveway Cross Section Scale: 1"=20'

DATE	REVISION	BY
3/13/2019	1	PE
8/19/2020	2	PE
11/05/2020	3	PE
2/2/2021	4	PE

REGISTERED PROFESSIONAL ENGINEER PHILIP T. EDWARDS C86451 CIVIL STATE OF CALIFORNIA

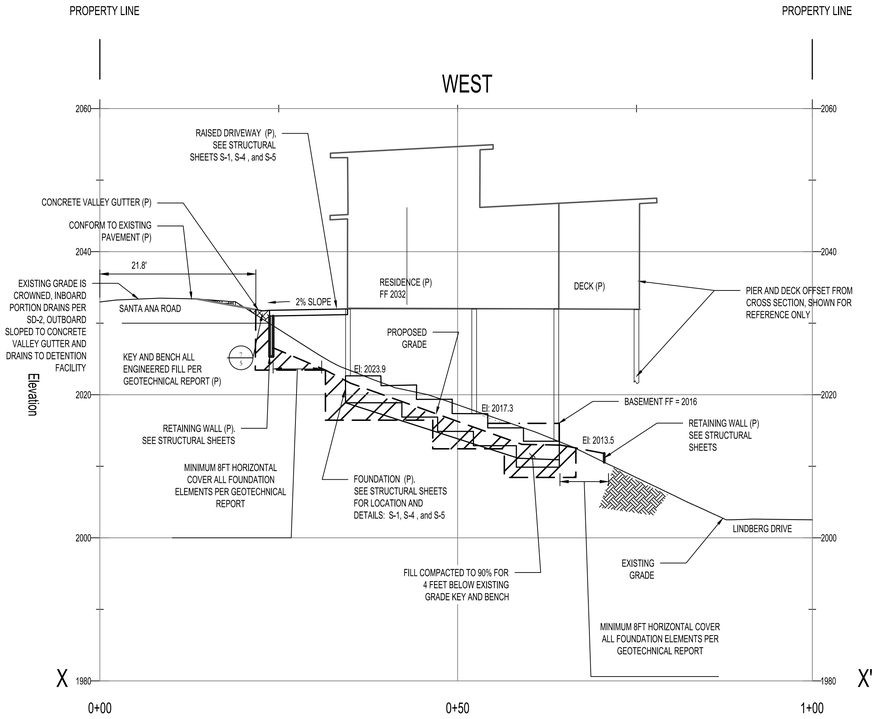
BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY RD, SUITE E
FREEDOM, CALIFORNIA 95019
OFFICE: 831.724.2612

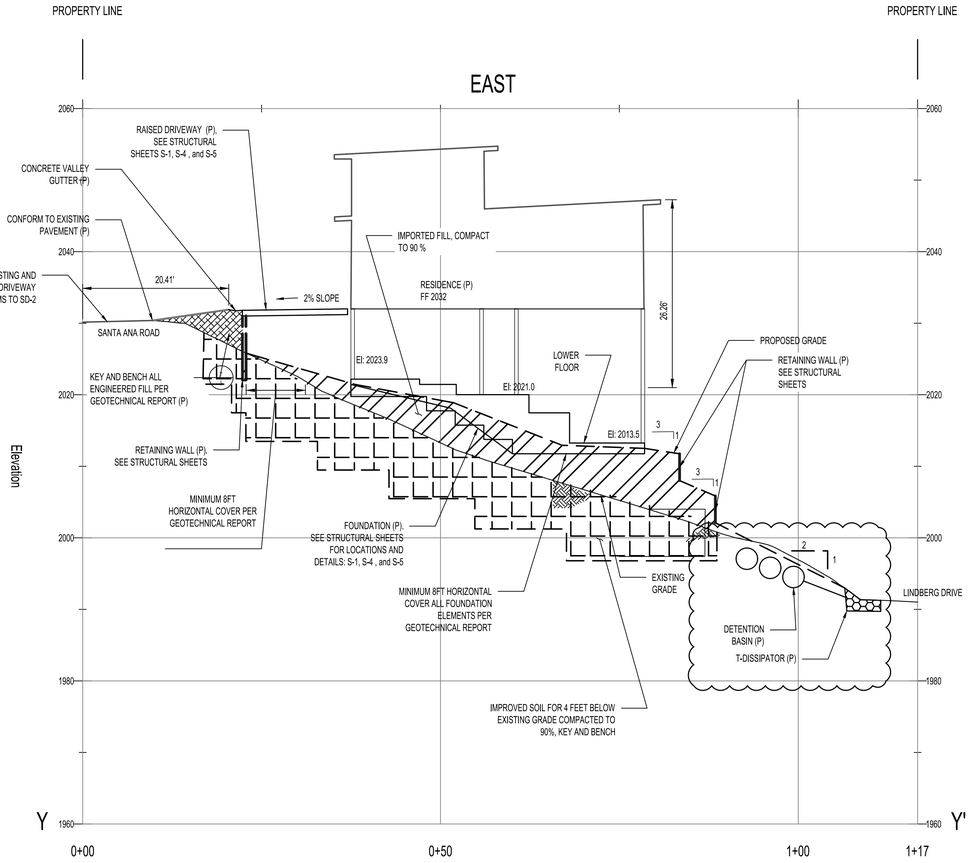
PROPOSED RESIDENCE - DRIVEWAY ALIGNMENT

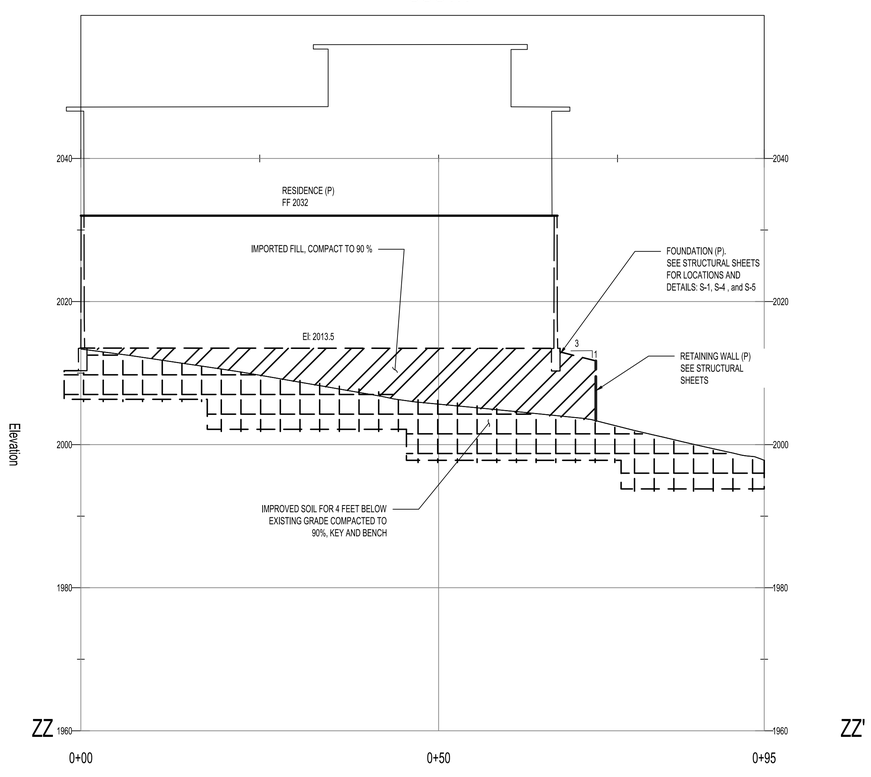
REDWOOD ESTATES-NO SITUS
CORNER OF SANTA ANA RD. AND LINDBERG DR.
SANTA CLARA COUNTY, CALIFORNIA
APN 544-44-146

PROJECT:	16-158-SCL
DATE:	OCT.27.2017
DRAWN:	PE/GAB
SCALE:	SHOWN

SHEET
C-3







BY	REVISION	DATE
PE	1	3/13/2019
PE	2	8/19/2020
PE	3	11/05/2020
PE	4	2/2/2021

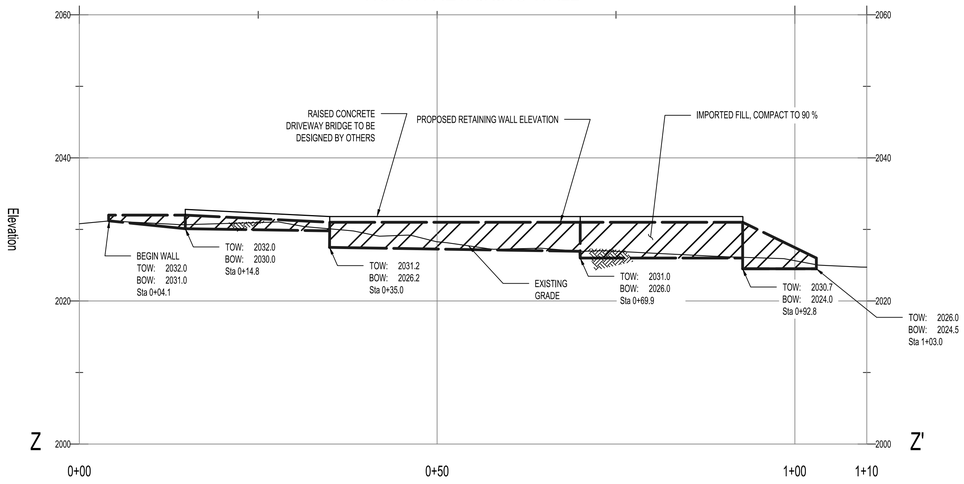
BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY RD, SUITE E
FREEDOM, CALIFORNIA 95019
OFFICE: 831.724.2612

CROSS SECTIONS
REDWOOD ESTATES-NO SITUS
CORNER OF SANTA ANA RD. AND LINDBERG DR.
SANTA CLARA COUNTY, CALIFORNIA
APN 544-44-146

PROJECT:	16-158-SCL
DATE:	OCT.27.2017
DRAWN:	PE/GAB
SCALE:	1"=10'

SHEET
C-4.1

NORTH RETAINING WALL

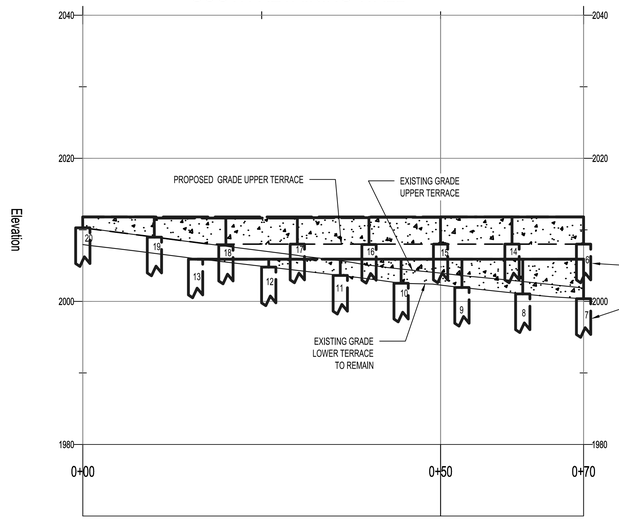


PIER NUMBER	TOW	BOW	Heights (ft)	WALL NAME
1	2017.8	2016.3	1.5	E. WALL
2	2016.8	2013.1	3.7	E. WALL
3	2015.8	2009.7	6.1	E. WALL
4	2014.8	2007.0	7.8	E. WALL
4A	2013.8	2005.7	8.1	E. WALL
5	2012.8	2004.5	8.3	E. WALL
5A	2012.3	2003.1	9.2	E. WALL
6	2011.8	2001.8	10.0	E. WALL (Corner)
7	2007.9	2000.3	7.6	E. WALL & S. WALL (Corner)
8	2005.9	2001.4	4.5	S. WALL LOWER
9	2005.9	2002.0	3.9	S. WALL LOWER
10	2005.9	2002.5	3.4	S. WALL LOWER
11	2005.9	2003.5	2.4	S. WALL LOWER
12	2005.9	2004.7	1.2	S. WALL LOWER
13	2006.0	2006.0	0.0	S. WALL LOWER
6	2011.8	2007.9	3.9	S. WALL UPPER (Corner)
14	2011.8	2007.9	3.9	S. WALL UPPER
15	2011.8	2007.9	3.9	S. WALL UPPER
16	2011.8	2007.9	3.9	S. WALL UPPER
17	2011.8	2007.9	3.9	S. WALL UPPER
18	2011.8	2007.9	3.9	S. WALL UPPER

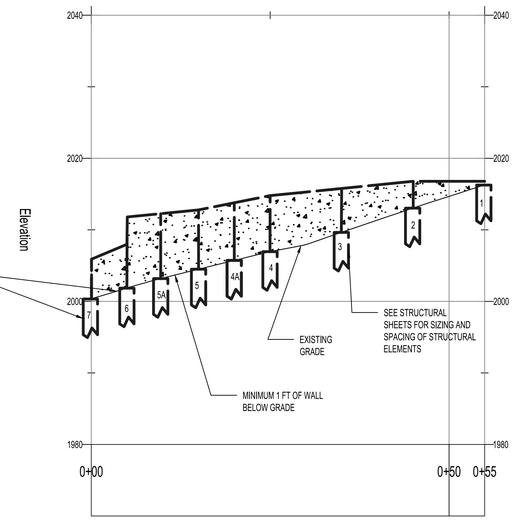
Note: Wall spacing 8 ½ feet between piers 7 through 11. Pier spacing between piers 4 through 6 is 5 feet. All other spacing 10 feet. (Spacing per structural engineer).

Note: The south and east retaining walls have been added to this version of the plans.

SOUTH RETAINING WALL



EAST RETAINING WALL



REVISION	DATE	BY
1	3/13/2019	PE
2	8/19/2020	PE
3	11/05/2020	PE
4	2/2/2021	PE

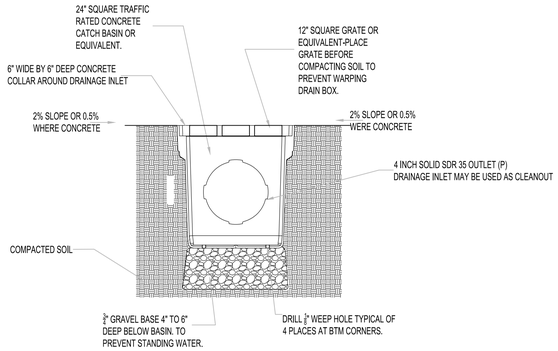
REGISTERED PROFESSIONAL ENGINEER PHILIP T. EDWARDS C86451 CIVIL STATE OF CALIFORNIA

BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY RD, SUITE E
FREEDOM, CALIFORNIA 95019
OFFICE: 831.724.2612

RETAINING WALL PROFILE VIEWS
REDWOOD ESTATES-NO SITUS
CORNER OF SANTA ANA RD. AND LINDBERG DR.
SANTA CLARA COUNTY, CALIFORNIA
APN 544-44-146

PROJECT: 16-158-SCL
DATE: OCT.27.2017
DRAWN: PE/GAB
SCALE: 1"=10'

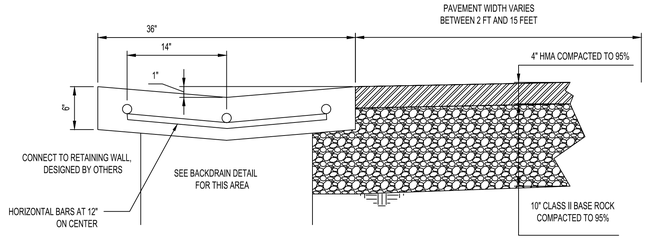
SHEET
C-4.2



NOTE: • GRATE TO BE ATTACHED TO CATCH BASIN WITH SCREW PROVIDED AT TIME OF INSTALLATION.

1/5 DRAINAGE INLET

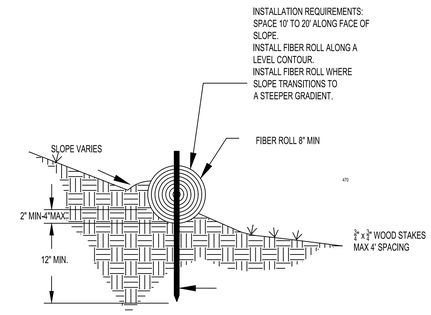
N.T.S.



NOTES:
- Minimum flow line slope for valley gutter shall be 0.5%.
- Minimum 2% cross slope for pavement section.
- Use 2500 psi concrete for valley gutter
- Pavement section based on TI of 5.5, see geotechnical addendum letter.

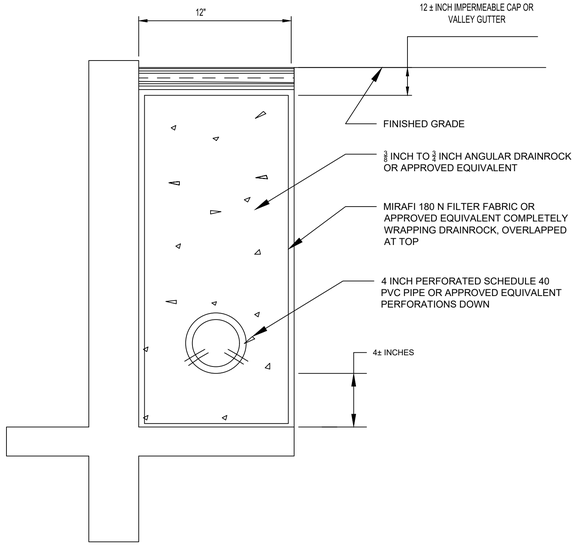
2/5 PAVEMENT SECTION & VALLEY GUTTER

N.T.S.



3/5 STRAW WATTLE

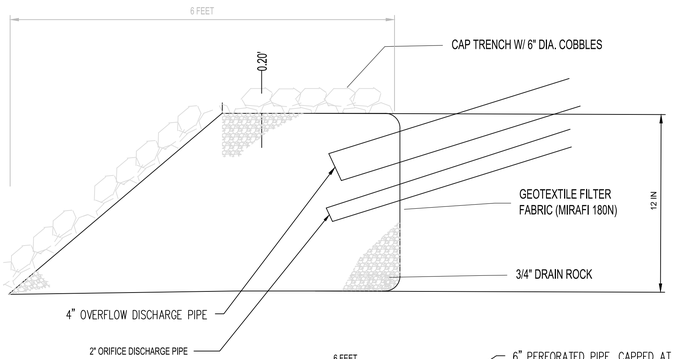
N.T.S.



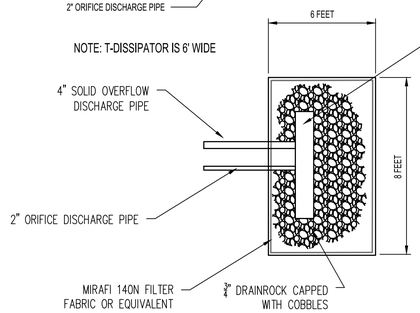
2±% GRADIENT TO PIPE AND TRENCH BOTTOM CONNECTED TO A CLOSED CONDUIT THAT DISCHARGES DETENTION FACILITY

4/5 BACKDRAIN TYPICAL

N.T.S.



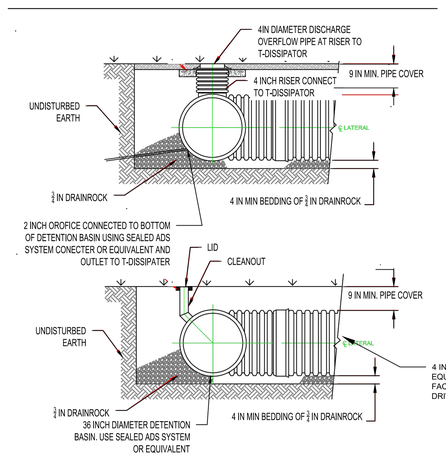
NOTE: T-DISSIPATOR IS 6' WIDE



6" PERFORATED PIPE, CAPPED AT BOTH ENDS (HOLES DOWN, PARALLEL TO CONTOUR OF SLOPE). DISCHARGE PIPE SHOULD DAYLIGHT INTO DRAIN ROCK AND CAPPED WITH COBBLES.. COBBLES SHALL BE KEYED INTO NATIVE SOIL APPROXIMATELY 2 FEET DEEP.

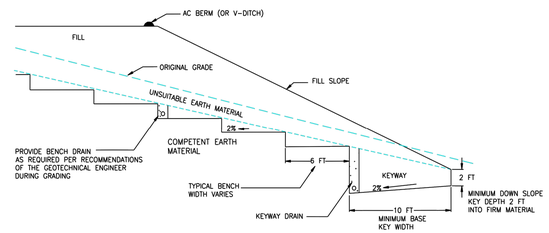
5/5 TYPICAL T-DISSIPATOR

N.T.S.



6/5 DETENTION FACILITY

N.T.S.



NOTES:
1. DRAWING IS NOT TO SCALE
2. FILLS SITUATED ON SLOPES STEEPER THAN 5:1 (H:V) SHOULD BE KEYED AND BENCHED.
3. FILL MATERIAL SHOULD BE PLACED PER THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT.
4. LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER.
5. BENCH AND KEYWAY MATERIAL SHALL CONSIST OF 3/8 INCH TO 3/4 INCH ANGULAR DRAINROCK OR APPROVED EQUIVALENT COMPLETELY WRAPPED IN APPROVED FILTER FABRIC AS RECOMMENDED IN THE GEOTECHNICAL REPORT.
6. BENCH AND KEYWAY DRAINS SHOULD BE AT LEAST 18 INCHES THICK.
7. 4 INCH PERFORATED SCHEDULE 40 PVC PIPE OR APPROVED EQUIVALENT SHALL BE PLACED 4 INCHES ABOVE THE BASE OF EACH BENCH AND KEYWAY CONNECTED TO A CLOSED CONDUCT THAT DISCHARGES TO AN APPROVED LOCATION.

7/5 KEYEING AND BENCHING TYPICAL

N.T.S.

REVISION	DATE	BY
1	3/13/2019	PE
2	8/19/2020	PE
3	11/05/2020	PE
4	2/2/2021	PE

REGISTERED PROFESSIONAL ENGINEER PHILIP T. EDWARDS C86451 CIVIL STATE OF CALIFORNIA

BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY RD, SUITE E
FREEDOM, CALIFORNIA 95019
OFFICE: 831.724.2612

GRADING AND DRAINAGE DETAILS
REDWOOD ESTATES-NO SITUS
CORNER OF SANTA ANA RD. AND LINDBERG DR.
SANTA CLARA COUNTY, CALIFORNIA
APN 544-44-146

PROJECT: 16-158-SCL
DATE: OCT.27.2017
DRAWN: PE/GAB
SCALE: SHOWN

SHEET
C-5