NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

PROJECT DATA

OWNER'S NAME:	AMIR MOEINI / GREEN HOUSE PROPERTY INC.
ZONING:	R-1-10
NUMBER OF FLOORS:	SINGLE STORY W/ BASEMENT
FIRE PROTECTION:	HAS SPRINKLER
CONSTRUCTION TYPE:	VB
OCCUPANCY CLASSIFICATION:	R-3/U

APPLICABLE CODES:

A. CALIFORNIA FIRE CODE	2019 EDITION
B. CALIFORNIA BUILDING CODE	2019 EDITION
C. CALIFORNIA MECHANICAL CODE	2019 EDITION
D. CALIFORNIA PLUMBING CODE	2019 EDITION
E. CALIFORNIA ELECTRIC CODE:	2019 EDITION ENERGY CODE
F. CALIFORNIA ENERGY CODE	2019 EDITION

G. ANY OTHER APPLICABLE LOCAL AND STATE LAWS AND REGULATIONS.

ALSO:
2019 CALIFORNIA RESIDENTIAL CODE (BASED ON THE 2009 IRC) AND 2019 CALIFORNIA GREEN BUILDING STANDARD CODE, WHICH ARE ALSO APPLICABLE TO THIS PROJECT.

SCOPE OF WORK

BUILD NEW SINGLE FAMILY HOME AS SINGLE STORY WITH THE BASEMENT INCLUDING:

- FIVE (5) BEDROOMS.
- FOUR AND HALF (4½) BATHROOMS.
- LIVING / DINING ROOMS.
- GREAT ROOM AND KITCHEN.
- MUDROOM.
- LAUNDRY ROOM AND LAUNDRY CLOSET.
- HOME THEATER.
- TWO (2) LIGHT WELLS.
- ATTACHED THREE GARAGE.
- DETACHED ACCESSORY DWELLING UNIT.

CONSULTANTS

DESIGNER:

ARIA BUILD AND CONSTRUCTION
931 MERIDIAN AVE., SAN JOSE, CA 95126
PH: (408) 816-7734

CIVIL:

NNR ENGINEERING SERVICES CO.
535 WEYBRIDGE DRIVE, SAN JOSE,CA 95123
PH: (408) 348-7813

AREAS

LOT SIZE ..... 0.31 Acres ..... 13,493 SQ. FT.
MAXIMUM ALLOWABLE F.A.R. (11,000x35%=3,850)+(2,500x10%=250)=4,100 SQ. FT.

	Existing	Proposed	Allowed/Required
LOT COVERAGE: *Land area covered by all structures that are over 6 feet in height*	1,800.91 square feet (13.35%)	4,398.10 square feet (32.6%)	4,722.55 square feet (35 %)
FLOOR AREA: *Measured to the outside surfaces of exterior walls*	1,263.84 square feet (9.37%)	3,155.66 square feet (23.38%)	4,100 square feet (%)
SETBACKS:			
Front	36'-2" feet	26'-2" feet	25' feet
Rear	44'-2" feet	34'-0" feet	25' feet
Right side (1st/2nd)	22'-4" feet/ feet	12'-4" feet/ feet	10' feet N/A feet
Left side (1st/2nd)	10' feet/ feet	12'-2" feet/ feet	10' feet N/A feet
HEIGHT:	15'-0" feet	21'-1" feet	35'-0" feet

SQUARE FOOTAGE BREAKDOWN

	Existing	Change in	Total Proposed
HABITABLE LIVING AREA: *Includes habitable basement areas*	1,263.84 square feet	5,050.00 square feet	6,313.73 square feet
NON- HABITABLE AREA: *Does not include covered porches or open structures*	537.07 square feet	159.93 square feet	697.00 square feet

LOT CALCULATIONS

NET LOT AREA:	13,493 square feet
FRONT YARD HARDSCAPE AREA: *Hardscape area in the front yard setback shall not exceed 50%*	229.82 square feet (1.70%)
LANDSCAPING BREAKDOWN:	Total hardscape area (existing and proposed): _____sq ft Existing softscape (undisturbed) area: _____sq ft New softscape (new or replaced landscaping) area: _____sq ft *Sum of all three should equal the site's net lot area*

DRAWING INDEX

ARCHITECTURAL:

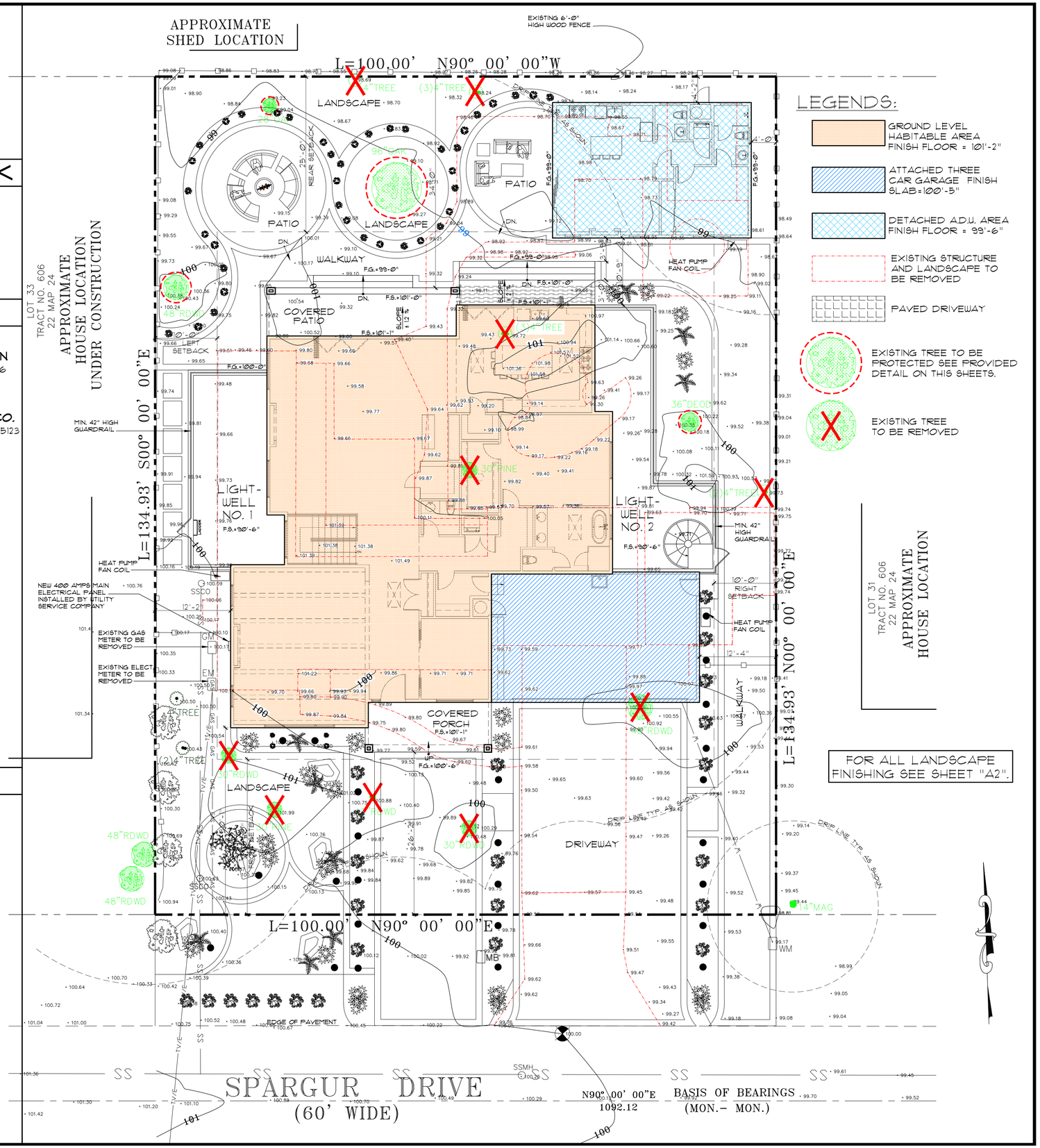
A1 COVER SHEET, EXISTING SITE PLAN AND AREA CALCS.
A2 LANDSCAPE PLAN
A3 PROPOSED GROUND FLOOR PLAN
A4 PROPOSED BASEMENT FLOOR PLAN
A5 PROPOSED ROOF PLAN
A6 PROPOSED FRONT AND RIGHT ELEVATIONS
A7 PROPOSED REAR AND LEFT ELEVATIONS
A8 ACCESSORY DWELLING PLANS AND ELEVAATIONS
A9 AREA CALCULATIONS
A10 BUILDING CROSS SECTION

SURVEY:

1 TOPOGRAPHIC SURVEY SITE PLAN

GRADING AND DRAINAGE:

C-1 GRADING AND DRAINAGE PLAN
C-2 DETAILS
C-3 EROSION CONTROL PLAN
C-4 CITY STANDARD DETAILS
C-5 PUMP DETAILS
C-6 BLUE PRINT FOR CLEANBAY



REVISIONS	BY

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ARIA Build & Construction

COVER SHEET AND SITE PLAN

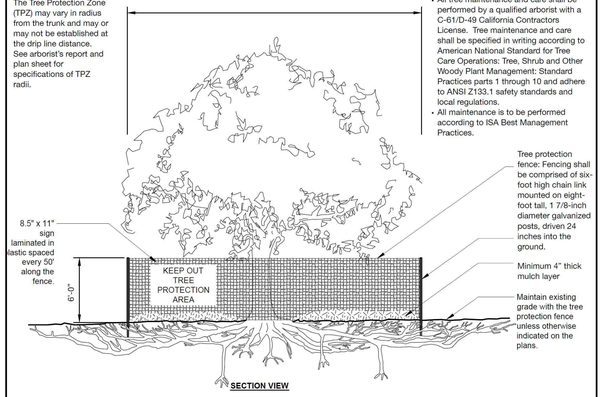
NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/8" = 1'-0"
DRAWN	BK
JOB	
SHEET	A1
OF	SHEETS

Notes:
The Tree Protection Zone (TPZ) may vary in radius from the trunk and may or may not be established at the drip line distance. See arborist's report and plan sheet for specifications of TPZ radii.

Crown diameter drip line distance equal to the outer most limit of foliage.

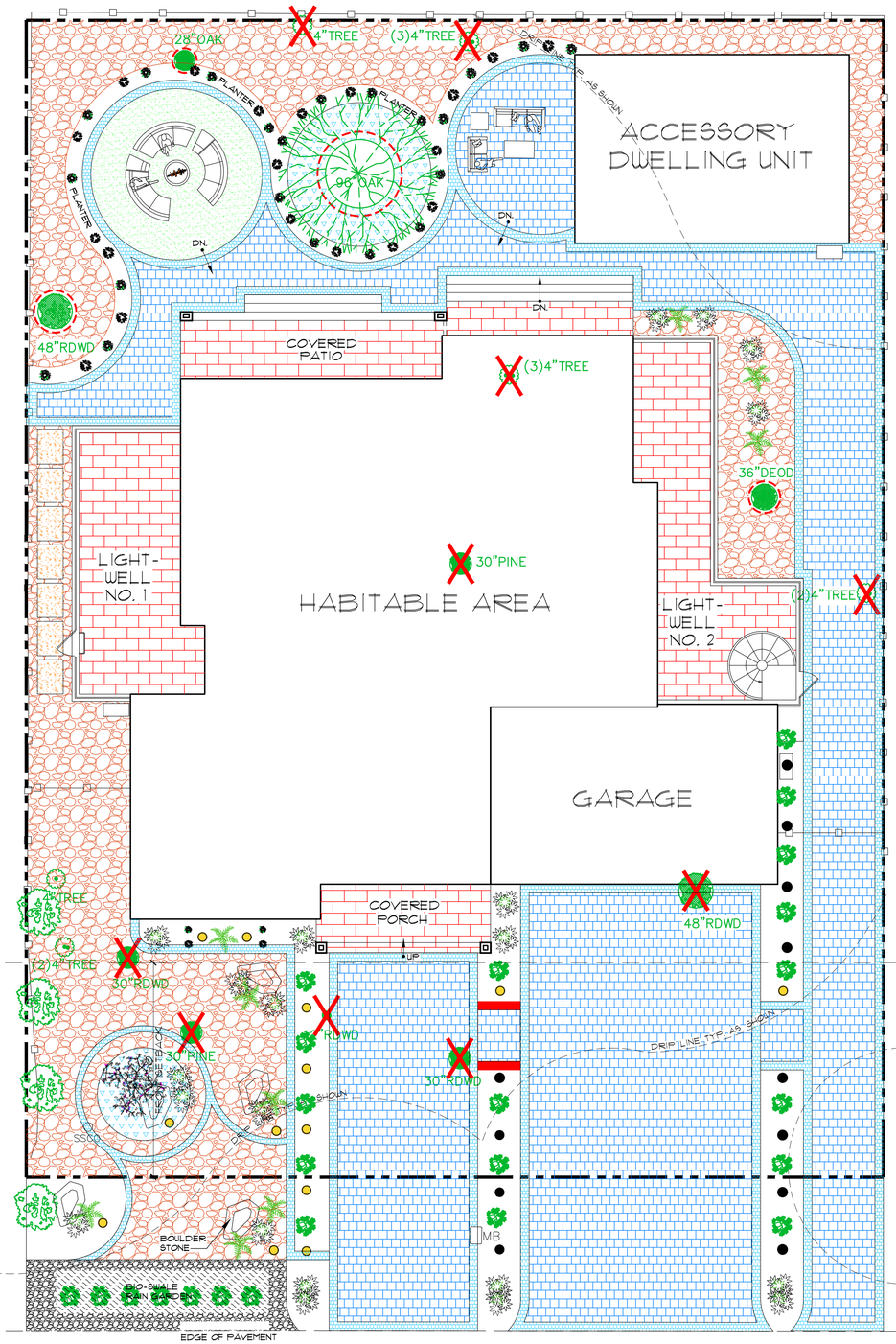
Notes:
- All tree maintenance and care shall be performed by a qualified arborist with a C-61/D-49 California Contractors License. Tree maintenance and care shall be specified in writing according to American National Standard for Tree Care Operations: Tree, Shrub and Other Woody Plant Management: Standard Practices parts 1 through 10 and adhere to ANSI Z133.1 safety standards and local regulations.
- All maintenance is to be performed according to ISA Best Management Practices.



SECTION VIEW

S-X TREE PROTECTION

URBAN TREE FOUNDATION © 2014
OPEN SOURCE FREE TO USE
Modified by Monarch Consulting Arborists LLC, 2019



LEGENDS:

- PERVIOUS PAVER
- PORCELAIN TILE
- PAVER BOARDER
- CONCRETE PAD
- BARK CHIPPINGS
- WHITE GRAVEL
- ARTIFICIAL GRASS WATERLESS LAWN
- EXISTING TREE TO BE PROTECTED SEE PROVIDED DETAIL ON THIS SHEETS.
- EXISTING TREE TO BE REMOVED

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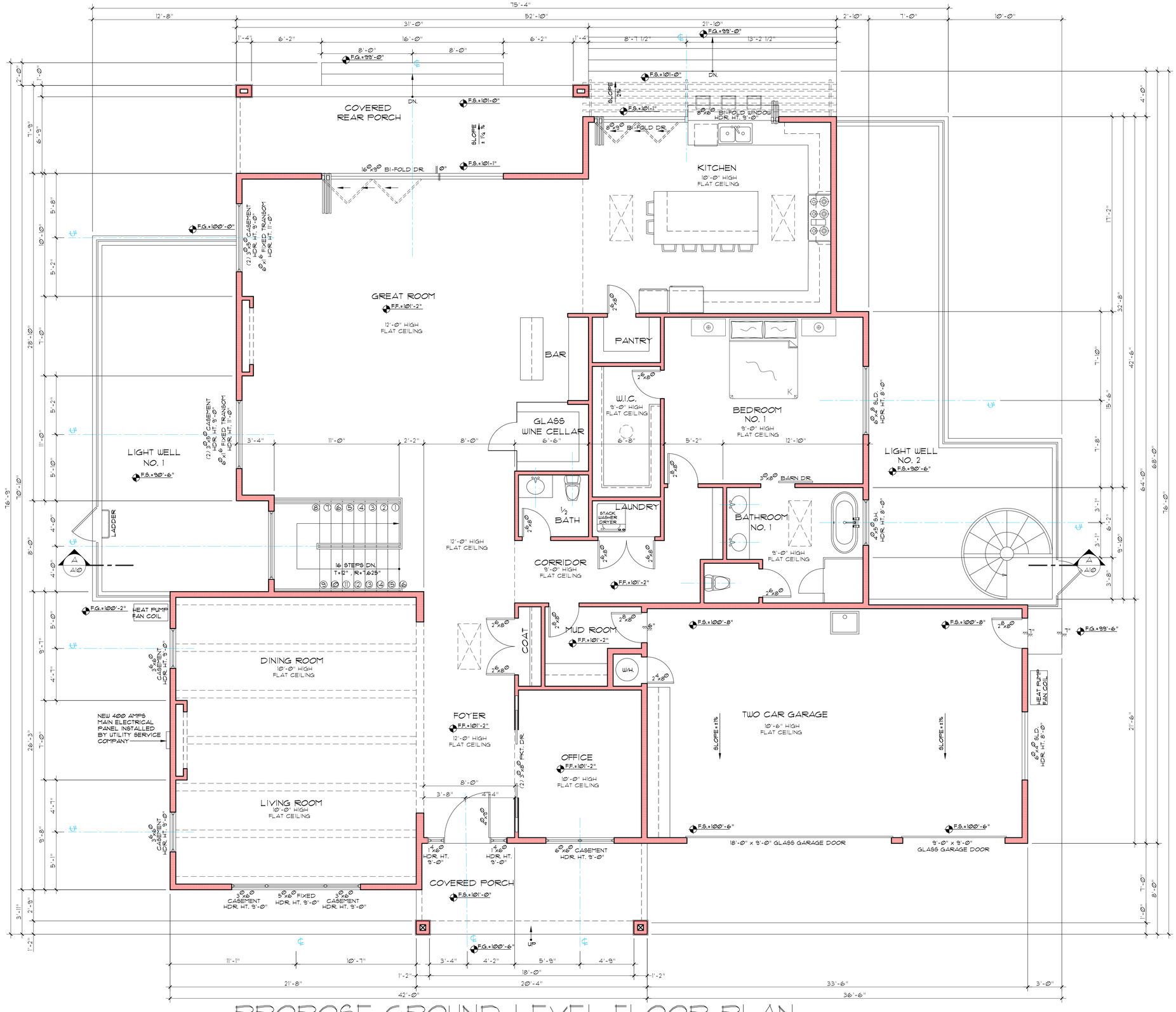
LANDSCAPE PLAN

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/8" = 1'-0"
DRAWN	BK
JOB	
SHEET	A2
OF	SHEETS



PROPOSE GROUND LEVEL FLOOR PLAN

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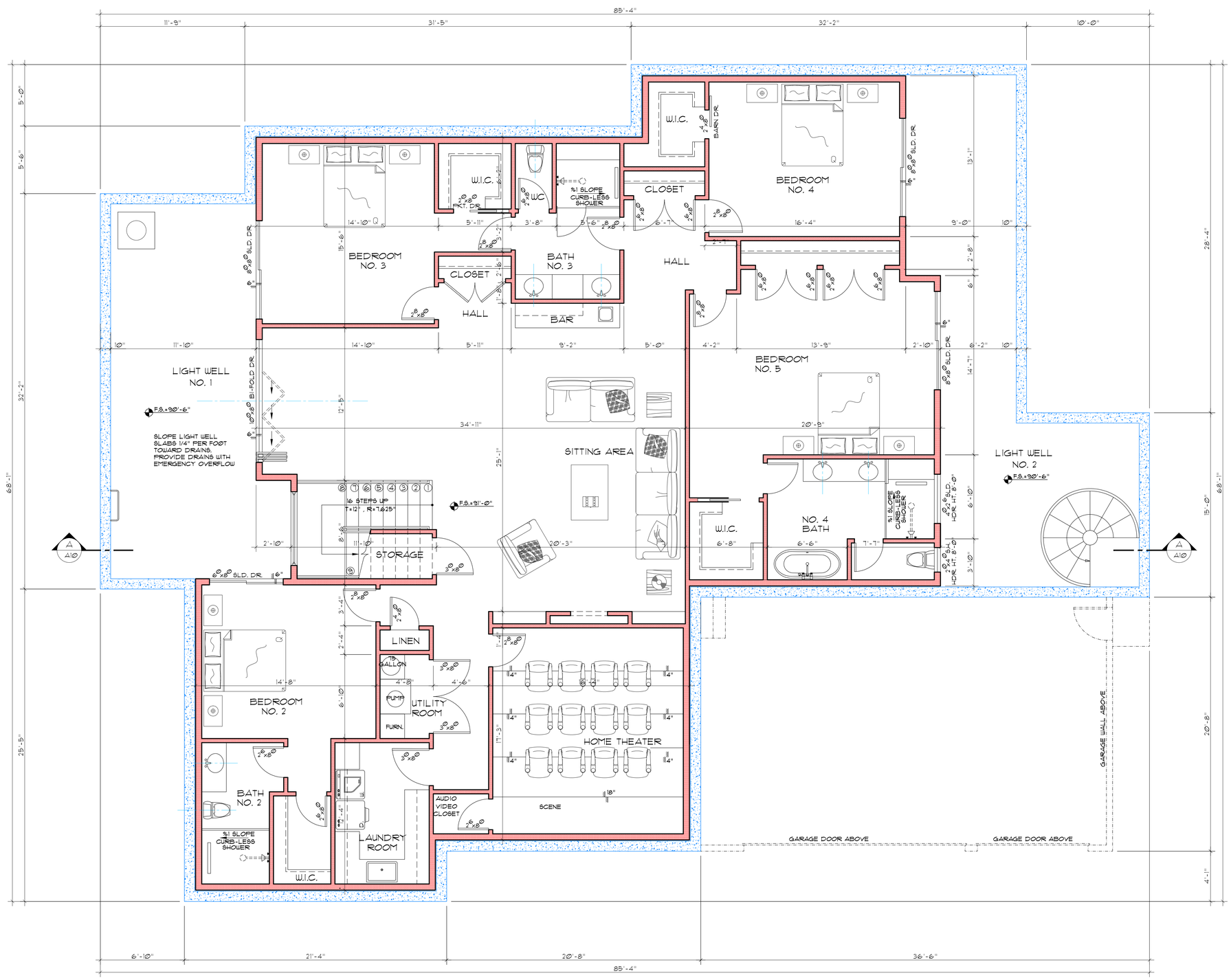
GROUND FLOOR PLAN

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/4" = 1'-0"
DRAWN	BK
JOB	
SHEET	A3
OF	SHEETS



BASEMENT FLOOR PLAN

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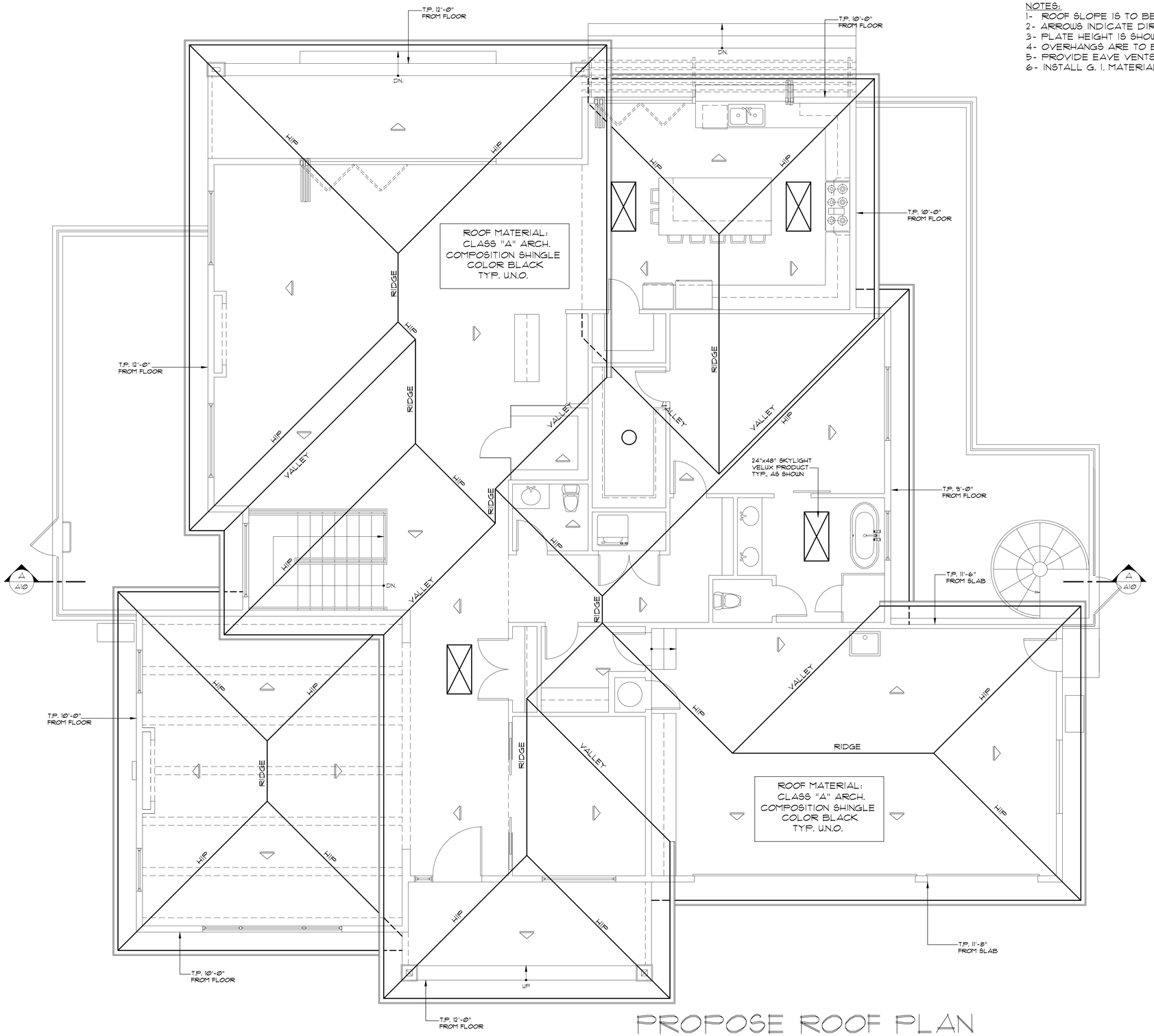
SAN JOSE, CA 95126
ARIA Build & Construction PH: (408) 816-7734

BASEMENT FLOOR PLAN

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/4" = 1'-0"
DRAWN	BK
JOB	
SHEET	A4
OF	SHEETS

NOTES:
1- ROOF SLOPE IS TO BE 5:12 .
2- ARROWS INDICATE DIRECTION OF ROOF SLOPE .
3- PLATE HEIGHT IS SHOWN ON THE PLAN .
4- OVERHANGS ARE TO BE 18" AT EAVES.
5- PROVIDE EAVE VENTS FOR ATTIC VENTILATION PER C.B.C. TYPICAL.
6- INSTALL G. I. MATERIAL ROOF JACKS FOR PLUMBING VENTS, ETC. AS REQUIRED.



PROPOSE ROOF PLAN

REVISIONS	BY

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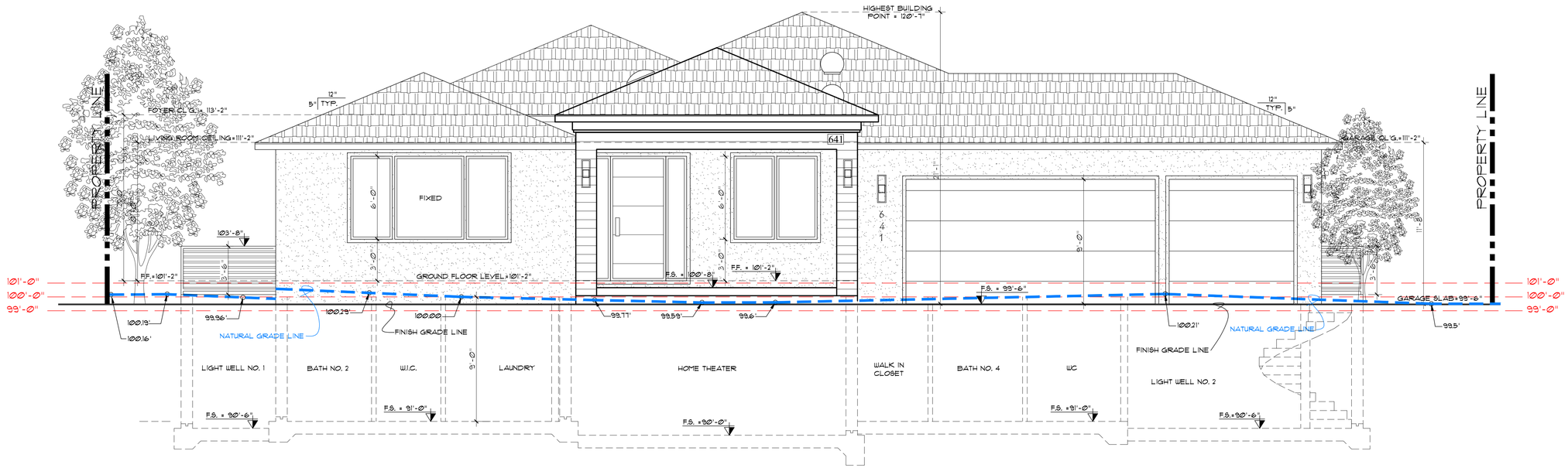
SAN JOSE, CA 95126
ARIA Build & Construction PH: (408) 816-7734

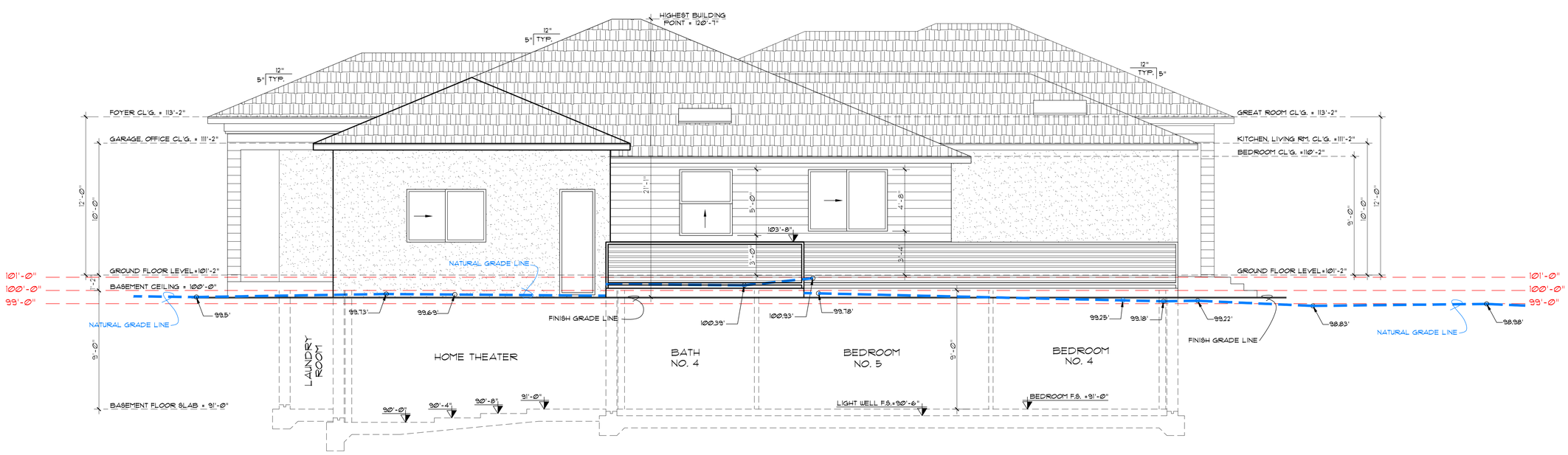
ROOF PLAN

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/4" = 1'-0"
DRAWN	BK
JOB	
SHEET	A5
OF	SHEETS



FRONT (SOUTH) ELEVATION



RIGHT (EAST) ELEVATION

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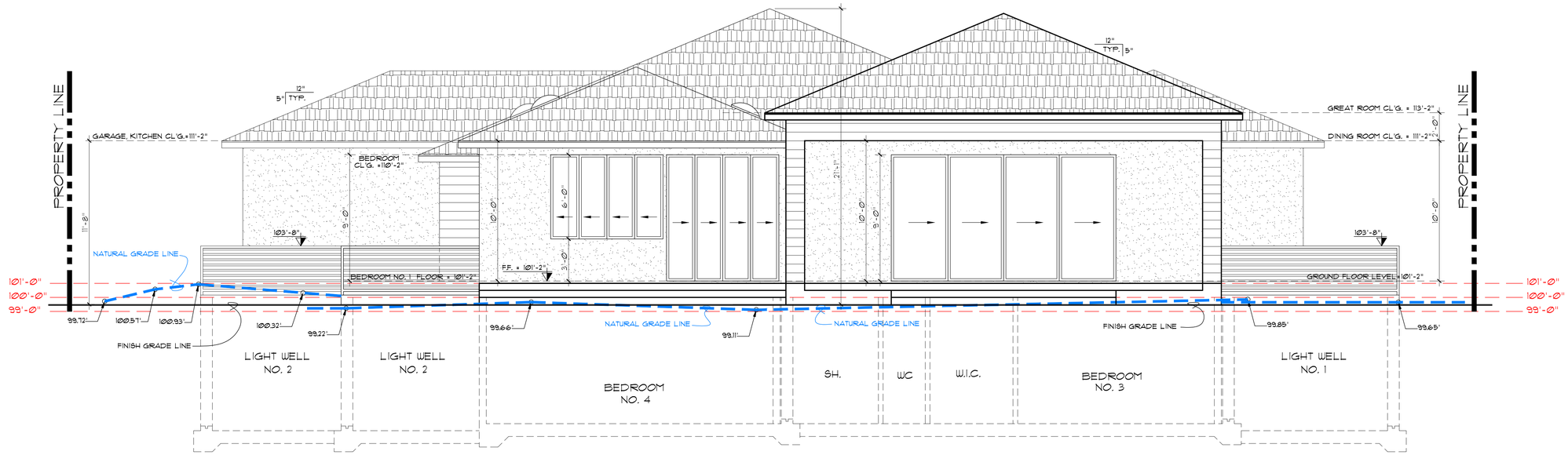
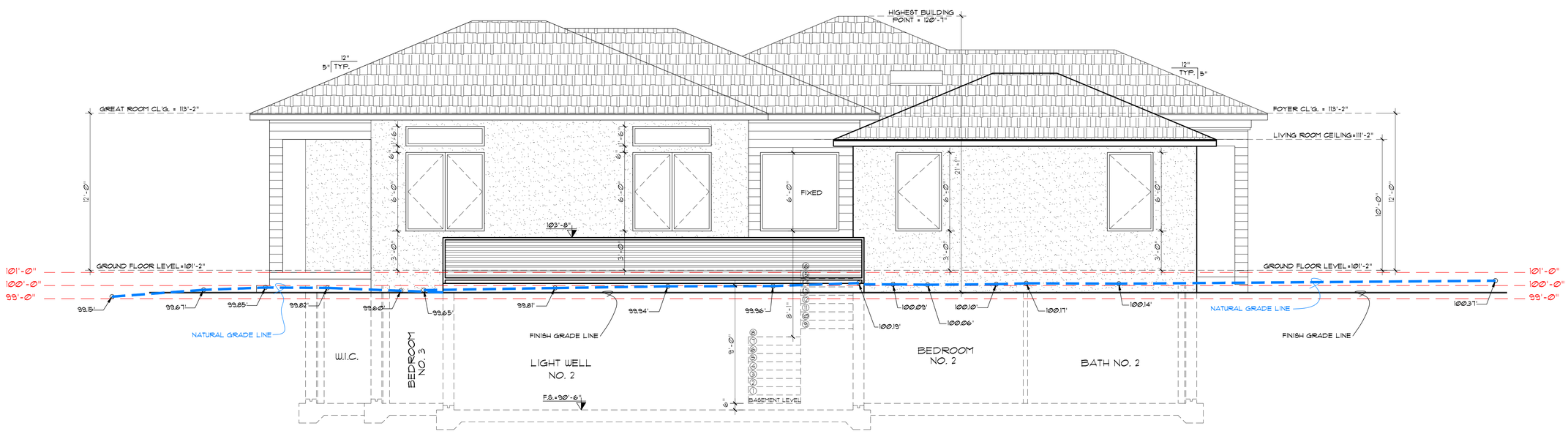
FRONT AND RIGHT ELEVATIONS

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/4" = 1'-0"
DRAWN	BK
JOB	
SHEET	A6
OF	SHEETS



REAR (NORTH) ELEVATION



LEFT (WEST) ELEVATION

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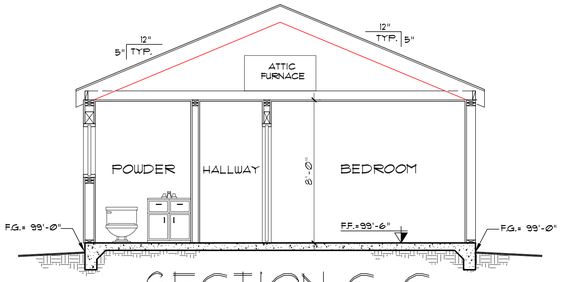
REAR AND LEFT ELEVATIONS

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

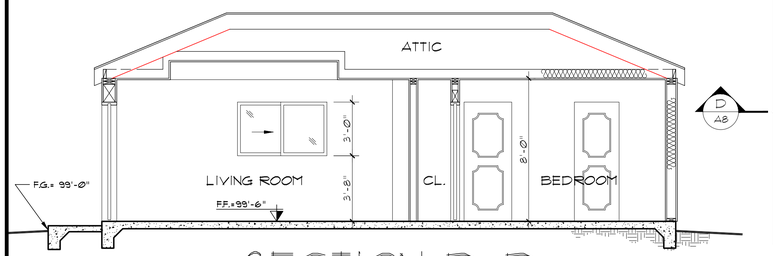
DATE	11/10/2021
SCALE	1/4" = 1'-0"
DRAWN	BK
JOB	
SHEET	A7
OF	SHEETS

LEGENDS:

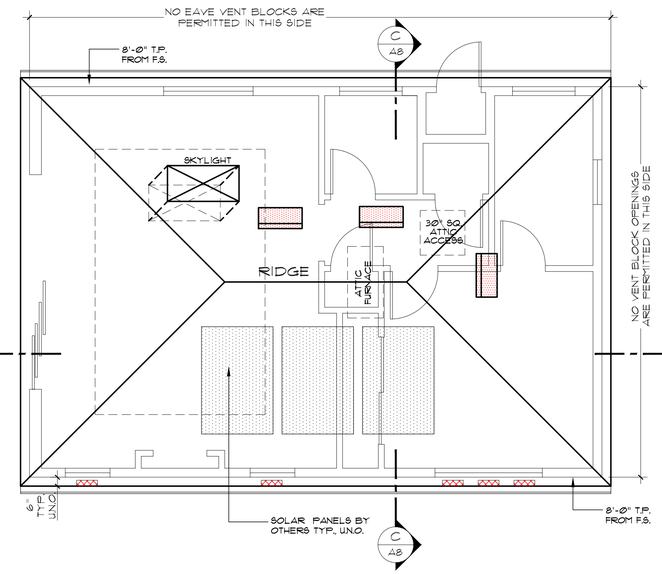
- 2x8 STUD WALL PER STRUCTURAL PLAN
- 2x6 STUD WALL PER STRUCTURAL PLAN
- 2x4 STUD WALL PER STRUCTURAL PLAN
- EYEBROW VENT TYP. AS SHOWN, SEE SPECIFICATION ON THIS SHEET.
- EAVE VENT LOCATIONS
- FOUNDATION VENT LOCATIONS



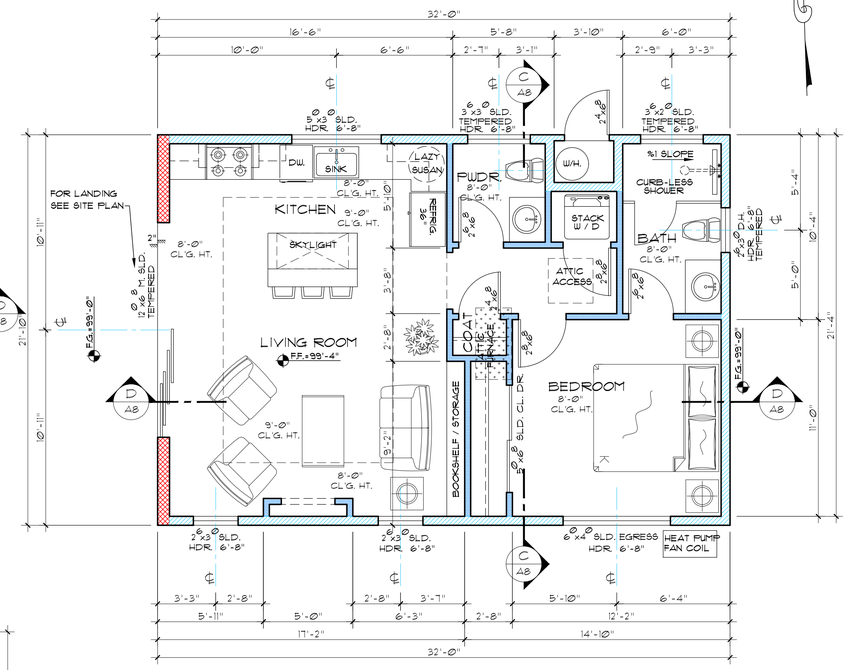
SECTION C-C



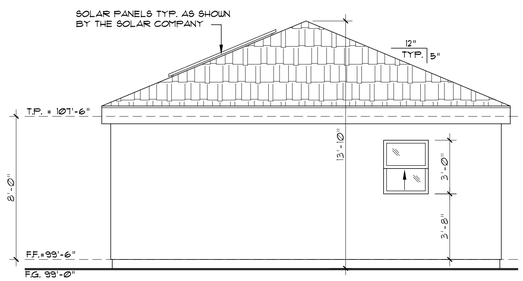
SECTION D-D



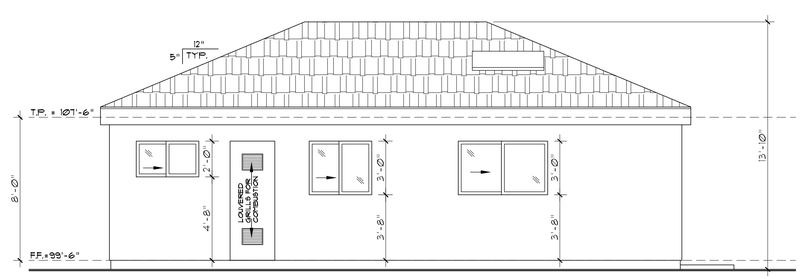
"ADU" ROOF PLAN



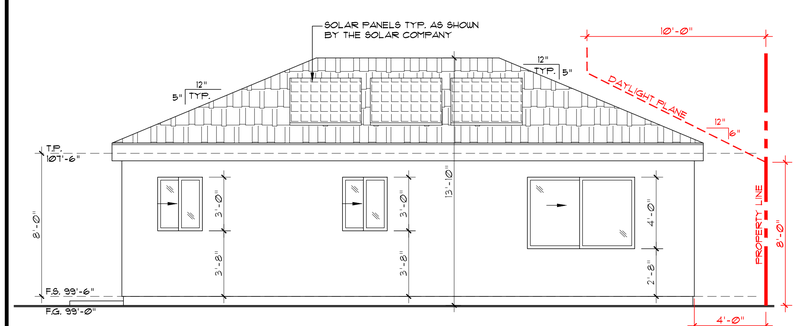
"ADU" FLOOR PLAN



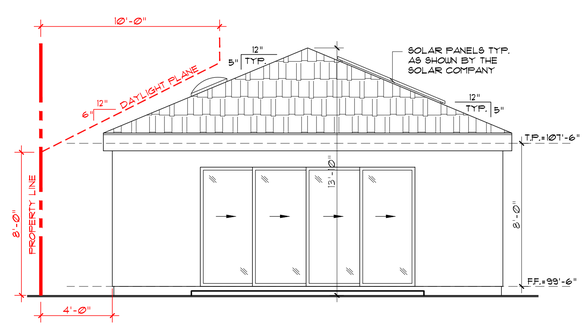
RIGHT (EAST) ELEVATION



REAR (NORTH) ELEVATION



FRONT (SOUTH) ELEVATION



LEFT (WEST) ELEVATION

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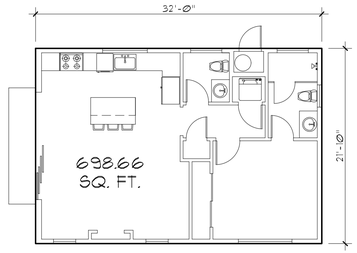
ARIA Build & Construction

PROPOSED ADU FLOOR, ROOF, ELEVS AND SECTION PLUS LIGHTING PLAN

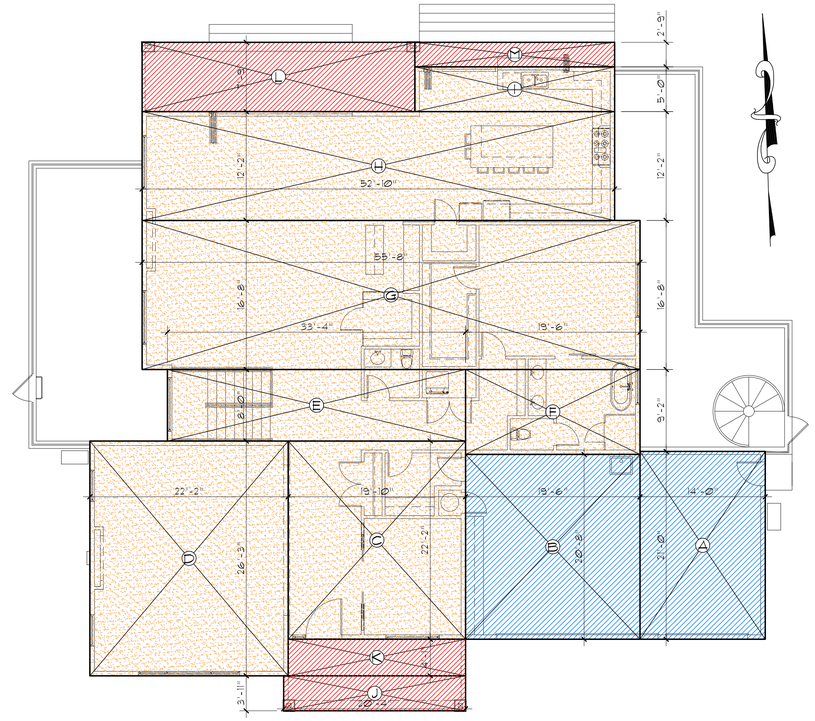
NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/4" = 1'-0"
DRAWN	BK
JOB	
SHEET	A8
OF	SHEETS



ADU. AREA

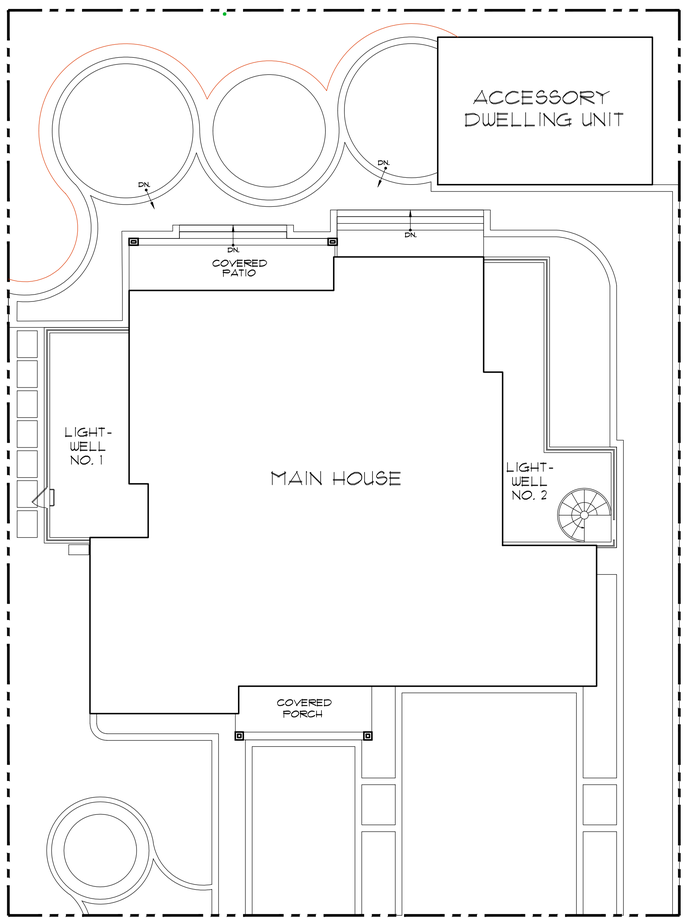
SC: 1/8" = 1'-0"



GROUND FLOOR AREA

SC: 1/8" = 1'-0"

	SPACES		AREA SQ. FT.	TOTAL SQ. FT.
GROUND FLOOR	GARAGE	A	294.00	697.00
		B	403.00	
	HABITABLE	C	439.64	3,155.66
		D	581.88	
		E	266.66	
		F	185.25	
		G	927.77	
		H	642.80	
		I	111.66	
	COVERED PORCH PATIO	J	78.64	458.42
		K	80.93	
		L	236.37	
		M	61.42	

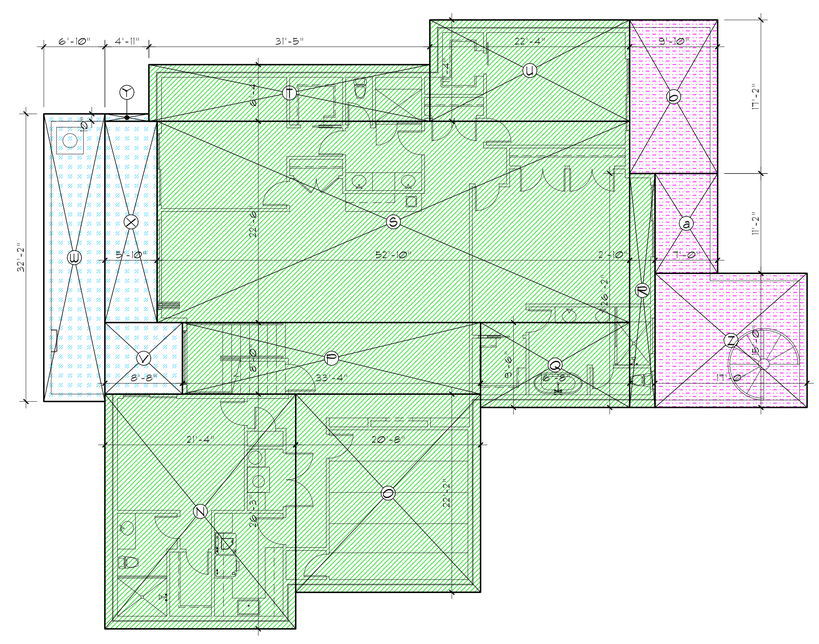


GROUND LEVEL PRELIMINARY HOME	3,852.66	SQ. FT.	4,398.10 SQ. FT.
REAR PATIO	384.82	SQ. FT.	
FRONT PORCH	160.62	SQ. FT.	%32.59

ALLOWABLE LOT COVERAGE = 13493 x%35 = 4,722.55 SQ. FT.

LOT COVERAGE CALCS

SC: 3/32" = 1'-0"



BASEMENT AREAS

SC: 1/8" = 1'-0"

	SPACES		AREA SQ. FT.	TOTAL SQ. FT.
BASEMENT	HABITABLE	N	560.00	3,158.07
		O	458.11	
		P	266.66	
		Q	158.33	
		R	74.14	
		S	1,188.75	
		T	198.97	
		U	253.11	
	LIGHT WELL NO. ONE	V	69.33	424.48
		W	219.80	
		X	131.25	
		Y	4.10	
	LIGHT WELL NO. TWO	Z	255.00	501.97
		a	78.17	
		b	168.80	

REVISIONS	BY

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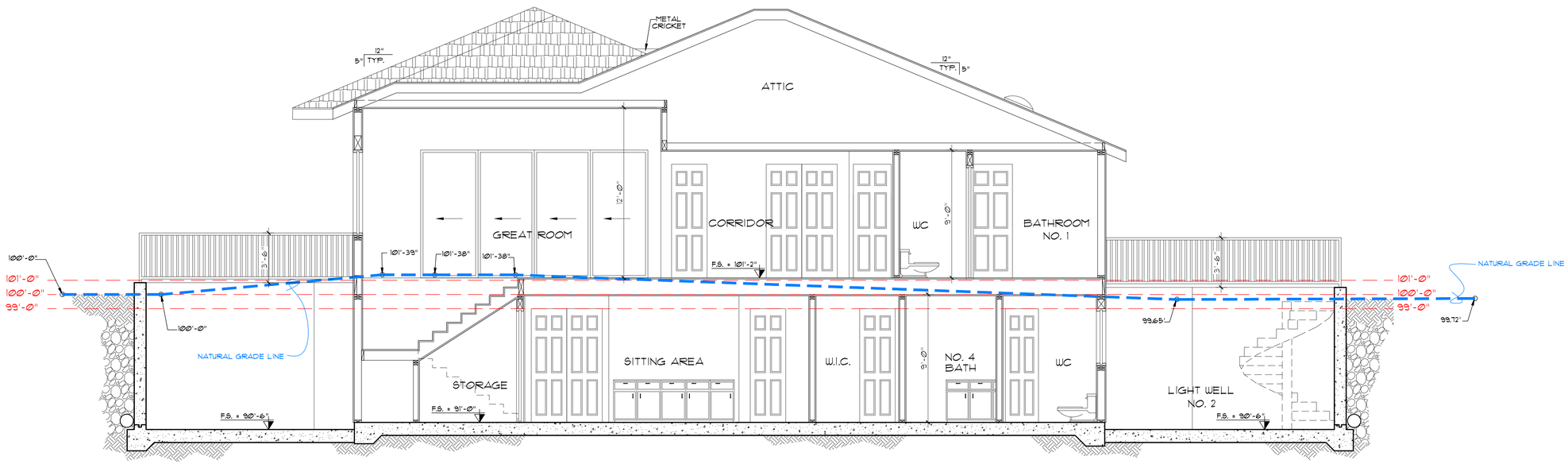
SAN JOSE, CA 95126
ARIA Build & Construction PH: (408) 816-7734

AREA CLACULATIONS

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	AS SHOWN
DRAWN	BK
JOB	
SHEET	A9
OF	SHEETS



SECTION A-A

REVISIONS	BY

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MAIN HOUSE
CROSS SECTION

NEW SINGLE FAMILY HOME
641 SPARGUR DRIVE
LOS ALTOS, CA 94022
APN # 170-20-007

DATE	11/10/2021
SCALE	1/4" = 1'-0"
DRAWN	BK
JOB	
SHEET	A10
OF	SHEETS

SURVEYOR'S NOTE:

1. UTILITIES FOUND ARE BASED UPON SURFACE EVIDENT FINDINGS. RECORDS OF UTILITIES WERE NOT UTILIZED FOR THIS SURVEY
2. TREES SHOWN ARE THOSE OF SIZE SIGNIFICANCE. THE SITE CONTAINS OTHER TREES UNDER 6" AND ARE NOT SHOWN FOR MAP CLARITY. TREE CLASSIFICATIONS ARE TO THE BEST KNOWLEDGE OF THE SURVEYOR. AN ARBORIST MUST SPECIFY ACTUAL TREE TYPE.
3. MAIN STRUCTURE AND APPURTENANT STRUCTURES ARE BASED UPON THE BEST EFFORTS OF THE SURVEY CREW. SOME ELEMENTS MAY BE MISSING AND CHECKS BY THE ARCHITECTS OFFICE WILL BE NECESSARY BEFORE DESIGN WORK.

ABBREVIATIONS

FL	FLOWLINE
TC	TOP OF CURB
EP	EDGE OF PAVEMENT
CONC	CONCRETE
LIP	LIP OF GUTTER
GS	GROUND SHOT
AD	AREA DRAIN
FF	FINISH FLOOR
BSL	BUILDING SETBACK LINE

BENCHMARK

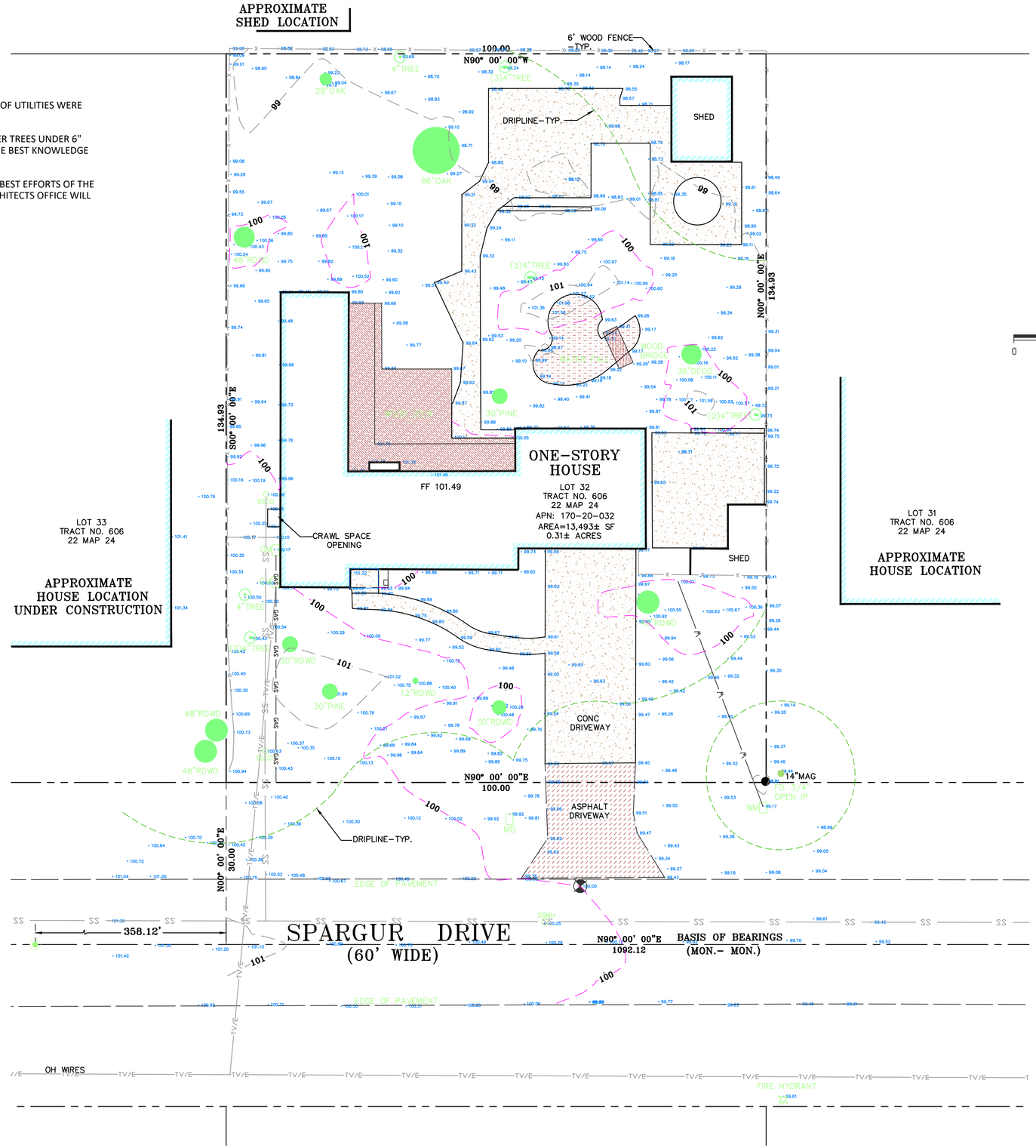
ASSUMED ELEVATION=100.00'

BASIS OF BEARINGS

PER TRACT MAP NO. 606 FILED IN BOOK 22 OF MAPS AT PAGE 24, SANTA CLARA COUNTY RECORDS.

LEGEND

SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
—x—	FENCE LINE
WV	WATER VALVE
WM	WATER METER
	FIRE HYDRANT
	JOINT POLE
	GUY ANCHOR
XX" TREE	TREE, SIZE AND TYPE AS NOTED
—G—	GAS LINE
—W—	WATER LINE
	CONCRETE
GM	GAS METER



SURVEYORS STATEMENT:

THIS MAP CORRECTLY REPRESENTS A TOPOGRAPHIC SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYOR ACT

Darryl Lydell Bond
PLS 9213
EXPIRES 9-30-21

LICENSED LAND SURVEYOR — DARRYL LYDELL BOND — NO. LS9213 — EXP. 09-30-21 — STATE OF CALIFORNIA

JULY 16, 2021

NNR ENGINEERING SERVICES CO.
DARRYL LYDELL BOND PLS 9213
535 WEYBRIDGE DRIVE, SAN JOSE, CA 95123
(408) 348-7813
nnrengineering@yahoo.com

TOPOGRAPHICAL SURVEY

641 SPARGUR DRIVE

SANTA CLARA COUNTY CALIFORNIA

LOS ALTOS

SCALE	1"=10'
DATE	7-16-2021
DRAWN	NR
CHECKED	D. BOND
PROJ. MGR.	DB

DATE	MK	SHEET REVISIONS	BY	CK

SHEET NO. 1 OF 1 SHEETS

JOB NO.
SPARGUR DR
CAD FILE:

GRADING AND DRAINAGE CONSTRUCTION NOTES:

1. DIRECT ROOF DOWNSPOUT LEADERS TO APPROVED SPLASH BLOCKS (2' LENGTH MIN.). DIRECT AWAY FROM BUILDING FOR POSITIVE FLOW, & TOWARDS PERVIOUS AREA OF THE SITE –TYP. SEE DETAIL ON SHEET C–2.
2. DIRECT SURFACE FLOW DRAINAGE AWAY FROM BUILDING AT 2% SLOPE FOR PAVED AREAS AND SLOPE 5% FOR AT LEAST 10 FEET, FOR NON–PAVED (DIRT & LANDSCAPE) AREAS.
3. APPROXIMATE LOCATION OF NEW 4" SDR–26 SS. LAT. @ 2% MIN.
4. APPROXIMATE LOCATION OF NEW WATER SERVICE LINE, (DESIGN BY OTHERS). CONNECT WATER SERVICE WITH METER PER CITY STANDARD REQUIREMENTS.
5. APPROXIMATE LOCATION OF JOINT TRENCH TRENCH INCLUDES: ALL GAS/ELECTRIC LINES, COMMUNICATIONS LINES AND APPURTENANCES, INCLUDING ALL PUBLIC UTILITY, CATV AND TELEGRAPH SYSTEMS, SHALL BE LOCATED AND INSTALLED UNDERGROUND. SEE TRENCH BACKFILL DETAIL ON C–2. FOR TRENCH PAVING, BACKFILL AND PIPING BEDDING SECTIONS IN THE CITY R/W, SEE CITY STD. DETAIL SU–19.
6. CONSTRUCT EARTHEN SWALE SLOPED @ 1% MIN. TOWARDS POSITIVE OUTFALL. SEE DETAIL ON SHEET C–2.
7. 6" PVC (SDR–35) @ S=0.5% MIN.
8. (N) INFILTRATION DEVICE. SEE DETAIL ON SHEET C–2.
9. INSTALL 4"ø SCHEDULE 40 PVC PERFORATED BACKDRAINS & UNDERSLAB DRAINS (W/ HOLES DOWN)– SLOPE 1% MIN. TO SUMP AT OUTSIDE OF BASEMENT. DO NOT CONNECT LIGHTWELL DRAINS OR DOWNSPOUTS TO BACKDRAINS OR UNDERSLAB DRAINS–SEE SOIL REPORT. DO NOT INTERCONNECT SUBDRAINS & LIGHTWELL DRAINS.
10. BASEMENT WALL– SEE STRUCTURAL PLANS.
11. STORM DRAIN CLEANOUT.
12. 4" PVC (SDR–35) @ S=1% MIN.
13. (1)~ 3" PVC PUMP OUTLET (PRESSURIZED) MIN. 6" GROUND COVER ON TOP OF PIPE PROVIDE 3" STEEL PIPE PROTECTIVE SLEEVE UNDER PAVED AREAS.
14. PROVIDE CHRISTY BOX AND INSTALL 3" SUMP PUMP W/PIPING TO INFILTRATION DEVICE. PROVIDE BACKFLOW PREVENTION DEVICE ON DISCHARGE LINE. BACKUP POWER IS RECOMMENDED. DO NOT INTERCONNECT SUBDRAINS & LIGHTWELL DRAINS. SEE SUMP PUMP "ZOELLER 151" OR APPROVED EQUAL WITH CHECK VALVE ON DISCHARGE LINE DETAILS ON SHEET C–2.
15. 36" HDPE PIPE OR EQUAL WITH COVER PROVIDE DEDICATED SUB DRAINAGE SUMP WITH PUMP. PUMP TO DISCHARGE AT INFILTRATION DEVICE. PROVIDE BACKFLOW PREVENTION DEVICE ON DISCHARGE LINE. BACKUP POWER IS RECOMMENDED.SEE SUMP PUMP "ZOELLER N53" OR APPROVED EQUAL WITH CHECK VALVE ON DISCHARGE LINE DETAILS ON SHEET C–2.
16. INSTALL COMBO BACK WATER VALVE WITH RELIEF VALVE OUTLETS PER "LOS ALTOS MUNICIPAL CODE: SEC.12.12.020"
17. NEW WATER METER (DESIGN BY OTHERS).
18. INSTALL (N) BACKFLOW PREVENTER.
19. APPROXIMATE LOCATION OF SEWER GRINDER – SEE ARCHITECTURAL PLANS FOR EXACT LOCATION. ALL PUMPS AND WIRES, ETC. TO BE DESIGNED BY OTHERS
20. INFILTRATION DEVICE TYPE 1–6'X6'X5'. SEE DETAIL ON SHEET C–2.
21. INFILTRATION/RETENTION DEVICE TYPE 2. SEE DETAIL ON SHEET C–2.
22. 24" HDPE PERFORATED DISSIPATION TRENCH LAID FLAT, L=20'.
23. INSTALL (N) SSCO PER CITY STD. DETAIL SS–5. APPROXIMATE LOCATION. SEE DETAIL ON SHEET C–3.
24. INSTALL CHECK VALVE TO PREVENT BACKFLOW INTO STORM DRAINAGE SYSTEM.

DRAINAGE NOTE:

A."UNDER NO CIRCUMSTANCE SHALL THE GRADING AND DRAINAGE ACTIVITIES ASSOCIATED WITH THIS PROJECT DIRECTLY SHEETFLOW ONTO THE NEIGHBORING PROPERTY."

ENCROACMENT PERMIT NOTE:

NO PROPOSED CONSTRUCTION WITHIN THE CITY RIGHT–OF–WAY SHALL BEGIN UNTIL CITY REQUIREMENTS FOR THE ISSUANCE OF AN ENCROACHMENT PERMIT, INCLUDING REVIEW OF THE PLANS, HAVE BEEN MET AND AN ENCROACHMENT PERMIT ISSUED.

ANY DAMAGED RIGHT–OF–WAY INFRASTRUCTURES AND OTHERWISE DISPLACED CURB, GUTTER AND/OR PARKING STRIP SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE CITY ENGNEER OR HIS DESIGNEE. CONRTRACTOR SHALL COORDINATE WITH PUBLIC WORKS,DEPARTMENT AT (650) 947–2680

UTILITY SERVICE

THE APPLICANT SHALL SUBMIT WRITTEN CERTIFICATION FROM THE APPROPRIATE ENERGY AND COMMUNICATION UTILITIES TO THE PUBLIC WORKS DEPARTMENT AND THE PLANNING DIVISION STATING THAT THEY WILL PROVIDE ENERGY AND COMMUNICATION SERVICES TO THE PROPOSED PARCELS OF THIS SUBDIVISION.

THE LOCATIONS OF THE MAIN WATER SERVICE AND SANITARY SEWER LINES ARE APPROXIMATE, PRIOR TO THE CONNECTION POINTS SHOWN. AS A REMINDER, A SEWER CONNECTION PERMIT FROM SANITATION DISTRICT, AND A CONNECTION LETTER FROM THE WATER COMPANY ARE REQUIRED.

MAINTENANCE NOTE:

IT SHALL BE THE OWNER'S RESPONSIBILITY TO ENSURE THAT ALL DRAINAGE IMPROVEMENTS SHOWN HEREON ARE MAINTAINED IN GOOD WORKING ORDER. THIS INCLUDES PERIODICALLY INSPECTING THE STORM DRAIN PIPES FOR SEDIMENT AS WELL AS THE DRAIN INLETS, SEDIMENT BASINS AND PERMEABLE PAVEMENT FOR SEDIMENT. ANY BUILT UP SEDIMENT SHOULD BE PERIODICALLY CLEANED TO ENSURE THE DRAINAGE FEATURES FUNCTION AS INTENDED.

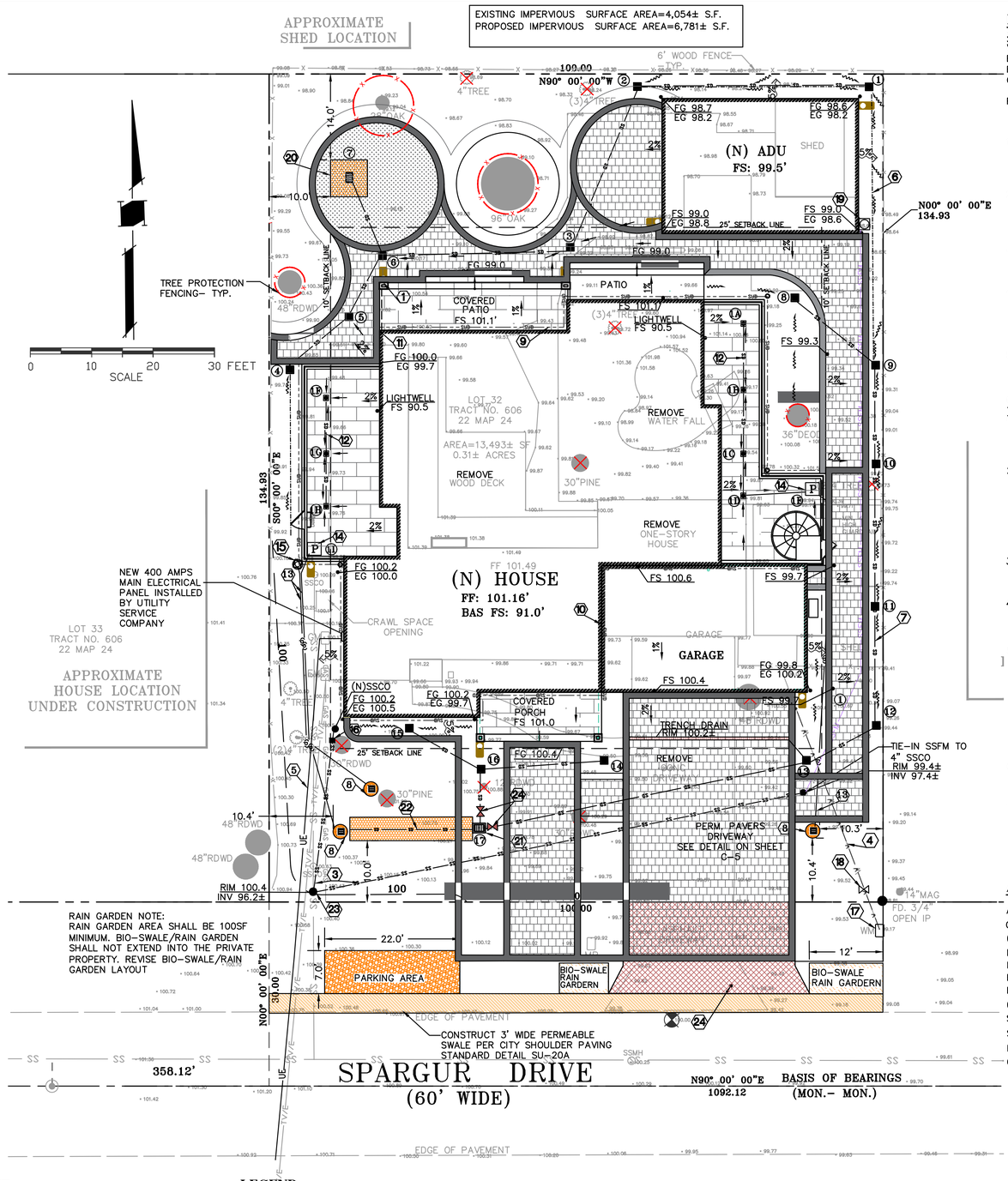
TREES PROTECTION NOTE:

ALL TREE PROTECTION FENCING SHALL BE CHAIN LINK AND A MINIMUM OF FIVE FEET IN HEIGHT WITH POSTS DRIVEN INTO THE GROUND. IT SHALL BE INSTALLED PRIOR TO ISSUANCE OF THE DEMOLITION PERMIT AND SHALL NOT BE REMOVED UNTIL ALL BUILDING CONSTRUCTION HAS BEEN COMPLETED. TYPICAL AS NOTED.

SS. SEWER NOTE

NEW SANITARY SEWER CLEANOUT SHALL BE INSTALLED IN LINE WITH EXISTING SANITARY SEWER LATERAL, THERE SHALL BE NO NEW TURNS INSTALLED AFTER PROPERTY LINE SANITARY SEWER CLEANOUT.

EXISTING IMPERVIOUS SURFACE AREA=4,054± S.F.
PROPOSED IMPERVIOUS SURFACE AREA=6,781± S.F.



DRAINAGE NOTE

1P 1A AD RIM 90.4± INV 87.5±	1 AD RIM 98.1± INV 96.1±	6 AD RIM 98.8± INV 96.9±	11 AD RIM 99.2± INV 95.8±
1G 1B AD RIM 90.4± INV 87.3±	2 AD RIM 98.0± INV 95.7±	7 CB RIM 98.7± INV 96.3±	12 AD RIM 99.0± INV 95.6±
1H 1C AD RIM 90.4± INV 87.0±	3 AD RIM 98.8± INV 95.5±	8 AD RIM 98.6± INV 96.6±	13 CB RIM 99.7± INV 95.3±
1D AD RIM 90.4± INV 86.7±	4 AD RIM 99.4± INV 97.4±	9 AD RIM 99.0± INV 96.3±	14 AD RIM 99.9± INV 97.9±
1I 1E LIGHTWELL SUMP W/PUMP RIM 90.3± INV 86.4± SUMP@ 85.4±	5 AD RIM 99.4± INV 97.2	10 AD RIM 99.0± INV 96.2±	15 AD RIM 99.8± INV 97.9±

LEGEND:

16 CB RIM 99.9± INV 97.0±

17 CB RIM 99.6± INV 94.6±(6"IN) INV 94.1±(24" OUT)

AREA DRAIN (CHRISTY BOX V–1) OR EQUAL

P CATCH BASIN (CHRISTY BOX V–24) OR EQUAL) W/ SUMP PUMP @ LIGHT WELL

CATCH BASIN (3'X3' CHRISTY BOX OR EQUAL)

SHEET INDEX

GRADING AND DRAINAGE PLAN	C–1
MISC. DETAILS	C–2
EROSION CONTROL PLAN	C–3
CITY STANDARD DETAILS	C–4
PUMP DETAILS	C–5
BLUEPRINT FOR A CLEAN BAY	C–6

LIGHT WELL SUMP PUMP

½ H.P. SUBMERSIBLE SUMP PUMP "ZOELLER 151" OR APPROVED EQUAL WITH CHECK VALVE ON DISCHARGE LINE. PUMP SHALL ACTIVATE SHOULD WATER REACH LEVEL 2" BELOW RIM OF SUMP. PROVIDE BATTERY OR GENERATOR BACK UP IN CASE OF A POWER FAILURE. PUMP SHALL BE HARD WIRED TO PANEL PER APPLICABLE LOCAL/NATIONAL CODES. LOCATION PER ELECTRICIAN.

REQUIRED VENT 2" SERVICING THE SUMP TO EXTERIOR OF THE BUILDING.

UNDERGROUND NOTES

1. CONTRACTORS SHALL EXPOSE AND VERIFY PIPE MATERIAL, LINE SIZE, LOCATION AND ELEVATION OF EXISTING UTILITIES, INCLUDING SANITARY SEWERS, STORM DRAINS, AND WATER LINES AT ALL TIE–INS AND CROSSINGS PRIOR TO CONSTRUCTING NEW FACILITIES.
2. UNLESS OTHERWISE NOTED, ALL STORM DRAINS, SANITARY SEWERS, MANHOLES AND INLETS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CITY OF LOS ALTOS STANDARD SPECIFICATIONS AND STANDARD PLAN DETAILS AS DESIGNATED AND TO DETAILS AS SHOWN ON THE PLAN.
3. ALL TRENCH EXCAVATION, BACKFILL AND BEDDING FOR STORM DRAINS AND SANITARY SEWERS SHALL CONFORM TO THE CITY OF LOS ALTOS STANDARD SPECIFICATIONS, AND DETAILS.
4. ALL TRENCHES AND EXCAVATIONS SHALL BE CONSTRUCTED IN STRICT COMPLIANCE WITH THE APPLICABLE SECTIONS OF CALIFORNIA AND FEDERAL O.S.H.A. REQUIREMENTS AND OTHER APPLICABLE SAFETY ORDINANCES. CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR TRENCH SHORING DESIGN AND INSTALLATION.
5. ALL GAS, ELECTRICAL, TELEPHONE AND CABLE T.V. UTILITIES, WILL BE DESIGNED AND CONSTRUCTED BY OTHERS UNDER SEPARATE CONTRACTS AND PLANS.

GENERAL NOTES

1. CONTRACTOR SHALL EXERCISE ALL NECESSARY CAUTION TO AVOID DAMAGE TO ANY EXISTING TREES AND SURFACE IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE AND SHALL BEAR FULL RESPONSIBILITY FOR ANY DAMAGE THERETO.
2. EXISTING UNDERGROUND LINES, APPURTENANCES AND FACILITIES WHICH ARE KNOWN TO THE ENGINEER ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL EXERCISE ALL NECESSARY CAUTION TO AVOID DAMAGE TO ANY EXISTING FACILITIES WHICH ARE TO REMAIN IN PLACE, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THE PLANS, AND SHALL BEAR FULL RESPONSIBILITY FOR ANY DAMAGE THERETO. NO WARRANTY IS GIVEN AS TO THE COMPLETENESS AND ACCURACY OF SUCH FACILITIES INFORMATION.
3. ALL CONTRACTORS WILL BE RESPONSIBLE FOR VERIFICATION OF THE LOCATION OF ALL EXISTING UTILITIES IN THE FIELD. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND FOR GENERAL INFORMATION ONLY.
4. CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT "USA" CENTER AT 800/642–2444, A TOLL–FREE NUMBER, 48 HOURS IN ADVANCE OF ANY EXCAVATION ACTIVITY SO ALL UNDERGROUND FACILITIES CAN BE LOCATED AND MARKED.
5. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONNEL AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE CITY, THE OWNER, AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONJUNCTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CITY OR THE ENGINEER.
6. IT SHALL BE THE RESPONSIBILITY OF THE VARIOUS CONTRACTORS TO COORDINATE THEIR WORK SO AS TO ELIMINATE CONFLICTS AND TO INSURE COMPLETION OF THE ENTIRE PROJECT WITHIN THE SPECIFIED PERIOD.
7. THE CONTRACTOR SHALL MAINTAIN THE STREET, SIDEWALKS AND ALL OTHER RIGHTS–OF–WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC, SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.

ABBREVIATION

AD	AREA DRAIN
CO	CLEANOUT
(E)	EXISTING
FG	FINISH GRADE
FL	FLOW LINE
FS	FINISH SLAB
INV	INVERT
(N)	NEW
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
RDS	ROOF DOWNSPOUT
CB	CATCH BASIN

DESCRIPTION

FOOTING DRAIN LINE — — — — SUB
STORM DRAIN LINE — SD — SD — SD — SD — SD — SD — SD — SD
DRAINAGE FLOW
REMOVE TREE

SITE BENCHMARK

SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 100.00'

*PAD ELEVATION

REFER TO STRUCTURAL PLANS/ SOIL REPORT FOR SLAB SECTION, CRAWL SPACE, AND BASEMENT SUBGRADE TO ESTABLISH PAD LEVEL.

GENERAL NOTE

A. ANY DAMAGED RIGHT–OF–WAY INFRASTRUCTURES AND OTHERWISE DISPLACED CURB AND GUTTER SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE CITY ENGINEER OR HIS DESIGNEE. CONTRACTOR SHALL COORDINATE WITH PUBLIC WORKS DEPARTMENT AT (650) 947–2680.

B. PRIOR TO THE COMMENCEMENT OF ANY WORK DONE IN THE PUBLIC RIGHT–OF–WAY, A PERMIT TO OPEN STREET AND/OR AN ENCROACHMENT PERMIT WILL BE REQUIRED.

EARTH WORK NOTE:

THE CONTRACTOR SHALL STRICTLY ADHERE TO THE SOILS ENGINEER'S RECOMMENDATIONS ON STRIPPING AND SITE PREPARATION FOR ALL PERTINENT GRADING, PAVING AND TRENCH BACKFILL ON THIS SITE.

NOTE:

THE QUANTITIES ARE SHOWN FOR THE PURPOSE OF GRADING PERMIT APPROVAL FROM THE CITY OF LOS ALTOS AND ARE NOT TO BE USED FOR PAYMENT TO THE CONTRACTOR . CONTRACTOR SHALL ESTABLISH HIS OWN QUANTITIES.

BASEMENT/HOUSE/ADU APPROXIMATE CUT REQUIRED	2,700± CY
FILL REQUIRED	0± CY

REGISTERED PROFESSIONAL ENGINEER NADIM N. RAFFOUL No. 56027 Exp. 12/31/22 CIVIL STATE OF CALIFORNIA

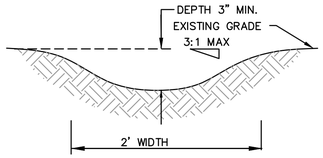
NNR ENGINEERING SERVICES CO.
CIVIL ENGINEERS
535 WEYBRIDGE DRIVE
SAN JOSE, CALIFORNIA 95123
(408) 345-7813

641 SPARGUR DRIVE
LOS ALTOS, CA.
APN 170-20-032
SANTA CLARA COUNTY

GRADING AND DRAINAGE PLAN

REVISIONS	DATE

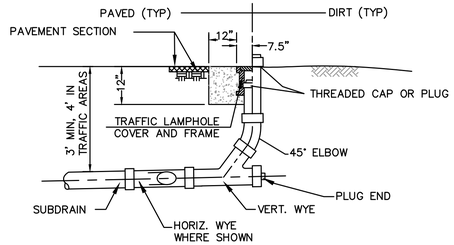
JOB NO:
DATE: 11–8–2021
SCALE: 1"=10'
DRAWN BY: NR
SHEET NO: C–1
OF 6 SHEETS



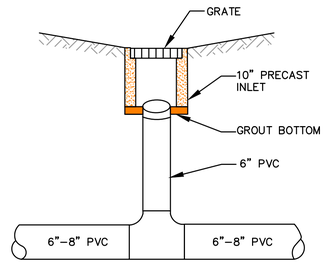
EARTH SWALE DETAIL
N.T.S.

MAINTENANCE NOTES

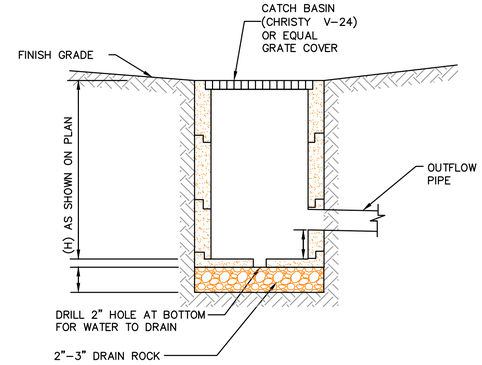
1. OWNER IS RESPONSIBLE FOR MAINTAINING ALL INLETS, RETENTION SYSTEM AND INFILTRATION DEVICE FROM TRASH, DEBRIS & SEDIMENTS.
2. THE REGULAR CLEARING OF SILT AND DEBRIS IS ESPECIALLY IMPORTANT PRIOR TO EACH RAINY SEASON.



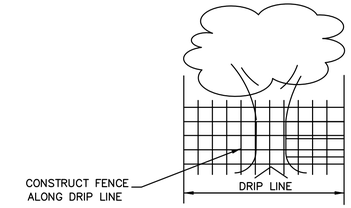
STORMDRAIN CLEANOUT DETAIL
N.T.S.



AREA DRAIN DETAIL
N.T.S.



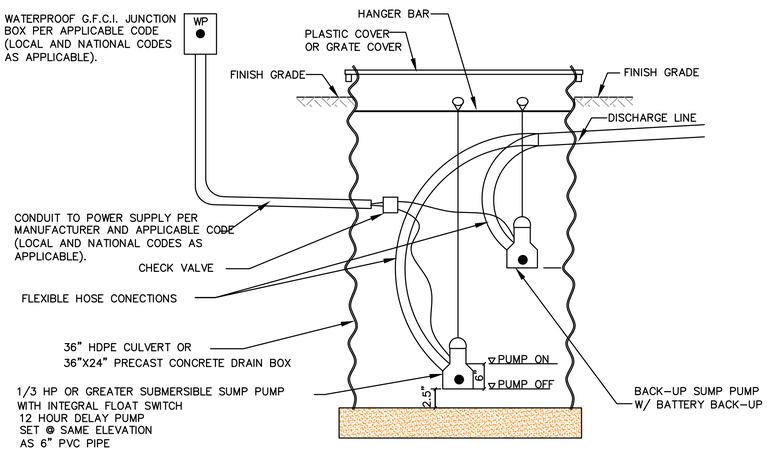
CATCH BASIN DETAIL
N.T.S.



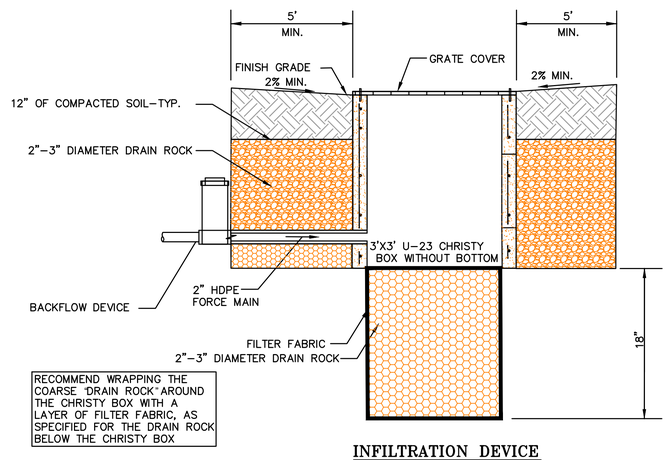
TREE PROTECTION DETAIL
N.T.S.

NOTES:

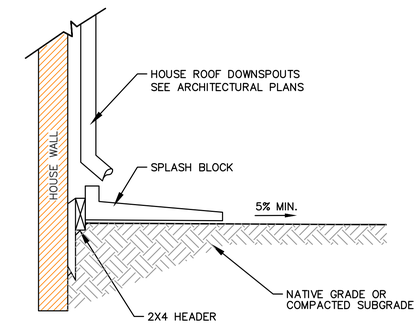
1. THE DEVELOPER SHALL INSTALL "THE PROTECTION DEVICE " PRIOR TO THE START OF GRADING OR CLEARING WORK.
2. THE CITY RESERVED THE RIGHT TO ISSUE A "STOP WORK" NOTICE IF THE " PROTECTIVE DEVICE " IS NOT INSTALLED.
3. ROLLED CHAIN LINK FENCE ON DRIVEN POST.
4. PLACE WOOD CHIP AROUND TREE AND ALONG DRIP LINE



SUMP WITH PUMP
N.T.S.



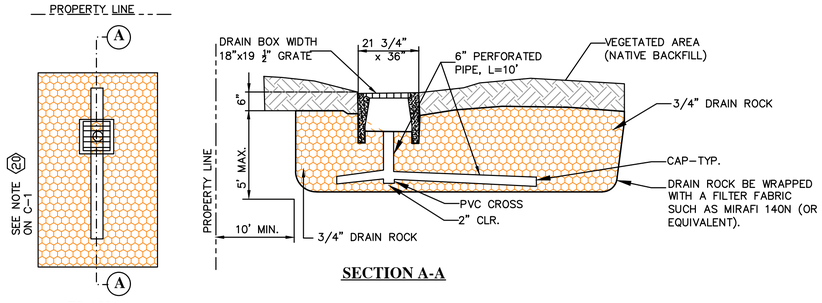
INFILTRATION DEVICE
N.T.S.



ROOF DOWNSPOUT/SPLASH BLOCK
N.T.S.

MAINTENANCE NOTES

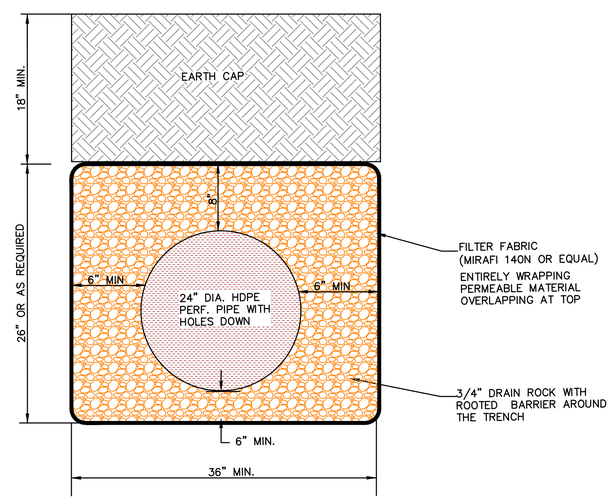
1. OWNER IS RESPONSIBLE FOR MAINTAINING ALL INLETS, RETENTION SYSTEM AND INFILTRATION DEVICE FROM TRASH, DEBRIS & SEDIMENTS.
2. THE REGULAR CLEARING OF SILT AND DEBRIS IS ESPECIALLY IMPORTANT PRIOR TO EACH RAINY SEASON.



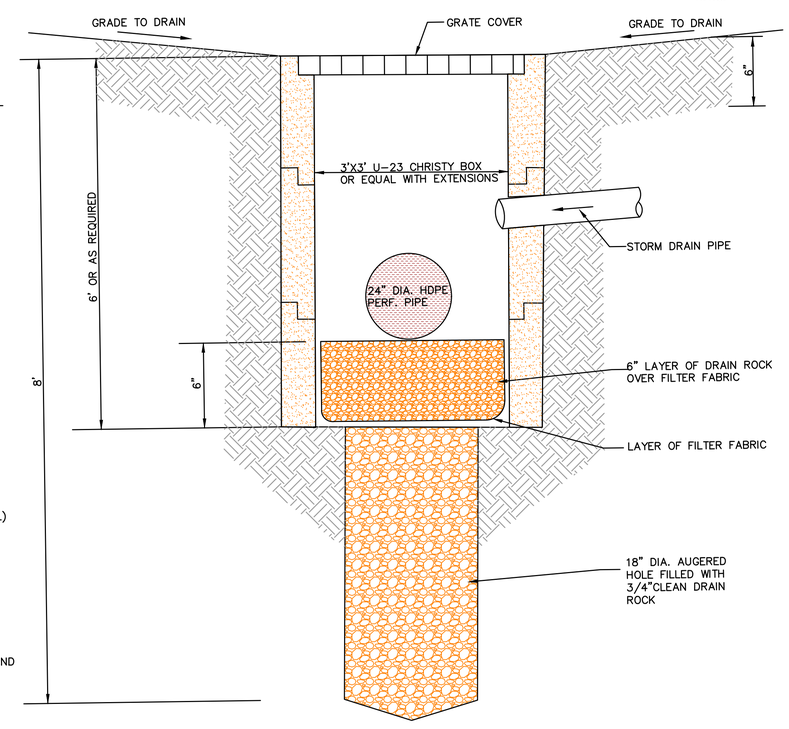
PLAN

SECTION A-A

INFILTRATION DEVICE TYPE 1 DETAIL
N.T.S.



DISSIPATION TRENCH DETAIL
N.T.S.



INFILTRATION/RETENTION DEVICE TYPE 2 DETAIL
N.T.S.

REGISTERED PROFESSIONAL ENGINEER
NADIM N. RAFFOUL
No. 56027
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

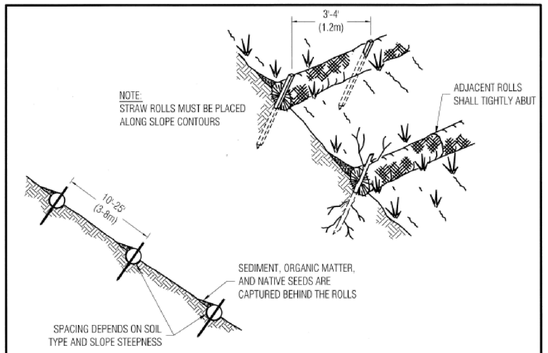
NNR ENGINEERING SERVICES CO.
CIVIL ENGINEERS
535 WEYBRIDGE DRIVE
SAN JOSE, CALIFORNIA 95123
(408) 345-7818

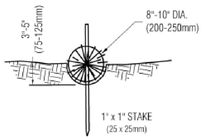
641 SPARGUR DRIVE
LOS ALTOS, CA.
APN 170-20-032
SANTA CLARA COUNTY

MISC. DETAILS

REVISIONS	DATE

JOB NO:
DATE: 11-8-2021
SCALE: N.T.S.
DRAWN BY: NR
SHEET NO:
C-2
OF 6 SHEETS





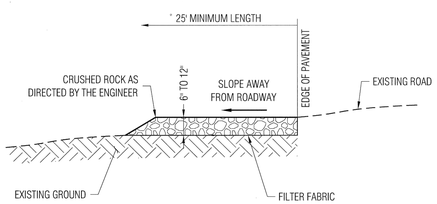
NOTES:

1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" (75-125mm) DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
2. VERTICAL SPACING FOR SLOPE INSTALLATIONS
   1:1 SLOPES = 10 FEET APART
   2:1 SLOPES = 20 FEET APART
   3:1 SLOPES = 30 FEET APART
   4:1 SLOPES = 40 FEET APART
   <4:1 SLOPE = ONE ROW AT LOW POINT
3. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT TO RUN OFF-SITE AND CAN BE PERMANENTLY STABILIZED

Approved: 1/4/10
City Engineer Date

REVISION		ENGINEERING DIVISION	
Description	Date	STRAW ROLLS	EC-4

STANDARD DETAILS MAY 2010



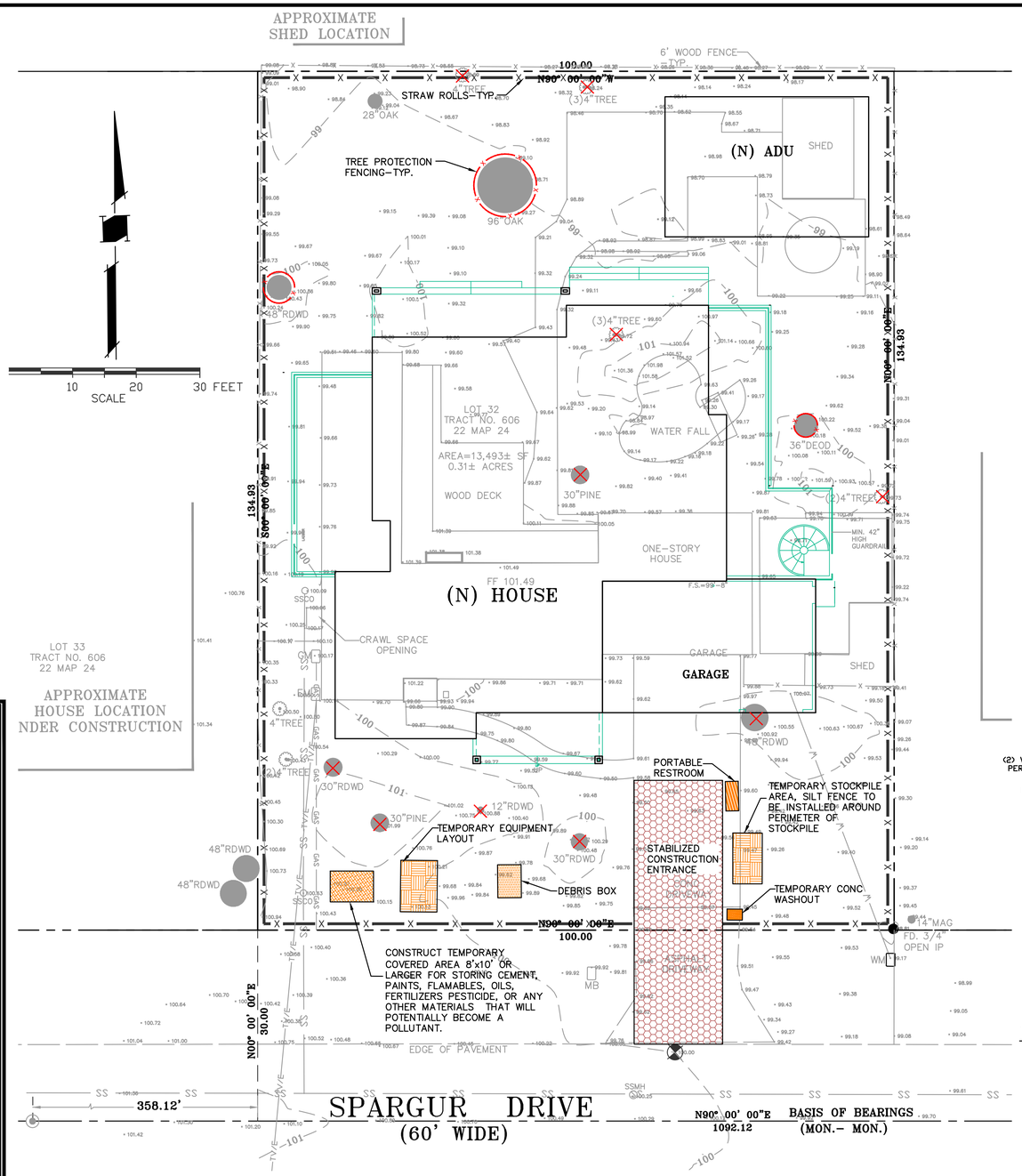
NOTES:

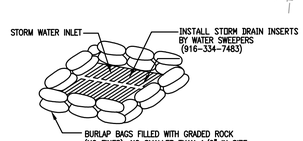
1. PROVIDE A FANNED STABILIZED CONSTRUCTION ENTRANCE TO ACCOMODATE THE TURNING RADIUS OF CONSTRUCTION EQUIPMENT ON AND OFF THE PUBLIC STREET
2. INSTALL STABILZED CONSTRUCTION ENTRANCE ALONG NEW DRIVEWAY CORRIDOR FOR THE FULL PROPOSED WIDTH

Approved: 1/4/10
City Engineer Date

REVISION		ENGINEERING DIVISION	
Description	Date	STABILIZED CONSTRUCTION SITE ENTRANCE	EC-2

STANDARD DETAILS MAY 2010





NOTES:

1. THICKNESS OF FILLED BAGS WHEN LAID SHALL NOT EXCEED 4'.
2. ENSURE THERE ARE NO GAPS BETWEEN THE BAGS.
3. REMOVE ACCUMULATED SILT, AND DEBRIS BEFORE IT EXCEEDS 2" THICK ON THE SIDES
4. INSPECT INLET PROTECTION DAILY DURING EXTENDED RAINFALL PERIODS AND BEFORE AND AFTER EACH RAIN EVENT.

BURLAP SACK DRAIN INLET (D.I.) SEDIMENT FILTER DETAIL

NTS

SEQUENCE OF CONSTRUCTION

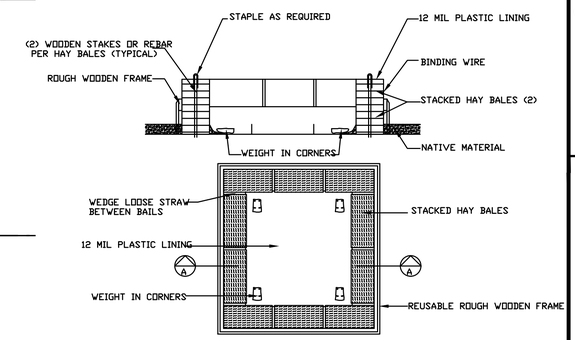
1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. CONSTRUCT AND MAITAIN TEMPORARY CHAIN LINK FENCE AT THE SITE PERIMETER.
3. CONSTRUCT FIBER ROLLS ON THE SITE PERIMETER.
4. PROVIDE WATER ON SITE FOR DUST CONTROL DURING ALL GRADING OPERATIONS.
5. CLEAR AND GRUB THE SITE.
6. BEGIN GRADING THE SITE.
7. INSTALL CHECK DAMS, SEDIMENT TRAPS AND BASINS, TEMPORARY SWALES.
8. COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
9. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).

LEGEND

—X—X— STRAW WATTLES

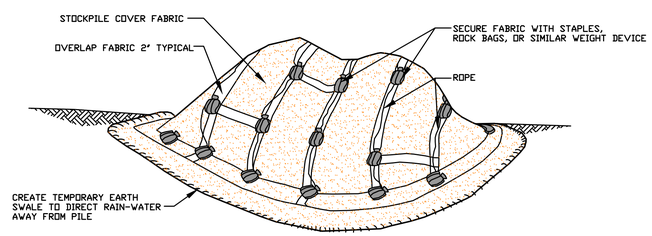
EROSION AND SEDIMENT CONTROL NOTES:

1. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN CONFORMANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN FOR THIS PROJECT AND AS REQUIRED BY THE STATE OF CALIFORNIA WATER RESOURCES CONTROL BOARD ORDER R2-2003-0021 AND NPDES PERMIT NO. CAS 0029831.
2. THE DEVELOPER IS RESPONSIBLE FOR ENSURING THAT ALL CONTRACTORS AND SUBCONTRACTORS ARE AWARE OF ALL STORM WATER QUALITY MEASURES AND IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED CONSTRUCTION BEST MANAGEMENT PRACTICES WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS, AND/OR STOP ORDERS.
3. ANY VEHICLE OR EQUIPMENT WASHING/STEAM CLEANING MUST BE DONE AT AN APPROPRIATELY EQUIPPED FACILITY WHICH DRAINS TO THE SANITARY SEWER. OUTDOOR WASHING MUST BE MANAGED IN SUCH A WAY THAT THERE IS NO DISCHARGE OF SOAPS, SOLVENTS, CLEANING AGENTS OR OTHER POLLUTANTS TO THE STORM DRAINS. WASH WATER SHALL DISCHARGE TO THE SANITARY SEWER, SUBJECT TO REVIEW AND APPROVAL OF THE CITY ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LITTER CONTROL AND SWEEPING OF ALL PAVED SURFACES DURING CONSTRUCTION.
5. THE FACILITIES SHOWN ON THIS PLAN ARE DESIGNED TO CONTROL EROSION AND SEDIMENT DURING THE RAINY SEASON, OCTOBER 1 TO APRIL 30. EROSION CONTROL MEASURES ARE TO BE FUNCTIONAL PRIOR TO OCTOBER 1ST OF ANY YEAR GRADING OPERATIONS HAVE LEFT AREAS UNPROTECTED FROM EROSION.
6. ALL ON-SITE STORM DRAINS SHALL BE CLEANED IMMEDIATELY BEFORE THE START OF THE RAINY SEASON BEGINNING ON OCTOBER 1ST EACH YEAR, SUBJECT TO THE REVIEW OF THE BUILDING/ENGINEERING INSPECTOR.
7. IF RAINY WEATHER BECOMES IMMINENT, GRADING OPERATIONS SHALL BE STOPPED AND EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PROTECT DISTURBED AREAS.
8. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT LADEN RUNOFF TO ANY STORM DRAIN SYSTEM.
9. CONSTRUCTION ENTRANCES SHALL CONSIST OF A MINIMUM 8" THICK LAYER OF 3"-4" FRACTURED STONE AGGREGATE UNLAID WITH GEOTEXTILE LINER FOR A MINIMUM DISTANCE OF 50 FEET, AND IS TO BE PROVIDED AT EACH VEHICLE ACCESS POINT TO EXISTING PAVED STREETS. THE DEPTH AND LENGTH OF AGGREGATE MAY NEED TO BE ADJUSTED IN THE FIELD TO ENSURE NO TRACKING OF SEDIMENT ONTO EXISTING PAVED STREETS. CONSTRUCTION ENTRANCES SHALL SLOPE AWAY FROM EXISTING PAVED STREETS.
10. INLETS NOT USED IN CONJUNCTION WITH EROSION CONTROL MEASURES ARE TO BE BLOCKED UNLESS THE AREA DRAINED IS UNDISTURBED OR STABILIZED.
11. BORROW AREAS AND TEMPORARY STOCKPILES SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTORL MEASURES TO THE SATISFACTION OF THE CITY ENGINEER.
12. NO STRAW BALES OR SILT FENCES SHALL BE USED AS EROSION CONTROL MEASURES. SILT FENCES MAY ONLY BE USED AS A PHYSICAL BARRIER TO PREVENT VEHICULAR AND PEDESTRIAN TRAFFIC FROM USING NON-APPROVED ACCESS POINTS (E.G. – ALONG RIGHT-OF-WAY).
13. ALL DISTURBED AREAS INCLUDING FLAT PADS ARE TO BE TREATED WITH STRAW AND TACKIFIER AT A RATE OF 2 TONS PER ACRE APPROXIMATELY 3 INCHES THICK.



TEMPORARY CONCRETE WASHOUT FACILITY (ABOVE GRADE)

NTS



TEMPORARY COVER ON STOCK PILE

NTS

REGISTERED PROFESSIONAL ENGINEER
NADIM N. RAFFOUL
No. 56027
Exp. 12/31/22
Civil
STATE OF CALIFORNIA

NNR ENGINEERING SERVICES CO.
CIVIL ENGINEERS
535 WEYBRIDGE DRIVE
SAN JOSE, CALIFORNIA 95123
(408) 348-7813

641 SPARGUR DRIVE

LOS ALTOS, CA.

APN 170-20-032

SANTA CLARA COUNTY

EROSION CONTROL PLAN

REVISIONS	DATE

JOB NO:

DATE: 11-8-2021

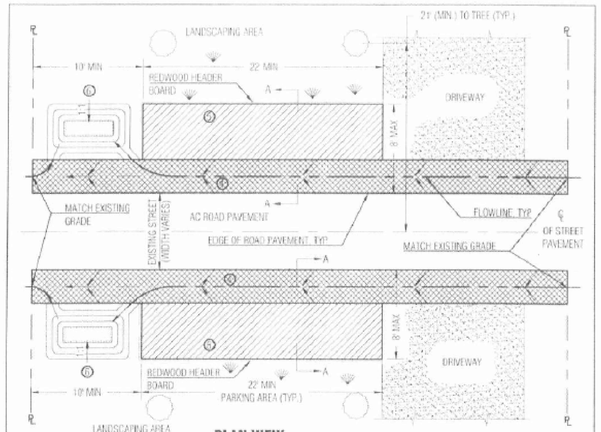
SCALE: 1"=10'

DRAWN BY: NR

SHEET NO:

C-3

OF 6 SHEETS



SEE STANDARD DETAIL SU-20B FOR NOTES RELATED TO THE STREET SHOULDER IMPROVEMENT POLICY.

Approved: City Engineer — Date 12/12/18

REVISION		ENGINEERING DIVISION	
Description	Date	STREET SHOULDER IMPROVEMENT POLICY (SHEET 1 OF 3)	SU-20A

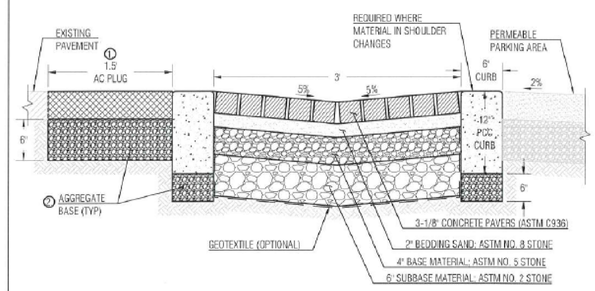
NOTES:

1. IF THE STREET PAVEMENT WIDTH IS 36 FEET OR GREATER, NO SHOULDER IMPROVEMENTS ARE PERMITTED WITH THE EXCEPTION OF LANDSCAPING AND IRRIGATION.
2. POLICY DOES NOT APPLY FOR REPAIRS, RESEALING, AND REPAVING IN KIND OF EXISTING SHOULDERS. NOR DOES IT REQUIRE THAT SHOULDERS MUST BE PAVED.
3. THE SHOULDER OF A NEWLY CONSTRUCTED OR 50% OR GREATER SQUARE FOOTAGE REMODELED RESIDENCE IS REQUIRED TO BE BROUGHT INTO COMPLIANCE WITH THIS POLICY.
4. DRAINAGE SWALE:
   a. 3' WIDE;
   b. MAXIMUM CROSS SLOPE 5%;
   c. DRAINAGE SWALE SHALL BE CONSTRUCTED USING PERMEABLE MATERIALS PER DETAIL SU-20C.
5. PARKING AREA SHALL FEATURE ONE OF THE FOLLOWING MATERIALS:
   a. PERMEABLE CONCRETE PAVERS AND OPEN CELL CONCRETE BLOCKS:
      CONCRETE PAVER BLOCKS BOTH SOLID AND GRIDDED SYSTEMS (WITH OPEN CELLS FOR AGGREGATE, GRAVEL, OR GRASS) HAVE BEEN DEVELOPED IN A LARGE VARIETY OF SHAPES, TEXTURES, PATTERNS, AND COLORS. THE CONCRETE PAVERS AND OPEN CELL CONCRETE BLOCKS SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS. GAPS OF CONCRETE PAVERS, IF FEATURED BY THE TYPE OF PAVER, SHALL BE FILLED WITH SAND. OPEN CELL CONCRETE BLOCKS VARY IN SIZE BASED ON BLOCK TYPE AND SHALL BE FILLED IN WITH GRAVEL OR GRASS, ALLOWING WATER TO ENTER THE SUBGRADE. CONCRETE PAVERS AND OPEN CELL CONCRETE BLOCKS SHALL BE INSTALLED OVER A SAND BEDDING COURSE (MINIMUM 1" THICK OR PER PAVER MANUFACTURERS RECOMMENDATION). FURTHER WATER RESERVOIR CAPACITY CAN BE ADDED BY INSTALLING OPEN GRADED BASE AND STONE SUBBASE WITH AN OPTIONAL UNDERDRAIN (TO BE ROUTED TO THE BIOSWALE/RAIN GARDEN), WITH GEOTEXTILE ON BOTTOM AND SIDES. TYPICALLY AN EDGE CONSTRAINT IS INSTALLED AT THE PERIMETER OF THE PAVERS OR LOCATIONS SUBJECT TO LATERAL LOADING. SUBGRADE EXCAVATION DEPTH REQUIRED IS 8-12 INCHES, BUT CAN BE GREATER IN DEPTH IF ADDITIONAL RESERVOIR CAPACITY IS DESIRED.
   b. COMPACTED AGGREGATE BASE (AB):
      1-1/2 INCH OR 3/4 INCH CLASS 2 AGGREGATE BASE (6 INCHES THICK ON COMPACTED NATIVE SOIL)
   c. COMPACTED STABILIZED DECOMPOSED GRANITE (DG):
      SMALL SIZED GRANITE AGGREGATE MIXED WITH A STABILIZING AGENT, COMPACTED AND PLACED OVER EXISTING PERMEABLE SURFACES AND 6 INCHES OF AGGREGATE BASE IF SUBGRADE IS LESS SUITABLE. SUBGRADE EXCAVATION REQUIRED IS 8-12 INCHES, BUT CAN BE GREATER IN DEPTH IF ADDITIONAL RESERVOIR CAPACITY IS CONSIDERED. DG LAYER SHALL BE MINIMUM 4 INCHES THICK. GRADE TO DRAIN.
6. BIOSWALE/RAIN GARDEN IN LANDSCAPE AREA DESIGNED TO RECEIVE RUNOFF FROM DRAINAGE SWALE/PARKING AREA. DESIGN AND SHAPE OF BIOSWALE/RAIN GARDEN BY ARCHITECT OR ENGINEER. MINIMUM DEPTH SHALL BE 2.5'. REFER TO THE C.3 STORMWATER HANDBOOK FOR DESIGN PARAMETERS AND SPECIFICATIONS OF SOILS OR PLANTS. AREA SHALL BE DEPENDING ON LENGTH OF FRONTAGE (DISTANCE MEASURED PARALLEL TO EDGE OF ROAD BETWEEN PROPERTY LINES) AS FOLLOWS:
   a. FRONTAGE < 75' — 50 SF MINIMUM
   b. 75' < FRONTAGE < 100' — 100 SF MINIMUM
   c. 100' < FRONTAGE < 150' — 200 SF MINIMUM
   d. FRONTAGE > 150' — 300 SF MINIMUM
7. LOTS LOCATED ALONG SUGGESTED ROUTES TO SCHOOL MAY REQUIRE MODIFICATION TO THIS STANDARD DETAIL AS APPROVED BY THE CITY ENGINEER. OTHER MODIFICATIONS MAY BE MADE AS APPROVED BY THE CITY ENGINEER.

Approved: City Engineer — Date 12/12/18

REVISION		ENGINEERING DIVISION	
Description	Date	STREET SHOULDER IMPROVEMENT POLICY (SHEET 2 OF 3)	SU-20B

PERMEABLE DRAINAGE SWALE



NOTES:

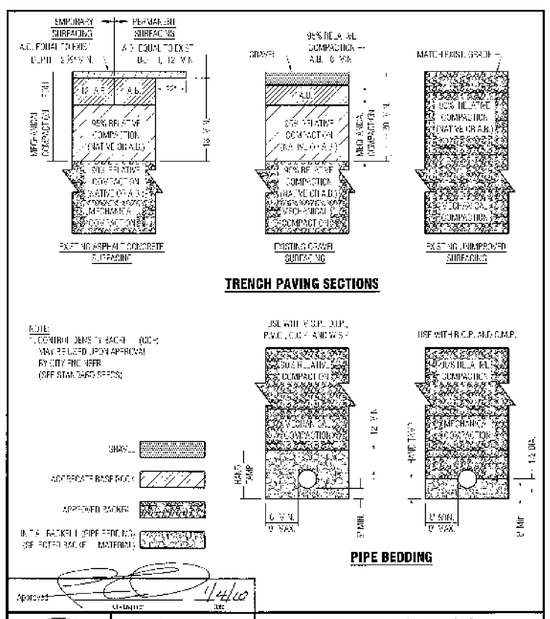
1. AC PLUG SHALL BE 4" THICK OR MATCH EXISTING PAVEMENT THICKNESS, WHICHEVER IS GREATER.
2. AGGREGATE BASE SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY.
3. INSTALL PAVERS AND ALL BASE MATERIALS PER MANUFACTURERS RECOMMENDATIONS.
4. ALTERNATE DRAINAGE SWALE MAY BE CONSTRUCTED WITH 1-1/2 INCH OR 3/4 INCH COMPACTED CLASS 2 AB (6 INCH THICK ON COMPACTED NATIVE SOIL).

LEGEND:

- CONCRETE PAVERS, OR APPROVED PERMEABLE MATERIAL FROM SU-20B NOTE 5.a.
- BEDDING SAND
- BASE MATERIAL
- SUBBASE MATERIAL
- PCC
- AGGREGATE BASE
- AC PLUG
- EXISTING PAVEMENT
- PERMEABLE PARKING AREA
- NATIVE MATERIAL
- NOTES

Approved: City Engineer — Date 12/12/18

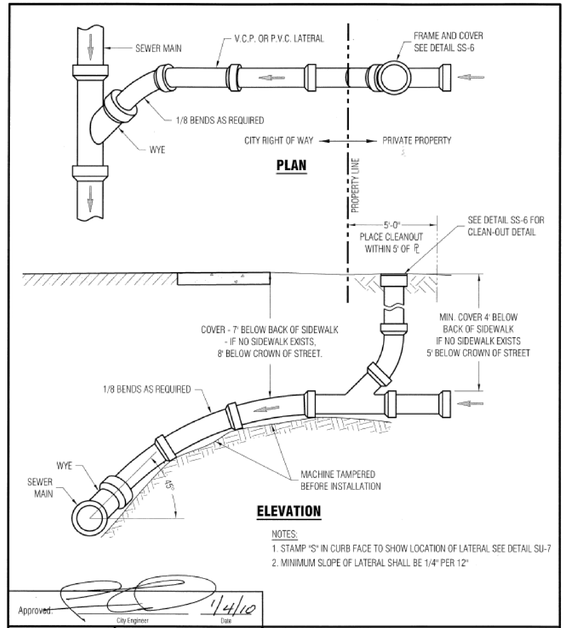
REVISION		ENGINEERING DIVISION	
Description	Date	STREET SHOULDER IMPROVEMENT POLICY (SHEET 3 OF 3)	SU-20C



Approved: City Engineer — Date 1/4/10

REVISION		ENGINEERING DIVISION	
Description	Date	TRENCH PAVING, BACKFILL AND PIPE BEDDING SECTIONS	SU-19

STANDARD DETAILS MAY 2010



NOTES:

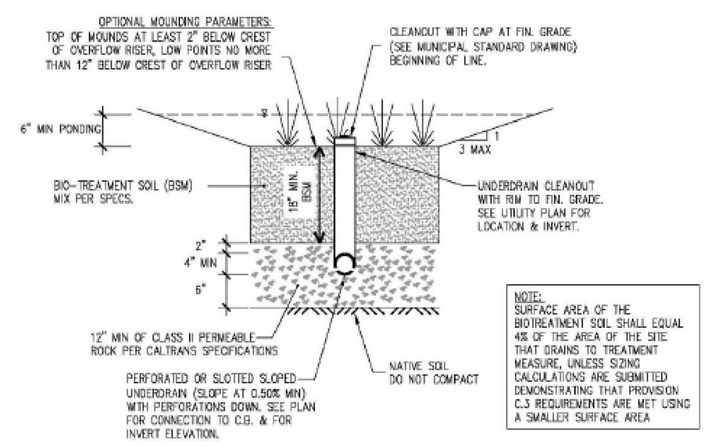
1. STAMP "S" IN CURB FACE TO SHOW LOCATION OF LATERAL SEE DETAIL SU-7
2. MINIMUM SLOPE OF LATERAL SHALL BE 1/4" PER 12"

Approved: City Engineer — Date 1/4/10

REVISION		ENGINEERING DIVISION	
Description	Date	SEWER LATERAL AND SEWER RISER	SS-5

STANDARD DETAILS MAY 2010

C.3 STORMWATER HANDBOOK



NOTE:
SURFACE AREA OF THE BIOTREATMENT SOIL SHALL EQUAL 4% OF THE AREA OF THE SITE THAT DRAINS TO TREATMENT MEASURE, UNLESS SIZING CALCULATIONS ARE SUBMITTED DEMONSTRATING THAT PROVISION C.3 REQUIREMENTS ARE MET USING A SMALLER SURFACE AREA

NOT TO SCALE
SEE FIGURE 6-3 FOR TYPICAL OVERFLOW

Figure 6-2: Cross Section of a Bioretention Area (with Maximized Infiltration)

REGISTERED PROFESSIONAL ENGINEER — NADIM N. RAFFOUL — No. 56027 — Exp. 12/31/22 — CIVIL — STATE OF CALIFORNIA

NNR ENGINEERING SERVICES CO.
CIVIL ENGINEERS
535 WESTRIDGE DRIVE
SAN JOSE, CALIFORNIA 95123
(408) 945-7783

641 SPARGUR DRIVE
LOS ALTOS, CA.
APN 170-20-032
SANTA CLARA COUNTY

CITY STANDARD DETAILS

REVISIONS	DATE

JOB NO:
DATE: 11-8-2021
SCALE: N.T.S.
DRAWN BY: NR
SHEET NO:
C-4
OF 6 SHEETS

"Quality Pumps Since 1939"

ZOELLER PUMP CO.

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

SECTION: 2.20.010
FM0493
0311
Supersedes
0810

MAIL TO: P.O. BOX 16347 • Louisville, KY 40256-0347
SHIP TO: 3649 Cane Run Road • Louisville, KY 40211-1961
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COMPARE THESE FEATURES

- Non-Clogging vortex impeller
- Float operated, submersible (NEMA 6) 2-pole mechanical switch & variable level long cycle systems available
- UL Listed 3-wire cord plug; 9 ft. standard for automatic, 15 ft. standard for nonautomatic
- Corrosion resistant powder coated epoxy finish
- No sheet metal parts to rust or corrode
- Stainless steel screws, switch arm, guard and handle
- No screens to clog
- Watertight neoprene "O" ring between motor and pump housing
- Solid buoyant polypropylene float
- Motor - 60 Hz, 1550 RPM, oil-filled, hermetically sealed, automatic reset thermal overload protected
- Upper and lower sleeve bearings running in bath of oil
- Entire unit pressure tested after assembly
- Carbon and ceramic shaft seal
- Maximum temperature for effluent or dewatering—130°F (54°C)
- Passes ¾" inch spherical solids
- 1½" NPT Discharge.
- On point—7¼" • Off point—3"
- Major width—10 3/32" • Height—10 1/16"

SPECIAL MODEL FEATURES:

MODEL 53
- Cast iron switch case, motor & pump housing
- Engineered thermoplastic base
- Engineered, glass-filled, plastic impeller with metal insert
- Stainless steel guard & handle
- Bearing - lower & upper oil fed cast iron

MODEL 55
- Bronze switch case, motor & pump housing
- Engineered thermoplastic base
- Engineered, glass-filled, plastic impeller with metal insert
- Stainless steel guard & handle
- Bearing - lower & upper oil fed bronze

MODEL 57
- All cast iron construction
- Stainless steel guard & handle
- Bearing - lower & upper oil fed cast iron
- Cast iron impeller

MODEL 59
- All bronze construction
- Stainless steel guard & handle
- Bearing - lower & upper oil fed bronze
- Bronze impeller

ALL MODELS ARE COMPLETELY SUBMERSIBLE HERMETICALLY SEALED

Watertight - dust tight. Permanently oiled bearings.

VARIABLE LEVEL CONTROL SYSTEMS AVAILABLE

Note: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.

53 - 57 Cast Iron Series
55 - 59 Bronze Series

(For Pump Prefix Identification see News & Views 0052)

"MIGHTY-MATE"

SUBMERSIBLE PUMP FOR DEWATERING (SUMP) OR EFFLUENT (SEPTIC TANK SYSTEMS)

Tested to UL Standard UL778

C UL US (Tested to UL778 and CSA22.2 108 Standards)

PASSES ¾" SOLIDS
1½" NPT DISCHARGE

AUTOMATIC MODEL

VORTEX TYPE IMPELLER

POWDER COATED TOUGH™

BN MODEL

MODELS AVAILABLE
- Automatic or Nonautomatic
- "53 - 57" - 3 HP, 115V or 230V
- "55 - 59" - 3 HP, 115V or 230V
- BE53/BE57 & BN53/BN57 available packaged with Piggyback Variable Level Float Switch

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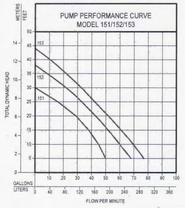
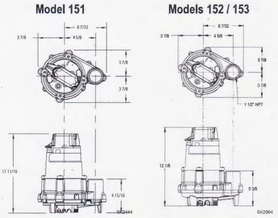


TOTAL DYNAMIC HEAD/FLOW PER MINUTE EFFLUENT AND DEWATERING

MODEL	151		152		153	
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters
5	1.5	50	188	69	261	77	291
10	3.0	45	170	61	231	70	265
15	4.6	38	144	53	201	61	231
20	6.1	29	110	44	167	52	197
25	7.6	16	61	34	129	42	159
30	9.1	–	–	23	87	33	125
35	10.7	–	–	–	–	22	85
40	12.2	–	–	–	–	11	42
Shut-off Head		30 ft. (9.1m)		38 ft. (11.6m)		44 ft. (13.4m)	

SH3458B

Model 151 | Models 152 / 153



CONSULT FACTORY FOR SPECIAL APPLICATIONS

- Timed dosing panels available
- Electrical alternators, for duplex systems, are available and supplied with an alarm
- Variable level control switches are available for controlling single phase systems
- Double piggyback variable level float switches are available for variable level long and short cycle controls
- Sealed Qwik-Box available for outdoor installations - See FM1420
- Over 130°F (54°C) special quotation required

151/152/153 Series

151/152/153 MODELS					Control Selection		Listings	
Model	Volts-Ph	Mode	Amps		Simplex	Duplex	CSA	UL
N151	115	1	Non	6.0	1	—	Y	Y
BN151	115	1	Auto	6.0	Included	2 or 3		
E151	230	1	Non	3.2	1	2 or 3		
BE151	230	1	Auto	3.2	Included	2 or 3		
N152	115	1	Non	8.5	1	2 or 3		
BN152	115	1	Auto	8.5	Included	2 or 3		
E152	230	1	Non	4.3	1	2 or 3		
BE152	230	1	Auto	4.3	Included	2 or 3		
N153	115	1	Non	10.5	1	2 or 3		
BN153	115	1	Auto	10.5	Included	2 or 3		
E153	230	1	Non	5.3	1	2 or 3		
BE153	230	1	Auto	5.3	Included	2 or 3		

SELECTION GUIDE

1. Single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
2. See FM0712 for correct model of Electrical Alternator E-Pak.
3. Variable level control switch 10-0743 used as a control activator, specify duplex (3) or (4) float system.

⚠ CAUTION

All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

"Easy assembly" (pump & discharge pipe not included.)

OPTIONAL PUMP STAND P/N 10-2421
- Reduces potential clogging by debris
- Replaces rocks or bricks under the pump
- Made of durable, noncorrosive ABS
- Raises pump 2" off bottom of basin
- Provides the ability to raise intake by adding sections of 1¼" or 2" PVC piping
- Attaches securely to pump
- Accommodates sump, dewatering and effluent applications

NOTE: Make sure float is free from obstruction.

RESERVE POWERED DESIGN

For unusual conditions a reserve safety factor is engineered into the design of every Zoeller pump.

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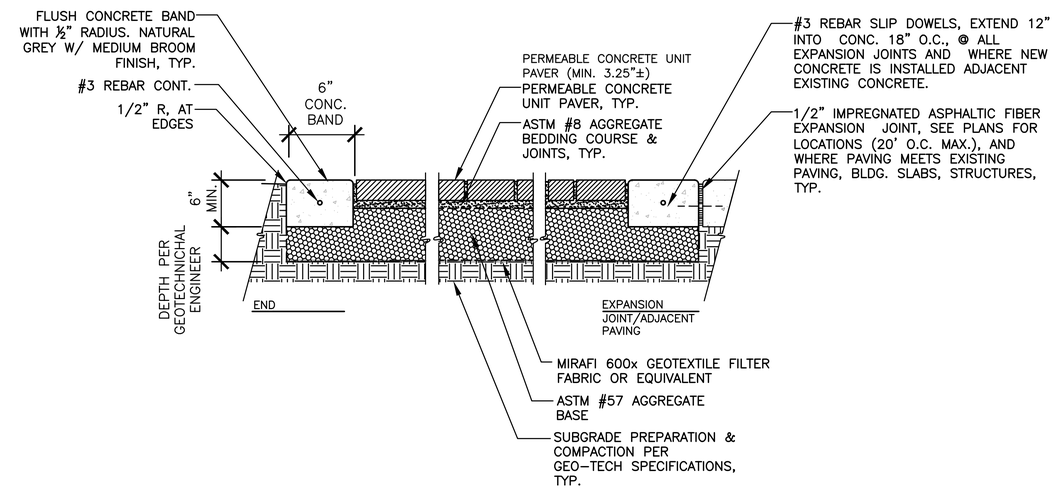

PERMEABLE CONCRETE PAVERS-PEDESTRIAN

N.T.S.

Your Peace of Mind is Our Top Priority®

ZOELLER PUMP COMPANY

Zoeller Family of Water Solutions

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

SECTION: 2.20.047
FM1919
0414
Supersedes
0110

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COMPARE THESE FEATURES

- Durable cast iron construction
- Model 151 comes standard with a glass-filled polypropylene base
- Corrosion resistant powder coated epoxy finish
- Stainless steel lifting handle
- Assembled with stainless steel bolts
- Non-clogging engineered thermoplastic vortex impeller design
- Model 151 - 1/3 HP passes ½" spherical solids
- Model 152 - .4 HP passes ¾" spherical solids
- Model 153 - 1/2 HP passes ¾" spherical solids
- Motor - 60 Hz, 3450 RPM, oil-filled, hermetically sealed, automatic reset thermal overload protected
- Carbon/Ceramic seals
- Upper sleeve bearing and lower ball bearing running in bath of oil
- 20 ft. UL Listed power cord with molded 3-wire plug
- 1½" NPT vertical discharge
- BN and BE standard models include a 20 ft. variable level float switch
- Operates at temperatures to 130°F (54°C) in effluent applications
- All models include a 1½" x 2" PVC adapter fitting

Note: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.

ALL MODELS ARE COMPLETELY SUBMERSIBLE HERMETICALLY SEALED

Watertight - dust tight. Permanently oiled bearings.

VARIABLE LEVEL CONTROL SYSTEMS AVAILABLE

Note: The sizing of effluent systems normally requires variable level float(s) controls and properly sized basins to achieve required pumping cycles or dosing timers with nonautomatic pumps.

151/152/153 EFFLUENT SERIES

(For Pump Prefix Identification see News & Views 0052)

"DOSE-MATE"

FOR SEPTIC TANK - LOW PRESSURE PIPE (LPP) AND ENHANCED FLOW STEP SYSTEMS

EFFLUENT SUBMERSIBLE
1½" NPT DISCHARGE

C UL US Tested to UL Standard UL778 and Certified to CSA Standard CSA22.2 No. 108

Model N152/N153 High Head Effluent

MODELS AVAILABLE
- N151/N152/N153 & E151/E152/E153 nonautomatic
- BN151/BN152/BN153 & BE151/BE152/BE153 packaged with Piggyback Variable Level Float Switch
- 1/3, .4 & 1/2 HP, 1Ph 115V or 230V

POWDER COATED TOUGH™

Model BN152/BN153 High Head Effluent

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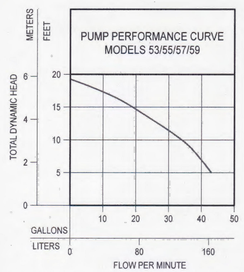
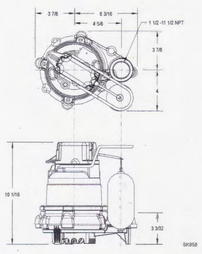


TOTAL DYNAMIC HEAD/FLOW PER MINUTE EFFLUENT AND DEWATERING

MODEL	53/55/57/59		
Feet	Meters	Gal.	Liters
5	1.5	43	163
10	3.0	34	129
15	4.6	19	72
Shut-off Head:		19.25 ft.(5.9m)	



CONSULT FACTORY FOR SPECIAL APPLICATIONS

- Variable level float switches available
- Variable level long cycle systems available
- Available with special cord lengths of 15', 25', 35', (50' 230V only)
- Alarm systems available
- Duplex systems available

SELECTION GUIDE

1. Integral float operated mechanical switch, no external control required.
2. Single piggyback variable level float switch or double piggyback variable level float switch. Refer to FM0477.
3. Mechanical alternator "M-Pak" 10-0072 or 10-0075.
4. See FM0712 for correct model of Electrical Alternator.
5. Variable level control switch 10-0225 used as a control activator, with Electrical Alternator (3) or (4) float system.

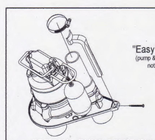
Single Seal			Control Selection				Listings	
Model	Volts	Phase	Mode	Amps	Simplex	Duplex	CSA	UL
M53/55 & M57/59	115	1	Auto	9.7	1	—	Y	Y
N53/55 & N57/59	115	1	Non	9.7	2	3 or 4 & 5	Y	Y
* BN53	115	1	Auto	9.7	*	—	Y	Y
* BN57	115	1	Auto	9.7	*	—	N	Y
* BE53/57	230	1	Auto	4.8	*	—	Y	Y
D53/55 & D57/59	230	1	Auto	4.8	1	—	Y	Y
E53/55 & E57/59	230	1	Non	4.8	2	3 or 4 & 5	Y	Y

* Single piggyback switch included.

⚠ CAUTION

All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

For information on additional Zoeller products refer to catalog on Piggyback Variable Level Float Switches, FM0477; Electrical Alternator, FM0486; Mechanical Alternator, FM0495; Sump/Sewage Basins, FM0487; and Single Phase Simplex Pump Control/Alarm Systems, FM0732.



"Easy assembly" (pump & discharge pipe not included.)

OPTIONAL PUMP STAND P/N 10-2421
- Reduces potential clogging by debris
- Replaces rocks or bricks under the pump
- Made of durable, noncorrosive ABS
- Raises pump 2" off bottom of basin
- Provides the ability to raise intake by adding sections of 1¼" or 2" PVC piping
- Attaches securely to pump
- Accommodates sump, dewatering and effluent applications

NOTE: Make sure float is free from obstruction.

RESERVE POWERED DESIGN

For unusual conditions a reserve safety factor is engineered into the design of every Zoeller pump.

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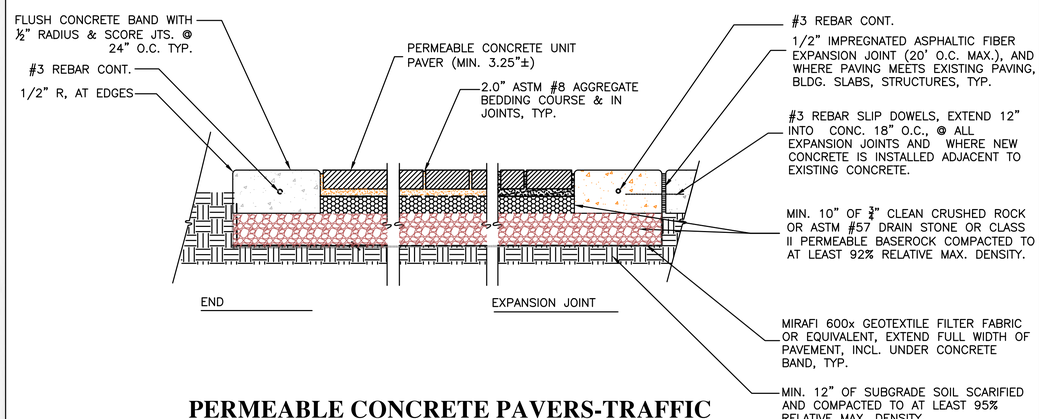


PERMEABLE CONCRETE PAVERS-TRAFFIC

N.T.S.

REGISTERED PROFESSIONAL ENGINEER
NADIM N. RAFFOUL
No. 56027
Exp. 12/31/20
CIVIL
STATE OF CALIFORNIA

NNR ENGINEERING SERVICES CO.
SERVICES CO.
555 WETBRIDGE DRIVE
SAN JOSE, CALIFORNIA 95123
(408) 346-7910

641 SPARGUR DRIVE
LOS ALTOS, CA.
APN 170-20-032
SANTA CLARA COUNTY

PUMP DETAILS

REVISIONS	DATE

JOB NO:
DATE: 11-8-2021
SCALE: N.T.S.
DRAWN BY: NR
SHEET NO:
C-5
OF 6 SHEETS

Heavy Equipment Operation

Best Management Practices for the Construction Industry

Best Management Practices for the

- Vehicle and equipment operators
- Site supervisors
- General contractors
- Home builders
- Developers

Doing the Job Right

Site Planning and Preventive Vehicle Maintenance

- ☐ Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks.
- ☐ Perform major maintenance, repair jobs, and vehicle and equipment washing off site where cleanup is easier.
- ☐ If you must drain and replace motor oil, radiator coolant, or other fluids on site, use drip pans or drop cloths to catch drips and spills. Collect all spent fluids, store in separate containers, and properly dispose as hazardous waste (recycle whenever possible).
- ☐ Do not use diesel oil to lubricate equipment parts, or clean equipment. Use only water for any onsite cleaning.
- ☐ Cover exposed fifth wheel hitches and other oily or greasy equipment during rain events.

Storm water Pollution from Heavy Equipment on Construction Sites

Poorly maintained vehicles and heavy equipment that leak fuel, oil, antifreeze or other fluids on the construction site are common sources of storm drain pollution. Prevent spills and leaks by isolating equipment from runoff channels, and by watching for leaks and other maintenance problems. Remove construction equipment from the site as soon as possible.

Spill Cleanup

- ☐ Clean up spills immediately when they happen.
- ☐ Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags) whenever possible and properly dispose of absorbent materials.
- ☐ Sweep up spilled dry materials immediately. Never attempt to "wash them away" with water, or bury them.
- ☐ Use as little water as possible for dust control. Ensure water used doesn't leave silt or discharge to storm drains.
- ☐ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ☐ Report significant spills to the appropriate local spill response agencies immediately.
- ☐ If the spill poses a significant hazard to human health and safety, property or the environment, you must also report it to the State Office of Emergency Services

Roadwork and Paving

Best Management Practices for the Construction Industry

Best Management Practices for the

- Road crews
- Driveway/sidewalk/parking lot construction crews
- Seal coat contractors
- Operators of grading equipment, paving machines, dump trucks, concrete mixers
- Construction inspectors
- General contractors
- Home builders
- Developers

Doing The Job Right

General Business Practices

- ☐ Develop and implement erosion/sediment control plans for roadway embankments.
- ☐ Schedule excavation and grading work during dry weather.
- ☐ Check for and repair leaking equipment.
- ☐ Perform major equipment repairs at designated areas in your maintenance yard, where cleanup is easier. Avoid performing equipment repairs at construction sites.
- ☐ When refueling or when vehicle/equipment maintenance must be done on site, designate a location away from storm drains and creeks.
- ☐ Do not use diesel oil to lubricate equipment parts or clean equipment.
- ☐ Recycle used oil, concrete, broken asphalt, etc. whenever possible, or dispose of properly.

During Construction

- ☐ Avoid paving and seal coating in wet weather, or when rain is forecast, to prevent fresh materials from contacting stormwater runoff.
- ☐ Cover and seal catch basins and manholes when applying seal coat, slurry seal, fog seal, or similar materials.
- ☐ Protect drainage ways by using earth dikes, sand bags, or other controls to divert or trap and filter runoff.

Storm Drain Pollution from Roadwork

Road paving, surfacing, and pavement removal happen right in the street, where there are numerous opportunities for asphalt, sawcut slurry, or excavated material to illegally enter storm drains. Extra planning is required to store and dispose of materials properly and guard against pollution of storm drains, creeks, and the Bay.

- ☐ Never wash excess material from exposed aggregate concrete or similar treatments into a street or storm drain. Collect and recycle, or dispose to dirt area.
- ☐ Cover stockpiles (asphalt, sand, etc.) and other construction materials with plastic tarps. Protect from rainfall and prevent runoff with temporary roofs or plastic sheets and berms.
- ☐ Park paving machines over drip pans or absorbent material (cloth, rags, etc.) to catch drips when not in use.
- ☐ Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags), or dig up, remove, and properly dispose of contaminated soil.
- ☐ Collect and recycle or appropriately dispose of excess abrasive gravel or sand.
- ☐ Avoid over-application by water trucks for dust control.

Asphalt/Concrete Removal

- ☐ Avoid creating excess dust when breaking asphalt or concrete.
- ☐ After breaking up old pavement, be sure to remove all chunks and pieces. Make sure broken pavement does not come in contact with rainfall or runoff.
- ☐ When making saw cuts, use as little water as possible. Shovel or vacuum saw-cut slurry and remove from the site. Cover or protect storm drain inlets during saw-cutting. Sweep up, and properly dispose of, all residues.
- ☐ Sweep, never hose down streets to clean up tracked dirt. Use a street sweeper or vacuum truck. Do not dump vacuumed liquor in storm drains.

Fresh Concrete and Mortar Application

Best Management Practices for the Construction Industry

Best Management Practices for the

- Masons and bricklayers
- Sidewalk construction crews
- Patio construction workers
- Construction inspectors
- General contractors
- Home builders
- Developers
- Concrete delivery/pumping workers

Doing The Job Right

General Business Practices

- ☐ Wash out concrete mixers only in designated wash-out areas in your yard, away from storm drains and waterways, where the water will flow into a temporary waste pit in a dirt area. Let water percolate through soil and dispose of settled, hardened concrete as garbage. Whenever possible, recycle washout by pumping back into mixers for reuse.
- ☐ Wash out chutes onto dirt areas at site that do not flow to streets or drains.
- ☐ Always store both dry and wet materials under cover, protected from rainfall and runoff and away from storm drains or waterways. Protect dry materials from wind.
- ☐ Ensure bags of cement after they are open. Be sure to keep wind-blown cement powder away from streets, gutters, storm drains, rainfall, and runoff.
- ☐ Do not use diesel fuel as a lubricant on concrete forms, tools, or trailers.

Storm Drain Pollution from Fresh Concrete and Mortar Applications

Fresh concrete and cement-related mortars that wash into lakes, streams, or estuaries are toxic to fish and the aquatic environment. Disposing of these materials to the storm drains or creeks can block storm drains, causes serious problems, and is prohibited by law.

During Construction

- ☐ Don't mix up more fresh concrete or cement than you will use in a two-hour period.
- ☐ Set up and operate small mixers on tarps or heavy plastic drop cloths.
- ☐ When cleaning up after driveway or sidewalk construction, wash fines onto dirt areas, not down the driveway or into the street or storm drain.
- ☐ Protect applications of fresh concrete and mortar from rainfall and runoff until the material has dried.
- ☐ Wash down exposed aggregate concrete only when the wash water can (1) flow onto a dirt area; (2) drain onto a bermed surface from which it can be pumped and disposed of properly; or (3) be vacuumed from a catchment created by blocking a storm drain inlet. If necessary, divert runoff with temporary berms. Make sure runoff does not reach gutters or storm drains.
- ☐ When breaking up pavement, be sure to pick up all the pieces and dispose of properly. Recycle large chunks of broken concrete at a landfill.
- ☐ Never bury waste material. Dispose of small amounts of excess dry concrete, grout, and mortar in the trash.
- ☐ Never dispose of washout into the street, storm drains, drainage ditches, or streams.

Preventing Pollution: It's Up to Us

In the Santa Clara Valley, storm drains transport water directly to local creeks and San Francisco Bay without treatment. Storm water pollution is a serious problem for wildlife dependent on our waterways and for the people who live near polluted streams or bay lands. Some common sources of this pollution include spilled oil, fuel, and fluids from vehicles and heavy equipment; construction debris; sediment created by erosion; landscaping runoff containing pesticides or weed killers; and materials such as used motor oil, antifreeze, and paint products that people pour or spill into a street or storm drain.

Thirteen valley municipalities have joined together with Santa Clara County and the Santa Clara Valley Water District to educate local residents and businesses and fight storm water pollution. TO comply with this program, contractors most comply with the practices described this drawing sheet.

Spill Response Agencies

DIAL 9-1-1

State Office of Emergency Services Warning Center (24 hours): **800-852-7550**

Santa Clara County Environmental Health Services: (408) 299-6930

Local Pollution Control Agencies

County of Santa Clara Pollution Prevention Program: (408) 441-1195

County of Santa Clara Integrated Waste Management Program: (408) 441-1198

County of Santa Clara District Attorney Environmental Crimes Hotline: (408) 299-TIPS

Santa Clara County Recycling Hotline: 1-800-533-8414

Santa Clara Valley Water District: (408) 265-2600

Santa Clara Valley Water District Pollution Hotline: 1-888-510-5151

Regional Water Quality Control Board San Francisco Bay Region: (510) 622-2300

Palo Alto Regional Water Quality Control Plant: (650) 329-2598
Serving East Palo Alto Sanitary District, Los Altos, Los Altos Hills, Mountain View, Palo Alto, Stanford

City of Los Altos

Building Department: (650) 947-2752

Engineering Department: (650) 947-2780

Landscaping, Gardening, and Pool Maintenance

Best Management Practices for the Construction Industry

Best Management Practices for the

- Landscapers
- Gardeners
- Swimming pool/spa service and repair workers
- General contractors
- Home builders
- Developers
- Homeowners

Doing The Right Job

General Business Practices

- ☐ Protect stockpiles and landscaping materials from wind and rain by storing them under tarps or secured plastic sheeting.
- ☐ Store pesticides, fertilizers, and other chemicals indoors or in a shed or storage cabinet.
- ☐ Schedule grading and excavation projects during dry weather.
- ☐ Use temporary check dams or ditches to divert runoff away from storm drains.
- ☐ Protect storm drains with sandbags or other sediment controls.
- ☐ Re-vegetation is an excellent form of erosion control for any site

Landscaping/Garden Maintenance

- ☐ Use pesticides sparingly, according to instructions on the label. Rinse empty containers, and use rinse water as product. Dispose of rinsed, empty containers in the trash. Dispose of unused pesticides as hazardous waste.
- ☐ Collect lawn and garden clippings, pruning waste, and tree trimmings. Chip if necessary, and compost.
- ☐ In communities with curbside pick-up of yard waste, place clippings and pruning waste at the curb in approved bags or containers. Or, take to a landfill that composts yard waste. No curbside pickup of yard waste is available for commercial properties.

Storm Drain Pollution From Landscaping and Swimming Pool Maintenance

Many landscaping activities expose soils and increase the likelihood that earth and garden chemicals will run off into the storm drains during irrigation or when it rains. Swimming pool water containing chlorine and copper-based algaecides should never be discharged to storm drains. These chemicals are toxic to aquatic life.

- ☐ Do not blow or rake leaves, etc. into the street, or place yard waste in gutters or on dirt shoulders, unless you are piling them for recycling (allowed by San Jose and unincorporated County only). Sweep up any leaves, litter or residue in gutters or on street.
- ☐ In San Jose, place yard waste for curbside recycling pickup in piles in the street, 18 inches from the curb and completely out of the flow line to any storm drain.

Pool/Fountain/Spa Maintenance

Draining Pools Or Spas

When it's time to drain a pool, spa, or fountain, please be sure to call your local wastewater treatment plant before you start for further guidance on flow rate restrictions, backflow prevention, and handling special cleaning waste (such as acid wash). Discharge flows shall not exceed 100 gallon per minute.

- ☐ Never discharge pool or spa water to a street or storm drain; discharge to a sanitary sewer cleanout.
- ☐ If possible, when emptying a pool or spa, let chlorine dissipate for a few days and then recycle/reuse water by draining it gradually onto a landscaped area.
- ☐ Do not use copper-based algaecides. Control algae with chlorine or other alternatives, such as sodium bromide.

Filter Cleaning

- ☐ Never clean a filter in the street or near a storm drain. Rinse cartridge and diatomaceous earth filters onto a dirt area, and spade filter residue into soil. Dispose of spent diatomaceous earth in the garbage.
- ☐ If there is no suitable dirt area, call your local wastewater treatment plant for instructions on discharging filter backwash or rinse water to the sanitary sewer.

Painting and Application of Solvents and Adhesives

Best Management Practices for the Construction Industry

Best Management Practices for the

- Homeowners
- Painters
- Paperhangers
- Plasterers
- Graphic artists
- Dry wall crews
- Floor covering installers
- General contractors
- Home builders
- Developers

Doing The Job Right

Handling Paint Products

- ☐ **Keep all liquid paint products and wastes away from the gutter, street, and storm drains.** Liquid residues from paints, thinners, solvents, glues, and cleaning fluids are hazardous wastes and must be disposed of at a hazardous waste collection facility (contact your local stormwater program listed on the back of this brochure).
- ☐ When thoroughly dry, empty paint cans, used brushes, rags, and drop cloths may be disposed of as garbage in a sanitary landfill. Empty, dry paint cans also may be recycled as metal.
- ☐ Wash water from painted buildings constructed before 1978 can contain high amounts of lead, even if paint chips are not present. Before you begin stripping paint or cleaning pre-1978 building exteriors with water under high pressure, test paint for lead by taking paint scrapings to a local laboratory. See Yellow Pages for a state-certified laboratory.
- ☐ If there is loose paint on the building, or if the paint tests positive for lead, block storm drains. Check with the wastewater treatment plant to determine whether you may discharge water to the sanitary sewer, or if you must send it offsite for disposal as hazardous waste.

Storm Drain Pollution from Paints, Solvents, and Adhesives

All paints, solvents, and adhesives contain chemicals that are harmful to wildlife in local creeks, San Francisco Bay, and the Pacific Ocean. Toxic chemicals may come from liquid or solid products or from cleaning residues or rags. Paint material and wastes, adhesives and cleaning fluids should be recycled when possible, or disposed of properly to prevent these materials from flowing into storm drains and watercourses.

Painting Cleanup

- ☐ **Never clean brushes or rinse paint containers into a street, gutter, storm drain, French drain, or stream.**
- ☐ For **water-based paints**, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ☐ For **oil-based paints**, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids and residue as hazardous waste.

Paint Removal

- ☐ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ☐ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury or tributyl tin must be disposed of as hazardous wastes. Lead based paint removal requires a state-certified contractor.
- ☐ When stripping or cleaning building exteriors with high-pressure water, block storm drains. Direct wash water onto a dirt area and spade into soil. Or, check with the local wastewater treatment authority to find out if you can collect (mop or vacuum) building cleaning water and dispose to the sanitary sewer. Sampling of the water may be required to assist the wastewater treatment authority in making its decision.

Recycle/Reuse Leftover Paints Whenever Possible

- ☐ Recycle or donate excess **water-based (latex) paint**, or return to supplier.
- ☐ Reuse leftover **oil-based paint**. Dispose of non-recyclable thinners, sludge and unwanted paint, as hazardous waste.
- ☐ Unopened cans of paint may be able to be returned to the paint vendor. Check with the vendor regarding its "buy-back" policy.

Los Altos Municipal Code Requirements

Los Altos Municipal Code Chapter 10.08.390 Non-storm water discharges

A. Unlawful discharges. It shall be unlawful to discharge any domestic waste or industrial waste into storm drains, gutters, creeks, or San Francisco Bay. Unlawful discharges to storm drains shall include, but not be limited to, discharge from toilets; sinks; industrial processes; cooling systems; boilers; fabric cleaning; equipment cleaning; vehicle cleaning; construction activities, including, but not limited to, painting, paving, concrete placement, saw cutting and grading; swimming pools; spas; and fountains, unless specifically permitted by a discharge permit or unless exempted pursuant to guidelines published by the superintendent.

B. Threatened discharges. It shall be unlawful to cause hazardous materials, domestic waste, or industrial waste to be deposited in such a manner or location as to constitute a threatened discharge into storm drains, gutters, creeks or San Francisco Bay. A "threatened discharge" is a condition creating a substantial probability of harm, when the probability and potential extent of harm make it reasonably necessary to take immediate action to prevent, reduce or mitigate damages to persons, property or natural resources. Domestic or industrial wastes that are no longer contained in a pipe, tank or other container are considered to be threatened discharges unless they are actively being cleaned up.

Los Altos Municipal Code Section 10.08.430 Requirements for construction operations.

A. A spill response plan for hazardous waste, hazardous materials and uncontained construction materials shall be prepared and available at the construction sites for all projects where the proposed construction site is equal to or greater than one acre of disturbed soil and for any other projects for which the city engineer determines is necessary to protect surface waters. Preparation of the plan shall be in accordance with guidelines published by the city engineer.

B. A storm water pollution prevention plan shall be prepared and available at the construction sites for all projects greater than one acre of disturbed soil and for any other projects for which the city engineer determines that a storm water management plan is necessary to protect surface waters. Preparation of the plan shall be in accordance with guidelines published by the city engineer.

C. Prior approval shall be obtained from the city engineer or designee to discharge water pumped from construction sites to the storm drain. The city engineer or designee may require gravity settling and filtration upon a determination that either or both would improve the water quality of the discharge. Contaminated groundwater or water that exceeds state or federal requirements for discharge to navigable waters may not be discharged to the storm drain. Such water may be discharged to the sewer, provided that the requirements of Section 10.08.240 are met and the approval of the superintendent is obtained prior to discharge.

D. No cleanup of construction debris from the streets shall result in the discharge of water to the storm drain system; nor shall any construction debris be deposited or allowed to be deposited in the storm drain system. (Prior code § 5-5.643)

Criminal and judicial penalties can be assessed for non-compliance.

General Construction And Site Supervision

Best Management Practices For Construction

Best Management Practices for the

- General contractors
- Site supervisors
- Inspectors
- Home builders
- Developers

Storm Drain Pollution from Construction Activities

Construction sites are common sources of storm water pollution. Materials and wastes that blow or wash into a storm drain, gutter, or street have a direct impact on local creeks and the Bay.

As a contractor, or site supervisor, owner or operator of a site, you may be responsible for any environmental damage caused by your subcontractors or employees.

Doing The Job Right

General Principals

- ☐ Keep an orderly site and ensure good housekeeping practices are used.
- ☐ Maintain equipment properly.
- ☐ Cover materials when they are not in use.
- ☐ Keep materials away from streets, storm drains and drainage channels.
- ☐ Ensure dust control water doesn't leave site or discharge to storm drains.

Advance Planning To Prevent Pollution

- ☐ Schedule excavation and grading activities for dry weather periods. To reduce soil erosion, plant temporary vegetation or place other erosion controls before rain begins. Use the *Erosion and Sediment Control Manual*, available from the Regional Water Quality Control Board, as a reference.
- ☐ Control the amount of runoff crossing your site (especially during excavation) by using berms or temporary or permanent drainage ditches to divert water flow around the site. Reduce storm water runoff velocities by constructing temporary check dams or berms where appropriate.
- ☐ Train your employees and subcontractors. Make these best management practices available to everyone who works on the construction site. Inform subcontractors about the storm water requirements and their own responsibilities.

Good Housekeeping Practices

- ☐ Designate one area of the site for auto parking, vehicle refueling, and routine equipment maintenance. The designated area should be well away from streams or storm drain inlets, bermed if necessary. Make major repairs off site.
- ☐ Keep materials out of the rain – prevent runoff contamination at the source. Cover exposed piles of soil or construction materials with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.
- ☐ Keep pollutants off exposed surfaces. Place trashcans and recycling receptacles around the site to minimize litter.
- ☐ Clean up leaks, drips and other spills immediately so they do not contaminate soil or groundwater or leave residue on paved surfaces. Use dry cleanup methods whenever possible. If you must use water, use just enough to keep the dust down.
- ☐ Cover and maintain dumpsters. Check frequently for leaks. Place dumpsters under roofs or cover with tarps or plastic sheeting secured around the outside of the dumpster. Never clean out a dumpster by hosing it down on the construction site.
- ☐ Set portable toilets away from storm drains. Make sure portable toilets are in good working order. Check frequently for leaks.

Materials/Waste Handling

- ☐ Practice Source Reduction -- minimize waste when you order materials. Order only the amount you need to finish the job.
- ☐ Use recyclable materials whenever possible. Arrange for pick-up of recyclable materials such as concrete, asphalt, scrap metal, solvents, degreasers, cleared vegetation, paper, rock, and vehicle maintenance materials such as used oil, antifreeze, batteries, and tires.
- ☐ Dispose of all wastes properly. Many construction materials and wastes, including solvents, water-based paints, vehicle fluids, broken asphalt and concrete, wood, and cleared vegetation can be recycled. Materials that cannot be recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never bury waste materials or leave them in the street or near a creek or stream bed.

Permits

- ☐ In addition to local building permits, you will need to obtain coverage under the State's General Construction Activity Storm water Permit if your construction site disturbs one acre or more. Obtain information from the Regional Water Quality Control Board.

Earth-Moving And Dewatering Activities

Best Management Practices for the Construction Industry

Best Management Practices for the

- Bulldozer, back hoe, and grading machine operators
- Dump truck drivers
- Site supervisors
- General contractors
- Home builders
- Developers

Doing The Job Right

General Business Practices

- ☐ Schedule excavation and grading work during dry weather.
- ☐ Perform major equipment repairs away from the job site.
- ☐ When refueling or vehicle/equipment maintenance must be done on site, designate a location away from storm drains.
- ☐ Do not use diesel oil to lubricate equipment parts, or clean equipment.

Practices During Construction

- ☐ Remove existing vegetation only when absolutely necessary. Plant temporary vegetation for erosion control on slopes or where construction is not immediately planned.
- ☐ Protect down slope drainage courses, streams, and storm drains with wattles, or temporary drainage swales. Use check dams or ditches to divert runoff around excavations. Refer to the Regional Water Quality Control Board's *Erosion and Sediment Control Field Manual* for proper erosion and sediment control measures.

Storm Drain Pollution from Earth-Moving Activities and Dewatering

Soil excavation and grading operations loosen large amounts of soil that can flow or blow into storm drains when handled improperly. Sediments in runoff can clog storm drains, smother aquatic life, and destroy habitats in creeks and the Bay. Effective erosion control practices reduce the amount of runoff crossing a site and slow the flow with check dams or roughened ground surfaces.

Contaminated groundwater is a common problem in the Santa Clara Valley. Depending on soil types and site history, groundwater pumped from construction sites may be contaminated with toxics (such as oil or solvents) or laden with sediments. Any of these pollutants can harm wildlife in creeks or the Bay, or interfere with wastewater treatment plant operation.

Discharging sediment-laden water from a dewatering site into any water of the state without treatment is prohibited.

- ☐ Cover stockpiles and excavated soil with secured tarps or plastic sheeting.

Dewatering Operations

1. Check for Toxic Pollutants

- ☐ Check for odors, discoloration, or an oily sheen on groundwater.
- ☐ Call your local wastewater treatment agency and ask whether the groundwater must be tested.
- ☐ If contamination is suspected, have the water tested by a certified laboratory.
- ☐ Depending on the test results, you may be allowed to discharge pumped groundwater to the storm drain (if no sediments present) or sanitary sewer. OR, you may be required to collect and haul pumped groundwater offsite for treatment and disposal at an appropriate treatment facility.

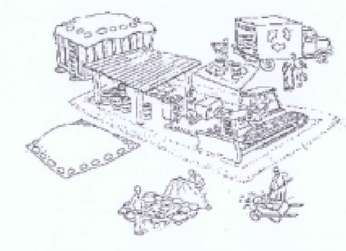
2. Check for Sediment Levels

- ☐ If the water is clear, the pumping time is less than 24 hours, and the flow rate is less than 20 gallons per minute, you may pump water to the street or storm drain.
- ☐ If the pumping time is more than 24 hours and the flow rate greater than 20 gpm, call your local wastewater treatment plant for guidance.
- ☐ If the water is not clear, solids must be filtered or settled out by pumping to a settling tank prior to discharge. Options for filtering include:
  - Pumping through a perforated pipe sunk part way into a small pit filled with gravel;
  - Pumping from a bucket placed below water level using a submersible pump;
  - Pumping through a filtering device such as a swimming pool filter or filter fabric wrapped around end of suction pipe.
- ☐ When discharging to a storm drain, protect the inlet using a barrier of burlap bags filled with drain rock, or cover inlet with filter fabric anchored under the grate. OR pump water through a grassy swale prior to discharge.

Blueprint for a Clean Bay

Remember: The property owner and the contractor share ultimate responsibility for the activities that occur on a construction site. You may be held responsible for any environmental damage caused by your subcontractors or employees.

Best Management Practices for the Construction Industry



Santa Clara Urban Runoff Pollution Prevention Program

DESIGNED BY: LAREY LIND	APPROVED BY: CITY OF LOS ALTOS	DATE: OCTOBER, 2003
DRAWN BY: VICTOR CHEN	CITY ENGINEER 48956 R.C.E.	SCALE: N.T.S.
CHECKED BY: JIM GUSTAFSON	SHEET OF SHEETS	DRAWING NO:

REGISTERED PROFESSIONAL ENGINEER NADIM N. RAFFOUL No. 56027 Exp. 12/31/22 CIVIL STATE OF CALIFORNIA

NNR ENGINEERING SERVICES CO.
CIVIL ENGINEERS
535 WEYBRIDGE DRIVE
SAN JOSE, CALIFORNIA 95123
(408) 348-7563

641 SPARGUR DRIVE
LOS ALTOS, CA.
APN 170-20-032
SANTA CLARA COUNTY

BLUEPRINT FOR A CLEAN BAY

REVISIONS	DATE

JOB NO:
DATE: 11-8-2021
SCALE: N.T.S.
DRAWN BY: NR
SHEET NO:
C-6
OF 6 SHEETS