

# HOUSTON RESIDENCE

## GROSS BUILDING AREA WORKSHEET

### FLOOR AREA RATIO AND LOT COVERAGE

ARCHITECTURAL FEATURE	FLOOR AREA RATIO CALCULATION	LOT COVERAGE
ATTIC	0 SQ. FT.	N/A
BASEMENT	0 SQ. FT.	N/A
FIRST FLOOR	1,439 SQ. FT.	1,439 SQ. FT.
SECOND FLOOR	1,884 SQ. FT.	N/A
UNDERFLOOR	0 SQ. FT.	N/A
HIGH CEILINGS	0 SQ. FT.	N/A
MEZZANINE	0 SQ. FT.	N/A
INTERIOR STAIRS CREDIT	< 105 SQ. FT. >	N/A
DECK OR PORCH- FULLY ENCLOSED	0 SQ. FT.	0 SQ. FT.
DECK-CANTILEVERED, UNCOVERED	N/A	N/A
DECK-SUPPORTED, UNCOVERED (> 18')	N/A	0 SQ. FT.
COVERED DECK/PORCH	0 SQ. FT.	215 SQ. FT.
AREA BENEATH PROJECTIONS- SEE DIAGRAM SHEET A2	2 SQ. FT.	N/A
DECK, 2ND FLOOR ROOFTOP	N/A	N/A
EXTERIOR STAIRS AND LANDINGS	0 SQ. FT.	0 SQ. FT.
TRELLIS OR ARBOR- SOLID OR OPEN	N/A	0 SQ. FT.
GARAGES/ CARPORTS	(567sf-225sf)	342 SQ. FT.
ACCESSORY STRUCTURE, GREENHOUSE	0 SQ. FT.	0 SQ. FT.
BAY WINDOWS	0 SQ. FT.	0 SQ. FT.
CHIMNEYS	0 SQ. FT.	0 SQ. FT.
AWNINGS, FENCES AND WALLS	N/A	N/A
ELEVATOR SHAFTS, ATRIUMS AND UNCOVERED COURTYARDS	< 30 SQ. FT. >	INCLUDED IN FIRST FLOOR CALC.
TOTALS:	3,532 SQ. FT.	2,880 SQ. FT.
RATIOS (LOT AREA: 10,742 S.F. INCLUDING AREA BELOW BLUFF, 7,702 NOT INCLUDING AREA BELOW BLUFF)	3,532/ 7,702 = 46% TOTAL ALLOWED: 50%	2,880/ 7,702 = 37% TOTAL ALLOWED: 40%

### HEATED SPACE CALCULATION

1. TOTAL HEATED SPACE:	
A) FIRST FLOOR	1,439 sq.ft.
B) SECOND FLOOR	1,884 sq.ft.
C) BASEMENT FLOOR	N/A
	1) 3,323 sq.ft.
2. TOTAL UNHEATED SPACE:	567 sq.ft.
	2) 567 sq.ft.



## CONTACTS

### OWNER:

JERRY HOUSTON  
166 ALICE AVENUE  
CAMPBELL, CA 95008  
(408) 355-1507  
jerry.houston54@icloud.com

### PROJECT DESIGNER:

DEREK VAN ALSTINE RESIDENTIAL DESIGN, INC.  
DEREK VAN ALSTINE  
1535 SEABRIGHT AVE SUITE 200  
SANTA CRUZ, CA 95062  
PH: (831) 426-8400  
FAX: (831) 426-8446  
derek@vanalstine.com

### SURVEYOR:

WESTFALL ENGINEERS, INC.  
HARRY BABICKA, LS 4953  
14583 BIG BASIN WAY  
SARATOGA, CA 95070  
PH: (831) 867-0244

### GEOLOGIST:

EASTON GEOLOGY, INC.  
GREGORY EASTON  
P.O. BOX 3533  
SANTA CRUZ, CA 95063  
PH: (831) 247-4317  
info@eastongeology.com

### SOILS ENGINEER:

CMAG ENGINEERING, INC.  
ADRIAN GARNER  
P.O. BOX 640  
APTOS, CA 95001  
PH: (831) 475-1411

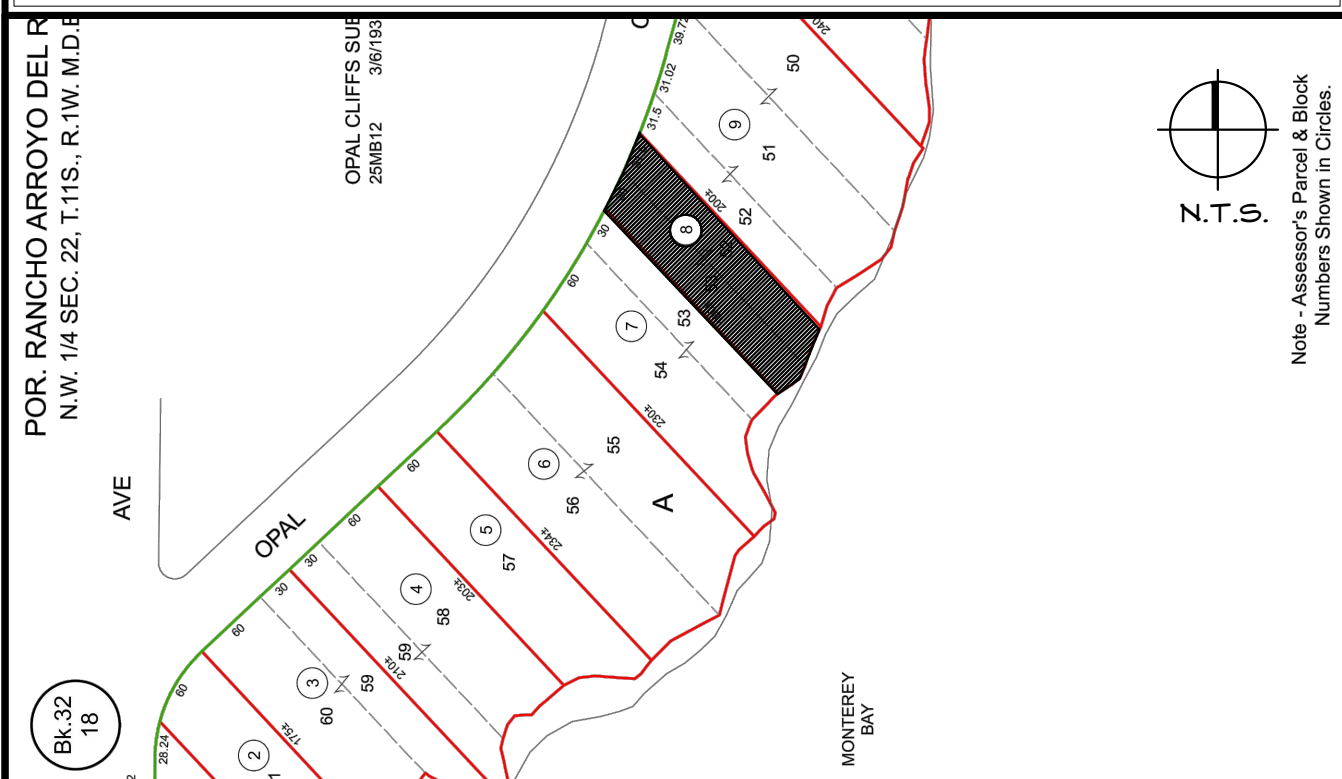
### CIVIL ENGINEER:

RAMSEY CIVIL ENGINEERING, INC.  
DAVID RAMSEY  
2905 KRISTIE COURT  
SANTA CRUZ, CA 95065  
PH: (831) 462-2905  
david@ramseyce.com

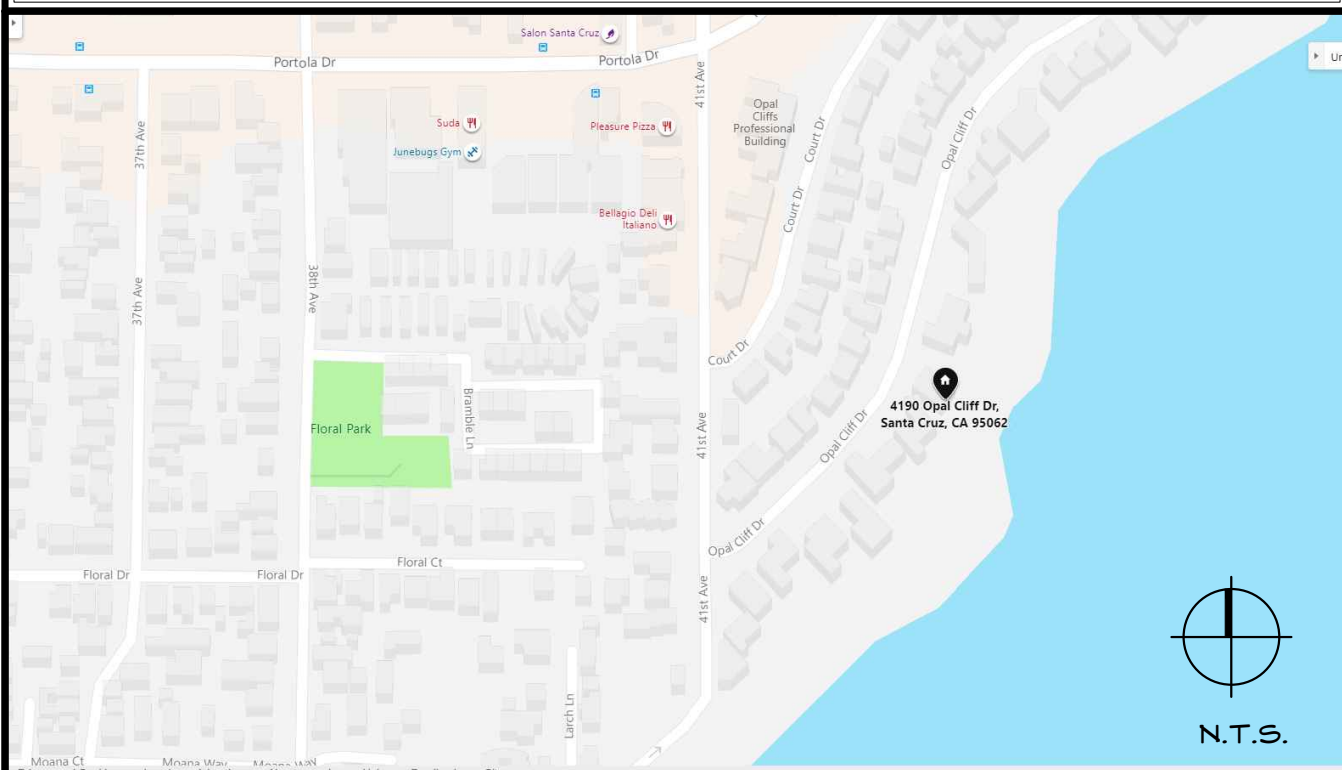
### LANDSCAPE ARCHITECT

ELLEN COOPER & ASSOCIATES  
ELLEN COOPER  
612 WINDSOR STREET  
SANTA CRUZ, CA 95062  
PH: (831) 426-6845  
FAX: (831) 426-6845

## PARCEL MAP



## VICINITY MAP



## BUILDING INFORMATION SUMMARY

### PROJECT DESCRIPTION:

DEMOLITION OF EXISTING TWO-STORY, 1,951 sq.ft. 2 BR, 1.5 BA SINGLE FAMILY DWELLING AND CONSTRUCTION OF NEW TWO-STORY, 3,323 sq.ft. 4 BR, 4.5 BA SINGLE FAMILY DWELLING WITH ATTACHED 567 sq.ft. GARAGE.

### PROJECT ADDRESS:

4190 OPAL CLIFF DRIVE  
SANTA CRUZ, CA 95062

### PARCEL NUMBER:

033-171-08

### ZONING:

R-1.5

### OCCUPANCY TYPE:

R3 / U SPRINKLERED

### LOT AREA:

10,742 sq.ft. ( 7,702 sq.ft. NOT INCLUDING AREA BELOW BLUFF )

### SETBACK INFORMATION:

REQUIRED  
PROPOSED

	FRONT YARD	SIDE YARD	REAR YARD
REQUIRED	20'-0"	5'-0" & 8'-0"	15'-0"
PROPOSED	20'-0"	5'-0" & 8'-0"	15'-0"

### PARKING (PROVIDED):

2 COVERED AND 2 UNCOVERED

### CODE NOTE:

ALL WORK INDICATED ON THE PLANS SHALL COMPLY WITH THE FOLLOWING CODES:

- 2019 CALIFORNIA RESIDENTIAL CODE
- 2019 CALIFORNIA BUILDING CODE
- 2019 CALIFORNIA FIRE CODE
- 2019 CALIFORNIA PLUMBING CODE
- 2019 CALIFORNIA MECHANICAL CODE
- 2019 CALIFORNIA ELECTRIC CODE
- 2019 CALIFORNIA GREEN BUILDING STANDARDS
- 2019 CALIFORNIA ENERGY STANDARDS
- SANTA CRUZ COUNTY CODE AMENDMENTS

### NOTE - ALL WORK TO COMPLY WITH:

GEOTECHNICAL REPORT:  
CMAG ENGINEERING  
PROJECT NO. 19-144-SC  
DATED FEBRUARY 18, 2020

GEOLOGICAL REPORT  
EASTON GEOLOGY  
JOB NO. C19009  
DATED FEBRUARY 7, 2020

## FIRE PROTECTION NOTES

1) THESE PLANS ARE IN COMPLIANCE WITH CALIFORNIA BUILDING AND FIRE CODES (2019) AND CENTRAL FIRE PROTECTION DISTRICT AMENDMENTS.

2) BUILDING SHALL BE PROTECTED BY AN APPROVED AUTOMATIC SPRINKLER SYSTEM COMPLYING WITH THE EDITION OF NFPA 13D CURRENTLY ADOPTED IN CHAPTER 35 OF THE CALIFORNIA BUILDING CODE.

3) FIRE SPRINKLER DESIGNER / INSTALLER SHALL SUBMIT TWO (2) SETS OF PLANS, CALCULATIONS, AND CUT SHEETS FOR THE UNDERGROUND AND OVERHEAD RESIDENTIAL AUTOMATIC SPRINKLER SYSTEM TO CENTRAL FIRE DEPARTMENT FOR APPROVAL. INSTALLATION SHALL FOLLOW GUIDE SHEET PROVIDED BY CENTRAL FIRE DEPARTMENT.

4) AN APPROVED SPARK ARRESTOR SHALL BE INSTALLED ON TOP OF CHIMNEY. WIRE MESH NOT TO EXCEED 1/8 INCH.

5) ROOF COVERING SHALL BE NO LESS THAN CLASS 'B' RATED ROOF.

6) NEW/UPGRADED HYDRANTS, WATER STORAGE TANKS, AND / OR UPGRADED ROADWAYS SHALL BE INSTALLED PRIOR TO CONSTRUCTION.

7) ADDRESS NUMBERS SHALL BE MINIMUM OF FOUR (4) INCHES IN HEIGHT AND OF A COLOR CONTRASTING TO THEIR BACKGROUND.

8) A 100-FOOT CLEARANCE WILL BE MAINTAINED WITH NON-COMBUSTIBLE VEGETATION AROUND ALL STRUCTURES.

9) FIRE HYDRANT INFORMATION: LOCATION: 4150 OPAL CLIFF DRIVE  
HYDRANT #803  
STATIC PRESSURE (PSI): 84  
RESIDUAL PRESSURE (PSI): 50  
FLOW (GPM): 750  
FLOW @ 20 PSI (GPM): 1,023

## DRAWING INDEX

### BUILDING DESIGN

T1	TITLE SHEET
L1	LANDSCAPE PLAN
A1	EXISTING AND PROPOSED SITE PLAN
A2	FIRST FLOOR PLAN
A3	SECOND FLOOR PLAN
A4	ROOF PLAN
A5	EXTERIOR ELEVATIONS
A6	EXTERIOR ELEVATIONS
A7	BUILDING SECTION

### CIVIL DESIGN

C1.0	COVER SHEET & SITE PLAN
C2.0	GRADING & DRAINAGE PLAN
C3.0	UTILITY PLAN
C4.0	EROSION & SEDIMENT CONTROL PLAN
C5.0	DETAILS

DEREK VAN ALSTINE  
RESIDENTIAL DESIGN INC.  
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4190 OPAL CLIFF DRIVE  
SANTA CRUZ, CA 95062

AIN:  
033-171-08

### ISSUE DESCRIPTION

SCHEMATIC DESIGN

APRIL 02, 2020

DESIGN DEVELOPMENT

JUNE 12, 2020

PLANNING SUBMITTAL

JULY 10, 2020

BUILDING SUBMITTAL

### REVISIONS:

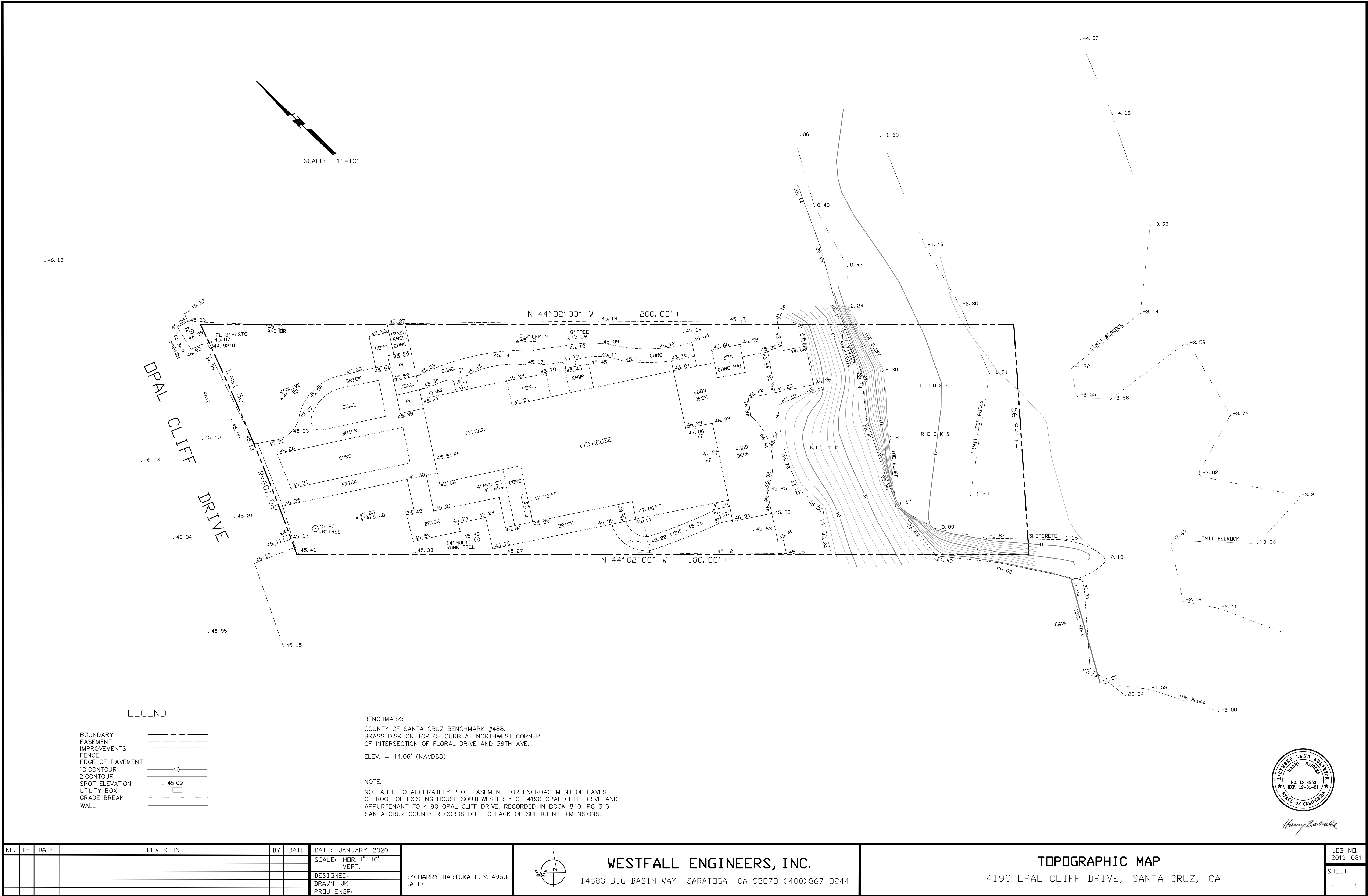
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TITLE SHEET

T1

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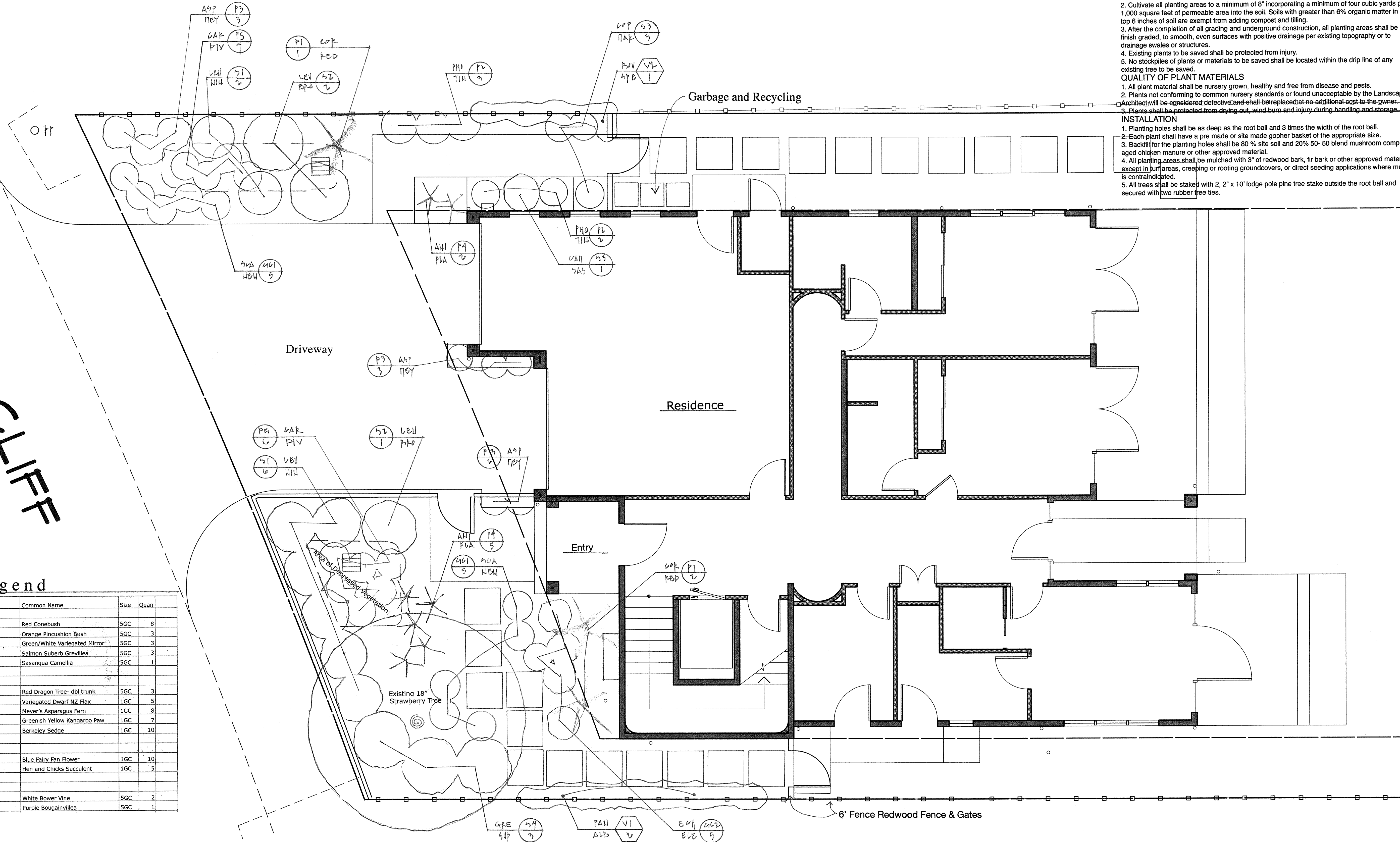


OPAL CLIFF

Plant Legend

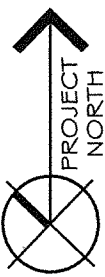
Sym	Botanical Name	Common Name	Size	Quan
Shrubs				
S1	Leucadendron 'Winter Red'	Red Conebush	5GC	8
S2	Leucospermum 'Brothers'	Orange Pincushion Bush	5GC	3
S3	Coprosma 'Marble Queen'	Green/White Variegated Mirror	5GC	3
S4	Grevillea 'Suberb'	Salmon Suberb Grevillea	5GC	3
S5	Camellia sasanqua	Sasanqua Camellia	5GC	1
Perennials				
P1	Cordylina 'Red Sensation'	Red Dragon Tree- dbl trunk	5GC	3
P2	Phormium 'Tiny Tiger'	Variegated Dwarf NZ Flax	1GC	5
P3	Asparagus meyeri	Meyer's Asparagus Fern	1GC	8
P4	Anigozanthos flavidis	Greenish Yellow Kangaroo Paw	1GC	7
P5	Carex divulsa	Berkeley Sedge	1GC	10
Groundcovers				
GC1	Scaevola 'New Wonder'	Blue Fairy Fan Flower	1GC	10
GC2	Echevaria elegans	Hen and Chicks Succulent	1GC	5
Vines				
V1	Pandora 'Alba'	White Bower Vine	5GC	2
V2	Bougainvillea 'spectabilis'	Purple Bougainvillea	5GC	1

- Notes**
- PLANTING AREA PREPARATION**
1. Remove soil as required to accommodate soil amendments and ensure positive drainage away from all structures.
  2. Cultivate all planting areas to a minimum of 8" incorporating a minimum of four cubic yards per 1,000 square feet of permeable area into the soil. Soils with greater than 6% organic matter in the top 6 inches of soil are exempt from adding compost and tilling.
  3. After the completion of all grading and underground construction, all planting areas shall be finish graded, to smooth, even surfaces with positive drainage per existing topography or to drainage swales or structures.
  4. Existing plants to be saved shall be protected from injury.
  5. No stockpiles of plants or materials to be saved shall be located within the drip line of any existing tree to be saved.
- QUALITY OF PLANT MATERIALS**
1. All plant material shall be nursery grown, healthy and free from disease and pests.
  2. Plants not conforming to common nursery standards or found unacceptable by the Landscape Architect will be considered defective and shall be replaced at no additional cost to the owner.
  3. Plants shall be protected from drying out, wind burn and injury during handling and storage.
- INSTALLATION**
1. Planting holes shall be as deep as the root ball and 3 times the width of the root ball.
  2. Each plant shall have a pre made or site made gopher basket of the appropriate size.
  3. Backfill for the planting holes shall be 80 % site soil and 20% 50- 50 blend mushroom compost, aged chicken manure or other approved material.
  4. All planting areas shall be mulched with 3" of redwood bark, fir bark or other approved material, except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.
  5. All trees shall be staked with 2, 2" x 10' lodge pole pine tree stake outside the root ball and secured with two rubber tree ties.



Planting Plan

1" = 4'-0"



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831 426-6845

Ellen Cooper

Landscape Architect

Ca. Lic. #2937

HOUSTON RESIDENCE

4190 OPAL CLIFF DRIVE

SANTA CRUZ, CA 95062

ARN

033-171-08

ISSUE DESCRIPTION

SCHEMATIC DESIGN

DESIGN DEVELOPMENT

PLANNING SUBMITTAL

JULY 10, 2020

BUILDING SUBMITTAL

REVISIONS:

NOV. 15, 2020

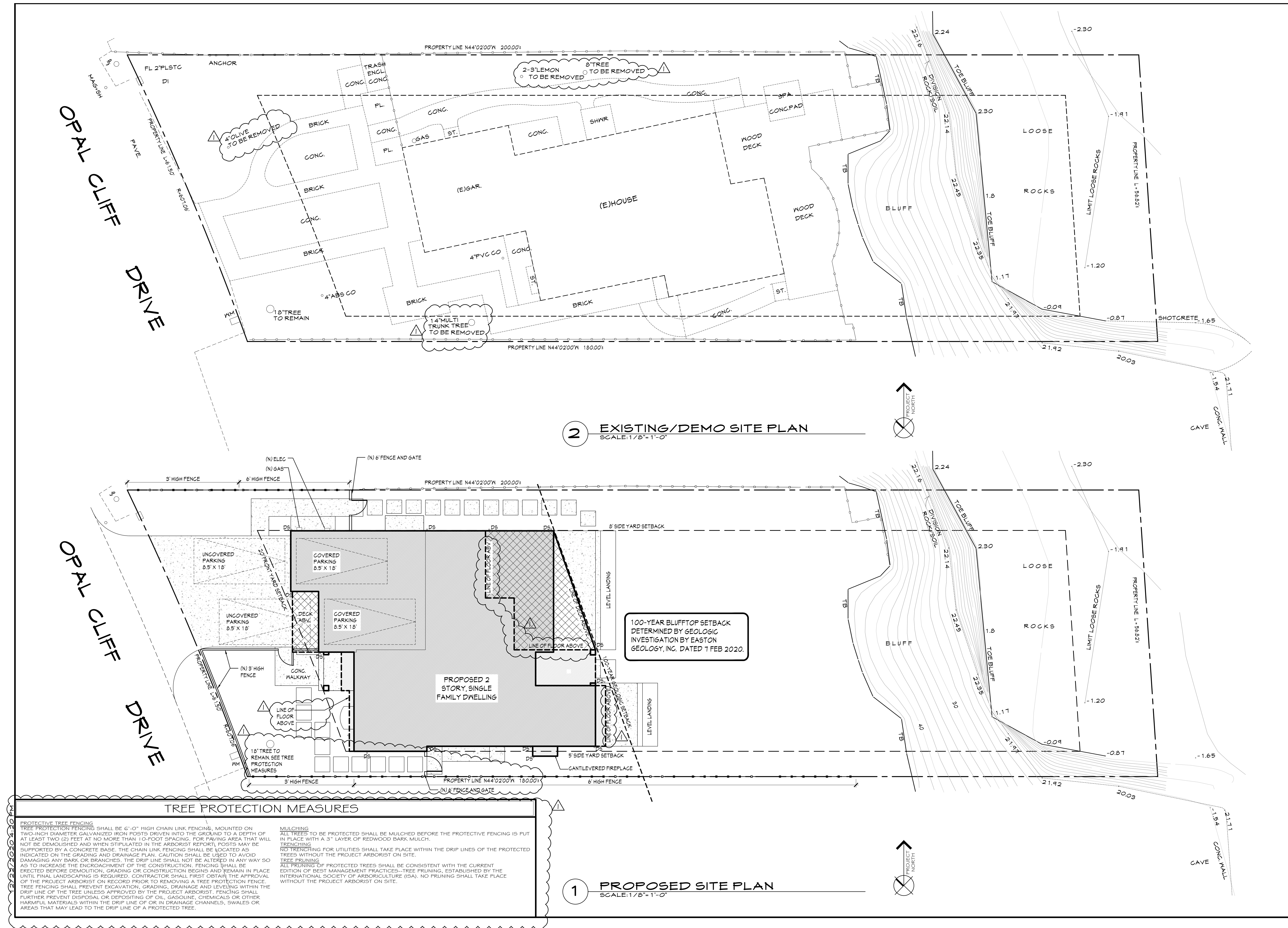
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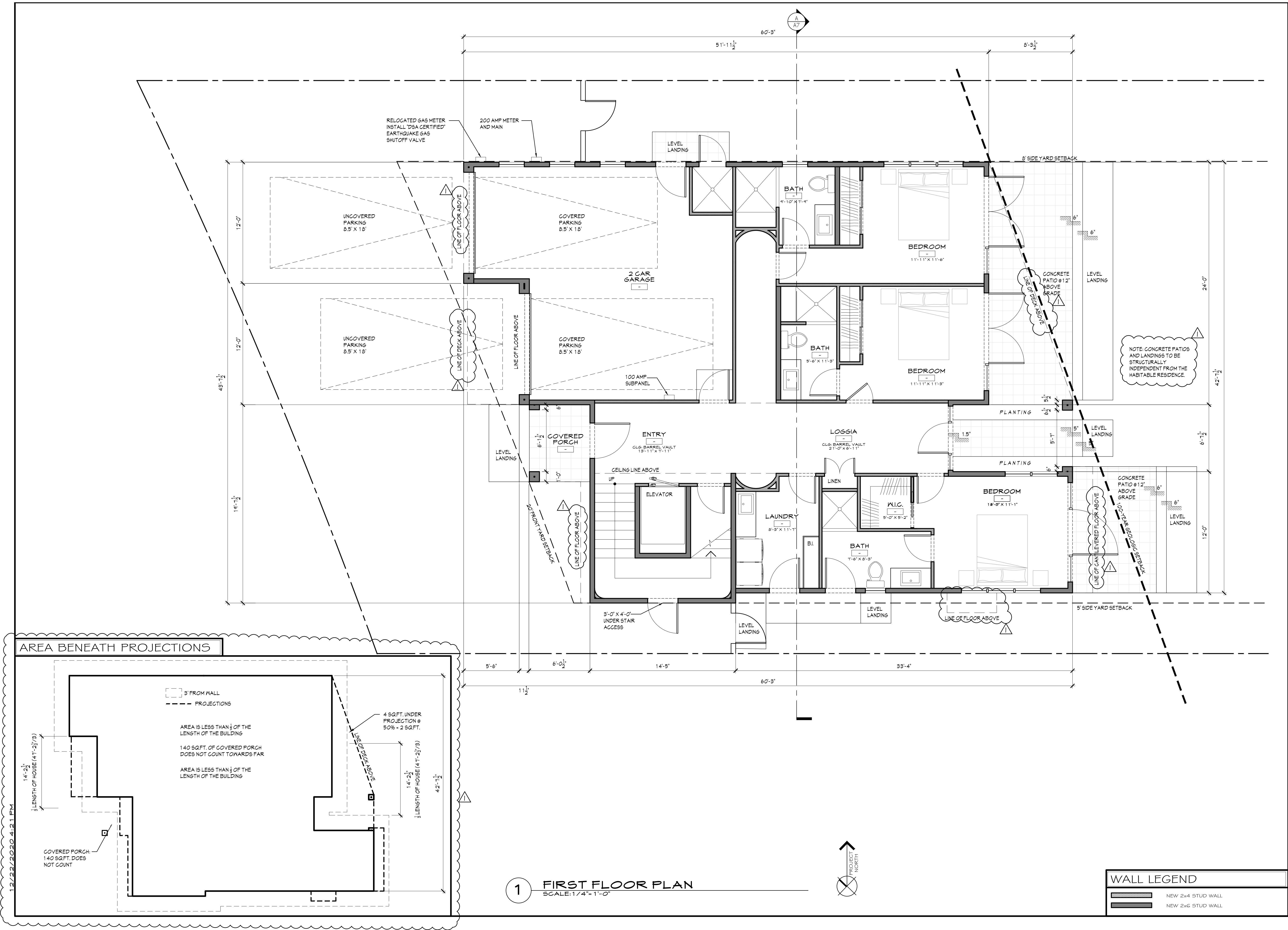
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PROPOSED LANDSCAPE PLAN

L1







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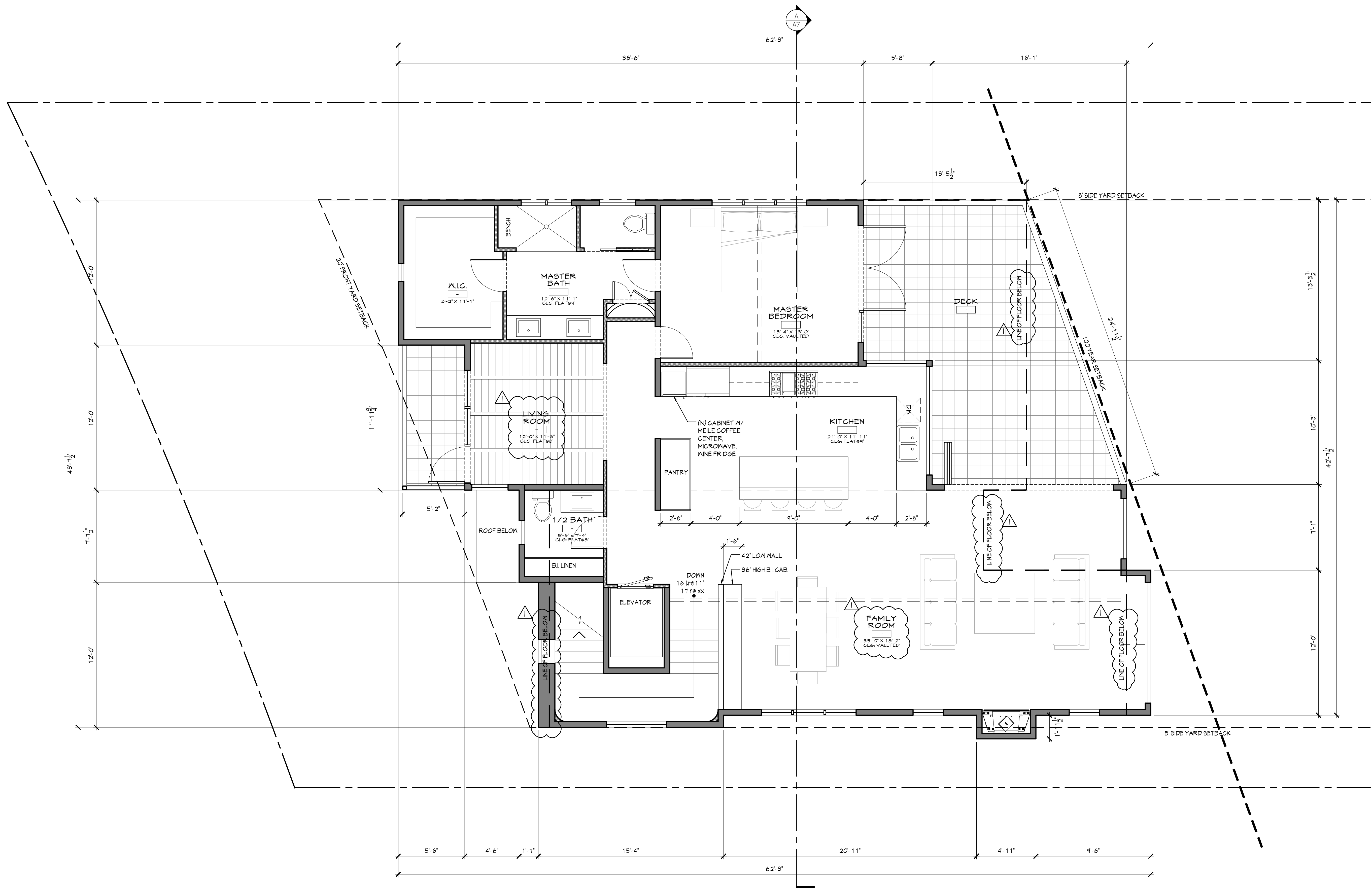
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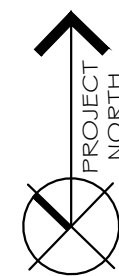
PROPOSED  
FIRST FLOOR PLAN

A2

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1 SECOND FLOOR PLAN  
SCALE: 1/4" = 1'-0"



WALL LEGEND

- NEW 2x4 STUD WALL
- NEW 2x6 STUD WALL

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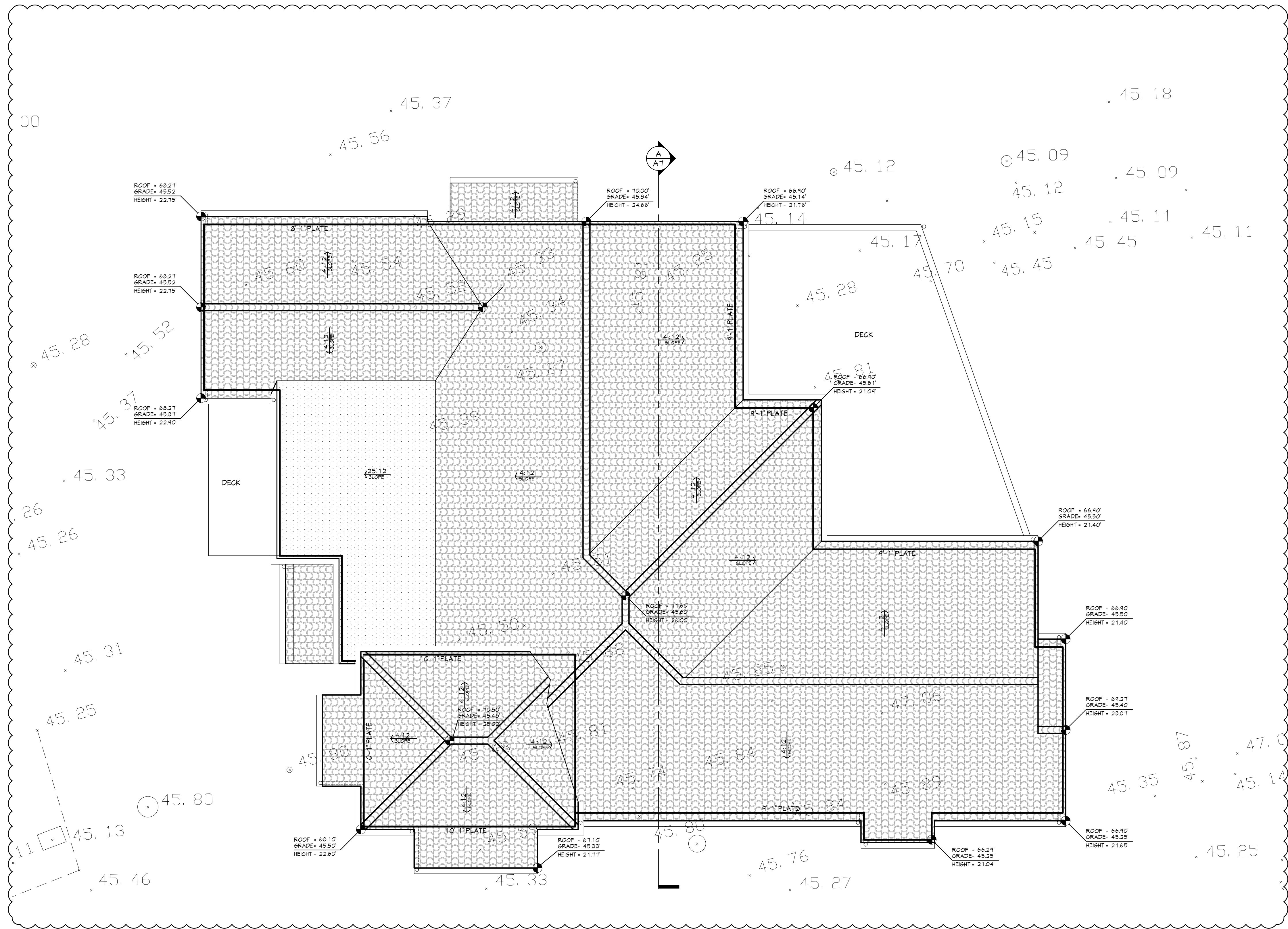
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PROPOSED  
SECOND FLOOR  
PLAN

A3



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1 ROOF PLAN  
SCALE: 1/4" = 1'-0"



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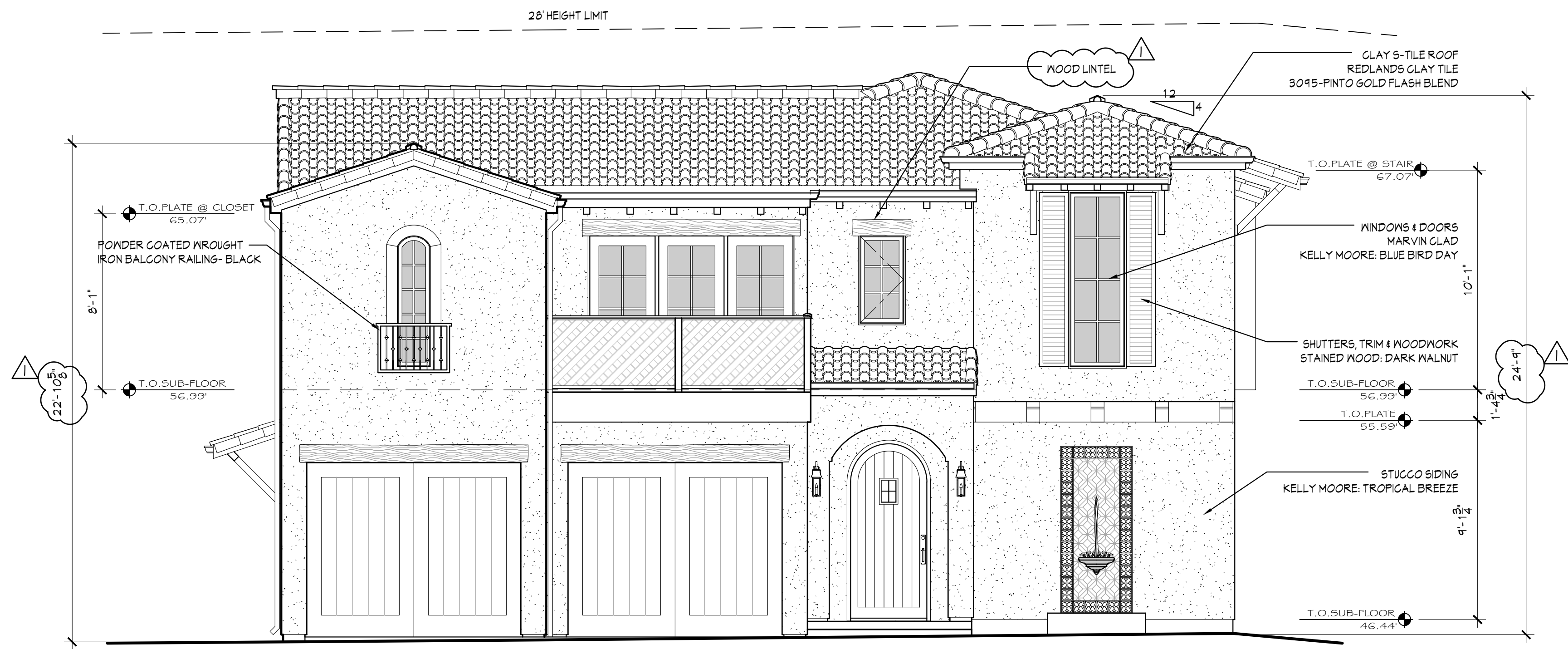
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PROPOSED  
ROOF  
PLAN

A4



1 WEST ELEVATION  
SCALE: 1/4" = 1'-0"



2 EAST ELEVATION  
SCALE: 1/4" = 1'-0"

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EXTERIOR  
ELEVATIONS

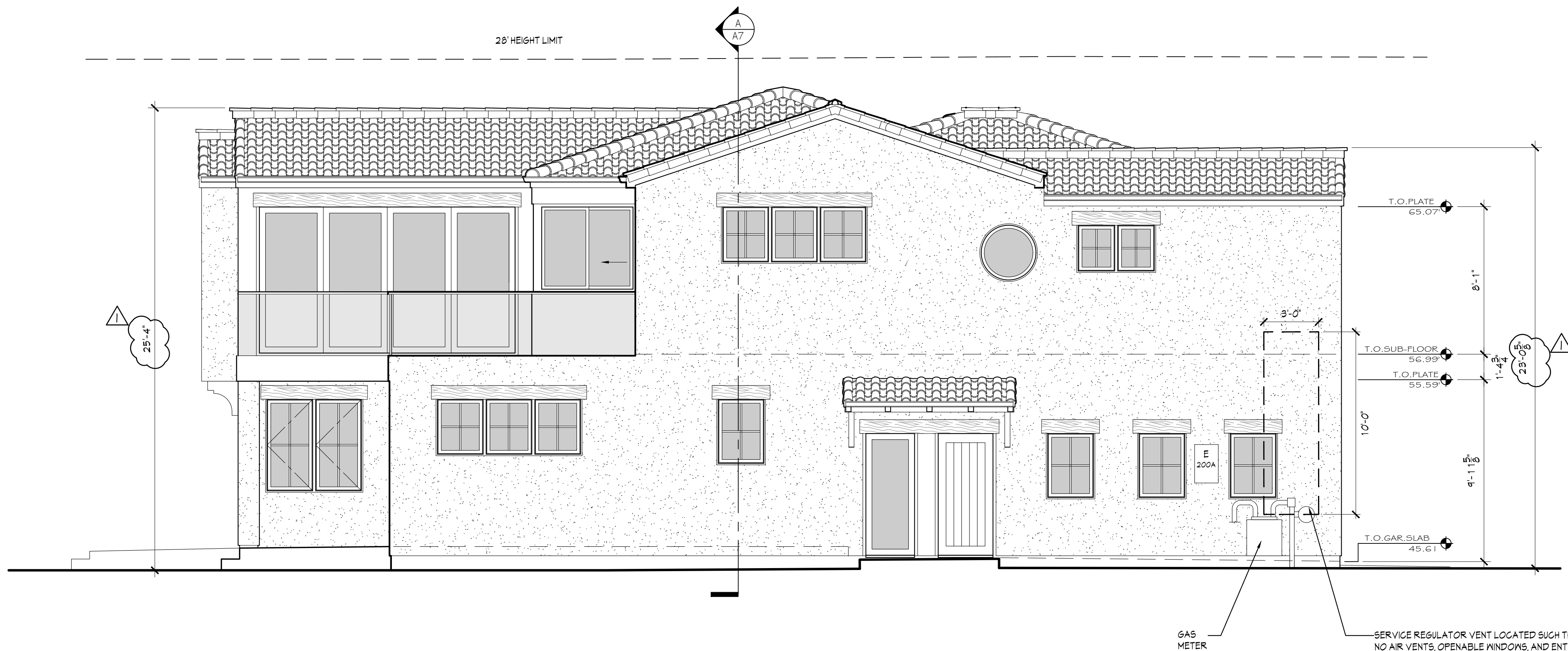
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3 SOUTH ELEVATION  
SCALE: 1/4" = 1'-0"



4 NORTH ELEVATION  
SCALE: 1/4" = 1'-0"

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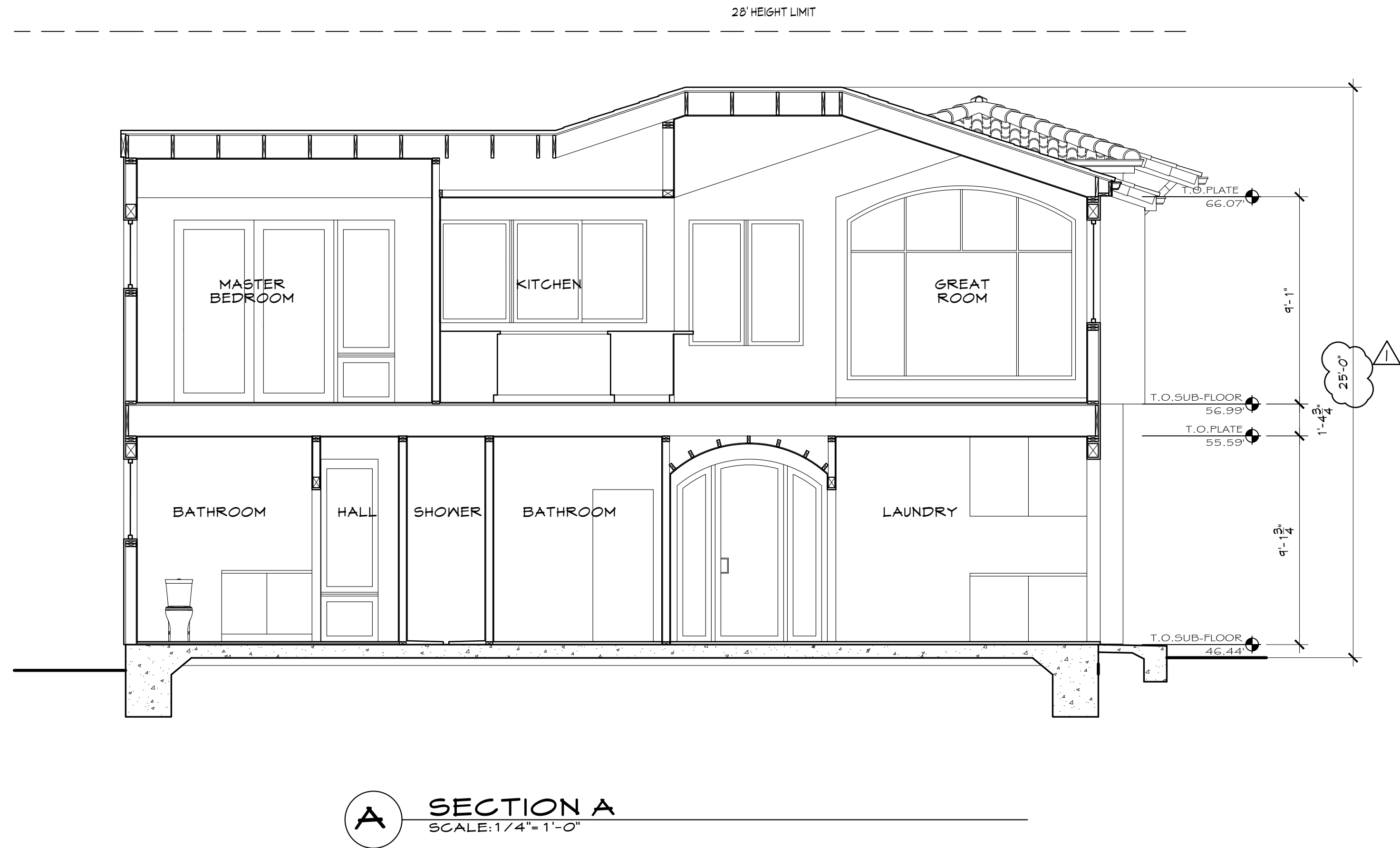
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EXTERIOR  
ELEVATIONS

A6

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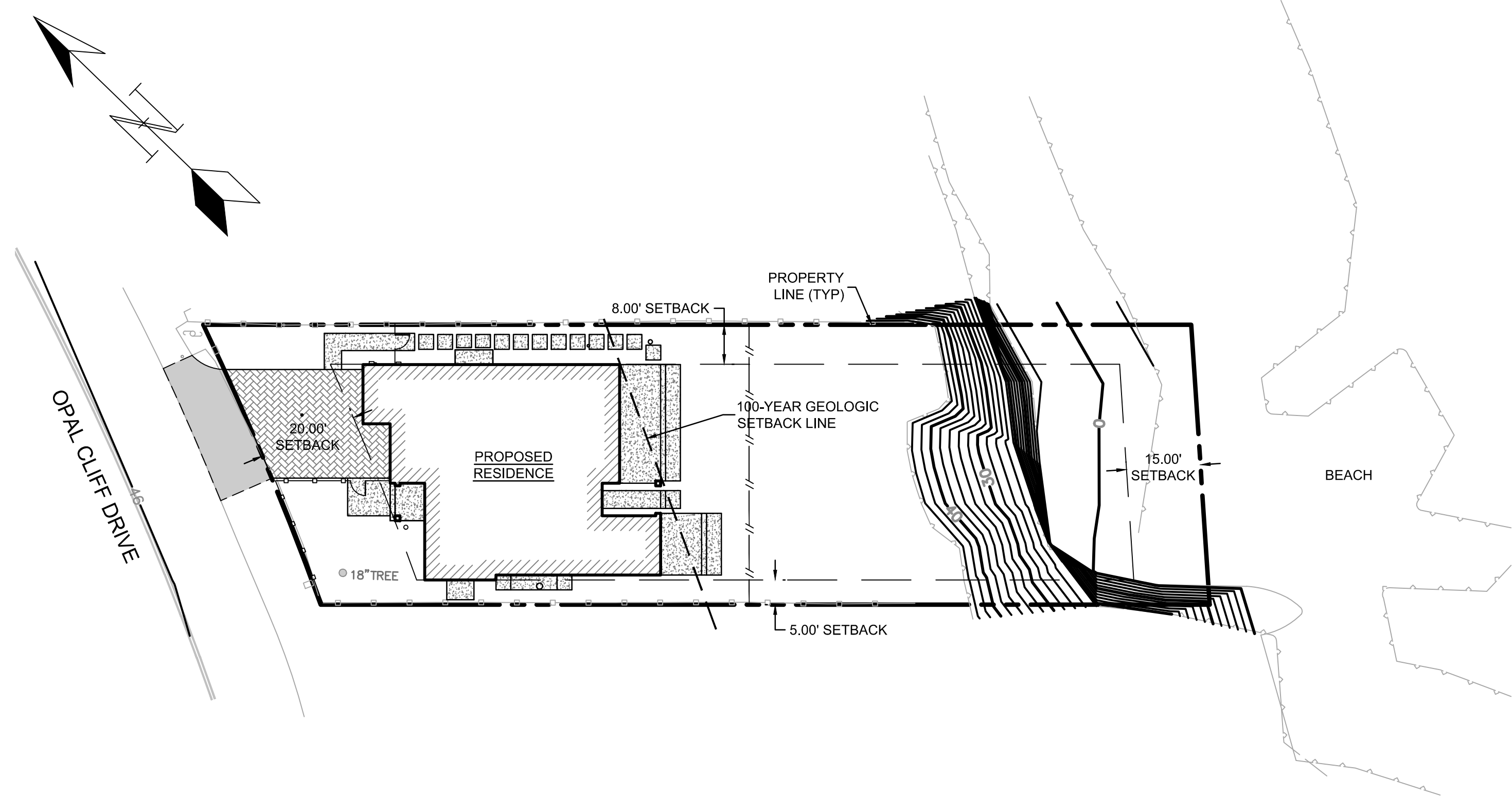
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SECTIONS

A7

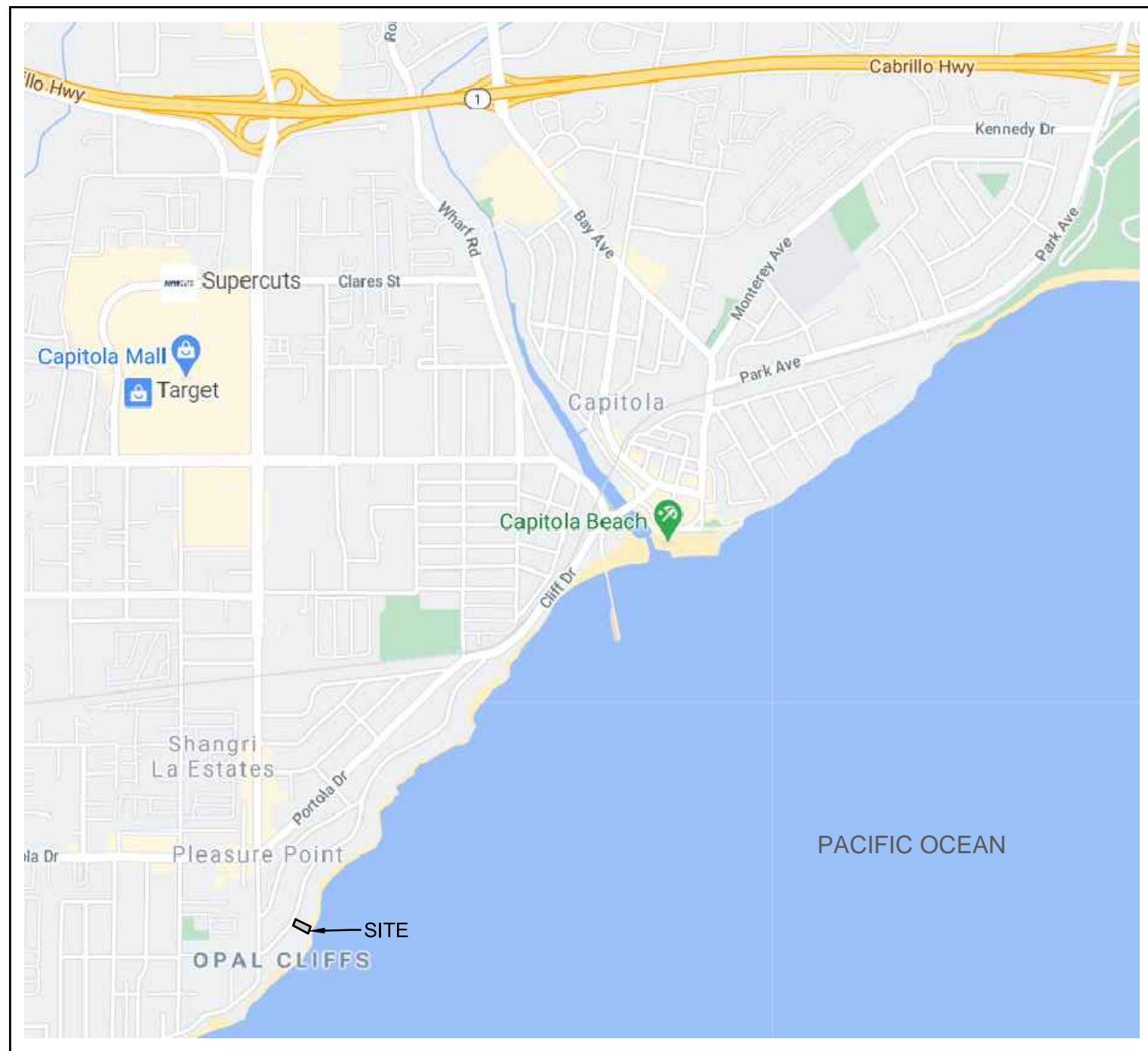


APN	ASSESSORS PARCEL NUMBER
BRW	BOTTOM OF RETAINING WALL
BW	BOTTOM OF WALL
CB	CATCH BASIN
CBC	CALIFORNIA BUILDING CODE
CO	CLEANOUT
CONC	CONCRETE
CTG	CLEANOUT TO GRADE
DS	DOWN SPOUT
DTL	DETAIL
DWG	DRAWING
DWY	DRIVEWAY
EG	EXISTING GROUND
EP	EDGE OF PAVEMENT
(E)	EXISTING
EX	EXISTING
FG	FINISH GRADE
FF	FINISH FLOOR
FL	FLOWLINE
FNC	FENCE
FT	FOOT/FEET
GB	GRADE BREAK
HDP	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
INV	INVERT
LF	LINEAR FOOT
LOG	LIMIT OF GRADING
LP	LOW POINT
MIN	MINIMUM
N	NORTH
NE	NORTHEAST
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OCEW	ON CENTER, EACH WAY
OH	OVERHEAD
PC	PORTLAND CEMENT CONCRETE
PP	POWER POLE
PL	PROPERTY LINE
POC	POINT OF CONNECTION
PV	PAVEMENT
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RC	RELATIVE COMPACTION
SD	SOUTH SLOPE
SE	SOUTHEAST
SFR	SINGLE FAMILY RESIDENCE
SHT	SHEET
SSCO	SANITARY SEWER CLEAN OUT
STD	STANDARD
TOW	TOP OF RETAINING WALL
TP	TOP OF WALL
USA	UNDERGROUND SERVICE ALER
W	WEST, WATER



3. SITE PLAN BASED ON TOPOGRAPHIC SURVEY, PERFORMED BY WESTFALL ENGINEERS, INC. (PROJECT #2019-081), DATED JANUARY, 2020.
2. ALL GRADING WORK AND CONSTRUCTION OF IMPROVEMENTS SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS SPECIFIED IN THE GEOLOGIC INVESTIGATION, PREPARED BY EASTON GEOLOGY, JOB NO. C19009, DATED FEBRUARY 7, 2020. THE GEOLOGICAL ENGINEER SHALL INSPECT THE COMPLETED PROJECT AND CERTIFY, IN WRITING, THAT ALL WORK CONFORMS TO THE GEOLOGIC INVESTIGATION REPORT.
3. NO CHANGES ON THESE PLANS SHALL BE MADE WITHOUT PRIOR APPROVAL OF RAMSEY CIVIL ENGINEERING, INC.
4. EROSION CONTROL PLANS SHALL BE PERMITTED AND FILED WITH THE APPLICABLE AGENCIES PRIOR TO ANY CONSTRUCTION OR GRADING OPERATIONS.
5. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO, OR USES OF, THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
6. ROOF DOWNSPOUTS SHALL DISCHARGE AWAY FROM BUILDING FOUNDATION PER 2019 CBC, AND DIRECTED TO GRADE TO DRAIN.
7. TOTAL NEW/REPLACED IMPERVIOUS SURFACES IS BETWEEN 500 AND 5,000 SQUARE FEET, THEREFORE, THE PROPOSED PROJECT IS CLASSIFIED AS A "MEDIUM" PROJECT PER THE SCC DESIGN CRITERIA, FEBRUARY 2019 EDITION. BMP'S SHALL BE IMPLEMENTED
8. ALL COMPACTION TO BE DETERMINED USING THE LATEST EDITION OF ASTM D1557.
9. THE TYPES, LOCATIONS, SIZES, AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE IMPROVEMENT PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR SHALL PERFORM THEIR OWN FIELD INVESTIGATION PRIOR TO CONSTRUCTION TO VERIFY UTILITY LOCATIONS. CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. THE ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED. IF AT ANYTIME THE CONTRACTOR IS UNSURE OF UTILITY LOCATIONS, A CERTIFIED UNDERGROUND UTILITY LOCATOR SHALL BE OBTAINED AT THE COST OF THE CONTRACTOR, FOR ONSITE UTILITIES, OR CONTACT U.S.A (OR 811) FOR OFFSITE UTILITIES.
10. ALL UTILITY STRUCTURES TO REMAIN WITHIN AREAS EFFECTED BY THE CONSTRUCTION WORK ON THIS PROJECT, INCLUDING, BUT NOT LIMITED TO CLEANOUTS, WATER VALVES, AND PULL BOXES SHALL BE ADJUSTED TO GRADE BY THE CONTRACTOR WHETHER SHOWN ON THESE PLANS OR NOT. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH ALL PUBLIC OR PRIVATE UTILITY COMPANIES.
11. ALL AREAS TO BE GRADED ACCORDING TO THE GRADES SHOWN ON THESE PLANS. A 1% MINIMUM SLOPE FOR DRAINAGE SHALL BE APPLIED IF NO GRADES ARE SHOWN, SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER.
12. CONTRACTOR SHALL GRADE EVENLY BETWEEN SPOT ELEVATIONS.
13. CONTRACTOR SHALL VERIFY THE CONTENTS AND THICKNESS OF THE BUILDING SLAB SECTION (I.E. CONCRETE, SAND, ROCK) WITH THE STRUCTURAL PLANS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
14. ALL GRADING, TRENCHING, SHORING, PAVING, AND CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE O.S.H.A REGULATIONS.
15. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF THE CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONNEL AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR AGREES TO DEFEND, INDEMNIFY, AND HOLD DESIGN PROFESSIONALS AND CITY REPRESENTATIVES HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.
16. THE OWNER ACKNOWLEDGES THAT THE PARCEL DOES AND WILL CONTINUE TO RECEIVE UPSTREAM RUNOFF, AND THAT THEY ARE RESPONSIBLE FOR MAINTENANCE OF THE DRAINAGE PATHWAY (NATURAL AND/OR MAN-MADE) THROUGH THE PARCEL, AND THAT THE COUNTY & FLOOD CONTROL DISTRICT(S) ARE NOT RESPONSIBLE FOR THE UPSTREAM RUNOFF OR FOR THE MAINTENANCE OF THE DRAINAGE PATHWAY.
17. A DOWNSTEAM ANALYSIS FOR STORMWATER RUNOFF WAS PERFORMED. THERE WILL BE NO SIGNIFICANT IMPACT TO DOWNSTEAM PROPERTIES DUE TO THE PROPOSED IMPROVEMENTS, SHOWN ON THESE PLANS. ONSITE STORMWATER WILL BE CONTROLLED VIA THE PROPOSED PERVIOUS PAVERS SYSTEM, WITH A SAFE OVERFLOW, VIA SHEET FLOW, TO OPAL CLIFF DRIVE.

1. ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH APPLICABLE REQUIREMENTS IN THE CURRENT EDITION OF THE "COUNTY OF SANTA CRUZ CRUZ DESIGN CRITERIA."
2. UNLESS OTHERWISE AGREED UPON WITH THE COUNTY OF SANTA CRUZ, WORK SHALL BE LIMITED TO 8:00 A.M. TO 5:00 P.M. WEEKDAYS. NON-NOISE PRODUCING ACTIVITIES, SUCH AS INTERIOR PAINTING, SHALL NOT BE SUBJECT TO THIS RESTRICTION.
3. A "DISTURBANCE COORDINATOR" SHALL BE ESTABLISHED, PRIOR TO CONSTRUCTION, TO RESPOND TO CITIZEN COMPLAINTS AND INQUIRIES REGARDING CONSTRUCTION NOISE AND DUST. THE NAME, PURPOSE AND TELEPHONE NUMBER OF THE DISTURBANCE COORDINATOR SHALL BE POSTED ON A SIGN EASILY VISIBLE FROM OFF-SITE DURING THE ENTIRE TIME PROJECT GRADING AND CONSTRUCTION OCCURS. THE DISTURBANCE COORDINATOR SHALL INVESTIGATE THE CONCERN AND TAKE REMEDIAL ACTION WHEN NECESSARY, WITHIN 24 HOURS OF RECEIVING A COMPLAINT OR INQUIRY.
4. ALL FIGURE (FIG.) REFERENCES, UNLESS OTHERWISE SPECIFIED, REFER TO STANDARD DRAWINGS IN THE CURRENT EDITION OF THE "COUNTY OF SANTA CRUZ DESIGN CRITERIA".
5. NO CHANGES IN THE APPROVED IMPROVEMENT PLANS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE DEPARTMENT OF PUBLIC WORKS.
6. NO LAND CLEARING, GRADING OR EXCAVATING SHALL TAKE PLACE BETWEEN OCTOBER 15 AND APRIL 15 UNLESS A SEPARATE WINTER EROSION CONTROL PLAN IS APPROVED BY THE PLANNING DIRECTOR. BETWEEN OCTOBER 15 AND APRIL 15, EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION SUCH PROTECTION MAY CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF THE PROJECT, ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.
7. THE CONTRACTOR SHALL APPLY WATER TO ALL EXPOSED EARTH SURFACES AT INTERVALS SUFFICIENT TO PREVENT AIRBORNE DUST FROM LEAVING THE PROJECT SITE. ALL EXPOSED EARTH SHALL BE WATERED DOWN AT THE END OF THE WORK DAY.
8. THE CONTRACTOR SHALL NOTIFY THE COUNTY CONSTRUCTION ENGINEER (831-454-2160) 24 HOURS PRIOR TO START OF CONSTRUCTION.
9. UNLESS OTHERWISE INDICATED BY A GEOTECHNICAL ENGINEER, THE TOP 8" OF SUB-GRADE UNDER ALL PAVED (CONCRETE AND ASPHALT) SURFACES SUBJECT TO VEHICULAR USE SHALL BE COMPACTED TO A MINIMUM 95% RELATIVE COMPACTION.
10. CONTRACTOR SHALL FIELD VERIFY ALL UNDERGROUND UTILITIES AND SUBSTRUCTURES. PRIOR TO FURTHER CONSTRUCTION, THE ENGINEER MUST BE NOTIFIED, IN WRITING, OF ANY DISCREPANCIES THAT MAY EXIST.
11. PRIOR TO CONSIDERATION FOR FORMAL COUNTY ACCEPTANCE OF THE IMPROVEMENTS, AS-BUILT PLANS WILL BE PREPARED BY COUNTY STAFF. ANY CHANGES FROM THE IMPROVEMENT PLANS NOT PREVIOUSLY APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WILL REQUIRE NEGOTIATION AND ADJUSTMENT TO THE SATISFACTION OF THE COUNTY.
12. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO, OR USES OF, THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
13. UNLESS OTHERWISE NOTED, THE TERMS "INSTALL", "CONSTRUCT" AND "NEW (N)" INDICATE THAT THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIALS, PRODUCTS, EQUIPMENT, AND LABOR FOR SAID INSTALLATION AND CONSTRUCTION.
14. PURSUANT TO SECTIONS 16.40.040 AND 16.42.100 OF THE COUNTY CODE, IF AT ANY TIME DURING SITE PREPARATION, EXCAVATION OR OTHER GROUND DISTURBANCE ASSOCIATED WITH THIS DEVELOPMENT, ANY  
  
ARTIFACT OR OTHER EVIDENCE OF AN HISTORIC ARCHEOLOGICAL RESOURCE OR A NATIVE AMERICAN CULTURAL SITE IS DISCOVERED, THE RESPONSIBLE PERSONS SHALL IMMEDIATELY CEASE AND DESIST FROM ALL FURTHER SITE EXCAVATION AND NOTIFY THE SHERIFF-CORONER IF THE DISCOVERY CONTAINS HUMAN REMAINS, OR THE PLANNING DIRECTOR IF THE DISCOVERY CONTAINS NO HUMAN REMAINS. THE PROCEDURES ESTABLISHED IN SECTIONS 16.40.010 AND 16.42.100 SHALL BE OBSERVED.
15. THE DIRECTOR OF PUBLIC WORKS, OR HIS AUTHORIZED REPRESENTATIVE, SHALL HAVE THE AUTHORITY TO "STOP WORK" IF THE WORK IS NOT BEING DONE IN ACCORDANCE WITH THE APPROVED IMPROVEMENT PLANS.



## INDEX OF SHEETS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
C1.0	COVER SHEET & SITE PLAN
C2.0	GRADING & DRAINAGE PLAN
C3.0	UTILITY PLAN
C4.0	EROSION & SEDIMENT CONTROL PLAN
C5.0	DETAILS & SECTIONS
C6.0	DETAILS

SURVEY FOR THIS PROJECT PROVIDED BY WESTFALL ENGINEERS, INC., DATED JANUARY, 2020.  
BENCHMARK INFORMATION IS TAKEN FROM AFOREMENTIONED SURVEY.  
PROPERTY LINES ARE SHOWN FOR ORIENTATION ONLY AND ARE BASED ON RECORD DATA. THEY MAY BE  
DISCOVERED TO BE DIFFERENT. SUBJECT TO THE RESULTS OF A COMPLETE BOUNDARY SURVEY.

PROJECT BENCHMARK IS COUNTY OF SANTA CRUZ BENCHMARK #488, A BRASS DISK ON TOP OF CURB AT NORTHWEST CORNER OF INTERSECTION OF FLORAL DRIVE AND 36TH AVE

ELEVATION = 44.06' (NAVD88)

IMPERVIOUS AREA BREAKDOWN		
ON-SITE	EXISTING (SF)	NEW/REPLACED (SF)
STRUCTURE AREA	1,860	2,007
CONCRETE/HARDSCAPE	1,389	905
ASPHALT	318	328
PERVIOUS PAVERS	0	570
TOTAL	3,567	3,525

PER PART 3, SECTION C.1.a OF THE SANTA CRUZ COUNTY DESIGN CRITERIA THIS PROJECT IS CONSIDERED A MEDIUM PROJECT (500SF-5,000SF) AND REQUIRES IMPLEMENTATION OF BMP's

**NOTES:**

1. PERVIOUS PAVER AREA TAKEN AT 50% FOR TOTAL BREAKDOWN.
2. DOWNSPOUTS WILL BE HARDDIPIED TO LOW LYING LANDSCAPED AREA NEAR FRONT OF PROPERTY.
3. LOW LYING LANDSCAPE AREAS WILL OVERFLOW TO EXISTING STORM DRAIN LINE, WHICH DISCHARGES OUT OF FACE OF CLIFF

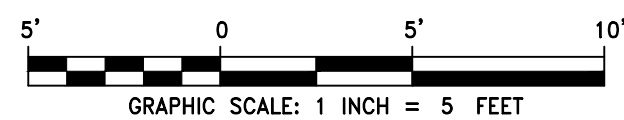
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REVISION BLOCK	DATE	DESCRIPTION	BY

DRAWN BY:	DMR
DESIGNED BY:	DMR
DATE:	12/21/2020
SCALE:	AS NOTED
PROJECT NO:	20-036
SHEET:	

**C2.0**



**GRADING/PAVING LEGEND**

	ASPHALT 3" AC OVER 9" CLIIAB @ 95% RC
	CONCRETE 4" PCC OVER 4" CLIIAB @ 95% RC
	PERVIOUS PAVERS OVER 9" CALTRANS CL 2 PERMEABLE MATERIAL, PROOF ROLL SUBBASE FOR SMOOTH/FLAT SUBBASE

**ESTIMATED EARTHWORK QUANTITIES**

5	CUBIC YARDS EXCAVATION
5	CUBIC YARDS EMBANKMENT
0	CUBIC YARDS (BALANCE ON SITE)

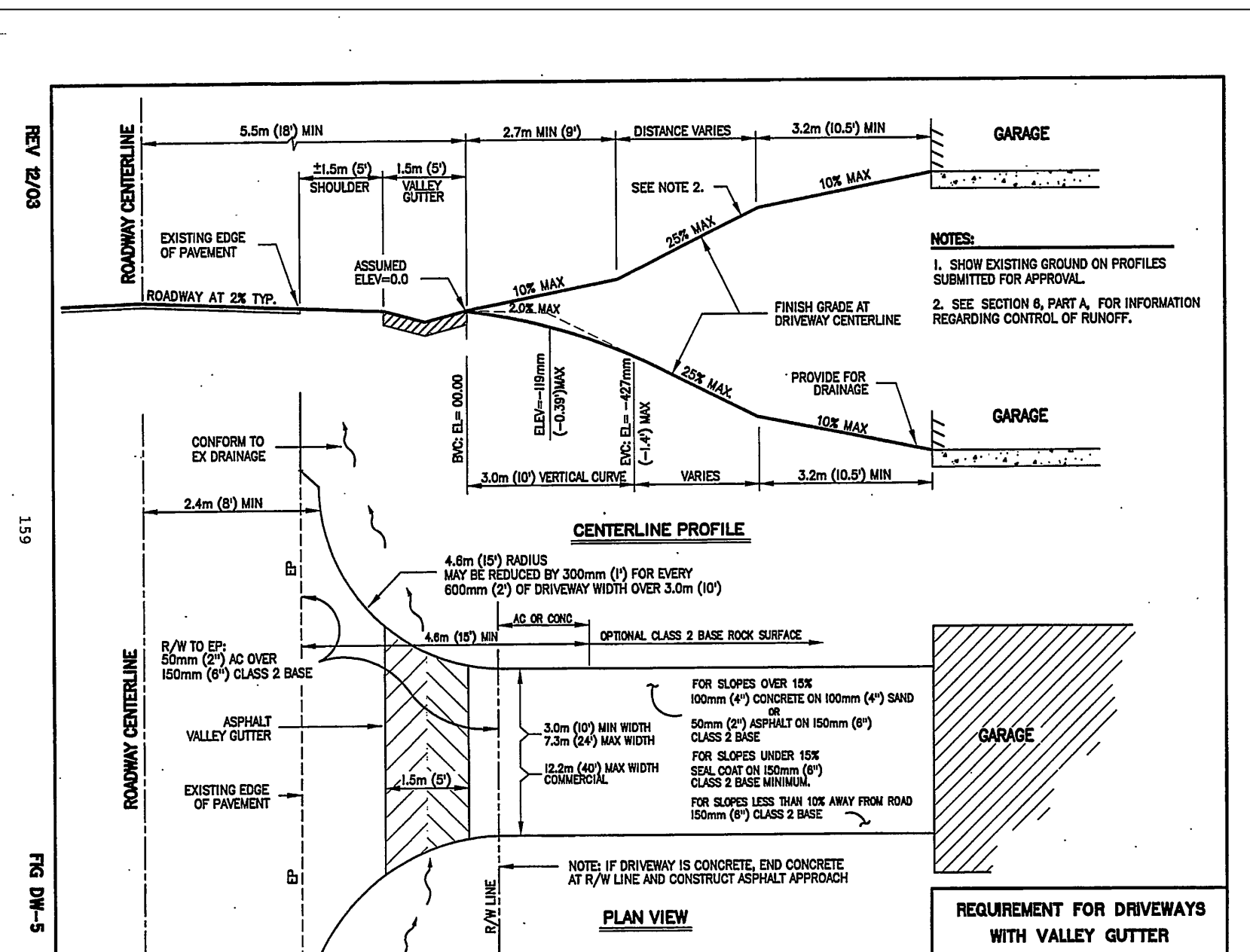
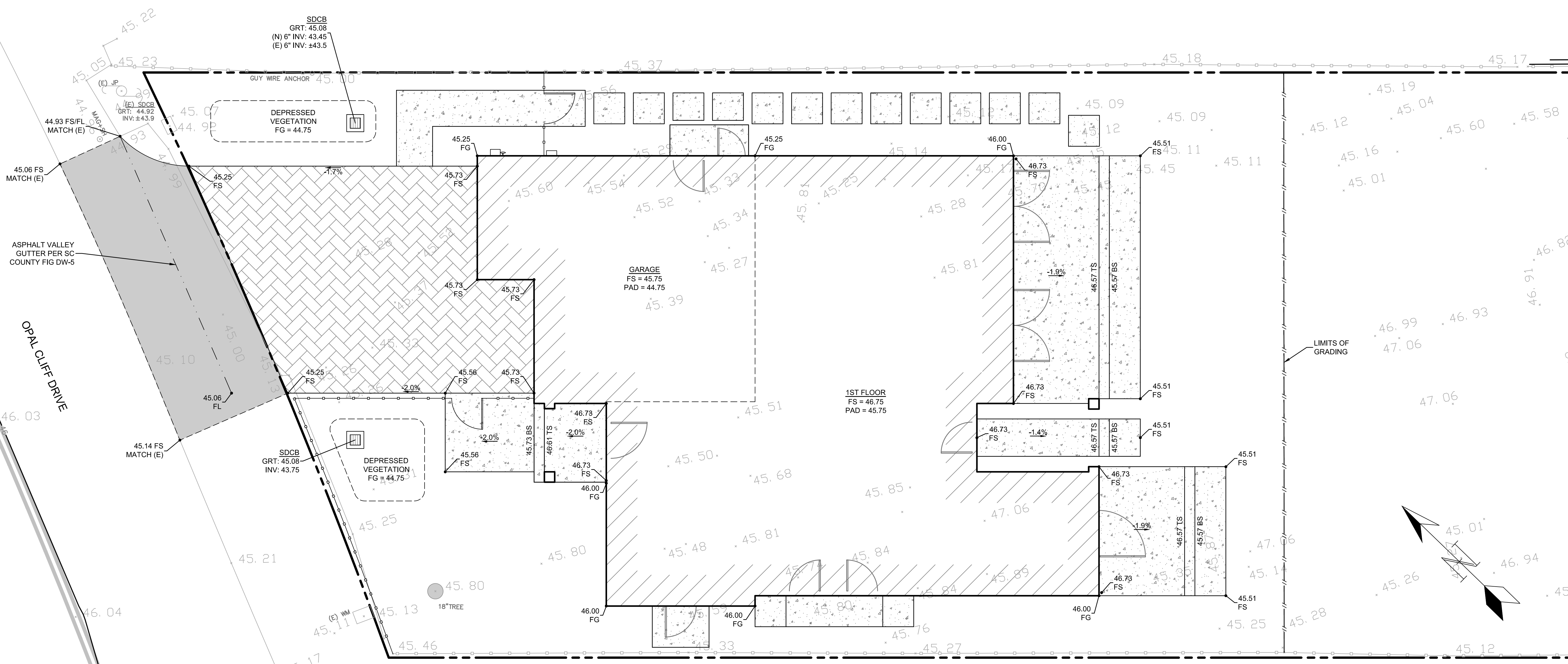
**NOTES**

1. ESTIMATE DOES NOT INCLUDE BUILDING OR RETAINING WALL FOUNDATIONS, UTILITY TRENCH VOLUMES OR ANY OVEREXCAVATION, IF REQUIRED BY SITE CONDITIONS.

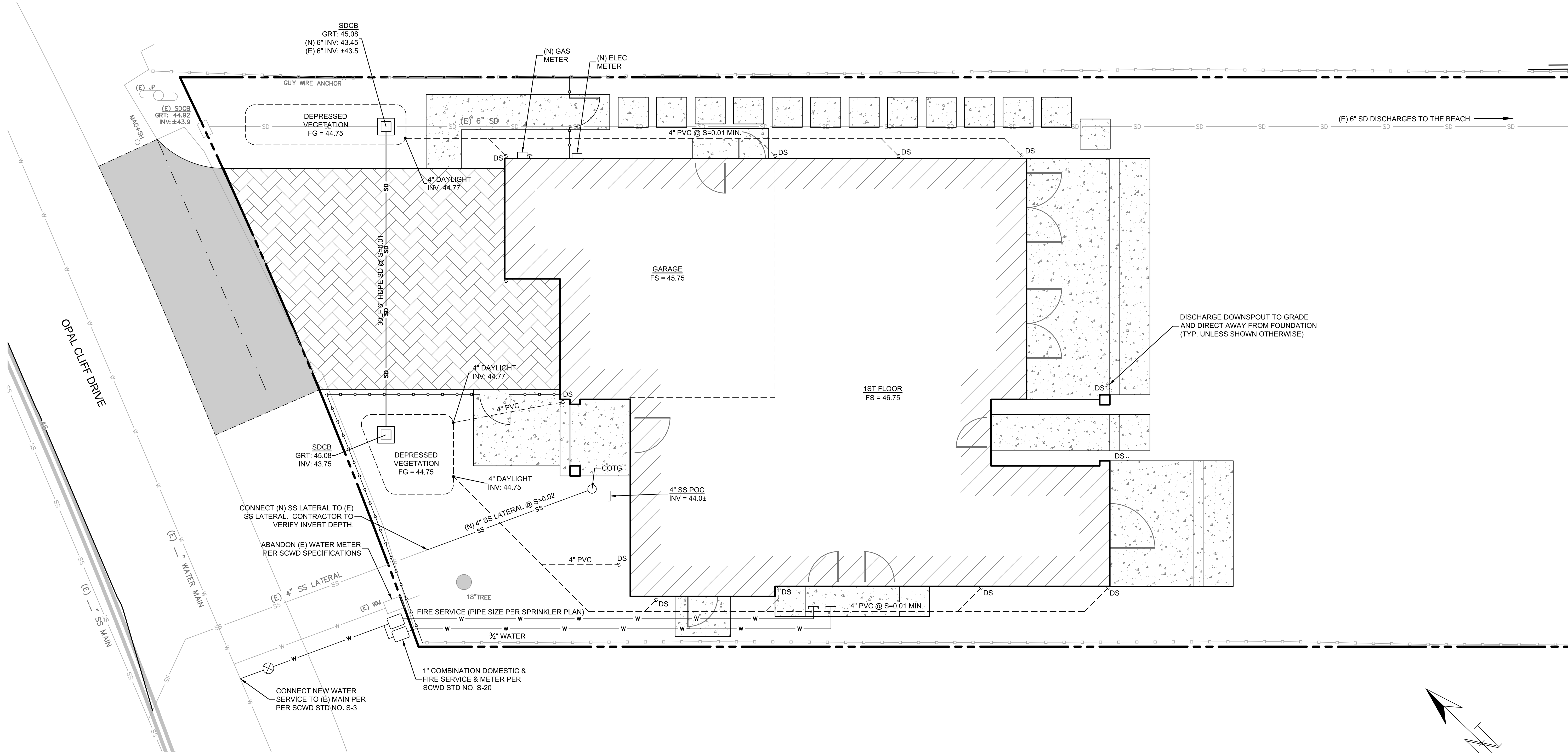
2. ESTIMATE ASSUMES A 0% COMPACTION FACTOR ON ALL FILL MATERIAL AND A 0% EXPANSION FACTOR ON ALL CUT MATERIAL.

3. PRIOR TO COMMENCEMENT OF WORK CONTRACTOR SHALL CONFIRM THAT ESTIMATES ARE CORRECT.

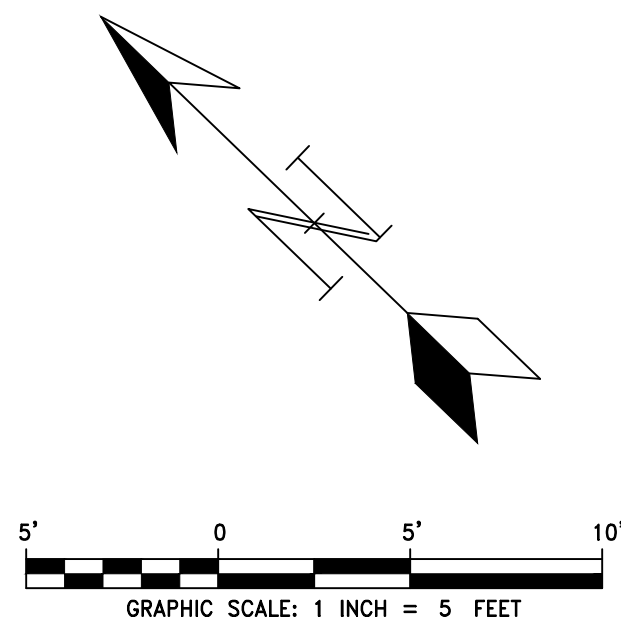
**GRADING & DRAINAGE PLAN**







UTILITY PLAN



CIVIL ENGINEERING  
LAND PLANNING  
PROJECT MANAGEMENT  
CONSTRUCTION SUPPORT  
QSD AND QSP SERVICES

2905 KRISTIE COURT  
SANTA CRUZ, CA 95065  
TEL (831) 462-2905  
www.ramseycivilengineering.com

DAVID RAMSEY  
RCE# 73735

APN# 033-171-08

PLAN TYPE

UTILITY PLAN

**HOUSTON RESIDENCE**

4190 OPAL CLIFFS DRIVE, SANTA CRUZ, CA

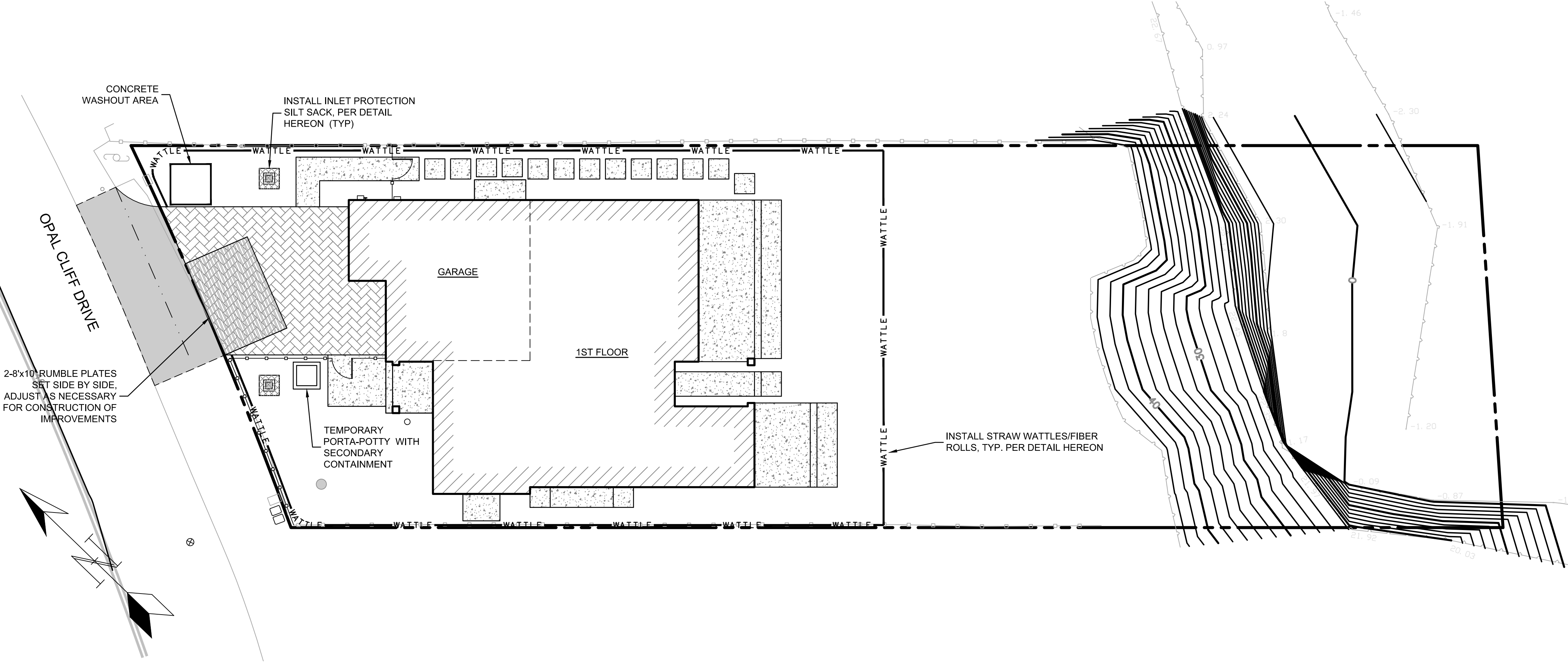
NUMBER	BY	DESCRIPTION	DATE

DRAWN BY:	DMR
DESIGNED BY:	DMR
DATE:	12/21/2020
SCALE:	AS NOTED
PROJECT NO:	20-036
SHEET:	C3.0



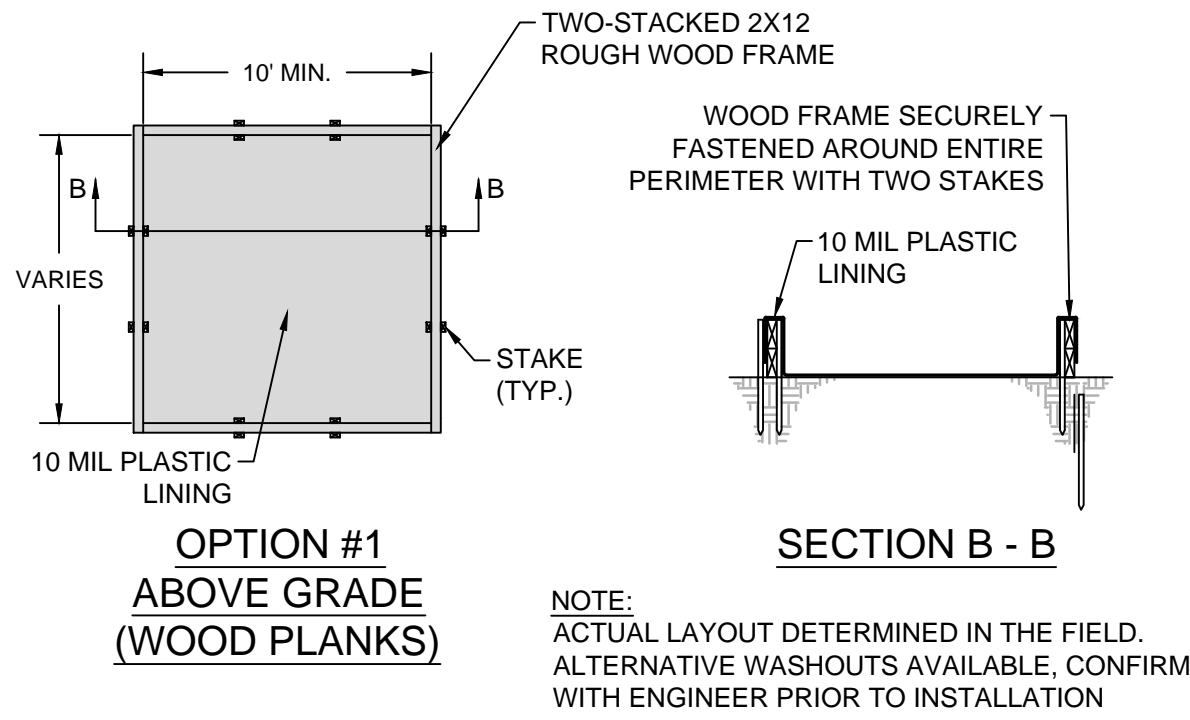
EROSION CONTROL NOTES

1. THE EROSION CONTROL PLANS IN THIS SET SHALL BE REVIEWED AND IMPLEMENTED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
2. THE CONTRACTOR SHALL ENSURE ALL MONITORING AND INSPECTIONS ARE PERFORMED AS REQUIRED ONSITE THROUGHOUT CONSTRUCTION.
3. NO LAND CLEARING, GRADING OR EXCAVATION SHALL BE DONE BETWEEN OCTOBER 15TH AND APRIL 15TH. ANY DEVIATION FROM THIS CONDITION REQUIRES REVIEW AND APPROVAL OF A SEPARATE WINTER EROSION CONTROL PLAN BY ENVIRONMENTAL PLANNING PRIOR TO BEGINNING CONSTRUCTION. THE DEVELOPER SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING SITE EROSION CONTROL AT ALL TIMES.
4. IT SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE PERMITEE TO ENSURE THAT EROSION DOES NOT OCCUR FROM ANY ACTIVITY DURING OR AFTER PROJECT CONSTRUCTION. ADDITIONAL MEASURES, BEYOND THOSE SPECIFIED, MAY BE REQUIRED BY THE PLANNING DIRECTOR AS DEEMED NECESSARY TO CONTROL ACCELERATED EROSION.
5. PRIOR TO ANY FORECAST RAIN AND ANYTIME BETWEEN OCTOBER 15 AND APRIL 15, AT THE END OF EACH WORKDAY, AT THE END OF EACH WORKWEEK, THE DEVELOPER SHALL IMPLEMENT ALL TEMPORARY MEASURES NECESSARY TO PREVENT EROSION AND SILTATION UNTIL THE PROJECT HAS BEEN FINALIZED. THESE MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, DIRECT SEEDING OF THE AFFECTED AREAS, STRAW MULCHING, AND/OR INSTALLATION OF STRAW BALES DAMS/SILT FENCES.
6. DURING CONSTRUCTION, NO TURBID WATER SHALL BE PERMITTED TO LEAVE THE SITE. USE OF SILT AND GREASE TRAPS, FILTER BERMS, HAY BALES OR SILT FENCES SHALL BE USED TO PREVENT SUCH DISCHARGE.
7. ALL AREAS ON- AND OFF-SITE EXPOSED DURING CONSTRUCTION ACTIVITIES, IF NOT PERMANENTLY LANDSCAPED PER PLAN, SHALL BE PROTECTED BY MULCHING AND/OR SEEDING WITH ANNUAL WINTER BARLEY.
8. ALL EXCAVATED MATERIAL SHALL BE REMOVED TO AN APPROVED DISPOSAL SITE OR DISPOSED OF ON-SITE IN A MANNER THAT WILL NOT CAUSE EROSION.
9. ANY MATERIAL STOCKPILED, FOR LONGER THAN 14 DAYS, DURING CONSTRUCTION SHALL BE COVERED WITH PLASTIC.
10. UPON COMPLETION OF CONSTRUCTION, ALL REMAINING EXPOSED SOILS SHALL BE PERMANENTLY REVEGETATED PER LANDSCAPING PLAN. THE PROTECTION SHALL BE INSTALLED PRIOR TO CALLING FOR FINAL APPROVAL OF THE PROJECT AND AT ALL TIMES BETWEEN OCTOBER 15 AND APRIL 15. SUCH PROTECTION SHALL BE MAINTAINED FOR AT LEAST ONE WINTER UNTIL PERMANENT PROTECTION IS ESTABLISHED.
11. EXPOSED SOIL ON SLOPES GREATER THAN 20% SHALL BE SEEDED, COVERED WITH 2 INCHES OF STRAW, AND AN EROSION CONTROL BLANKET. THE EROSION CONTROL BLANKET SHALL BE STAKED IN PLACE.
12. IT IS THE DEVELOPER'S RESPONSIBILITY TO SEE THAT ADDITIONAL MEASURES, NECESSARY TO CONTROL SITE EROSION AND PREVENT SEDIMENT TRANSPORT OFF-SITE ARE IMPLEMENTED.
13. ALL SPILLS AND/OR LEAKS SHALL BE IMMEDIATELY CLEANED UP AND MITIGATED PER THE CONTRACTORS O&M STANDARDS.



STORMWATER O&M PLAN

1. REFER TO THE RECORDED STORMWATER MAINTENANCE AGREEMENT (SCC FIG. SWM-25A) FOR ADDITIONAL SITE/PROJECT INFORMATION AND REQUIREMENTS, AS WELL AS RESPONSIBLE PARTY AGREEMENT.
2. STORMWATER MAINTENANCE AGREEMENT SHALL TRANSFER WITH OWNERSHIP.
3. BELOW MAINTENANCE SPECIFICATIONS REFER TO POST-CONSTRUCTION REQUIREMENTS, REFER TO THE PROJECT EROSION CONTROL PLAN (SHEET C4) FOR MAINTENANCE REQUIREMENTS DURING THE CONSTRUCTION PHASE OF THE PROJECT.
4. MAINTENANCE AGREEMENT REFERS TO ALL PRIVATELY OWNED STORMWATER FACILITIES.
5. SUMMARIZED MAINTENANCE REQUIREMENTS FOR DRAINAGE FACILITIES:
  - 5.1. ROOF DOWNSPOUTS:
    - 5.1.1. ALL DOWNSPOUTS AND ROOF GUTTERS SHALL BE INSPECTED YEARLY FOR SEDIMENT AND/OR TRASH BUILD-UP. ALL SEDIMENT AND TRASH SHALL BE REMOVED AND PROPERLY DISPOSED OF.
  - 5.2. GRADED SWALES:
    - 5.2.1. ROUTINE MAINTENANCE ON AN ANNUAL BASIS SHALL INCLUDE TRASH AND DEBRIS REMOVAL, AND REMOVAL OF LEAVES DURING AND AFTER FALL LEAF DROP.
    - 5.2.2. RECOMMENDED INSPECTIONS ON AN ANNUAL BASIS INCLUDE:
      - 5.2.2.1. ENSURE INFLOW AND OUTFLOW AREAS ARE SECURE AND NO EROSION HAS OCCURRED. ADD ROCK DISSIPATION PADS OR CHECK DAMS AS NECESSARY TO REDUCE FLOWS AND ELIMINATE EROSION.
      - 5.2.2.2. IF VISIBLE SEDIMENT EXIST AT BOTTOM OF FACILITY, SEDIMENT SHALL BE REMOVED TO ENSURE PROPER FLOW THROUGH.
      - 5.2.2.3. IF EXCESSIVE PONDING OF WATER IS OCCURRING (2-3 DAYS AFTER THE END OF A STORM) CONFIRM LEAF, DEBRIS OR SEDIMENT BUILD-UP IS NOT IMPEDING FLOW, REMOVE AS NECESSARY.
      - 5.2.2.4. IF VEGETATED ENSURE ALL VEGETATION IS HEALTHY. REMOVE AND REPLACE ALL DEAD OR DYING VEGETATION.

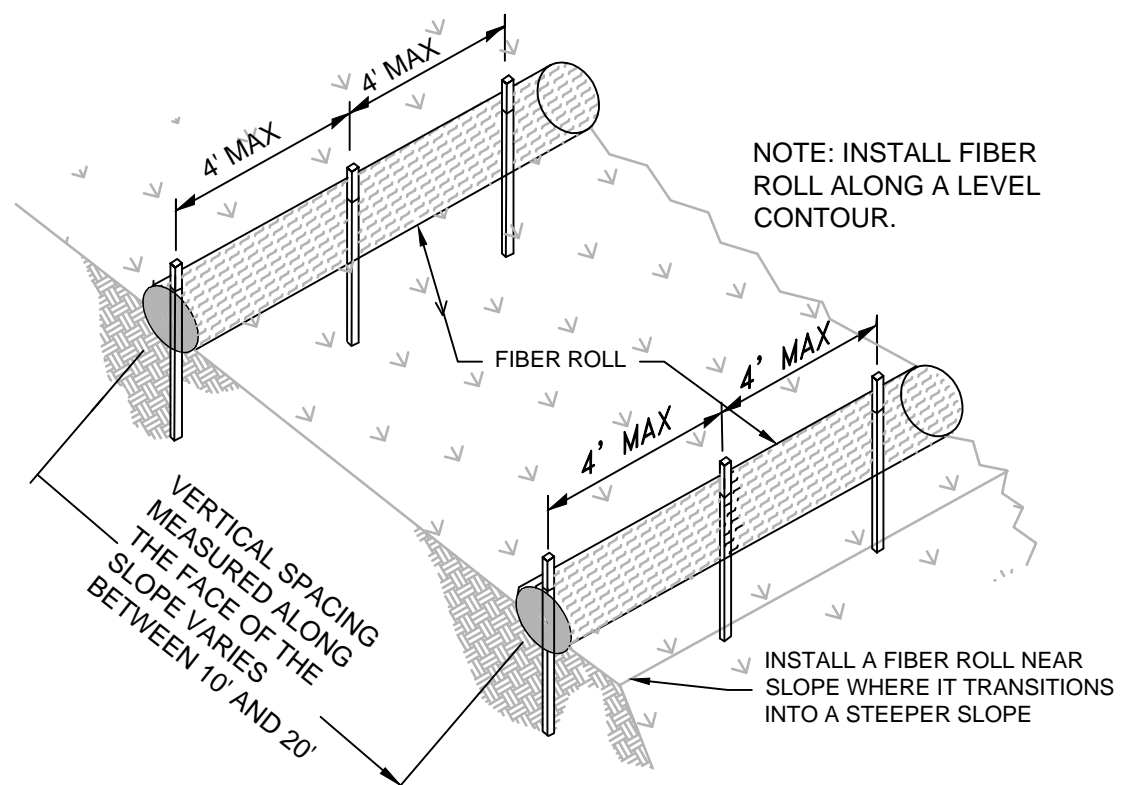


INSPECTION AND MAINTENANCE

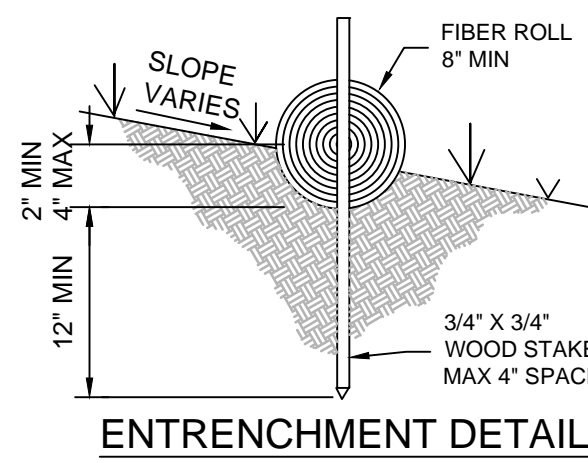
1. THE CONTRACTORS WATER POLLUTION CONTROL (WPCM) MANAGER SHALL MONITOR ON SITE CONCRETE WASTE STORAGE AND DISPOSAL PROCEDURES AT LEAST WEEKLY.
2. THE WPCM SHALL MONITOR CONCRETE WORKING TASKS, SUCH AS SAW CUTTING, CORING, GRINDING AND GROOVING DAILY TO ENSURE PROPER METHODS ARE EMPLOYED AS DIRECTED BY THE ENGINEER.
3. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 4 INCHES FOR ABOVE GRADE FACILITIES AND 12 INCHES FOR BELOW GRADE FACILITIES. MAINTAINING TEMPORARY CONCRETE WASHOUT FACILITIES SHALL INCLUDE REMOVING AND DISPOSING OF HARDENED CONCRETE AND RETURNING THE FACILITIES TO A FUNCTIONAL CONDITION. HARDENED CONCRETE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. EXISTING FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
5. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED FOR DAMAGE (I.E. TEARS IN POLYETHYLENE LINER, MISSING SANDBAGS, ETC.). DAMAGED FACILITIES SHALL BE REPAIRED.

CONCRETE WASHOUT

NTS



TYPICAL INSTALLATION



FIBER ROLLS PART 1

NTS

CONSTRUCTION SPECIFICATIONS

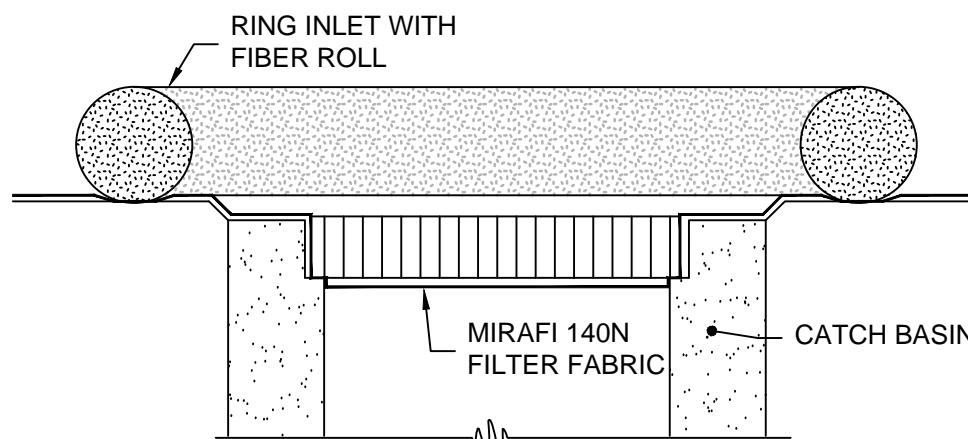
1. PREPARE SLOPE BEFORE THE FIBER ROLL PROCEDURE IS STARTED. SHALLOW GULLIES SHOULD BE SMOOTHED AS WORK PROGRESSES.
2. DIG SMALL TRENCHES ACROSS SLOPE ON CONTOUR, TO PLACE FIBER ROLLS IN. THE TRENCH SHOULD BE DEEP ENOUGH TO ACCOMMODATE HALF THE THICKNESS OF THE FIBER ROLL. WHEN THE SOIL IS LOOSE AND UNCOMPACTED, THE TRENCH SHOULD BE DEEP ENOUGH TO BURY THE FIBER ROLL 2/3 OF ITS THICKNESS BECAUSE THE GROUND WILL SETTLE. IT IS CRITICAL THAT FIBER ROLLS ARE INSTALLED PERPENDICULAR TO WATER MOVEMENT, PARALLEL TO THE SLOPE CONTOUR.
3. START BUILDING TRENCHES AND INSTALL FIBER ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
4. CONSTRUCT TRENCHES AT CONTOUR INTERVALS OF THREE TO EIGHT FEET APART DEPENDING ON STEEPNESS OF SLOPE. THE STEEPER THE SLOPE, THE CLOSER TOGETHER THE TRENCHES.
5. LAY THE FIBER ROLL ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE FIBER ROLL. USE A STRAIGHT BAR TO DRIVE HOLES THROUGH THE FIBER ROLL AND INTO THE SOIL FOR THE WOODEN STAKES.
6. DRIVE THE STAKE THROUGH THE PREPARED HOLE INTO THE SOIL. LEAVE ONLY ONE OR TWO INCHES OF STAKE EXPOSED ABOVE FIBER ROLL. IF USING WILLOW STAKES REFER TO USDA SOIL CONSERVATION SERVICE TECHNICAL GUIDE, BIOENGINEERING, FOR GUIDELINES TO PREPARING LIVE WILLOW MATERIAL.
7. INSTALL STAKES AT LEAST EVERY FOUR FEET APART THROUGH FIBER ROLL. ADDITIONAL STAKES MAY BE DRIVEN ON THE DOWNSLOPE SIDE OF THE TRENCHES ON HIGHLY EROSION OR VERY STEEP SLOPES.

INSTALLATION AND MAINTENANCE

8. INSPECT THE FIBER ROLL AND THE SLOPES AFTER SIGNIFICANT STORMS. MAKE SURE THE FIBER ROLLS ARE IN CONTACT WITH THE SOIL.
9. REPAIR ANY RILLS OR GULLIES PROMPTLY.
10. RESEED OR REPLANT VEGETATION IF NECESSARY UNTIL THE SLOPE IS STABILIZED.

FIBER ROLLS PART 2

NTS



INSPECTION AND MAINTENANCE:

1. FILTER FABRIC BARRIERS SHALL BE INSPECTED WEEKLY AFTER EACH SIGNIFICANT STORM - 1 INCH RAINFALL (25.4 MM) IN 24 HOUR PERIOD. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SEDIMENT SHOULD BE REMOVED WHEN IT REACHES 3" MAXIMUM HEIGHT. AT THAT TIME INSPECT THE FILTER MATERIAL FOR TEARS AND CLEAN OR REPLACE AS REQUIRED.
3. THE REMOVED SEDIMENT SHALL BE DISTRIBUTED EVENLY ACROSS AREAS ON-SITE, CONFORM WITH THE EXISTING GRADE AND BE REVEGETATED OR OTHERWISE STABILIZED PER EROSION CONTROL NOTES.

CATCH BASIN PROTECTION

NTS



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CIVIL ENGINEERING  
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QSD AND QSP SERVICES

2905 KRISTIE COURT  
SANTA CRUZ, CA 95065  
TEL (831) 462-2905  
www.ramseycivilengineering.com

REGISTERED PROFESSIONAL ENGINEER  
NO. C73735  
CIVIL  
STATE OF CALIFORNIA

DAVID RAMSEY  
RCE# 73735

APN# 033-171-08  
PLAN TYPE

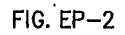
EROSION & SEDIMENT CONTROL PLAN  
**HOUSTON RESIDENCE**  
4190 OPAL CLIFFS DRIVE, SANTA CRUZ, CA

REVISION BLOCK	NUMBER	DESCRIPTION	DATE


DRAWN BY:	DMR
DESIGNED BY:	DMR
DATE:	12/21/2020
SCALE:	AS NOTED
PROJECT NO:	20-036
SHEET:	

C4.0





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REGISTERED PROFESSIONAL ENGINEER  
DAVID RAMSEY  
NO. C73735  
CIVIL  
STATE OF CALIFORNIA

DAVID RAMSEY  
RCE# 73735

DATE

ARN# 033 171 08

PLAN TYPE

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