

DRAINAGE CONCEPT

THE MASTER DRAINAGE REPORT (DMR) BY ISAACSON & ARFMAN, P.A., DATED FEBRUARY 21, 2012, OUTLINED DRAINAGE REQUIREMENTS FOR EACH TRACT WITHIN SANTA MONICA PLACE (TRACTS 1 - 4). THIS PROPERTY IS A PORTION OF TRACT 3 (15.5781 ACRES) WITH LAND TREATMENTS ESTIMATED AT 20%B, 20%C AND 60% D.

PER THE DMR, "TRACT 3 SHALL BE ALLOWED TO SURFACE DISCHARGE MAX. 10 CFS TO DERICKSON AVE. AND THE REMAINDER OF 69.2 CFS INTO THE STORM DRAIN SYSTEM CONNECTION TO THE DERICKSON AVE. STORM DRAIN."

THE PROPOSED CONSTRUCTION SITE CONSISTS OF APPROXIMATELY 30% OF THE OVERALL AREA OF TRACT 3. THUS, THIS PORTION OF TRACT 3 SHOULD RELEASE APPROXIMATELY 30% X (10+69.2) = 23.8 CFS.

THE SITE HAS BEEN DIVIDED INTO TWO BASINS: DISCHARGE TO DERICKSON (SUB-BASIN 1) AND DISCHARGE WEST TO ENTER THE STORM DRAIN STANDPIPE (SUB-BASINS 2 AND 3).

BASIN 1: CONSISTS OF THE NORTHERN 40% OF THE PROPERTY WHICH WILL DISCHARGE APPROXIMATELY 8 CFS TO DERICKSON AVE. VIA SIDEWALK CULVERTS

WITH AN ALLOWABLE OF 10 CFS FROM THE TOTAL TRACT, THIS WILL LEAVE APPROXIMATELY 2 CFS FOR THE REMAINDER OF TRACT 3 WHICH IS PLANNED FOR SINGLE FAMILY RESIDENTIAL AND IS EXPECTED TO DRAIN ALMOST ENTIRELY TO THE INTERNAL FUTURE PUBLIC STORM DRAIN EXTENSION. NOTE THAT PER THE APPROVED DRAINAGE REPORT FOR TRACT 1, ONLY 7.8 OF THE ALLOWABLE 10 CFS FROM THAT TRACT WILL BE DISCHARGED TO DERICKSON AVE. LEAVING AN ADDITIONAL 2.2 CFS AVAILABLE.

BASINS 2 AND 3: CONSISTS OF THE SOUTHERN 60% OF THE PROPERTY WHICH WILL DISCHARGE APPROXIMATELY 10.9 CFS TO THE UNDEVELOPED PORTION OF TRACT 3 EITHER VIA STORM DRAIN (BASIN 2) OR AS SURFACE DISCHARGE TO THE PROPOSED SOUTH PUBLIC STREET (BASIN 3). TEMPORARY PONDS AND EARTH SWALES WITH EROSION PROTECTION AS NEEDED WILL BE CONSTRUCTED TO PASS THE CONCENTRATED FLOW TO THE EXISTING POND TO ENTER THE PUBLIC STORM DRAIN SYSTEM AT THE PROVIDED STANDPIPE (TO BE CONSTRUCTED AS PART OF CPN 689984).

THESE BASIN CALCULATIONS DO NOT ACCOUNT FOR ANY WATER HARVESTING OR DETENTION BASINS WHICH MAY REDUCE THE TOTAL DISCHARGE RATES.

ALL LANDSCAPE AREAS, OTHER THAN THOSE ADJACENT TO THE BUILDING, WILL BE DEPRESSED FOR WATER HARVESTING.

18" DEEP DETENTION PONDS WITHIN EACH OF THE BASIN AREAS WILL BE UTILIZED TO DETAIN DISCHARGE, UTILIZE FOR LANDSCAPING / INFILTRATION AND RELEASE EXCESS.

STORMWATER CONTROL MEASURES ARE REQUIRED TO PROVIDE MANAGEMENT OF 'FIRST FLUSH' (DEFINED AS THE 90TH PERCENTILE STORM EVENT OR 0.44" OF STORMWATER WHICH DISCHARGES DIRECTLY TO A PUBLIC STORM DRAINAGE SYSTEM).

CALCULATIONS: Elan Senior Living Facility : May 23, 2014

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

ON-SITE				
AREA OF SITE:	198332	SF	=	4.6
100-year, 6-hour				
DEVELOPED FLOWS:				
	Treatment	SF	%	PRECIP. Zone
Area A	=	0	0%	E _A = 0.66
Area B	=	35700	18%	E _B = 0.92
Area C	=	59500	30%	E _C = 1.29
Area D	=	103133	52%	E _D = 2.36
Total Area	=	198332	100%	

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

Weighted E = $\frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$

Developed E = 1.78 in.

On-Site Volume of Runoff: V₃₆₀ =

$\frac{E^* A}{12}$

Developed V₃₆₀ = 29416 CF

On-Site Peak Discharge Rate: Q_p = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D / 43,560

For Precipitation Zone 3

Q_{PA} = 1.87

Q_{PC} = 3.45

Q_{PB} = 2.60

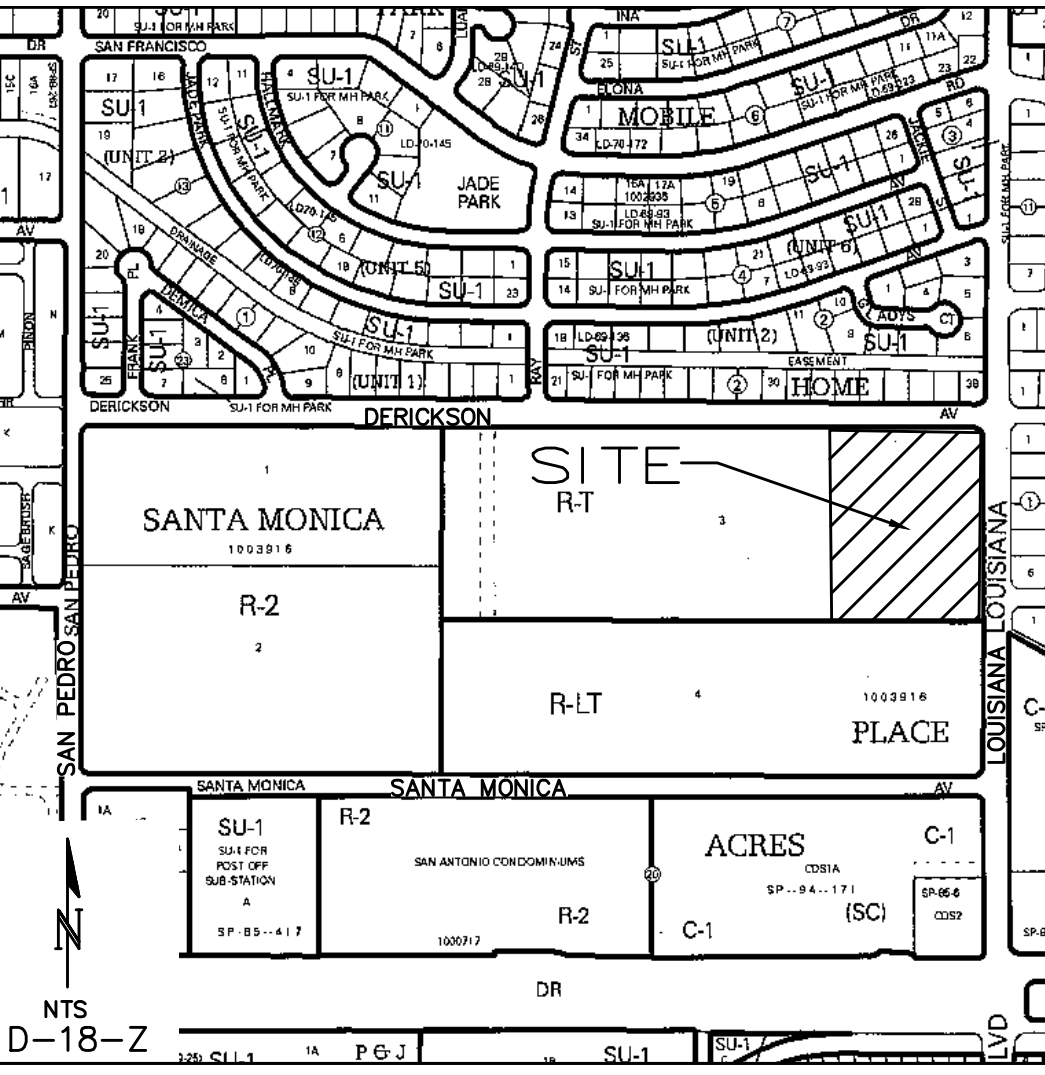
Q_{PD} = 5.02

Developed Q_p = 18.7 CFS

BASIN NO.	1	DESCRIPTION	DRAINING TO DERICKSON AVE
Area of basin flows =	82379	SF	1.9 Ac.
The following calculations are based on Treatment areas as shown in table to the right			LAND TREATMENT
Sub-basin Weighted Excess Precipitation (see formula above)			A = 0%
Weighted E =	1.78 in.		B = 18%
Sub-basin Volume of Runoff (see formula above)			C = 30%
V ₃₆₀ =	12218	CF	D = 52%
Sub-basin Peak Discharge Rate (see formula above)			
Q _p =	7.8	cfs	

BASIN NO.	2	DESCRIPTION	DRAINING WEST TO PUBLIC STORM DRAIN STANDPIPE
Area of basin flows =	98526	SF	2.3 Ac.
The following calculations are based on Treatment areas as shown in table to the right			LAND TREATMENT
Sub-basin Weighted Excess Precipitation (see formula above)			A = 0%
Weighted E =	1.78 in.		B = 18%
Sub-basin Volume of Runoff (see formula above)			C = 30%
V ₃₆₀ =	14613	CF	D = 52%
Sub-basin Peak Discharge Rate (see formula above)			
Q _p =	9.3	cfs	

BASIN NO.	3	DESCRIPTION	DRAINING SOUTH TO PUBLIC STORM DRAIN STANDPIPE
Area of basin flows =	17426	SF	0.4 Ac.
The following calculations are based on Treatment areas as shown in table to the right			LAND TREATMENT
Sub-basin Weighted Excess Precipitation (see formula above)			A = 0%
Weighted E =	1.78 in.		B = 18%
Sub-basin Volume of Runoff (see formula above)			C = 30%
V ₃₆₀ =	2585	CF	D = 52%
Sub-basin Peak Discharge Rate (see formula above)			
Q _p =	1.6	cfs	



PROPERTY: THE SITE IS A PREVIOUSLY DEVELOPED (MOBILE HOME) PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP D-18. THE SITE IS BOUND TO THE SOUTH BY UNDEVELOPED PROPERTY, TO THE WEST BY APARTMENTS, TO THE EAST BY LOUISIANA BLVD. AND TO THE NORTH BY DERICKSON AVE.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS INCLUDE AN APPROXIMATELY 59,500 SF SENIOR LIVING FACILITY WITH ASSOCIATED ASPHALT PAVED DRIVES, PARKING, PEDESTRIAN WALKS AND LANDSCAPING.

LEGAL: THE EASTERN PORTION OF TRACT 3, SANTA MONICA PLACE, ALBUQUERQUE. NM

AREA: 4.6 ACRES

BENCHMARK: VERTICAL DATUM IS BASED UPON THE ALBUQUERQUE CONTROL SURVEY BENCHMARK "18-E18", ELEVATION = 5269.166 (NGVD88)

OFF-SITE: NO OFF-SITE DRAINAGE IMPACTS THIS PROPERTY.

FLOOD HAZARD: THE SUBJECT PROPERTY LIES WITHIN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE 0.2% ANNUAL CHANCE FLOOD PLAIN) IN ACCORDANCE WITH THE NATIONAL FLOOD INSURANCE PROGRAM RATE MAP NO. 35001C0137 F, EFFECTIVE DATE 11-19-03.

SURVEYOR: RUSS P. HUGG, SURV-TEK, INC., (505)897-3366, ALBUQUERQUE, NEW MEXICO.

LEGEND

- B2 DRAINAGE BASIN
- CONCEPTUAL STORM DRAIN
- PROPOSED DETENTION POND / STORM DRAIN INLET LOCATION (18" DEEP)
- PROPOSED FLOW DIRECTION
- F.F. = PROPOSED FINISH FLOOR ELEVATION
- WH = PROPOSED WATER HARVESTING BASIN (6" DEPRESSED)

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ELAN - Santa Monica Place
(Senior Assisted Living/Memory Care)

CONCEPTUAL GRADING & DRAINAGE PLAN

Date:	9/10/14	No. Revision:	Date:	Job No.	2047
Drawn By:	BUB				CG-101
Ckd By:	FCA				SH OF