DRAINAGE REPORT

Single Family Residence

APN 0596-221-13
57170 Spencer Road,
Yucca Valley, CA 92284

Prepared For:
STR Takeover, LLC
57170 Spencer Rd,
Yucca Valley, CA 92284

Prepared By:
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DRP Enterprises, LLC
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August 19, 2024

TABLE OF CONTENTS

1 INTRODUCTION

The purpose of the following report is to present the methodology and results of the hydrologic and hydraulic analysis conducted in support of a residential construction project in Yucca Valley, California. The following section of this report will describe the project, the existing drainage patterns, and the FEMA floodplain zone assigned to the site.

1.1 Project Description

The proposed project involves constructing a new single-family residence on a lot with an existing structure (APN 0596-221-13-0000) in Yucca Valley, California. The proposed project is located along Spencer Road off Highway 247 as shown on the location map on Figure 1. The new residence will be located on the eastern half of the lot as shown on the grading plans provided in Appendix A.

1.2 Drainage Patterns

In the existing condition, onsite runoff is conveyed from high points to small washes that generally convey flow towards the northeastern part of the property. Near the proposed project, flow concentrates between the two high points located on the eastern half of the parcel (where the new single-family residence will be constructed) and conveys flow to the south. The proposed project will preserve the existing drainage patterns in that flow will continue to be directed from the southern part of the property to the northerly side of the property line. A basin will be constructed at the outlet of the small wash situated between the two high points to attenuate the peak flow. Refer to Section 2.3 of this report for calculations and discussion regarding the proposed basin. In addition, the grading and drainage plans, which depict the existing and proposed topography, are provided in Appendix A. Figure 2 is a drainage area map. In the proposed condition, a residence will be constructed on the eastern half of the parcel, and flow will be directed away from the home.

1.2.1 FEMA Floodplain Identification

The site is situated in Federal Emergency Management Agency (FEMA) Flood Zone X as shown on FEMA Flood Insurance Rate Map (FIRM) number 06071C8120H, effective on August 28, 2008. Zone X denotes areas with minimal flood hazard. FEMA Flood Zone X is not a Special Flood Hazard Area (SFHA). Figure 3 is the FEMA FIRMette for the project site.

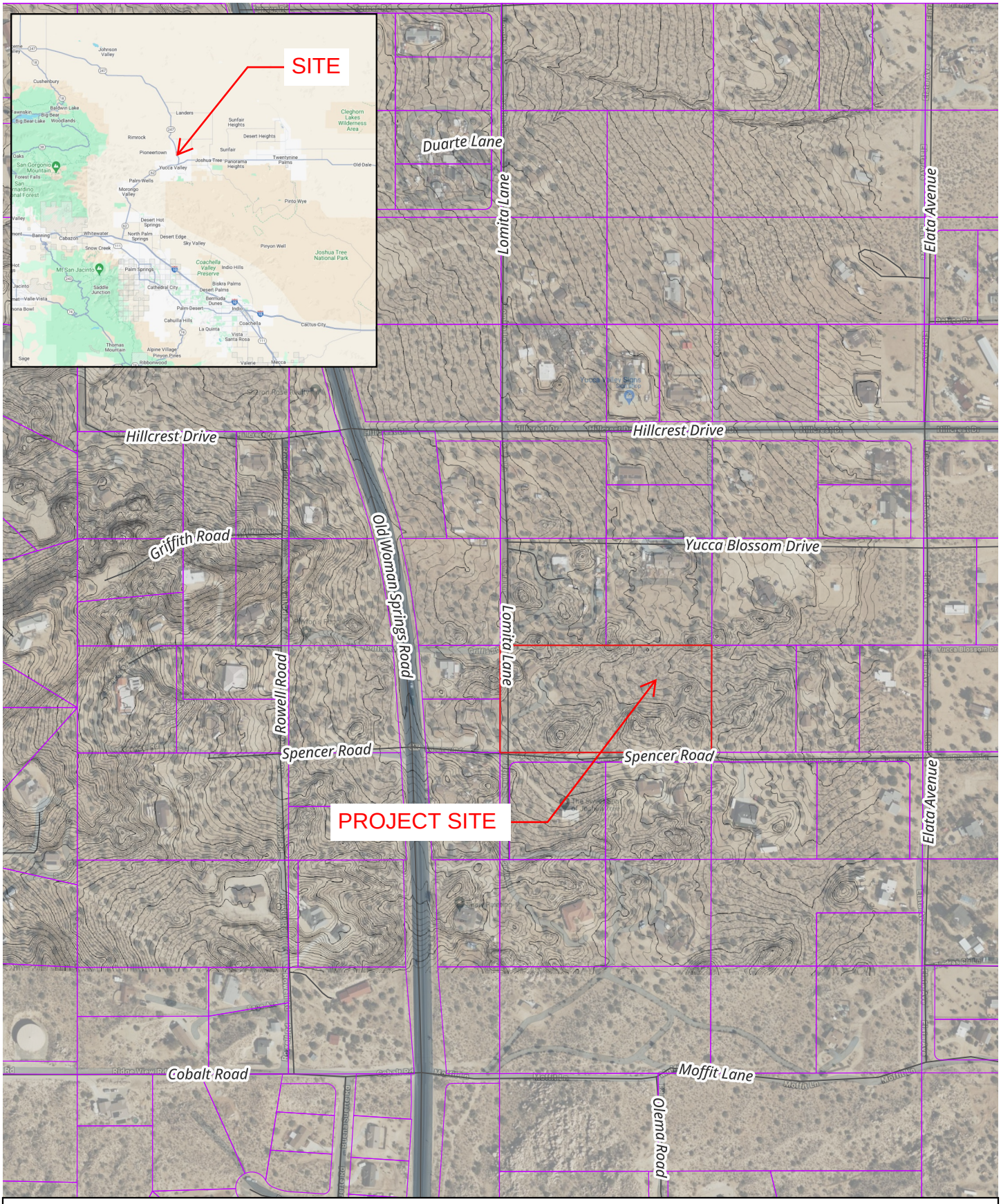


FIGURE 1 -
LOCATION MAP

N

0 250 500 ft

Site
Parcel
Roads

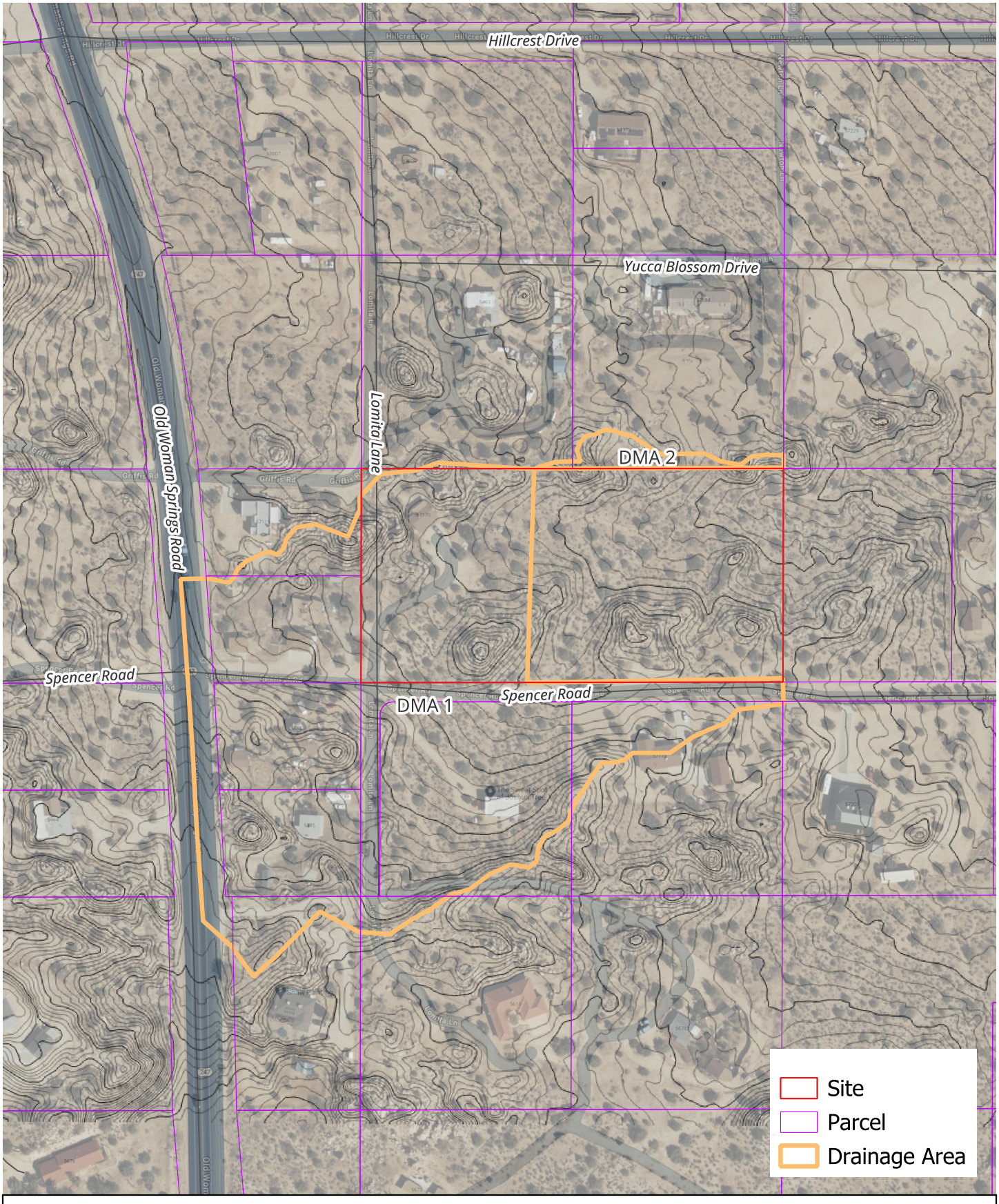


FIGURE 2 - DRAINAGE AREA MAP

N

0 250 500 ft

National Flood Hazard Layer FIRMette

FEMA

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/13/2024 at 8:10 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

2 HYDROLOGY

The following section of this report will describe the hydrologic analysis performed for this project site for the purpose of comparing the existing and proposed conditions.

2.1 Peak Flow Calculation – Onsite Watershed

The onsite watershed is comprised of the parcel itself. The onsite evaluation was analyzed using the Rational Method as described in the San Bernardino County Hydrology Manual to evaluate the differences between the existing and proposed condition. The equation for the Rational Method as shown in the San Bernardino County Hydrology Manual is as follows:

$$Q = 0.9 \times (I - F_m) \times A$$

where,
Q is the 100-year peak discharge (cfs),
I is rainfall intensity (in/hr),
F_m is defined as the ratio of pervious area (a_p) times the infiltration rate for pervious area, and
A is the drainage area (acres).

Table 1 - Rational Method Calculations – Onsite Watershed

Scenario	Area (ac)	a_p	F_m (1)	$i^{(2)}$ (in/hr)	Q (cfs)
Existing	5.0	1	0.14	5.98	26.28
Proposed	5.0	0.978	0.137	5.98	26.29

Notes

1. *The Fp value for this site (0.14) was obtained from Figure C-15 of the San Bernardino County Hydrology Manual.*
2. *Intensity was obtained from NOAA PFDS data provided in **Appendix B** and was based off time of concentration determined using the nomograph provided in the San Bernardino County Hydrology Manual (see **Appendix C**). The nomograph indicated a Tc of 7 minutes, which was rounded down to 5 minutes for the purpose of obtaining an intensity value from PFDS.*

2.2 Peak Flow Calculation – Offsite Watershed

The hydrologic analysis of the offsite watershed was also performed using the Rational Method as described in the San Bernardino County Hydrology Manual. The DMAs listed in Table 2 are shown on Figure 2.

Table 2 - Rational Method Calculations - Offsite Watershed

Drainage Management Area (DMA)	Area (ac)	a_p	F_m (1)	$i^{(2)}$ (in/hr)	Q (cfs)
DMA 1	8.83	0.819	0.115	4.28	33.10
DMA 2	0.23	1	0.14	5.98	1.21

Notes

1. *The Fp value for this site (0.14) was obtained from Figure C-15 of the San Bernardino County Hydrology Manual.*
2. *Intensity was obtained from NOAA PFDS data provided in **Appendix B** and was based off time of concentration determined using the nomograph provided in the San Bernardino County Hydrology Manual (see **Appendix C**).*

2.3 Volume Mitigation

The proposed basin located at the northeastern corner of the corner was designed to meet the requirements outlined in the "San Bernardino County Detention Basin Design Criteria." According to the "San Bernardino County Detention Basin Design Criteria," the basin and outlet shall be sized such that the post-development 100-year peak flow rate generated by the site shall be less than or equal to 90% of the pre-development 100-year peak flow from the site. As shown on the grading and drainage plans provided in Appendix A, the proposed basin will have 625 cubic feet of capacity. The outlet structure is comprised of a riser structure and 4-inch storm drain that conveys flow to a riprap outfall comprised of 3-inch to 4-inch river rock. The volume mitigation calculations are summarized below.

- The 100-year post-development peak flow rate generated by the site is 26.29 cfs.
- 90% of the 100-year pre-development peak flow rate from the site = 0.9 x 26.28 cfs = 23.65 cfs
- Difference between the 100-year post-development peak flow rate and 90% of the 100-year pre-development flow rate = 2.64 cfs

$$V = 1.5 \times \Delta Q \times T_c \times 60$$

where,
V is the required volume of the basin (cf),
ΔQ is the difference between the 100-year post-development peak flow rate and 90% of the 100-year pre-development peak flow rate (cfs), and
T_c is time of concentration (min).

The time of concentration as calculated using the nomography on Figure D-1 in the San Bernardino County Hydrology Manual for the on-site watershed is 7.5 minutes. The volume mitigation required as calculated above is 1,783 cubic feet.

3 CONCLUSION

Although the volume mitigation calculations presented in Section 2.3 of this report indicate the basin is undersized, the calculated pipe outflow is 0.13 cfs. In this way, the proposed basin and basin outflow configuration will attenuate the 100-year peak flow rate such that the post-development 100-year peak flow rate generated from the site is less than 90% of the pre-development 100-year peak flow rate from the site.

APPENDIX A – GRADING AND DRAINAGE PLANS

TOWN OF YUCCA VALLEY

SAN BERNARDINO COUNTY, CALIFORNIA

GRADING AND DRAINAGE PLANS

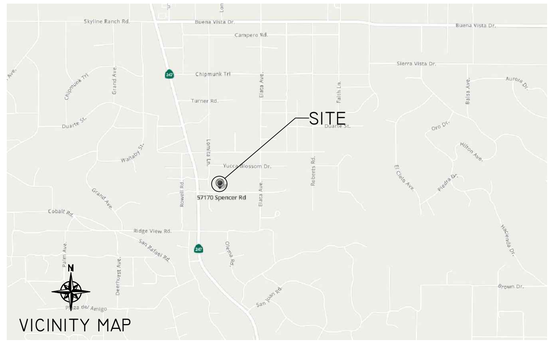
SINGLE FAMILY RESIDENCE

57170 SPENCER ROAD

APN 0596-221-13

TOWN OF YUCCA VALLEY ENGINEERING DIVISION
GRADING PLAN GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD PLANS OF THE TOWN OF YUCCA VALLEY AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK), LATEST EDITION, AND THE PROJECT'S "CONDITIONS OF APPROVAL", CALTRANS STANDARDS CURRENT EDITION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN EFFECTIVE MEANS OF DUST CONTROL WHICH SHALL INCLUDE PROVISIONS FOR ADEQUATE WATERING DURING THE GRADING PROCESS AND PROVISIONS FOR CONTINUANCE OF DUST CONTROL UNTIL THE GRADE SURFACE PRESENTS SUFFICIENT COVER AGAINST WIND OR WATER EROSION THAT SPECIAL DUST CONTROL MEASURES ARE NO LONGER NECESSARY.
3. CONTRACTOR SHALL OBTAIN PERMITS AS REQUIRED BY THE TOWN OF YUCCA VALLEY DEVELOPMENT CODE.
4. ALL GRADING SHALL COMPLY WITH CHAPTER J OF THE CALIFORNIA BUILDING CODE, LATEST EDITION AS AMENDED BY THE TOWN OF YUCCA VALLEY.
5. THE LOCATION OF EXISTING, UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. SUBJECT TO THE PROVISIONS OF SECTION 4215 OF THE CALIFORNIA GOVERNMENT CODE, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK CONTACT DIG ALERT AT 811 TWO WORKING DAYS PRIOR TO ANY EXCAVATION.
6. DIMENSIONING TO CURBS SHALL BE TO FACE OF CURB.
7. CONTRACTOR SHALL DISPOSE OF ALL DEBRIS OFF-SITE AT A LEGALLY APPROVED DISPOSAL SITE.
8. CONTRACTOR SHALL REMOVE ANY ABANDONED UTILITY FACILITIES AND SHOW LIMITS OF REMOVALS ON THE RECORD DRAWINGS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, REPLACEMENT OR RELOCATION OF ALL REGULATORY, WARNING AND GUIDE SIGNS.
10. THE ASPHALT DESIGN MUST MEET THE CALTRANS STANDARD SPECIFICATIONS, CURRENT ADDITION, SECTION 39, FOR TYPE B ASPHALT, ¾" MAXIMUM MEDIUM AND ½" MAXIMUM MEDIUM. THE OIL SHALL BE PG 70-10.
11. THE AGGREGATE BASE SHALL BE CLASS II, FOR ¾" MAXIMUM ACCORDING TO THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS, SECTION 26, CURRENT ADDITION.
12. A "RECORD DRAWING" (FORMERLY CALLED "AS-BUILT" DRAWING) OF THIS PLAN MUST BE SUBMITTED TO AND APPROVED BY THE TOWN ENGINEER BY THE PROJECT ENGINEER OF RECORD PRIOR TO ACCEPTANCE OF THE PROJECT.
13. CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL BE PROVIDED ON ALL PROJECTS AS REQUIRED BY TOWN STANDARDS OR AS DIRECTED BY THE TOWN ENGINEER. AS A MINIMUM, ALL CONSTRUCTION SIGNING, LIGHTING AND BARRICADING SHALL BE IN ACCORDANCE WITH STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, "MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES" DATED 1991, OR SUBSEQUENT EDITIONS IN FORCE AT THE TIME OF CONSTRUCTION
14. THE FLOWLINES OF ALL CURB AND GUTTERS AND CROSS GUTTERS SHALL BE WATER TESTED BEFORE ACCEPTANCE OF THE PROJECT.
15. PARKING STALLS SHALL BE CLEARLY DELINEATED WITH A 4 TO 6 INCH STRIPE "HAIRPIN" OR ELONGATED "U" DESIGN OR OTHER APPROVED STRIPING OR STALL DELINEATION.
16. FINAL SITE GRADING AND DRAINAGE FLOW LINES SHALL BE CERTIFIED, IN WRITING, BY THE ENGINEER OF RECORD TO BE IN CONFORMANCE TO THE APPROVED GRADING PLAN PRIOR TO FINAL INSPECTION.
17. NPDES PERMIT IS REQUIRED PRIOR TO ISSUANCE OF A GRADING PERMIT FOR PARCELS 1 ACRE OR GREATER.
18. THE LOCATION OF BLOCK WALLS, RETAINING WALLS, AND OTHER STRUCTURES SHALL BE CLEARLY DEFINED ON THE PLANS. CONSTRUCTION AND STRUCTURAL DETAILS SHALL NOT BE SHOWN ON THE GRADING PLAN ALL PROVISIONS OF THE PRELIMINARY SOILS REPORT PREPARED BY NTS GEOTECHICAL DATED 10-8-2023 SHALL BE COMPLIED WITH.
19. THIS PLAN IS FOR GRADING PURPOSES ONLY. APPROVAL DOES NOT CONSTITUTE APPROVAL OF BUILDING LOCATIONS, OFF-SITE DRAINAGE FACILITIES, DRIVEWAY LOCATIONS OR SIZES, PARKING LOT LAYOUT, ETC., OR OTHER ITEMS NOT RELATED TO BASIC GRADING OPERATIONS. NO STRUCTURAL CALCULATIONS HAVE BEEN MADE FOR ANY STRUCTURES ON THIS PLAN DURING PLAN CHECK; THEREFORE, THE PLAN CHECK ENGINEER TAKES NO RESPONSIBILITY FOR THE INTEGRITY OF SUCH STRUCTURES.
20. THESE PLANS SHALL EXPIRE IF CONSTRUCTION HAS NOT STARTED WITHIN 12 MONTHS OF PLAN APPROVAL BY THE TOWN ENGINEER.
21. "UPON ISSUANCE OF A GRADING PERMIT BY THE TOWN OF YUCCA VALLEY ALL GRADING SHALL BE UNDERTAKEN AND COMPLETED IN COMPLIANCE WITH TOWN OF YUCCA VALLEY ORDINANCE NO. 133, IN PARTICULAR, SECTION 4(B) BUILDING CODE AMENDMENTS: 4. APPENDIX, VOLUME 1, CHAPTER 33, EXCAVATION AND GRADING, A. SECTION 3309.3 GRADING DESIGNATION, B. SECTION 3316, EROSION CONTROL AND 5.SECTION 3320 ENGINEERING REPORTS, AND THE ENGINEER OF RECORD SHALL CERTIFY THAT ALL GRADING COMPLIES WITH SAID ORDINANCE PRIOR TO ACCEPTANCE OR ISSUANCE OF ANY PERMITS BY THE TOWN OF YUCCA VALLEY."



ABBREVIATIONS:

AC	ASPHALT CONCRETE
ANT PT	ANGLE POINT
BCR	BEGIN CURB RETURN
BW	BACK OF SIDEWALK
CL	CENTERLINE
COR	CORNER
CLF	CHAIN LINK FENCE
CP	CONTROL POINT
CONC.	CONCRETE
ECR	END CURB RETURN
EP	EDGE OF PAVEMENT
ER	EDGE OF ROAD
EW	EDGE OF WALK
FH	FIRE HYDRANT
FG	FINISH GRADE
FL	FLOW LINE
FND	FOUND
FS	FINISH SURFACE
GS	GROUND
HC	HANDICAP
IFOW	INSIDE FACE OF WALL
INT	INTERSECTION
LP	LOW POINTS
LT	LIGHT
MOC	MIDDLE OF CURB
OFOW	OITSIDE FACE OF WALL
PL	PROPERTY LINE
PI	POINT OF INTERSECTION
PP	POWER POLE
SMH	SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
TB	TOP OF BERM
TC	TOP OF CURB
P-WI	POST/WROUGHT IRON FENCE

LEGEND:

- CENTERLINE
- PROPERTY LINE
- EASEMENT
- (N) IRON FENCING
- EXIS. FENCE
- EXIS. CONTOUR LINE (368)
- PROPOSED CONTOUR LINE (368)
- SPOT ELEVATION (369.03 FS)
- BOLLARD
- FIRE HYDRANT
- GAS VALVE
- LIGHT POLE
- MISCELLANEOUS BOX
- POWER POLE
- SEWER MANHOLE
- STREET LIGHT
- SIGN
- TRAFFIC SIGNAL LIGHT
- STORM DRAIN MANHOLE
- WATER VALVE
- JOSHUA TREE
- DOMESTIC WATER
- SANITARY SEWER
- PROPOSED TELEPHONE
- PROPOSED ELECTRIC
- NEW WATER METER
- PROPOSED CATCH BASIN
- PROPOSED DRAINAGE SWALE
- PROPOSED 4" SD
- PROPOSED PERF 4" SD
- DRAINAGE PATTERN
- RETAINING WALLS
- PCC DRIVE, SURFACES
- LANDSCAPE/NATURAL
- GRAVEL SURFACES
- AC PAVED SURFACES
- JUN JUNIPER TREE
- YUCCA TREE

INDEX OF DRAWINGS

OWNER/CLIENT:

STR TAKEOVER LLC
57170 SPENCER ROAD
YUCCA VALLEY, CA. 92284

ZONING LAND USE:

RESIDENTIAL - RURAL RL

UTILITY PURVEYORS:

WATER - HI DESERT WATER	PH: (760) 365-8333
SEWER - SEPTIC	PH: PRIVATE
ELEC. - SCE-SOLAR	PH: (800) 611-1911
GAS - PROPANE	PH: PRIVATE

ASSESSOR PARCEL NUMBERS:

APN 0596-221-13

SITE ADDRESS:

57170 SPENCER ROAD
YUCCA VALLEY, CA 92284

LEGAL DESCRIPTION:

APN 0596-221-13

LOTS ACREAGE:

42,623.2026 SQ. FT. OR 0.98 ACRES

TOTAL APPRX. AREA DIST.

14,230 SQ. FT. OR 0.32 ACRES

CODES/ORDINANCES:

ALL WORK SHALL BE IN COMPLIANCE WITH THE TOWN OF YUCCA VALLEY ORDINANCES, REQUIREMENTS AND TOWN MUNICIPAL CODES.

ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH ALL CALIFORNIA BUILDING CODE REQUIREMENTS (CBC) 2019. APPENDIX J, CHP 18.

SURVEY INFO:

PROJECT BENCHMARK LISTED IN TITLE BLOCK

SURVEY PERFORMED BY
JD COLE AND ASSOCIATES
JIM COLE PLS
YUCAIPA CA
AERIAL FROM TMR AND ASSOCIATES

SCOPE OF WORK

NEW SINGLE FAMILY RESIDENTIAL UNIT IN RURAL SETTING. COVERED PATIO, GRADING, DRAINAGE, RET. WALLS AND NEW PCC WALK AND DRIVEWAY SEPTIC TANK AND LEACH FIELD.

BASIS OF BEARING:

_____ _____
_____ _____

TREE NOTE:

EXTREME CARE MUST BE TAKEN TO MINIMIZE IMPACTS OF ALL EARTHWORK TO PROTECT ALL NATURAL TREES AND PLANTS ON THE SITE. THERE WERE NO SURVEYED OR NOTED TREES ON THIS SITE APPLICABLE TO NATIVE PLANT OR WESTERN JOSHUA PERMITS.

STATE MAP

CIVIL ENGINEER

DRP ENTERPRISES LLC
Daniel Patneaude
MAILING ADDRESS:
PO BOX 4428
PALM SPRINGS, CA 92263
206-734-7765
Joanne C. Singer RCE 26900
760-625-7426

DRP PROJ. I.D. 2023-1690-01

PERVIOUS - IMPERVIOUS AREA CALCULATIONS		
EXISTING LOT	BEFORE	AFTER
PARCEL AREA	217,800 SF	217,800 SF
BUILDINGS	0 SF	2,481 SF
LOT COVERAGE (BLDG)	0%	1.2%
D/W, WALKS, PAVED	0 SF	3,764 SF
TOTAL IMPERVIOUS %	0%	2.8%
TOTAL PERVIOUS %	100%	97.8

EARTHWORK QUANTITIES

DESCRIPTION	CUT	FILL
EARTHWORK	188 CY	153 CY
OVER-EXCAVATION	132 CY	___ CY
RECOMPACTION	---	132 CY
SHRINKAGE	___ CY	15.3 CY
MISC	--- CY	--- CY
IMPORT	--- CY	___ CY
EXPORT	--- CY	--- CY
TOTAL	188 CY	153 CY

NOTE: SHRINKAGE IS ASSUMED AT A FACTOR OF 10%
NOTE: SOME NATURAL SOILS MAY NEED TO BE EXPORTED BASED ON SOILS DENSITY TESTING.

PRIVATE ENGINEER'S NOTICE TO CONTRACTOR

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN ON THESE PLANS WAS OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN OF THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND ANY DISCREPANCY BETWEEN THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITION DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR ALSO AGREES TO DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

Joanne Singer
JOANNE C. SINGER RCE 26900 — 11-29-2023 DATE

GRADING TOLERANCE NOTE:

GRADING SHALL BE DONE WITHIN A TOLERANCE OF 0.1' OF THE GRADES AND ELEVATIONS SHOWN ON THESE PLANS. IN NO WAY DO THE ABOVE TOLERANCES RELIEVE THE CONTRACTOR OF RESPONSIBILITY OF PROVIDING A FINISHED GRADE SURFACE THAT DOES NOT POND OR PRODUCE PONDING.

PRIMARY DESIGN STANDARDS

1. TOWN OF YUCCA VALLEY 2020 - STANDARD DETAILS
2. COUNTY OF SAN BERNARDINO STANDARDS AS APPLICABLE 2018
3. 2018 GREENBOOK: STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (18TH EDITION)
4. 2018 STANDARD SPECIFICATIONS BY CALIFORNIA DEPARTMENT OF TRANSPORTATION

CERTIFICATION

I hereby certify that the grading has been completed in accordance with the approved grading plan.

REGISTERED PROFESSIONAL ENGINEER — JOANNE C. SINGER — C 26900 — 3/31/2025 — CIVIL — STATE OF CALIFORNIA

JOANNE C. SINGER — DATE
RCE NO. 26900 EXP. 3/21/2025

IMPORTANT NOTICE
Section 4216/4217 of the Government Code requires a Dig Alert Identification Number to be issued before a "Permit to Excavate" will be valid. For your Dig Alert I.D. Number call
CALL TOLL FREE
48 HOURS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
811

BENCHMARK:
BENCH MARK DISK NGVD 29
80 = SET IN A BOULDER
705.24 1968
CA-071 MAY HOLD, BUT OF TYPE COMMONLY
SUBJECT TO SURFACE MOTION
THE SITE LOCATION WAS REPORTED AS SUITABLE
FOR SATELLITE OBSERVATIONS - September 13, 2015

REVISIONS

NO.	INIT.	DATE	DESCRIPTION	APP'D	DATE

OWNER OR DEVELOPER:
STR TAKEOVER LLC
57170 SPENCER ROAD
YUCCA VALLEY, CA 92284

SOILS ENGINEER: _____ _____ (___) ___-____
_____ DATE
_____ ____
G.E. ____

PREPARED BY: DRP Enterprises — DRP PROJ. ID 2023-1690-01 — DATE: 11-29-2023
DRP ENTERPRISES LLC
DANIEL PATNEAUDE
MAILING ADDRESS:
PO BOX 4428
PALM SPRINGS, CA 92263
206-734-7765
JOANNE C. SINGER RCE 26900
760-625-7426

REGISTERED PROFESSIONAL ENGINEER — JOANNE C. SINGER — C 26900 — 3/31/2025 — CIVIL — STATE OF CALIFORNIA
EXP. DATE: 3/31/2025

TOWN OF YUCCA VALLEY CALIFORNIA — INC. NOV. 27, 1991

APPROVED BY:
_____ DATE
ALEX QISHTA,
DIRECTOR OF PUBLIC WORKS

TOWN OF YUCCA VALLEY
COVER SHEET
57170 SPENCER ROAD
GRADING AND DRAINAGE PLANS
APN 0596-221-13

SHEET G-1 OF G-4 SHEETS

GRA2023-XXXXXX

CONSTRUCTION NOTES		QTY. EST.
1	INSTALL GRAVEL DRIVE APPROACH.	112 SF
2	CONSTRUCT NEW GRAVEL DRIVEWAY WITH MIN 6 INCH AB OR RELATED BASE MATERIAL FOR COMPACTION.	3764 SF
3	NOT USED	
4	INSTALL NEW WATER METER BY OTHERS – HIGH DESERT WATER DISTRICT.	
5	INSTALL NEW 1 INCH WATER SERVICE LINE PER 2022 CBC AND PER SEPARATE BUILDING PERMITS.	
6	CONSTRUCT AND INSTALL 1 EA SEPTIC TANK, 4 INCH PVC SS LINE, LEACH FIELD PER PERC TEST. SEPARATE PERMIT.	
7	INSTALL DRAINAGE NATURAL SWALE PER PLAN. SEE DETAIL SECTION A–A ON SHEET 2.	330 LF
8	INSTALL NDS OR EQUAL AREA DRAINS. DETAILS SHOWN ON THIS SHEET.	1 EA
9	INSTALL 4 INCH PVC STORM DRAIN.	16 LF
10	CONSTRUCT (1 EA) SMALL RETENTION LOT(S) FOR OVERFLOW FROM LOT PER DETAIL 1 AND SECTION C–C SHOWN ON SHEET 3.	1 EA
11	INSTALL RIP RAP OUTFALL WITH 3" TO 4" RIVER ROCK AS SHOWN ON THE PLAN SET LOCATIONS. SEE DETAIL 2 SHEET 3.	1 EA
12	INSTALL NEW ELECTRICAL SERVICE PER 2022 CBC AND LOCAL POWER COMPANY SCE GUIDELINES AND REQUIREMENTS PER SEP. PERMIT.	

EARTHWORK QUANTITIES

DESCRIPTION	CUT	FILL
EARTHWORK	188 CY	153 CY
OVER-EXCAVATION	132 CY	___ CY
RECOMPACTION	---	132 CY
SHRINKAGE	___ CY	15.3 CY
MISC	--- CY	--- CY
IMPORT	--- CY	___ CY
EXPORT	--- CY	--- CY
TOTAL	188 CY	153 CY

NOTE: SHRINKAGE IS ASSUMED AT A FACTOR OF 10%
NOTE: SOME NATURAL SOILS MAY NEED TO BE EXPORTED BASED ON SOILS DENSITY TESTING.

NOTE:

CONTRACTOR SHALL FOLLOW CA DEPT. OF HEALTH SERVICES CRITERIA FOR SEPARATION OF WATER AND SEWER FACILITIES.

CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO STREETS AND SIDEWALKS DURING CONST. AND AGREES TO REPAIR AND REPLACE ALL EXIS. IMPROVEMENTS DURING THE COURSE OF CONST.

CONTRACTOR TO POTHOLE AND VERIFY ALL UTILITY CONNECTION POINTS AND CROSSINGS PRIOR TO CONSTRUCTION.

UTILITY NOTE:

ALL WATER, SEWER, ELECTRIC, AND GAS UTILITY LOCATIONS TO BE VERIFIED (DEPTH, SIZE, ETC.) BY CONTRACTOR PER STANDARDS OF LOCAL UTILITY COMPANIES. LOCATION OF WATER, SEWER SHOWN AS APPROXIMATE.

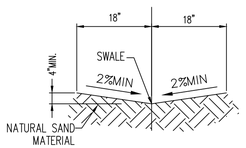
TREE NOTE:

EXTREME CARE MUST BE TAKEN TO MINIMIZE IMPACTS OF ALL EARTHWORK TO PROTECT ALL NATURAL TREES AND PLANTS ON THE SITE. THERE WERE NO SURVEYED OR NOTED TREES ON THIS SITE APPLICABLE TO NATIVE PLANT OR WESTERN JOSHUA PERMITS.

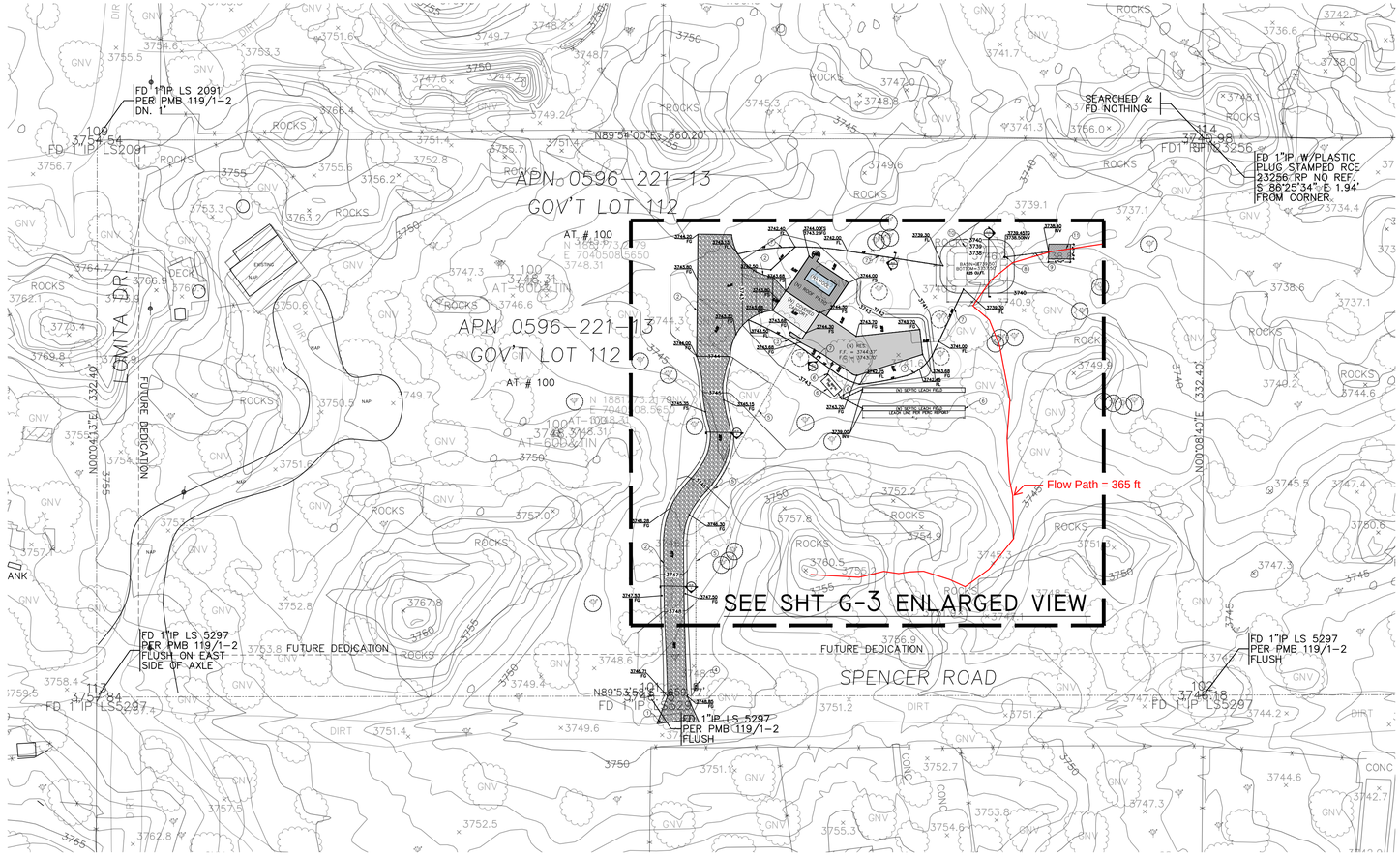
LEGEND:

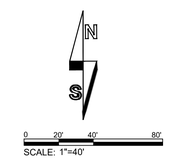
- CENTERLINE
- PROPERTY LINE
- EASEMENT
- (N) IRON FENCING
- EXIS. FENCE
- EXIS. CONTOUR LINE
- PROPOSED CONTOUR LINE
- SPOT ELEVATION
- BOLLARD
- FIRE HYDRANT
- GAS VALVE
- LIGHT POLE
- MISCELLANEOUS BOX
- POWER POLE
- SEWER MANHOLE
- STREET LIGHT
- SIGN
- TRAFFIC SIGNAL LIGHT
- STORM DRAIN MANHOLE
- WATER VALVE
- JOSHUA TREE
- DOMESTIC WATER
- SANITARY SEWER
- PROPOSED TELEPHONE
- PROPOSED ELECTRIC
- NEW WATER METER
- PROPOSED CATCH BASIN
- PROPOSED DRAINAGE SWALE
- PROPOSED 4" SD
- PROPOSED PERF 4" SD
- DRAINAGE PATTERN
- RETAINING WALLS
- PCC DRIVE, SURFACES
- LANDSCAPE/NATURAL
- GRAVEL SURFACES
- AC PAVED SURFACES
- JUNIPER TREE
- YUCCA TREE

PERVIOUS - IMPERVIOUS AREA CALCULATIONS		
EXISTING LOT	BEFORE	AFTER
PARCEL AREA	217,800 SF	217,800 SF
BUILDINGS	0 SF	2,481 SF
LOT COVERAGE (BLDG)	0%	1.2%
D/W, WALKS, PAVED	0 SF	3,764 SF
TOTAL IMPERVIOUS %	0%	2.8%
TOTAL PERVIOUS %	100%	97.8%



TYP. EARTH SWALE SEC. A-A
NOT TO SCALE

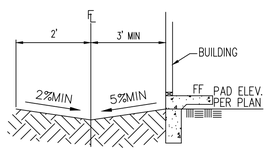




GRADING PLANS

GRADING TOLERANCE NOTE:

GRADING SHALL BE DONE WITHIN A TOLERANCE OF 0.1' OF THE GRADES AND ELEVATIONS SHOWN ON THESE PLANS. ALL SLOPES SHALL BE CONSTRUCTED WITH 0.5' OF THE LOCATION SHOWN ON THESE PLANS. IN NO WAY DO THE ABOVE TOLERANCES RELIEVE THE CONTRACTOR OF RESPONSIBILITY OF PROVIDING A FINISHED GRADE SURFACE THAT DOES NOT PONG OR PRODUCE PONDING.



TYP. DRAIN SEC 2022 CBC
NOT TO SCALE

CERTIFICATION

I hereby certify that the grading has been completed in accordance with the approved grading plan.

REGISTERED PROFESSIONAL ENGINEER — JOANNE C. SINGER — C 26900 — 3/31/2025 — CIVIL — STATE OF CALIFORNIA

JOANNE C. SINGER — DATE

RCE NO. 26900 EXP. 3/21/2025

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CALL TOLL FREE
48 HOURS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
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BENCHMARK:

BENCH MARK DISK NGVD 29
80 = SET IN A BOULDER
705.24 1968
CA-071 MAY HOLD, BUT OF TYPE COMMONLY
SUBJECT TO SURFACE MOTION
THE SITE LOCATION WAS REPORTED AS SUITABLE
FOR SATELLITE OBSERVATIONS - September 13, 2015

REVISIONS

NO.	INIT.	DATE	DESCRIPTION	APP'D	DATE

OWNER OR DEVELOPER:
STR TAKEOVER LLC
57170 SPENCER ROAD
YUCCA VALLEY, CA 92284

SOILS ENGINEER: _____ _____
(___) ___-____
_____ ___ — DATE
G.E. _____

PREPARED BY: DATE: 11-29-2023
DRP Enterprises — DRP PROJ. ID 2023-1690-01
DRP ENTERPRISES LLC
DANIEL PATNEAUDE
MAILING ADDRESS:
PO BOX 4428
PALM SPRINGS, CA 92263
206-734-7765
JOANNE C. SINGER RCE 26900
760-625-7426
REGISTERED PROFESSIONAL ENGINEER — JOANNE C. SINGER — C 26900 — 3/31/2025 — STATE OF CALIFORNIA
EXP. DATE: 3/31/2025

TOWN OF YUCCA VALLEY, CALIFORNIA • INC. NOV. 27, 1991 •

APPROVED BY:
ALEX QISHTA, — DATE
DIRECTOR OF PUBLIC WORKS

TOWN OF YUCCA VALLEY

GRADING AND DRAINAGE PLAN

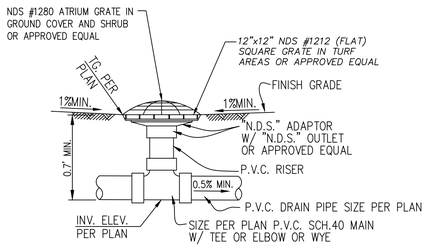
57170 SPENCER ROAD

GRADING AND DRAINAGE PLANS

APN 0596-221-13

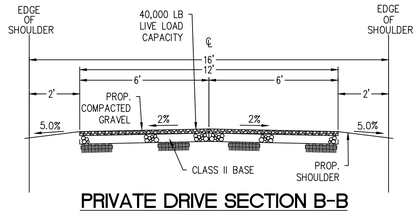
SHEET G-2 OF G-4 SHEETS

GRA2023-XXXXXX



AREA DRAIN DETAIL

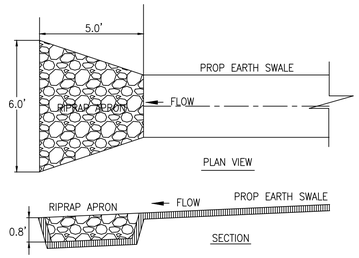
NOT TO SCALE



PRIVATE DRIVE SECTION B-B

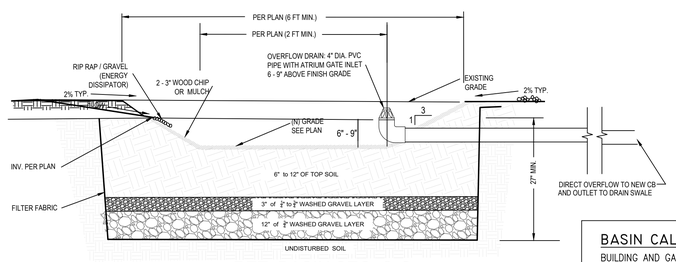
N.T.S.

TYPICAL SECTION



RIP RAP DETAILS

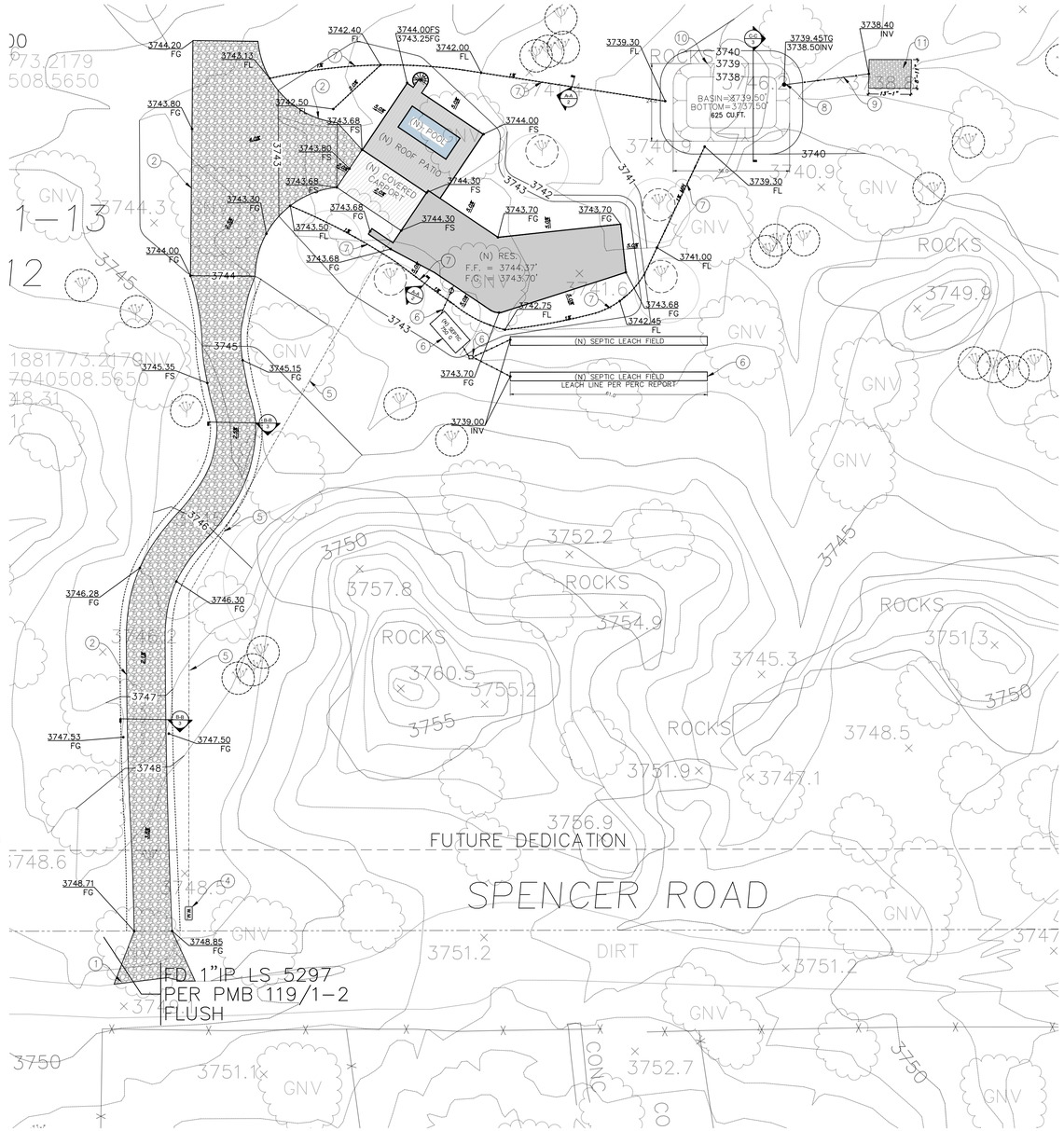
NOT TO SCALE



RET. BASIN SEC: C-C

NOT TO SCALE

CONSTRUCTION NOTES		QTY. EST.
1	INSTALL DRIVE APPROACH EITHER ASPHALT OR GRAVEL PER TOWN OF YUCCA VALLEY DIRECTION FOR RURAL ROAD.	112 SF
2	CONSTRUCT NEW GRAVEL DRIVEWAY WITH MIN 6 INCH AB OR RELATED BASE MATERIAL FOR COMPACTION.	3764 SF
3	NOT USED	
4	INSTALL NEW WATER METER BY OTHERS – HIGH DESERT WATER DISTRICT.	
5	INSTALL NEW 1 INCH WATER SERVICE LINE PER 2022 CBC AND PER SEPARATE BUILDING PERMITS.	
6	CONSTRUCT AND INSTALL 1 SEPTIC TANK, 4 INCH PVC SS LINE, LEACH FIELD PER PERC TEST. SEPARATE PERMIT.	
7	INSTALL DRAINAGE NATURAL SWALE PER PLAN. SEE DETAIL SECTION A–A ON SHEET 2.	330 LF
8	INSTALL NDS OR EQUAL AREA DRAINS. DETAILS SHOWN ON THIS SHEET.	1 EA
9	INSTALL 4 INCH PVC STORM DRAIN.	16 LF
10	CONSTRUCT (1 EA) SMALL RETENTION LOT(S) FOR OVERFLOW FROM LOT PER DETAIL 1 AND SECTION C–C SHOWN ON SHEET 3.	1 EA
11	INSTALL RIP RAP OUTFALL WITH 3" TO 4" RIVER ROCK AS SHOWN ON THE PLAN SET LOCATIONS. SEE DETAIL 2 SHEET 3.	1 EA
12	INSTALL NEW ELECTRICAL SERVICE PER 2022 CBC AND LOCAL POWER COMPANY SCE GUIDELINES AND REQUIREMENTS PER SEP. PERMIT.	



BASIN CALCULATION

BUILDING AND GARAGE COVERAGE – 2,481

LOT COVERAGE HARDSCAPE – IMPERVIOUS – 3,764

TOTAL COVERAGE – 6,245 SF

TOTAL BASIN NEEDED – 625 CF

TOTAL BASIN AREA PROVIDED –625 CF

CERTIFICATION

I hereby certify that the grading has been completed in accordance with the approved grading plan.

REGISTERED PROFESSIONAL ENGINEER · JOANNE C. SINGER · C 26900 3/31/2025 · CIVIL · STATE OF CALIFORNIA

JOANNE C. SINGER
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TOWN OF YUCCA VALLEY

DETAILS AND SECTIONS

57170 SPENCER ROAD

GRADING AND DRAINAGE PLANS

APN 0596-221-13

SHEET G-3 OF G-4 SHEETS

GRA2023-XXXXXX

BMP LEGEND

PDS 659	BROW DITCH
PDS 659	BERM (B)
	DIRECTION OF LOT DRAINAGE

MATERIALS & WASTE MANAGEMENT BMPs:

WM-1	MATERIAL DELIVERY & STORAGE
WM-4	SPILL PREVENTION AND CONTROL
WM-8	CONCRETE WASTE MANAGEMENT
WM-5	SOLID WASTE MANAGEMENT
WM-9	SANITARY WASTE MANAGEMENT
WM-6	HAZARDOUS WASTE MANAGEMENT

TEMPORARY RUNOFF CONTROL BMPs:

SS-2	PRESERVATION OF EXISTING VEGETATION (PEV)
SS-3	BONDED OR STABILIZED FIBER MATRIX (WINTER) (M)
SS-4	HYDROSEEDING (SUMMER) (TSP)
SS-6 / SS-8	STRAW OR WOOD MULCH (S/W)
SS-7	PHYSICAL STABILIZATION (WINTER) (EBM)
SS-10	ENERGY DISSIPATOR
SC-1	SILT FENCE
SC-2	SEDIMENT / DESILTING BASIN
SC-5	FIBER ROLLS (FR)
SC-6 / SC-8	GRAVEL OR SAND BAGS
SC-7	STREET SWEEPING AND VACUUMING
SC-10	STORM DRAIN INLET PROTECTION
NS-2	DEWATERING FILTRATION (DW)
TC-1	STABILIZED CONSTRUCTION ENTRANCE
TC-2	CONSTRUCTION ROAD STABILIZATION
TC-3	ENTRANCE / EXIT TIRE WASH

POST-CONSTRCUTION SITE DESIGN BMPs

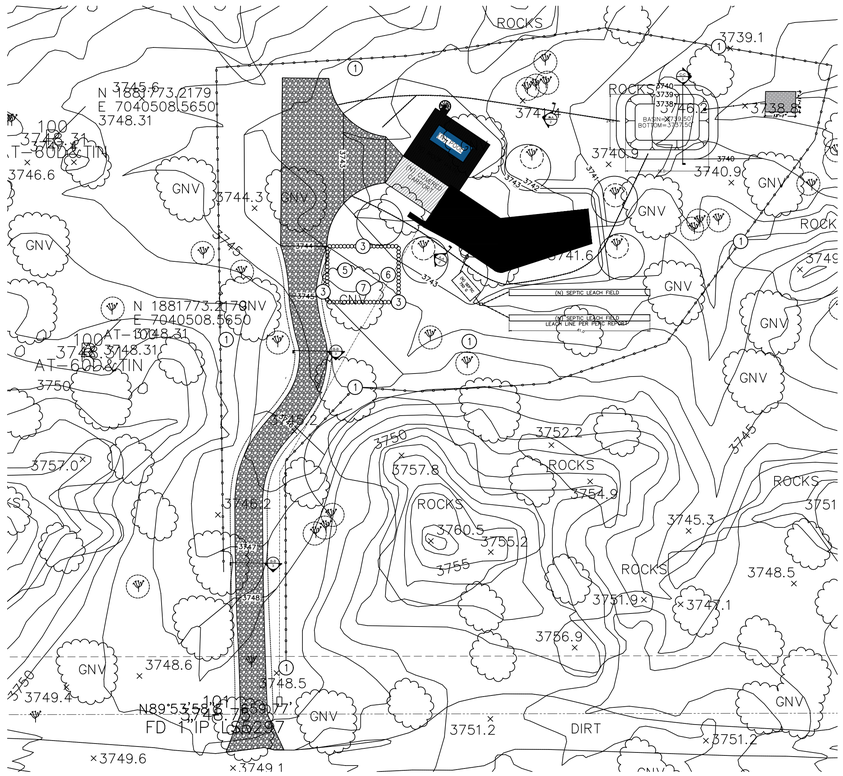
4.3.1	MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES
4.3.2	CONSERVE NATURAL AREAS, SOILS, AND VEGITATION
4.3.3	MINIMIZE IMPERVIOUS AREA
4.3.4	MINIMIZE SOIL COMPACTION
4.3.5	IMPERVIOUS AREA DISPERSION
4.3.6	RUNOFF COLLECTION
4.3.7	RUNOFF COLLECTION
4.3.8	HARVESTING AND USING PRECIPITATION

POST CONSTRUCTION SOURCE CONTROL BMPs

4.2.1	PREVENTION OF ILLICIT DISCHARGES INTO THE MS4
4.2.2	STORM DRAIN STENCILING AND POSTING OF SIGNAGE
4.2.3	PROTECTED OUTDOOR MATERIALS STORAGE AREAS
4.2.4	PROTECT MATERIALS STORED IN OUTDOOR WORK AREAS
4.2.5	PROTECT TRASH STORAGE AREAS
4.2.6	ADDNL BMPs BASED ON POTENTIAL RUNOFF POLLUTANTS:

EROSION CONTROL NOTES:

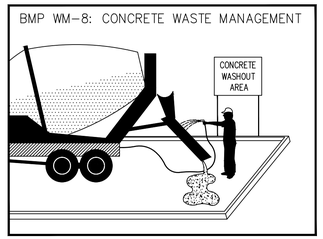
1. IN THE CASE OF EMERGENCY, CALL OWNER OR REPRESENTATIVE AT (760) XXXXX
2. SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING STRUCTURAL CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE.
3. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TACKING, OR WIND.
4. APPROPRIATE BMP'S FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS SHALL BE IMPLEMENTED TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTIES BY WIND OR RUNOFF.
5. RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES UNLESS TREATED TO REDUCE OR REMOVE SEDIMENT AND OTHER POLLUTANTS.
6. ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OR THE REQUIRED BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
7. AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED IN TRASH OR RECYCLE BINS.
8. CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE.DISCHARGES OF MATERIAL OTHER THAN STORM WATER ONLY WHEN NECESSARY FOR PERFORMANCE AND COMPLETION OF CONSTRUCTION PRACTICES AND WHERE THEY DO NOT: CAUSE OR CONTRIBUTE TO A VIOLATION OF ANY WATER QUALITY STANDARD; CAUSE OR THREATEN TO CAUSE POLLUTION,CONTAMINATION, OR NUISANCE; OR CONTAIN A HAZARDOUS SUBSTANCE IN A QUANTITY REPORTABLE UNDER FEDERAL REGULATIONS 40 CFR PARTS 117AND 302.
9. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIMES,PESTICIDES, HERBICIDES, WOOD PRESERVATIVES AND SOLVENTS; ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; FERTILIZERS, VEHICLE/EQUIPMENT WASH WATER AND CONCRETE WASH WATER; CONCRETE, DETERGENT OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING AND SUPER CHLORINATED POTABLE WATER LINE FLUSHING. DURING CONSTRUCTION, PERMITTEE SHALL DISPOSE OF SUCH MATERIALS IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE,PHYSICALLY SEPARATED FROM POTENTIAL STORM WATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
10. DE-WATERING OF CONTAMINATED GROUNDWATER, OR DISCHARGING CONTAMINATED SOILS VIA SURFACE EROSION IS PROHIBITED. DE-WATERING OF NON-CONTAMINATED GROUNDWATER REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY CONTROL BOARD.
11. GRADED AREAS ON THE PERMITTED AREA PERIMETER MUST DRAIN AWAY FROM THE FACE OF SLOPES AT THE CONCLUSION OF EACH WORKING DAY.DRAINAGE IS TO BE DIRECTED TOWARD DESILTING FACILITIES.
12. THE PERMITTEE AND CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.
13. THE PERMITTEE AND CONTRACTOR SHALL INSPECT THE EROSION CONTROL WORK AND INSURE THAT THE WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.
14. THE PERMITTEE SHALL NOTIFY ALL GENERAL CONTRACTORS, SUBCONTRACTORS, MATERIAL SUPPLIERS, LESSEES, AND PROPERTY OWNERS THAT DUMPING OF CHEMICALS INTO THE STORM DRAIN SYSTEM OR THE WATERSHED IS PROHIBITED.
15. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. NECESSARY MATERIALS SHALLBE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
16. ALL REMOVABLE EROSION PROTECTIVE DEVICES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE 5-DAY RAIN PROBABILITY FORECAST EXCEEDS 40%.
17. SEDIMENTS FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE, AND STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
18. APPROPRIATE BMP'S FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED AND RETAINED ON SITE TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTY BY WIND OR RUNOFF.



EROSION AND SEDIMENT CONTROL PLAN

EROSION CONTROL CONSTRUCTION NOTES	QTY	UNIT
(1) INSTALL SILT FENCE PER CASQA SE-1	892	LF
(2) INSTALL FIBER ROLL PER CASQA SE-5	N/A	LF
(3) INSTALL GRAVEL BAG (2 BAGS) VELOCITY REDUCER PER CASQA SE-6 SHEET 6.	80	BAGS
(4) INSTALL INLET PROTECTION (1 BAG) PER CASQA SE-10 AND DETAIL HEREON	N/A	BAGS
(5) INSTALL SOLID WASTE MANAGEMENT PER CASQA WM-5 LOCATION SHALL BE DETERMINED DURING CONSTRUCTION	1	EA
(6) INSTALL WATERPROOFED CONCRETE WASHOUT AREA PER CASQA WM-8 AND DETAIL SHEET 6, LOCATION SHALL BE DETERMINED DURING CONSTRUCTION	1	EA
(7) INSTALL SANITARY/SEPTIC WASTE MANAGEMENT PER CASQA WM-9 LOCATION SHALL BE DETERMINED DURING CONSTRUCTION	1	EA
(8) INSTALL STABILIZED CONSTRUCTION ENTRANCE/EXIT PER CASQA TC-1 AND DETAIL SHEET 6, LOCATION SHALL BE DETERMINED DURING CONSTRUCTION	N/A	EA
(9) STREET SWEEPING AS NEEDED	YES	NA

BMP WM-8: CONCRETE WASTE MANAGEMENT



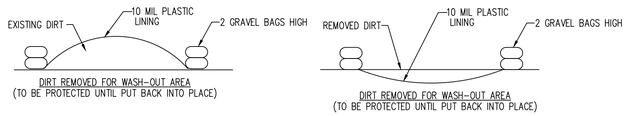
DESCRIPTION AND PURPOSE

PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORMWATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE, PERFORMING ONSITE WASH-OUT IN A DESIGNATED AREA, AND TRAINING EMPLOYEE AND SUBCONTRACTORS.

SUITABLE APPLICATIONS

CONCRETE WASTE MANAGEMENT PROCEDURES AND PRACTICES ARE IMPLEMENTED ON CONSTRUCTION PROJECTS WHERE:

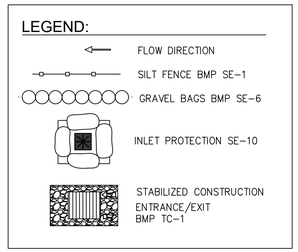
* CONCRETE IS USED AS A CONSTRUCTION MATERIAL OR WHERE CONCRETE DUST AND DEBRIS RESULT FORM DEMOLITION ACTIVITIES.
* SLURRIES CONTAINING PORTLAND CEMENT CONCRETE (PCC) OR ASPHALT CONCRETE (AC) ARE GENERATED, SUCH AS FROM SAW CUTTING, CORING, GRINDING, GROOVING, AND HYDRO-CONCRETE DEMOLITION.
* CONCRETE TRUCKS AND OTHER CONCRETE-COATED EQUIPMENT ARE WASHED ONSITE.
* MORTAR-MIXING STATIONS EXIST.

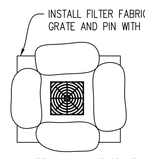


1. ALLOW CONCRETE TO SET, BREAKUP AND DISPOSE OF PROPERLY.
2. EXISTING DIRT TO BE PLACED ON SITE NEAR WASHOUT AREA (SEE DETAIL)
3. UPON COMPLETION OF CONSTRUCTION WASHOUT DITCH TO BE FILLED WITH ORIGINAL DIRT STORED ON SITE PER DETAIL HEREON.
4. REFILLING MUST BE COMPLETED PER GEOTECHNICAL RECOMMENDATIONS.
5. SEE CONCRETE WASTE MANAGEMENT BMP WM-8 FOR ADDITIONAL INFORMATION

CONCRETE WASHOUT AREA (BMP WM-8) (6)
NOT TO SCALE

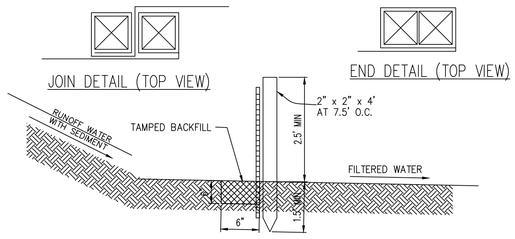
LEGEND:





ALL INLET SHALL HAVE GRAVEL BAGS 1 BAG HIGH DURING BLDG CONSTRUCTION PER BMP# SE-10

EROSION CONTROL INLET GRAVEL BAG DETAIL (4)
NOT TO SCALE



SILT FENCE (1)
N.T.S.

CERTIFICATION

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REGISTERED PROFESSIONAL ENGINEER JOANNE C. SINGER C 26900 3/31/2025 CIVIL STATE OF CALIFORNIA

JOANNE C. SINGER — DATE

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YUCCA VALLEY, CA 92284

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(___) ___-____
_____ ___ — DATE
G.E. ____

PREPARED BY:
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DRP ENTERPRISES LLC
DANIEL PATNEAUDE
MAILING ADDRESS:
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206-734-7765
JOANNE C. SINGER RCE 26900
760-625-7426

DRP PROJ. ID 2023-1690-01
DATE: 11-29-2023
REGISTERED PROFESSIONAL ENGINEER JOANNE C. SINGER C 26900 3/31/2025 CIVIL STATE OF CALIFORNIA
EXP. DATE: 3/31/2025

TOWN OF YUCCA VALLEY, CALIFORNIA INC. NOV. 27, 1991

APPROVED BY:
ALEX QISHTA, DIRECTOR OF PUBLIC WORKS — DATE

TOWN OF YUCCA VALLEY

EROSION AND SEDIMENT CONTROL PLANS
57170 SPENCER ROAD
GRADING AND DRAINAGE PLANS
APN 0596-221-13

SHEET G-4 OF G-4 SHEETS

GRA2023-XXXXXX

APPENDIX B – NOAA PRECIPITATION FREQUENCY DATA SERVER OUTPUT

NOAA Atlas 14, Volume 6, Version 2
Location name: Yucca Valley, California, USA*
Latitude: 34.1531°, Longitude: -116.4178°
Elevation: 3751 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.984 (0.816-1.20)	1.46 (1.21-1.79)	2.20 (1.81-2.69)	2.87 (2.35-3.55)	3.94 (3.12-5.03)	4.88 (3.79-6.37)	5.98 (4.52-7.98)	7.25 (5.34-9.96)	10.1 (7.12-14.4)	13.6 (9.26-20.1)
10-min	0.708 (0.588-0.864)	1.05 (0.870-1.28)	1.57 (1.30-1.93)	2.06 (1.69-2.54)	2.82 (2.23-3.60)	3.50 (2.71-4.57)	4.28 (3.24-5.72)	5.20 (3.82-7.13)	7.22 (5.10-10.3)	9.73 (6.64-14.4)
15-min	0.572 (0.472-0.696)	0.848 (0.700-1.04)	1.27 (1.04-1.55)	1.66 (1.36-2.05)	2.28 (1.80-2.90)	2.82 (2.19-3.68)	3.45 (2.61-4.61)	4.19 (3.08-5.75)	5.82 (4.11-8.33)	7.85 (5.35-11.6)
30-min	0.436 (0.360-0.532)	0.646 (0.534-0.790)	0.968 (0.798-1.19)	1.27 (1.04-1.56)	1.74 (1.37-2.22)	2.16 (1.67-2.81)	2.64 (1.99-3.52)	3.20 (2.35-4.39)	4.44 (3.14-6.36)	5.99 (4.09-8.87)
60-min	0.302 (0.250-0.369)	0.449 (0.371-0.549)	0.672 (0.554-0.823)	0.879 (0.719-1.09)	1.21 (0.954-1.54)	1.50 (1.16-1.95)	1.83 (1.38-2.44)	2.22 (1.63-3.05)	3.08 (2.18-4.41)	4.16 (2.84-6.16)
2-hr	0.212 (0.175-0.258)	0.299 (0.247-0.365)	0.427 (0.352-0.523)	0.542 (0.443-0.670)	0.717 (0.567-0.915)	0.867 (0.672-1.13)	1.03 (0.782-1.38)	1.22 (0.899-1.68)	1.56 (1.10-2.23)	2.10 (1.43-3.11)
3-hr	0.168 (0.139-0.205)	0.233 (0.193-0.285)	0.327 (0.270-0.401)	0.410 (0.336-0.507)	0.535 (0.423-0.683)	0.640 (0.496-0.835)	0.756 (0.572-1.01)	0.885 (0.651-1.22)	1.08 (0.760-1.54)	1.41 (0.963-2.09)
6-hr	0.110 (0.091-0.134)	0.151 (0.125-0.184)	0.208 (0.172-0.255)	0.258 (0.211-0.319)	0.331 (0.262-0.422)	0.391 (0.303-0.509)	0.455 (0.344-0.608)	0.526 (0.387-0.723)	0.629 (0.444-0.901)	0.715 (0.488-1.06)
12-hr	0.067 (0.056-0.082)	0.093 (0.077-0.114)	0.129 (0.106-0.158)	0.160 (0.130-0.197)	0.205 (0.162-0.261)	0.242 (0.187-0.315)	0.282 (0.213-0.376)	0.325 (0.239-0.446)	0.388 (0.274-0.556)	0.441 (0.301-0.653)
24-hr	0.042 (0.037-0.048)	0.059 (0.052-0.068)	0.083 (0.073-0.096)	0.103 (0.090-0.121)	0.134 (0.113-0.161)	0.159 (0.132-0.196)	0.187 (0.152-0.235)	0.217 (0.171-0.281)	0.262 (0.198-0.353)	0.300 (0.219-0.418)
2-day	0.023 (0.020-0.027)	0.033 (0.029-0.038)	0.047 (0.041-0.054)	0.059 (0.052-0.069)	0.078 (0.066-0.094)	0.093 (0.077-0.114)	0.110 (0.089-0.138)	0.128 (0.101-0.166)	0.156 (0.118-0.210)	0.179 (0.131-0.249)
3-day	0.017 (0.015-0.019)	0.024 (0.021-0.028)	0.035 (0.031-0.040)	0.044 (0.039-0.051)	0.058 (0.049-0.070)	0.070 (0.058-0.086)	0.083 (0.067-0.104)	0.097 (0.076-0.126)	0.118 (0.089-0.159)	0.136 (0.100-0.190)
4-day	0.013 (0.011-0.015)	0.019 (0.017-0.022)	0.027 (0.024-0.032)	0.035 (0.031-0.041)	0.046 (0.039-0.056)	0.056 (0.046-0.069)	0.066 (0.054-0.083)	0.078 (0.061-0.101)	0.095 (0.072-0.128)	0.109 (0.080-0.153)
7-day	0.008 (0.007-0.009)	0.012 (0.010-0.014)	0.018 (0.015-0.020)	0.023 (0.020-0.027)	0.030 (0.026-0.037)	0.037 (0.030-0.045)	0.044 (0.035-0.055)	0.051 (0.040-0.067)	0.063 (0.048-0.085)	0.073 (0.053-0.102)
10-day	0.006 (0.005-0.007)	0.009 (0.008-0.010)	0.013 (0.012-0.015)	0.017 (0.015-0.020)	0.023 (0.019-0.028)	0.028 (0.023-0.034)	0.033 (0.027-0.042)	0.039 (0.031-0.051)	0.048 (0.036-0.065)	0.056 (0.041-0.078)
20-day	0.003 (0.003-0.004)	0.005 (0.004-0.006)	0.007 (0.006-0.008)	0.009 (0.008-0.011)	0.013 (0.011-0.015)	0.015 (0.013-0.019)	0.018 (0.015-0.023)	0.022 (0.017-0.028)	0.026 (0.020-0.036)	0.031 (0.022-0.043)
30-day	0.002 (0.002-0.003)	0.003 (0.003-0.004)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.009 (0.008-0.011)	0.011 (0.009-0.014)	0.013 (0.011-0.017)	0.016 (0.012-0.020)	0.019 (0.014-0.026)	0.022 (0.016-0.031)
45-day	0.002 (0.001-0.002)	0.003 (0.002-0.003)	0.004 (0.003-0.005)	0.005 (0.004-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.010)	0.010 (0.008-0.013)	0.012 (0.009-0.015)	0.014 (0.011-0.019)	0.016 (0.012-0.023)
60-day	0.001 (0.001-0.002)	0.002 (0.002-0.002)	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.006-0.010)	0.009 (0.007-0.012)	0.011 (0.009-0.016)	0.013 (0.009-0.018)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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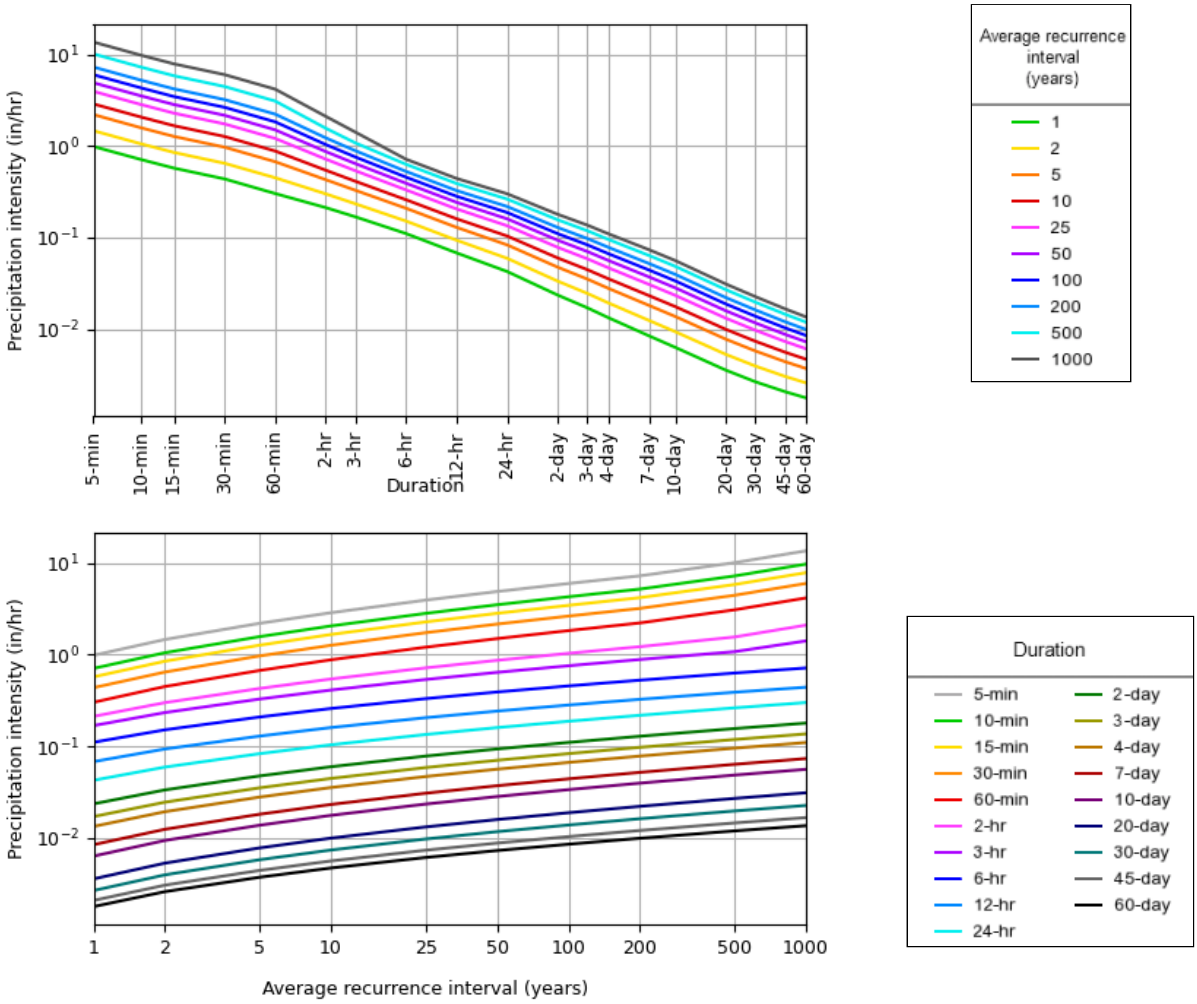
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 34.1531°, Longitude: -116.4178°



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Mon Aug 19 00:19:02 2024

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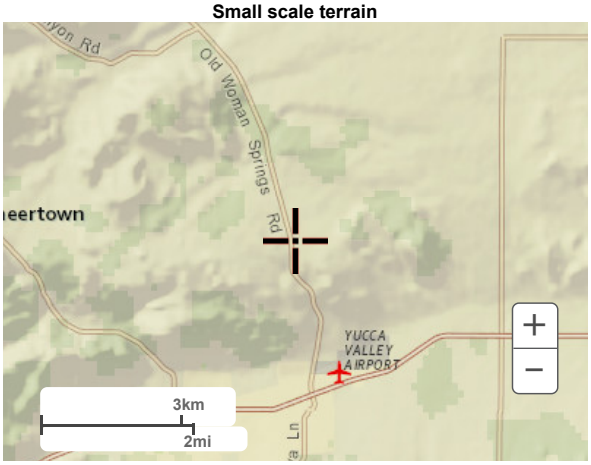
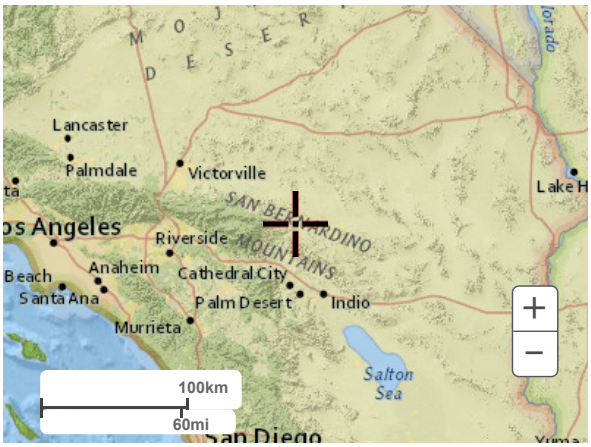
Maps & aerials

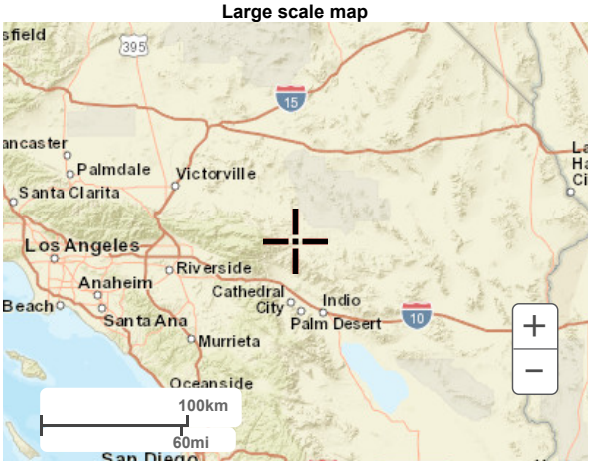
Small scale terrain



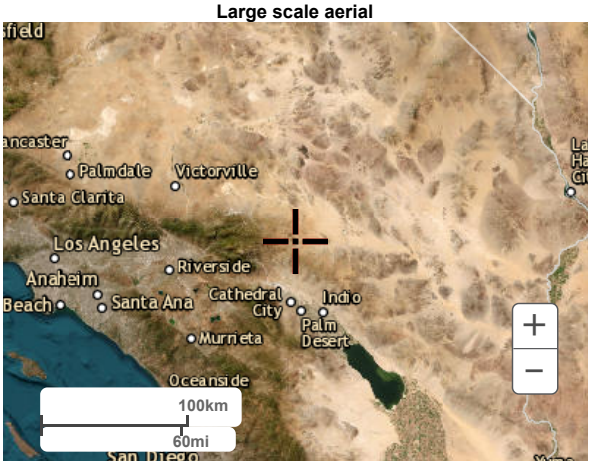
Large scale terrain



Large scale map



Large scale aerial



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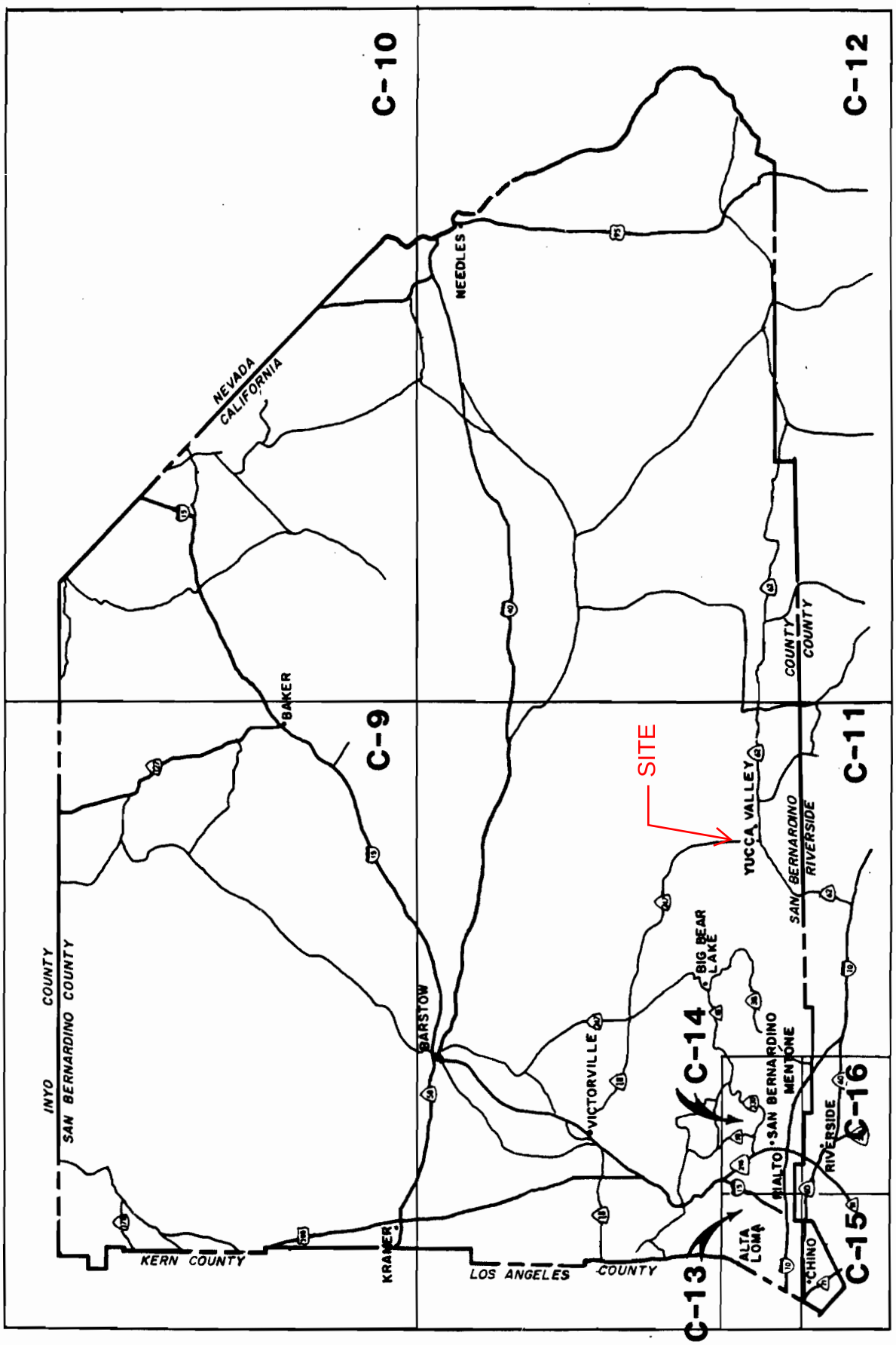
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

APPENDIX C – SAN BERNARDINO COUNTY HYDROLOGY MANUAL EXCERPTS



SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

SAN BERNARDINO COUNTY
SOIL MAP INDEX

Figure C-I

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

SAN BERNARDINO COUNTY
SOIL MAP INDEX

Figure C-I

Curve (1) Numbers of Hydrologic Soil-Cover Complexes For Pervious Areas-AMC II

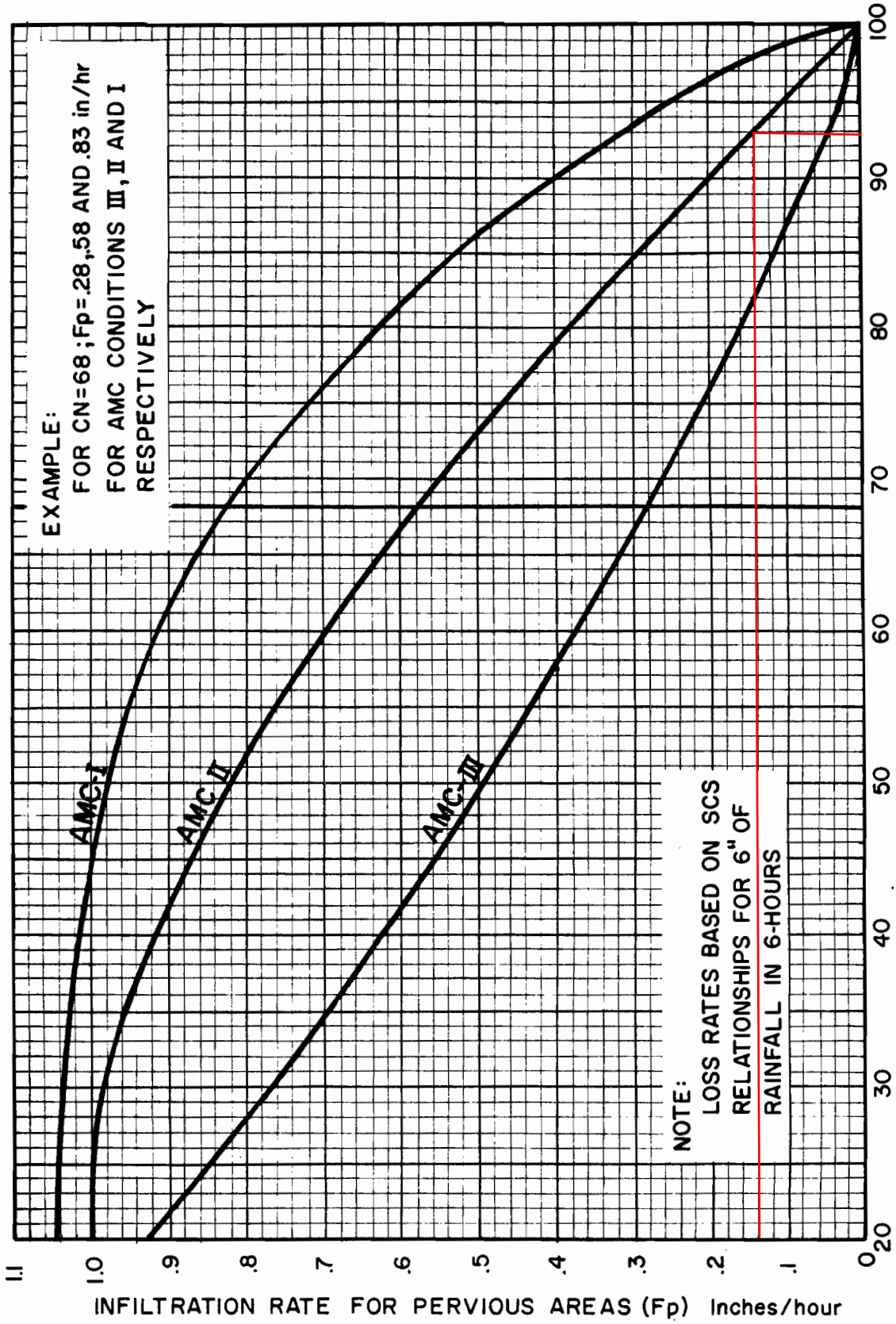
Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparral, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparral, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	71	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent.)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	25	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		77	86	91	94

SAN BERNARDINO COUNTY

HYDROLOGY MANUAL

CURVE NUMBERS FOR PERVIOUS AREAS

Figure C-3 (1 of 2)



SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS SCS CURVE NUMBERS

Figure C-6

TABLE C.2. Fm (in/hr) VALUES
FOR TYPICAL COVER TYPES

COVER TYPE	A_p(1)	SOIL GROUP A	B	C	D
NATURAL:					
Barren	1.0	0.41	0.27	0.18	0.14
Row Crops (good)	1.0	0.59	0.41	0.29	0.22
Grass (fair)	1.0	0.82	0.56	0.40	0.31
Orchards (fair)	1.0	0.88	0.62	0.43	0.34
Woodland (fair)	1.0	0.95	0.69	0.50	0.40
URBAN:					
Residential (1 DU/AC)	0.80	0.78	0.60	0.45	0.37
Residential (2 DU/AC)	0.70	0.68	0.53	0.39	0.32
Residential (4 DU/AC)	0.60	0.58	0.45	0.34	0.28
Residential (10 DU/AC)	0.40	0.39	0.30	0.22	0.18
Condominium	0.35	0.34	0.26	0.20	0.16
Mobile Home Park	0.25	0.24	0.19	0.14	0.12
Apartments	0.20	0.19	0.15	0.11	0.09
Commercial/Industrial	0.10	0.10	0.08	0.06	0.05

NOTES:

(1) Recommended a_p values from Figure C-4

(2) AMC II assumed for all Fm values

(3) CN values obtained from Figure C-3

(4) DU/AC=dwelling unit per acre

R1W | R2W | R3W |

T4N T3N T2N T1N T1S

SOURCE: 1976 SCS SURVEY

SOURCE: GEOLOGY MAP

SOURCE: 1970 SCS SURVEY

SOURCE: GEOLOGY MAP

SOURCE: 1970 SCS SURVEY

SOURCE: GEOLOGY MAP

SOURCE: 1970 SCS SURVEY

SOURCE: GEOLOGY MAP

SOURCE: 1970 SCS SURVEY

SOURCE: 1970 SCS SURVEY

SITE

LEGEND

SOIL GROUP BOUNDARY

A SOIL GROUP DESIGNATION

BOUNDARY OF INDICATED SOURCE

INDEX MAP

Scale 1:250,000

5 0 5 10 15 20 Statute Miles

5 0 5 10 15 20 25 30 Kilometers

5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET

WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION

BLACK NUMBERED LINES INDICATE THE 10,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 11

1985 MAGNETIC DECLINATION FROM TRUE NORTH VARIES FROM 15½° (280 MILS) EASTERLY FOR THE CENTER OF THE WEST EDGE TO 16° (270 MILS) EASTERLY FOR THE CENTER OF THE EAST EDGE

BASE MAP REPRODUCED FROM U.S.G.S. "SAN BERNARDINO" TOPOGRAPHIC MAP

SCALE REDUCED BY 1/2

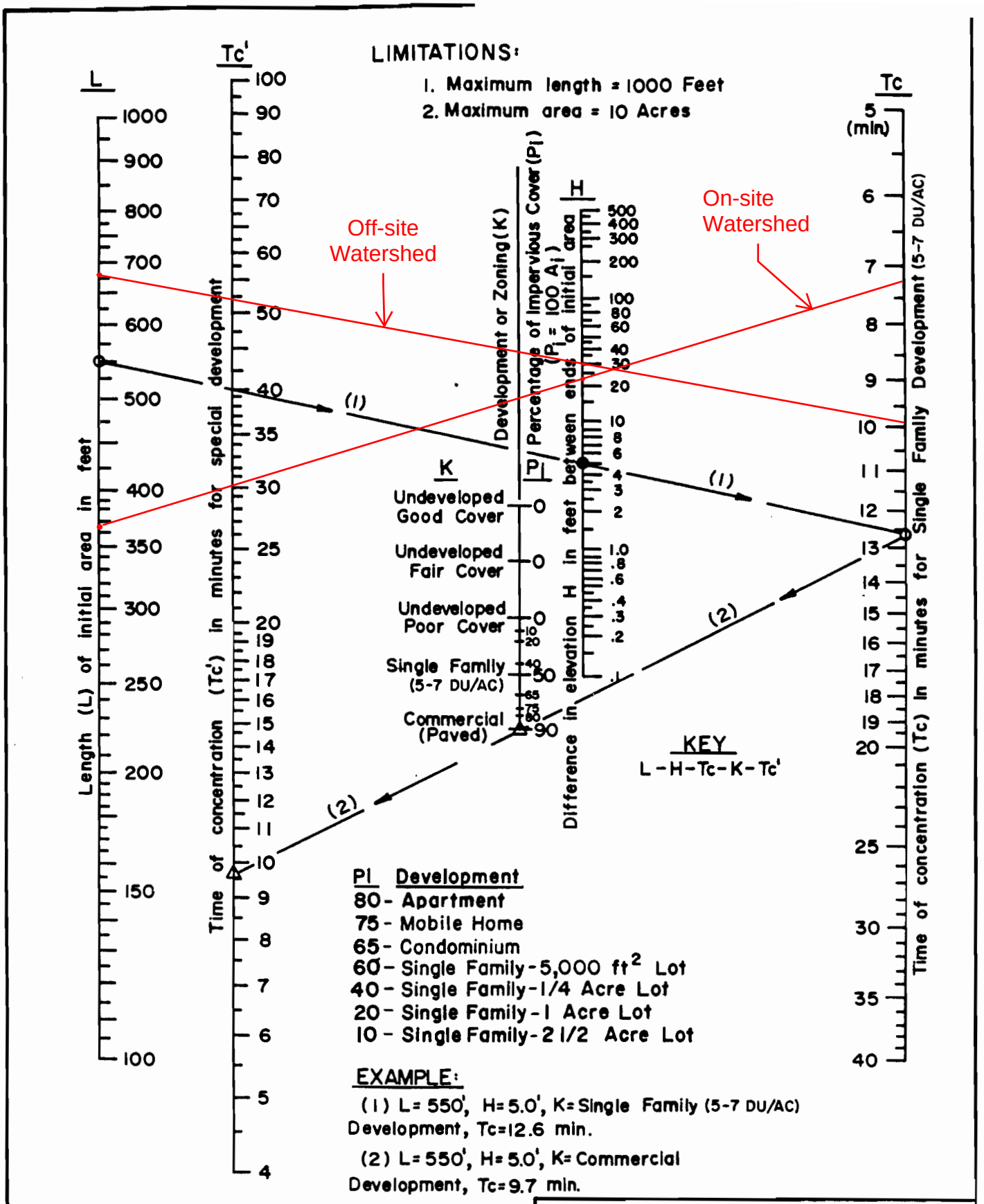
LOCATION DIAGRAM

SAN BERNARDINO COUNTY

HYDROLOGY MANUAL

HYDROLOGIC SOILS GROUP MAP FOR SOUTHCENTRAL AREA

FIGURE C-11



SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

TIME OF CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA

Figure D-1

APPENDIX D – PIPE FLOW CALCULATIONS

Manning Formula Uniform Pipe Flow at Given Slope and Depth

57170 Spencer Road, Yucca Valley, CA 92284

STR Takeover, LLC

Inputs

Pipe diameter, d_0	4	in
Manning roughness, n	0.013	
Pressure slope (possibly ? equal to pipe slope), S_0	0.004	rise/run
Relative flow depth, y/d_0	0.9	fraction

Results

Flow depth, y	3.6000	in
Flow area, a	11.9124	sq. in.
Pipe area, a0	12.5664	sq. in.
Relative area, a/a0	0.9480	fraction
Wetted perimeter, P_w	9.9924	in
Hydraulic radius, R_h	1.1921	in
Top width, T	2.4000	in
Velocity, v	1.5506	ft/sec
Velocity head, h_v	0.4484	in H2O
Froude number, F	0.43	
Average shear stress (tractive force), tau	0.0248	psf
Flow, Q (See notes)	0.1283	cfs
Full flow, Q0	0.1204	cfs
Ratio to full flow, Q/Q0	1.0658	fraction