

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

KEN SCHULTZ  
MAYOR

CLARENCE V. LITHGOW  
CHIEF  
ADMINISTRATIVE OFFICER

DAN WEAKS  
DEPUTY CAO  
PUBLIC SERVICES

FRED E. MONDRAGON  
DEPUTY CAO  
DEVELOPMENT & ENTERPRISE SERVICES

March 1, 1989

Victor Chavez, P.E.  
Chavez-Grieves Consulting Engineers  
4600-C Montgomery Boulevard, NE  
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR NOCTURNAL EXHIBIT PHASE IV  
RIO GRANDE ZOOLOGICAL PARK (K-13/D25)  
ENGINEER'S STAMP DATED FEBRUARY 22, 1989

Dear Mr. Chavez:

Based on the information provided on your submittal of February 22, 1989, the above referenced plan is approved for Building Permit.

Please attach a copy of this plan to the construction sets prior to sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.  
Engineering Assistant

BJM/bsj  
(WP+1030)

DRAINAGE INFORMATION SHEET

K13/025

PROJECT TITLE: RIO GRANDE 200  
PHASE IV, PRIMATE PLAN ZONE ATLAS/DRNG. FILE #: K-13-2

LEGAL DESCRIPTION: TOWN 10 NORTH, RANGE 3 EAST, SECTION 19  
TOWN OF ARTISCO GRANT, RIO GRANDE 200

CITY ADDRESS: 10<sup>th</sup> & STOVER SW

ENGINEERING FIRM: CHAVEZ-GRIEVES CONST. ENGS CONTACT: RKARDO SANCHEZ

ADDRESS: 4600 C MONTGOMERY NE PHONE: 881-7376

OWNER: CITY OF ABQ - RIO GRANDE 200 CONTACT: RAY DARNELL

ADDRESS: 903 10<sup>th</sup> SW PHONE: 843-7413

ARCHITECT: DALE CRAWFORD & ASSOC CONTACT: FRANKIS KILPATRICK

ADDRESS: 117 JEFFERSON NE PHONE: 265-0986

SURVEYOR: SCANLON & ASSOCIATES CONTACT: \_\_\_\_\_

ADDRESS: 8008 PENNSYLVANIA CIR NE PHONE: 265-6941

CONTRACTOR: N/A CONTACT: \_\_\_\_\_

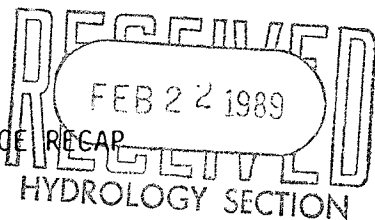
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

PRE-DESIGN MEETING:

☒ YES

☐ NO

☒ COPY OF CONFERENCE RECAP  
 SHEET PROVIDED



DRB NO. \_\_\_\_\_

EPC NO. \_\_\_\_\_

PROJ. NO. \_\_\_\_\_

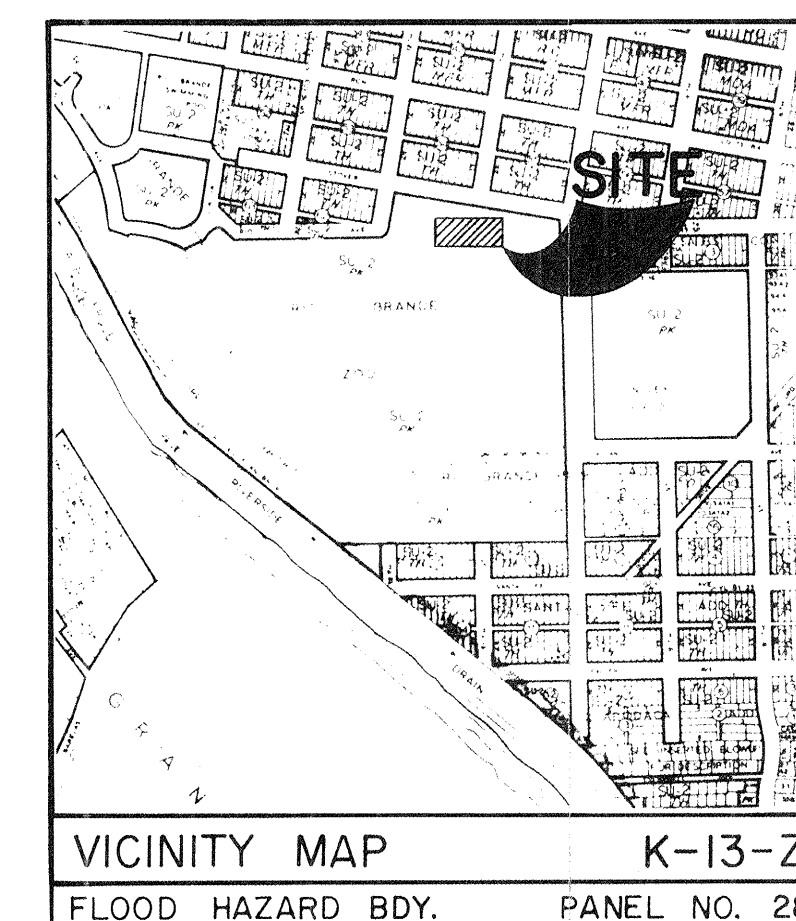
TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☒ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☒ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ SITE DEVELOPMENT PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☒ BUILDING PERMIT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ ROUGH GRADING PERMIT APPROVAL
- ☐ GRADING/PAVING PERMIT APPROVAL
- ☐ OTHER \_\_\_\_\_ (SPECIFY)

DATE SUBMITTED: 2-21-89  
 BY: Ricardo SN



LOCATION AND DESCRIPTION:

THE PROJECT IS LOCATED WITHIN THE CITY OF ALBUQUERQUE RIO GRANDE ZOO AT THE CORNER OF 10TH STREET & STOVER AVENUE IN ALBUQUERQUE, NEW MEXICO. THE PROJECT LIMITS CONTAIN APPROXIMATELY 0.22 ACRES. THE SITE IS PRESENTLY DEVELOPED AS THE HOOF STOCK AREA OF THE ZOO. THE SITE IS LOCATED WITHIN A FLOOD PLAIN.

EXISTING CONDITIONS:

PRESENTLY, RUNOFF FROM THE SITE DISCHARGES ONTO AN EXISTING DROP INLET LOCATED WITHIN THE ZOO PROPERTY.

PROPOSED CONDITIONS:

PROPOSED DEVELOPMENT OF THE SITE INCLUDES A BUILDING WITH RELATED LANDSCAPING. RUNOFF FROM THE PROJECT AREA WILL BE DIRECTED TO THE EXISTING CATCH BASIN VIA ASPHALT WALKS AND EARTHEN SWALES. DUE TO THE NEW CONSTRUCTION, FLOW FROM THIS PROJECT WILL INCREASE FROM 0.43 CFS TO 0.57 CFS.

CALCULATIONS: (BASED ON CITY OF ALBUQUERQUE DEVELOPMENT PROCESS  
MANUAL, VOLUME II).

CALCULATIONS:

Area = 0.22 acres  
 $I = 2.2 \text{ in./hr.}$  Plate 22.2 D-2  
 6-hour, 100-year rainfall = 2.2 in. Plate 22.2 D-1  
 $i = (2.2)(2.2) = 4.84 \text{ in./hr.}$

EXISTING ON-SITE CONDITIONS:

SURFACE TYPE		"C" VALUE	A (ACRES)	"C" X A	COMPOSITE "C"=CXA/A
Streets, Drives, Walks		0.95			
Roofs		0.90			
Lawns & Landscaping		0.25			
Undeveloped		0.40			
TOTAL			0.2204	0.0882	0.4
Q(100) = (0.4) (4.84) (0.2204) = 0.4267 cfs			0.2204	0.0882	
Q(10) = (0.657) (0.4267) = 0.2803 cfs					
CN = 68 Plate 22.2 C-2					
Direct Runoff = 2.2 in. Plate 22.2 C-4					
V(100) = (0.2) (0.2204) (43560)/12 = 160 cu. ft.					
V(10) = (0.657) (160) = 105 cu. ft.					

PROPOSED ON-SITE CONDITIONS:

SURFACE TYPE			"C" VALUE	A (ACRES)	"C" X A	COMPOSITE "C" = C X A/A
Streets, Drives, Walks			0.95			
Roofs			0.90	0.0826	0.0743	
Lawns & Landscaping			0.25	0.0800	0.0200	
Undeveloped			0.40	0.0578	0.0231	
TOTAL				0.2204	0.1174	0.53
Q(100) = (0.53)(4.84)(0.2204) = 0.5654 cfs						
Q(10) = (0.657)(0.5654) = 0.3714 cfs						
CN = 75 Plate 22.2 C-3						
Direct Runoff = 0.4 in. Plate 22.2 C-4						
V(100) = (0.4)(0.2204)(43560)/12 = 320 cu. ft.						
V(10) = (0.657)(320) = 210 cu. ft.						

LEGEND

EXISTING SPOT ELEVATION

NEW SPOT ELEVATION

EXISTING BUILDING

NEW BUILDING

EXISTING TREE

### LIMITS OF ASPHALT REMOVAL

ROOF DRAIN LINE

### LIMITS OF PROJECT

DIRECTION OF FLOW

## GRADING AND DRAINAGE PLAN

$$I'' = 2\sigma' - \sigma I'$$

NORTH

Typical Pathway Section

NOTE: WALKWAY BY ZOO (N.I.C.)

KEYED NOTES

- 1 REMOVE EXISTING ASPHALTIC CONCRETE ROAD AND  
CONCRETE/ROCK CURBS IN AREA SHOWN HATCHED.
- 2 EXISTING CONCRETE WALK TO REMAIN.
- 3 (FUTURE POOL BY ZOO - N.I.C.)
- 4 (FUTURE WALK BY ZOO - N.I.C.)
- 5 (EXISTING BUILDING & OTTER EXHIBIT TO BE  
DEMOLISHED BY ZOO - N.I.C.)
- 6 (LANDSCAPING AND IRRIGATION BY ZOO - N.I.C.)
- 7 NEW DEFLECTOR - SEE ROOF PLAN.
- 8 SEE SHEET A5 FOR MOAT INFORMATION.
- 9 SLOPE LEMUR EXHIBIT TOWARD MOAT. SEE BUILDING  
SECTIONS SHEET A3 AND A4.
- 10 EXISTING ASPHALTIC CONCRETE ROAD.
- 11 KEEP SWALE AND GRADING SUFFICIENTLY FAR FROM  
TREE SO AS NOT TO DISTURB ROOTS (GRADING AT  
TREE AREA BY ZOO).
- 12 ROOF SLOPE LINE (TYP)

GENERAL NOTES:

1. CONTRACTOR TO SLOPE GRADE AWAY FROM BUILDING FOR 5' AT 1% MIN. FOR POSITIVE DRAINAGE AWAY FROM BUILDING.
2. CONTRACTOR TO PROVIDE TEMPORARY SWALE AS REQUIRED TO DRAIN AWAY FROM BUILDING.

LEGAL DESCRIPTION:

SECTION 19, TOWNSHIP 10 NORTH, RANGE 3 EAST,  
TOWN OF ATRISCO GRANT. RIO GRANDE ZOO

BENCH MARK DATA:

THE STATION IS A STANDARD ACS BRASS TABLET STAMPED "1-K13" LOCATED 225' SOUTH OF THE INTERSECTION OF 8TH ST. & STOVER AVE. SW ON THE WEST SIDE OF THE STREET.

THE PROJECT BENCH MARK IS A DROP INLET LOCATED 75' EAST AND 45' NORTH OF THE NORTHEAST CORNER OF THE CORNER OF THE EXISTING PRIMATE HOUSE. ELEVATION AT TOP OF GRATE 4943.75. SEE PLAN FOR LOCATION

SURVEY DATA:

SURVEY PROVIDED BY SCANLON AND ASSOCIATES  
ENGINEERS 1988.

RECEIVED  
FEB 22 1969  
HYDROLOGY SECTION

# RIO GRANDE ZOOLOGICAL PARK NOCTURNAL EXHIBIT PHASE IV

### SITE GRADING & DRAINAGE PLAN

**DALE CRAWFORD & ASSOC.**  
117 JEFFERSON NE  
ALBUQUERQUE N.M. 87108  
**ARCHITECTS PLANN**

8HT.NO

2

L.M. 87108

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26