

VICINITY MAP-H-22



FLOOD HAZARD MAP - H-22

LEGEND

- 12.7 - EXISTING SPOT ELEVATION
- 12 - EXISTING CONTOUR
- 12.7 - PROPOSED SPOT ELEVATION
- 12 - PROPOSED FINISHED CONTOUR
- SURFACE FLOW DIRECTION
- DRAINAGE BOUNDARY
- POND/HIGHWATER LIMITS

NOTES

1. Legal: Lots 9 and 10, Blk 7, Enchanted Mesa Subdivision, Albuquerque, NM
2. Surveyors: Gordon Douglas, L.S./Date of Survey: 2/82
3. Bench Mark: City 6-H-22, NW Curb Return Sandler and Menaul Elev. 5705.28
104: 55L Curb Return/Alley - 1.c. Elev. = 5691.50

DESIGN CRITERIA

In a pre-design meeting with City Hydrology, it was determined that the site will be subject to on-site ponding of increased developed flows due to a flooding problem west of the site at Algodones. Further discussions with Fred Aguirre concerned 1) the feasibility of draining a small portion of the site onto the alley area without the developer having to pave the entire alley because of these flows, and 2) the feasibility of discharging the ponded flows of the parking area directly into the adjacent landscaped area instead of using a discharge pipe through the curb. The following notes address these concerns:

1. Flood Hazard Areas: The site is not located in a Flood Hazard Area. (See Map, this sheet).
2. Offsite Drainage: The site is isolated from offsite flows due to the presence of Sandler Street on the east, and the proposed alley improvements on the north.
3. On-Site Undeveloped Rate/Volume:
 $Q = (0.475)(5.4)(0.25) = 0.5$ cfs (This peak rate does not occur at any specific point, but is used as a comparative value).
Volume = $(2.6/12)(0.4)(9866 \text{ ft}^2) = 855 \text{ ft}^3$
4. On-Site Developed Rate/Volume:
a) Area draining directly to alley = 1697 ft²
 $Q_{100} = (0.90)(5.4)(0.08) = 0.2$ cfs
 $Vol_{100} = (2.6/12)(0.9)(1697) = 350 \text{ ft}^3$
b) Area draining directly to pond at SW corner = 8169 ft²
 $Q_{100} = (0.85)(5.4)(0.19) = 0.9$ cfs
 $Vol_{100} = (2.6/12)(0.85)(8169) = 1700 \text{ ft}^3$
 $Q_5 = (0.85)(2.43)(0.19) = 0.4$ cfs - Restrict to a Q of 0.3 cfs to match undeveloped rate.
Increased volume to be ponded = $(1500+350) - 855 = 979 \text{ ft}^3$

Summary

Summary	Undeveloped		Developed	
	Q	Vol.	Q	Vol.
Unrestricted	0.5	855	0.2	350
Controlled			0.3	979

Actual peak volume stored in pond while outflowing 0.3 cfs, assuming simultaneous inflow/outflow, = 650 ft³ at a peak time of 17 minutes, for the area of 8169 ft² and C = 0.85. (Programmable calculator)

Pond Volume Capacity (located in parking at SW Corner)

Elev.	Area	Avg. Area	Contour Interval	Volume
88.5	0	350	0.5	165 ft. ³
89.0	660	855	0.6	513 ft. ³
89.6	1050			

Total = 678 ft.³ > 650 req'd - OK

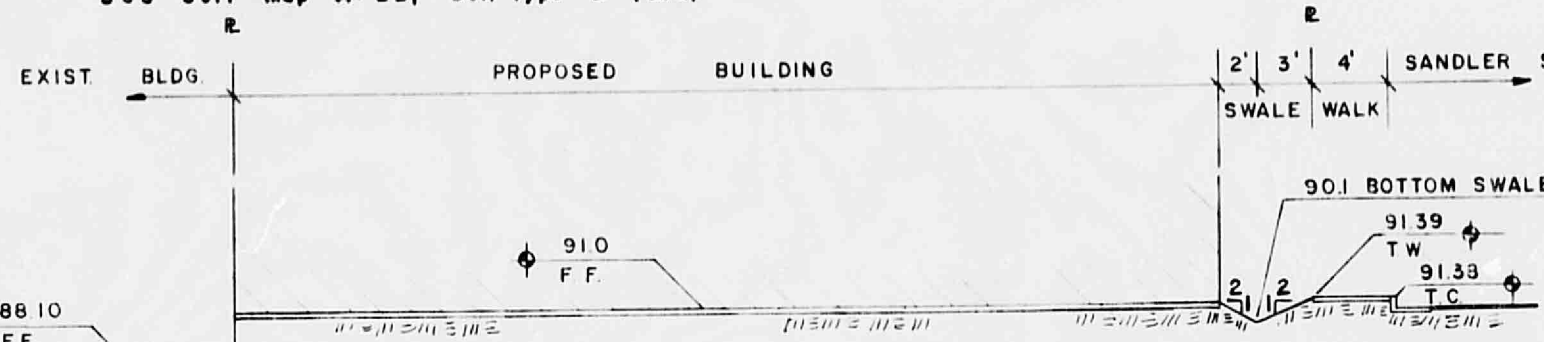
7. Outflow System: Control rate at 0.3 cfs under a head of 1' (Ex. $Q = CA\sqrt{2gh}$). Area of pipes required = 6.7 in². Use 1-3" diameter PVC drain located as shown.
8. Capacity of Triangular Drainage Swale along east side of building:
Area contributing to outflow point at walk = 3000 ft²
Maximum flow rate for swale = $(0.86)(5.4)(0.08) = 0.4$ cfs
Slope = 1% 5.5' = 211, $n = 0.040$
Depth of flow = 0.4', $vel. = 1.3'$ /sec. at $Q = 0.4$ cfs

Special Order #19 Documents Superior to City for pond outlet system. Drainage pond covenants to be submitted by owner.

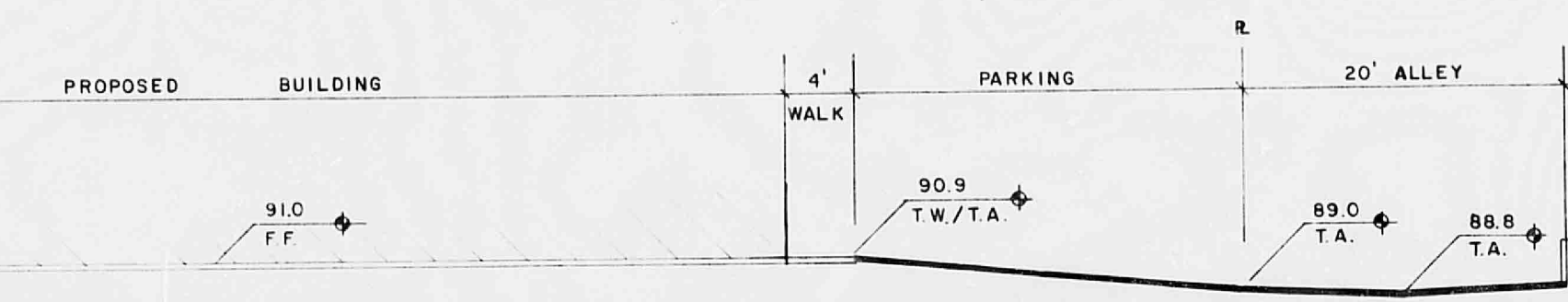
9. Spillway Calc's (Eq. $Q = CLH^{3/2}$)
 $Q_{100} = (0.85)(5.4)(0.19) = 1.0$ C.F.S.
Available Head = 0.2', $C = 2.49$, $L = 33'$
 Q Capacity = 7 C.F.S. > 1 Req'd - O.K.

Zoning for Lot is C-1

SCS Soil Map M-22, Soil Type "B" (Etc)

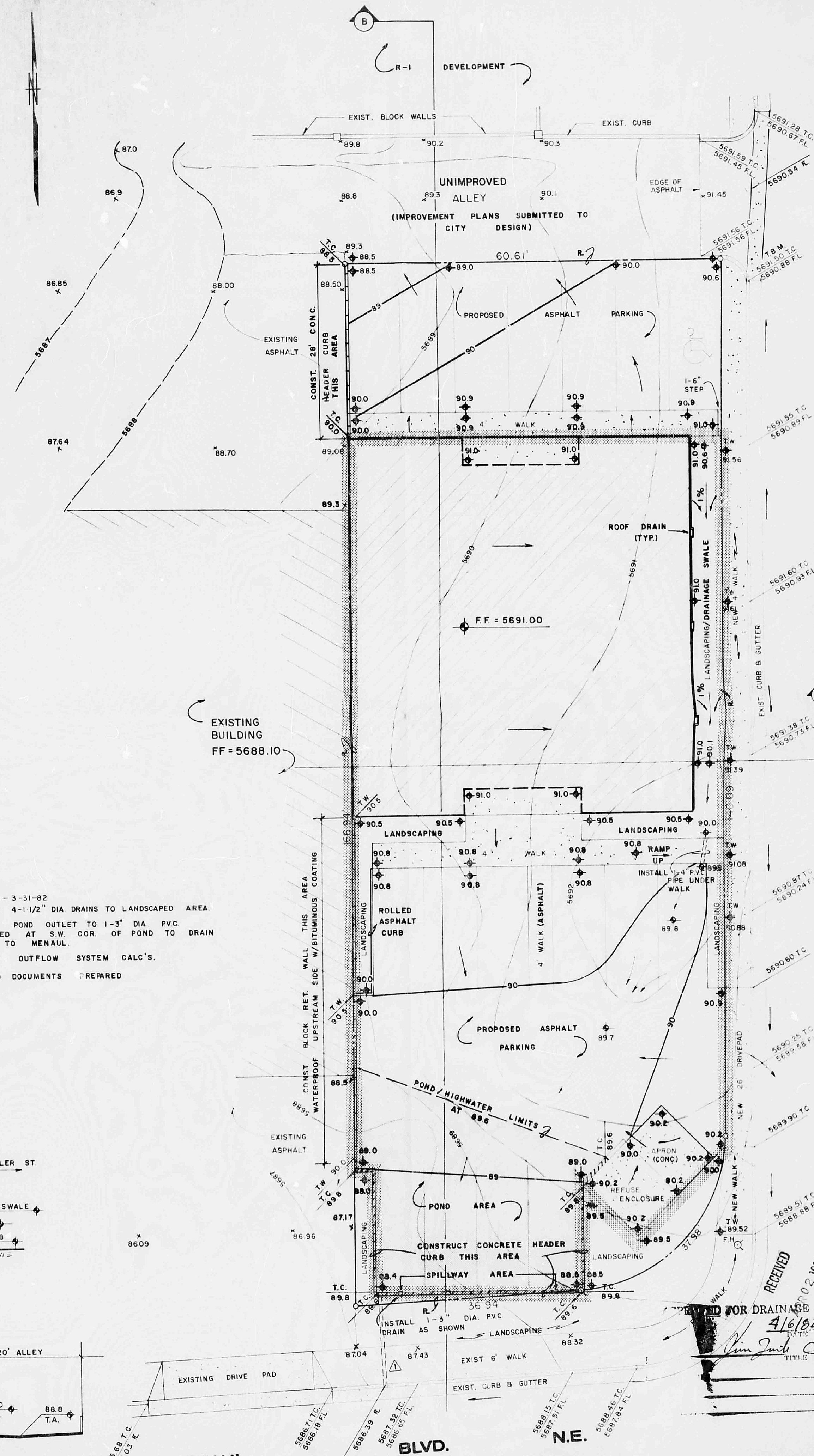
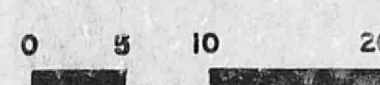


SECTION A



SECTION B

* NOTE: ELEVATIONS TRUE TO SECTION (A) ONLY



ALBUQUERQUE
NEW MEXICO

GRADING/DRAINAGE PLAN for
Sandler and
Menaul N.E.

Conulton's terra inc.

3-10-82