Cherne, Curtis

From: Vince Carrica [VCarrica@tierrawestllc.com]
Sent: Thursday, July 28, 2011 8:37 AM
To: Cherne, Curtis
Cc: Ron Bohannan; Brad Frosch
Subject: FW: Sundance Estates, Energy Dissipater Exhibit
Attachments: 2556-Energy_Dissipater.pdf; historic drainage.pdf; WEIGHT-E.xls

Curtis,
Attached is what we are getting bids for on the redo of the energy dissipater at Sundance Estates Phase 1 storm drain outfall. The existing structure is 6' across the front. The detail agreed to in the settlement agreement was 12' across the front. As you can see we have increased the front dimension to 20 feet in an effort to further spread the runoff out to lessen its erosive properties as it enters the Petroglyph Monument. Based on hydraulic analysis for the applicable flows at this location, the depths of flow were calculated for the various design years.

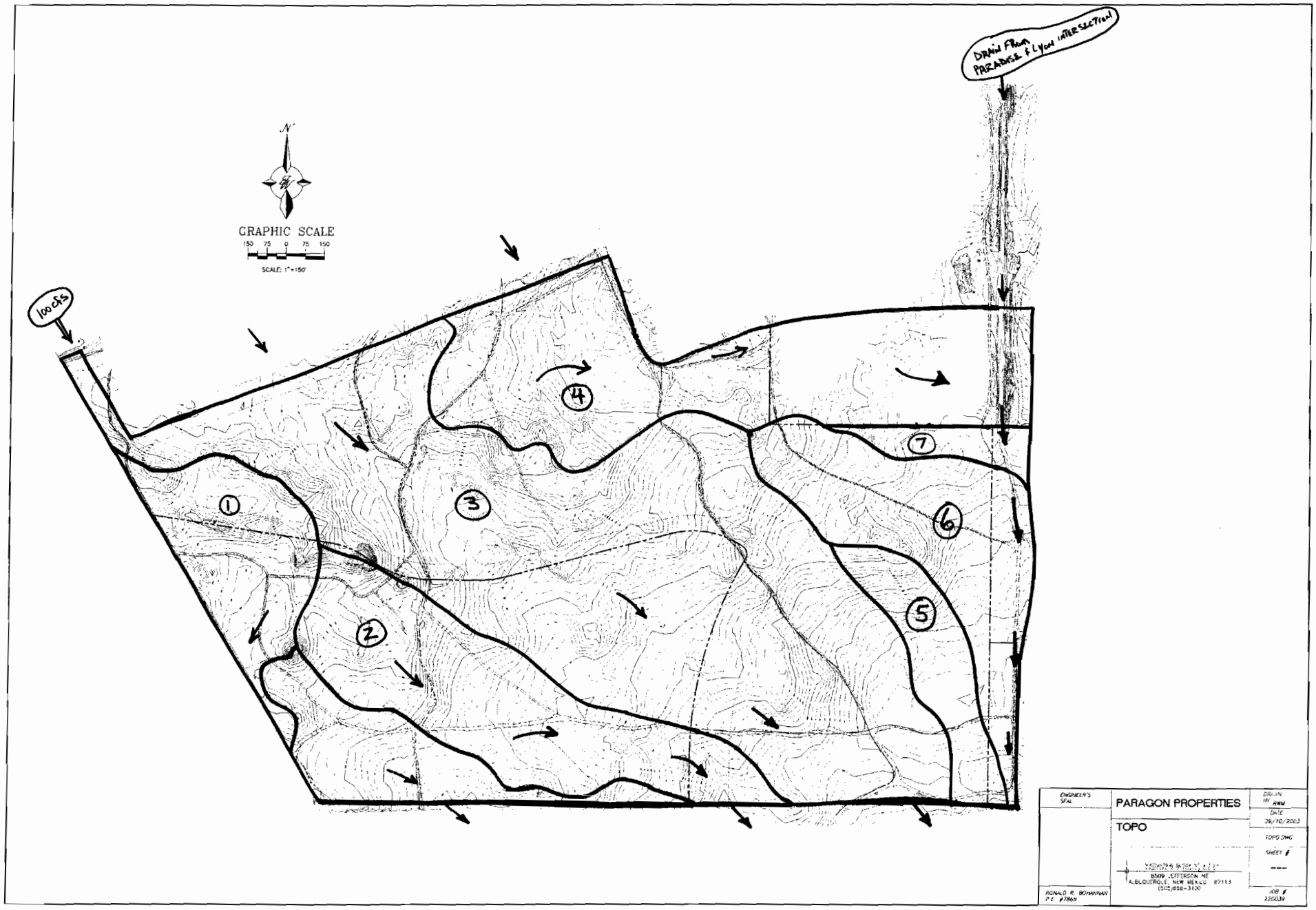
2 – Year event, Q = 12 cfs, Maximum depth of flow over escarpment = 2.9 inches
5 – Year event, Q = 21 cfs, Maximum depth of flow over escarpment = 4.2 inches
10 – Year event, Q = 24 cfs, Maximum depth of flow over escarpment = 4.7 inches
100 – Year event, Q = 32 cfs, Maximum depth of flow over escarpment = 5.6 inches

I have also attached a spreadsheet and a drawing showing the basins prior to development of the property and the flow rates resulting from undeveloped runoff from the site. As can be seen from the two exhibits, the runoff occurred at roughly four main locations and the value prior to development at the discharge point in question was 46 cfs. Keep in mind that this is just the runoff from within the boundaries of Sundance Estates. The 46 cfs does not include runoff from adjacent properties or from the developed, unincorporated areas located north and west of the Paradise / Lyon intersection.

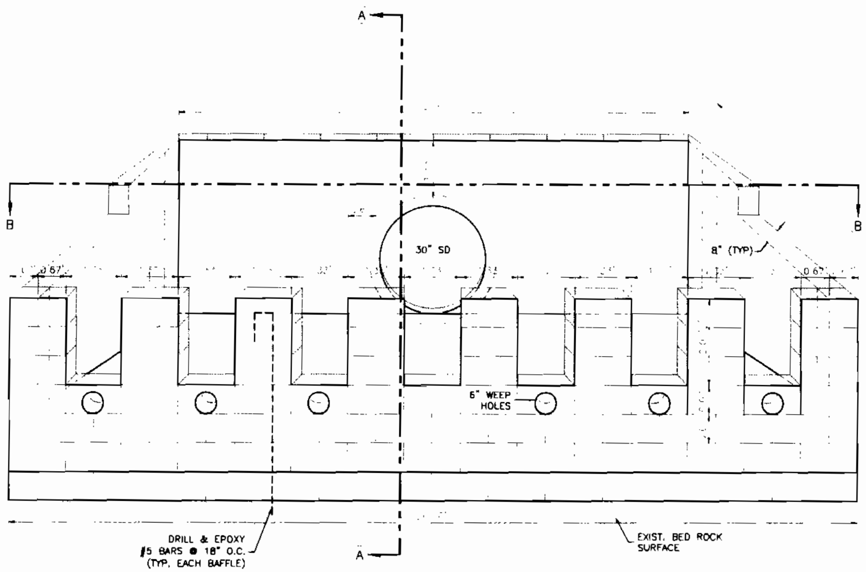
The runoff at the next point discharge to the west (off Basin #3) was calculated to be 75 cfs, and that does not even include the 100 cfs that crossed Paradise from the residential and commercial developments to the northwest. This 100 cfs was recently intercepted by the storm drain line installed in Paradise Blvd that now routes the runoff to the Calabacillas Arroyo.

Please give me a call when you have had a chance to review this information. We can discuss the new energy dissipater design and any questions you may have on the historic vs. developed runoff into the monument.
Vince

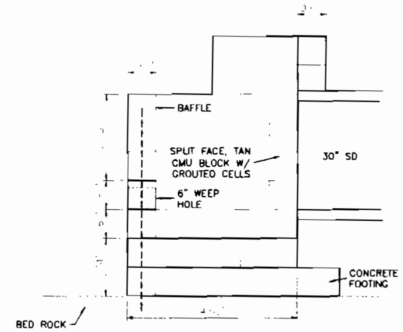
From: David Yturralde
Sent: Monday, July 25, 2011 10:42 AM
To: Vince Carrica
Subject: Sundance Estates, Energy Dissipater Exhibit



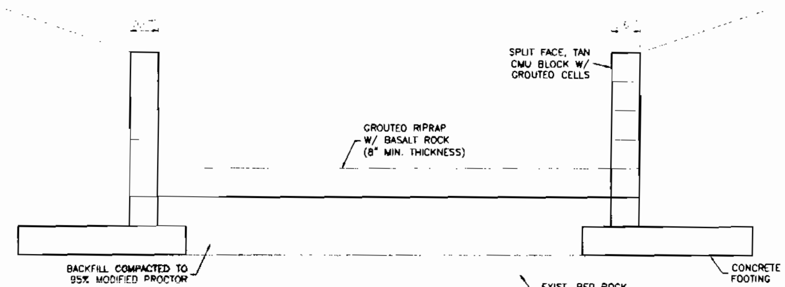
ENGINEER'S SEAL	PARAGON PROPERTIES	DRAWN BY: AMM
	TOPO	DATE: 26/10/2003
		TOPO.DWG
		SHEET # ---
RONALD R. BOHANNAN P.E. #7868	8509 JEFFERSON NE ALBUQUERQUE, NEW MEXICO 87113 (505)858-3100	JOB # 230039



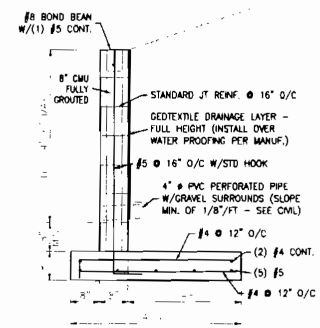
CMU OUTLET STRUCTURE DETAIL



SECTION A-A



SECTION B-B



RETAINING WALL DETAIL

AS BUILT INFORMATION: CONTRACTOR; WORK STARTED BY / DATE; INSPECTOR'S ACCEPTANCE BY / DATE; FIELD VERIFICATION BY / DATE; DRAWINGS CORRECTED BY / DATE

MICRO-FILM INFORMATION: RECORDED BY / DATE; NO.

BENCH MARKS

SURVEY INFORMATION: FIELD NOTES — NO. | BY | DATE

ENGINEER'S SEAL

DESIGN REVISIONS — NO. | DATE | REMARKS | BY

TIERRA WEST, LLC

TITLE: SUNDANCE ESTATES - PHASE 1-B
ENERGY DISSIPATER

DESIGN REVIEW COMMITTEE | CITY ENGINEER APPROVAL | MO./DAY/YR. | MO./DAY/YR.

LAST DESIGN UPDATE

CITY PROJECT NO. 761782 | ZONE MAP NO. B-11-Z | SHEET 1 OF 1

SUNDANCE ESTATES

Weighted E Method

Zone #1

Undeveloped Basins

Basin	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year Weighted E (ac-ft)	100-Year Volume (ac-ft)	100-Year Flow cfs
1	397870.00	9.134	0.01427	100%	9.133838	0%	0.000	0%	0	0%	0.000	0.440	0.335	11.78
2	763590.00	17.530	0.02739	100%	17.52961	0%	0.000	0%	0	0%	0.000	0.440	0.643	22.61
3	2537162.00	58.245	0.09101	100%	58.24522	0%	0.000	0%	0	0%	0.000	0.440	2.136	75.14
4	631311.00	14.493	0.02265	100%	14.49291	0%	0.000	0%	0	0%	0.000	0.440	0.531	18.70
5	240853.00	5.529	0.00864	100%	5.529224	0%	0.000	0%	0	0%	0.000	0.440	0.203	7.13
6	564296.00	12.954	0.02024	100%	12.95445	0%	0.000	0%	0	0%	0.000	0.440	0.475	16.71
7	99056.00	2.274	0.00355	100%	2.274013	0%	0.000	0%	0	0%	0.000	0.440	0.083	2.93
8	289164.00	6.638	0.01037	100%	6.638292	0%	0.000	0%	0	0%	0.000	0.440	0.243	8.56
Total	5523302.00	126.798	0.19812										4.649	163.57

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad