HYDROLOGY K20/D10 2 PLANS

K20/D10

2 Plans

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

K20 - D10

August 24, 1982

Mr. John Armstrong
Armstrong Engineering
2709 A Pan American N.E.
Albuquerque, N.M. 87107

RE: HAMILTON TEST FACILITY DRAINAGE PLAN

Dear John:

I have made a review of the referenced drainage plan and forward the following comments:

a. Please supply this office with a copy of the storm sewer detail sheet and a completed Drainage Information Sheet.

b. An approved copy of Special Order No. 19 must be attached to the City construction sets before Hydrology will sign-off.

Please contact me if you have any questions regarding the above items.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

K20-D10

August 31, 1982

Mr. John Armstrong
Armstrong Engineering
2709A Pan American N.E.
Albuquerque, New Mexico 87107

Re: HAMILTON TEST SYSTEMS DRAINAGE REPORT

Dear John:

The referenced report is hereby approved. Please see that the approved copies of Special Order No. 19 are attached to the City construction sets.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/fs

PERMIT FOR EXCAVATION & CONSTRUCTION, CITY OF ALBUQUERQUE

ENG 01263

LOCATION: 9805 Central Ave, N.E.							DATE: 12-22-82	
SW	DP	C&G	CC OK TRAFFIC	SEWER TAP	SEWER EXT.	WATER CUT	WATER EXT	
NEW SERVICE		NEW YD. LINES	S/W CURBS	MAIN LEAK	OTHER: Tie in to catch basin			
SW: 4"	6"	TO PROPERTY	CURB	CITY TO RESURFACE: YES XXX	NO			
LENGTH	WIDTH	TOTAL	NO. OF EX.	PAVED	UNPAVED			
STARTING DATE: 12-22-82		COMPL. DATE: 01-22-83		PERMIT EXPIRES: 01-02-83				
INSURANCE EXP: 09-23-83		BOND EXPIRES: 12-[illegible]		SAW CUT: YES	NO			
QUALIFIED: Carmine Reis								

Construction Fee $ N/C — Cr. 443008 - 5253000

Excavation Fee $ 12.50 — Cr. 443008 - 5253000

Restoration Fee $ N/C — Cr. 461601 - 8233000

Restoration Fee Required	YES	NO	BY
		XX	bes

PERMIT IS APPROVED FOR WORK DESCRIBED ABOVE IN ACCORDANCE WITH CITY ORDINANCE NO. 8-1978 & 219 - 1972

State License	Date	City License	Date

APPLICANT	ADDRESS	PHONE NO.
Raicce Plumbing Inc.	4121 Ellison N.E.	345-7780

SIGNATURE	APPROVED	BLUE STAKE NUMBER
Carmine Reis	CITY ENGINEER bes	#833

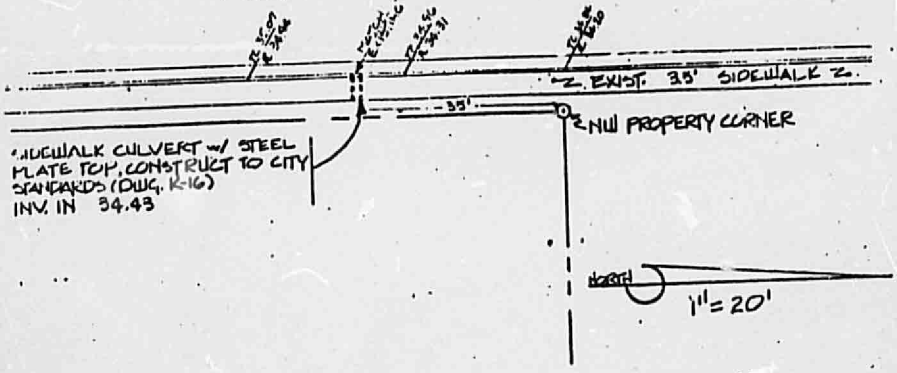
Permit is granted in consideration of the permittee assuming all liability, defending, and holding the City harmless for claims for damages or injury to persons or property resulting from permittee's excavation work.

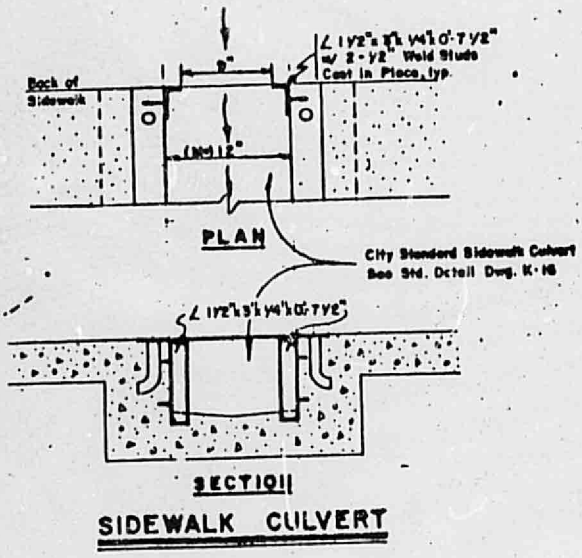
CONTR _____ CODE _____

CAUTION: PROTECT UNDERGROUND UTILITIES.
CALL 765-1234, 48 HOURS IN ADVANCE FOR LINE STAKING

Per Kearney his signature approves all details
3/3/83

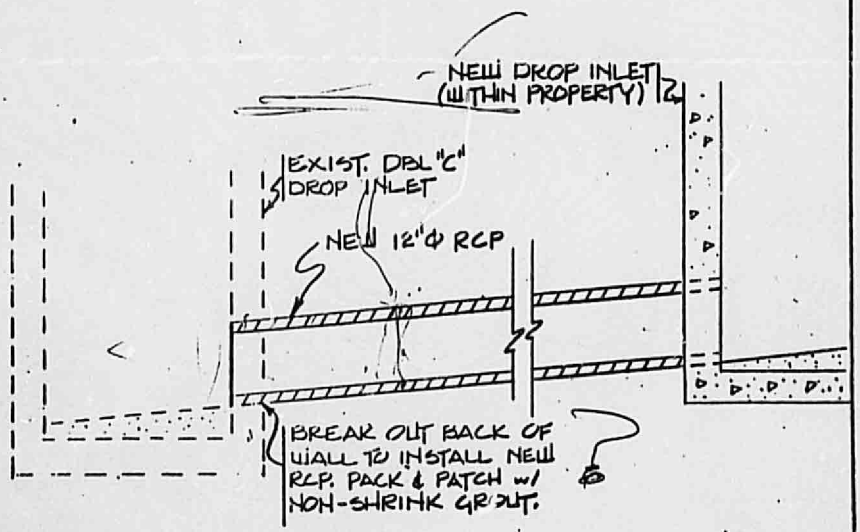
ALTEZ STREET N.E.





CITY OF ALBUQUERQUE

APPROVALS	ENGINEER	DATE	TITLE: SIDEWALK CULVERT
A.C.E./DESIGN			
INSPECTOR		3-29-83	PROJECT
		3-30-83	MAP NO. K-20

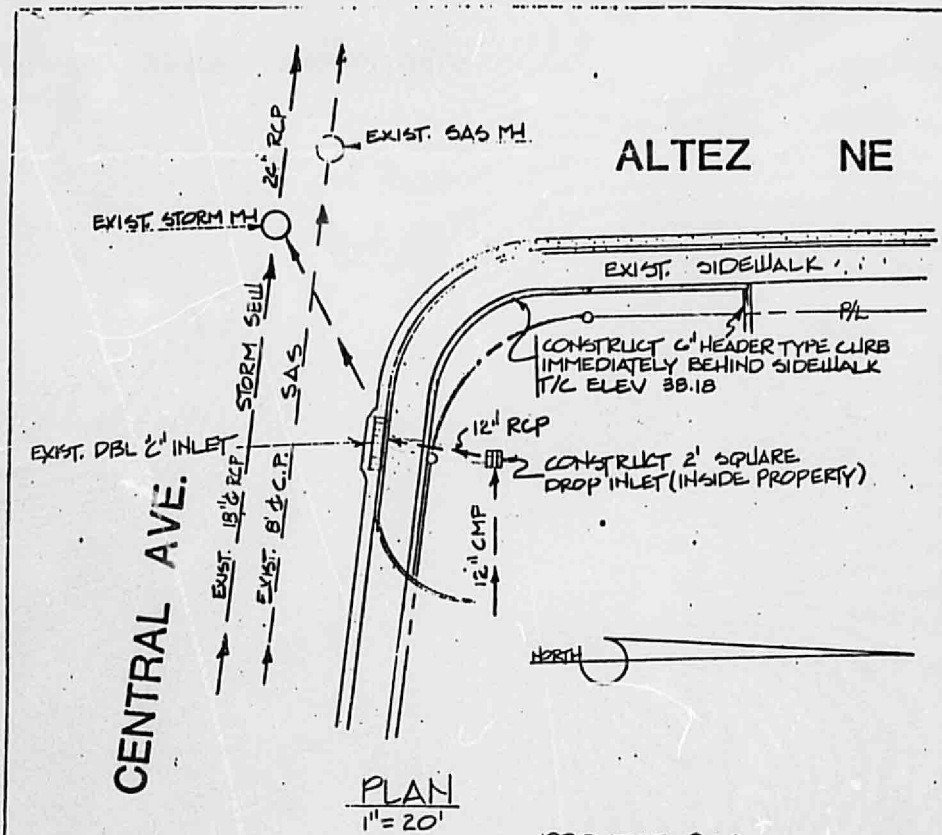


SCALE: 1" = 2'

Complete Sidewalk

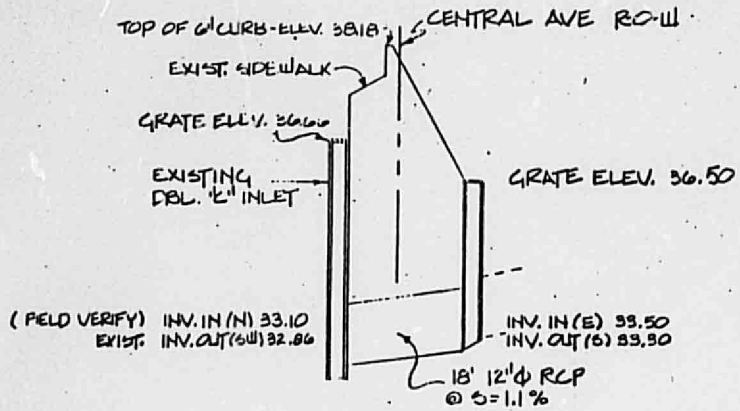
CITY OF ALBUQUERQUE

APPROVALS	ENGINEER	DATE	TITLE: DROP INLET TAP DETAILS
A.C.E./DESIGN		8/24/82	
INSPECTOR			PROJECT
			MAP K-20



PLAN
1" = 20'

PROJECT B.M.
NORTH BONNET BOLT OF FIRE HYDRANT @ N.W. CORNER OF CENTRAL & GARCIA STREETS
ELEV. - 5242.91



PROFILE

SCALE: 1" = 20' HORIZ.
1" = 2' VERT.

CITY OF ALBUQUERQUE

APPROVALS	ENGINEER	DATE	TITLE:
ASST. / DESIGN			DROP INLET TAP PLAN & PROFILE.
INSPECTOR			
			PROJECT

MAP K-20

DRAINAGE REPORT

FOR

HAMILTON TEST FACILITY
9805 CENTRAL N.E.
ALBUQUERQUE, NEW MEXICO

ARMSTRONG ENGINEERING, INC.
2709 A PAN AMERICAN N.E.
ALBUQUERQUE, NEW MEXICO
PHONE (505)345-2133

AUGUST, 1982

RECEIVED
AUG 17 1982
ENGINEERING

DISCUSSION

This report addresses the grading and drainage for the proposed Hamilton Test Facility located at 9805 Central Ave. N.E.

The site is bounded on three sides by streets and there is no offsite drainage through the site.

To meet the Interim Drainage Guidelines, this plan proposes to pond the difference between the developed and undeveloped run-off for a 100 year-6 hour storm and a controlled release at a rate equal to the 5 year undeveloped run-off for each drainage area within the site. Ponding will take place in four areas (see attached plan) with the front Area 1 draining into ponds 1A and 1B and controlled release into an existing drop inlet in Central Avenue. Area 2 will release into the Area 3 pond which will ultimately release into Altez Street through a City Standard Sidewalk Culvert.

The property is zoned C-2 and there was no special planing history discovered which would affect this plan.

Erosion Control will be accomplished by temporary berms to prevent water from washing into streets and storm sewer before soil mat and sod are in place.

CALCULATIONS

TOTAL SITE - EXISTING

Area = 2.59 acres
Hydrologic Soil Group B
Coefficient of run-off = 0.34 existing
100 year-6hour rainfall = 2.4 inches
time of concentration t_c < 10 min. all areas
5 year-6hour rainfall = (2.4)(0.541) = 1.3 inches
5 year intensity i_5 = 2.74 inches/hour
Q_5 = CiA = (0.34)(2.74)(2.59)= 2.41 cfs

AREA 1

Area = 26,095 sq.ft., 52.6% impervious
C = 0.59
Required Pond Volume=(26,095)(2.4/12)(0.59-0.34) = 1305 $ft.^3$
Pond Volume as shown = 1736 $ft.^3$ - o.k.
Q_5 = CiA =(0.59)(2.74)(26095/43560) = 0.97 cfs

Control Orifice (round hole cut in steel plate over inlet of 12 inch RCP)

Max. head = 4.68 ft.
C_d = 0.63
$Q = (0.63)\ Ao(2 \times 32.2 \times 4.68)^{0.5} = 10.94\ Ao$

for Q_5 :

10.94 Ao = 0.97 cfs
Ao = 0.09 $ft.^2$ = PI $d^2/4$
d = 0.34 ft. = 4 inches (see detail on attached plan)

AREA 4 - Direct release to street

A = 7815 ft.
C = 0.34
i_{100} = 5.07 in/hr
Q_{100} = CiA = (0.34)(5.07)(7815/43560) = 0.31 cfs

Area 3

A = 25,300 $ft.^2$, 55.1% impervious
C = 0.60
Required Pond Volume = (25300)(2.4/12)(0.60-0.34) =1316 $ft.^3$

Pond volume as shown = 1595, o.k.

CALCULATIONS

AREA 3 - cont.

Controlled Release (through K-16 Sidewalk Culvert)

$Q = Q_5$ undeveloped site - $Q_{Area\ 1}$ - $Q_{Area\ 4}$

Q = 2.41-0.97-0.31 = 1.13 cfs
Analyze sidewalk culvert as weir:
Max. head = 0.625
$Q = 3.1 \times B(0.625)^{1.5} = 1.13$ cfs B = 0.74 ft.= 9 inches
Use 12 inch wide (City min.) Sidewalk Culvert w/ 1½ in. angle iron each side to restrict opening to 9 inches.
See detail on attached plan.

AREA 2

A = 53,780 ft^2 ,46.4% impervious
C = 0.56
Required Pond Volume = (53780)(2.4/12)(0.56-0.34) = 2366 ft^3
Pond Volume as shown = 3162 ft^3 , o.k.

Controlled Release (thru opening in curb - drains to Area 3 pond)

Q = 1.13 cfs (same as release from Area 3)
Analyze as weir:
Max. head h = 0.70 ft.
$Q = 3.1 \times B(0.70)^{1.5} = 1.13$ cfs
B = 0.62' = 7.5 inches
See detail on attached plan.

INFORMATION SHEET

PROJECT TITLE Hamilton Test Systems TYPE OF SUBMITTAL Cert. of Occupancy

ZONE ATLAS PAGE NO. K-20-Z10 CITY ADDRESS 9805 Central Ave. East

LEGAL DESCRIPTION Tr. A of Hamilton Test Site Subdivision

ENGINEERING FIRM Armstrong Eng.,Inc. CONTACT John Armstrong

ADDRESS 2709A Pan American PHONE 345-2133

OWNER Hamilton Test Systems CONTACT Bill Parker

ADDRESS c/o 2709C Pan American PHONE 345-7949

ARCHITECT Rupley and Associates, Inc CONTACT John Rupley

ADDRESS 2709C Pan American PHONE 345-7949

SURVEYOR Hugg Surveying Co. CONTACT Gary Hugg

ADDRESS 1701 Grande S.E. Rio Ran PHONE 892-8800

CONTRACTOR Baker Const. Co., Inc. CONTACT Mike Baker

ADDRESS P.O. Box 6032 PHONE 344-4050

DATE SUBMITTED January 24, 1983

BY Armstrong Engineering, Inc.

Use this Information Sheet when submitting the following:

Drainage report or plan, conceptual grading and drainage plan, engineer's certification plan, erosion plan and grading plan. Provide the information applicable to your submittal.

ARMSTRONG ENGINEERING, INC.
CONSULTING ENGINEERS
2709-C PAN AMERICAN N.E.
ALBUQUERQUE, NEW MEXICO 87107

JOHN ARMSTRONG P.E.

(505) 345-2133

March 15, 1983

K 20-D10

Mr. Fred Aguirre, P.E.
City of Albuquerque
123 Central Avenue N.W.
Albuquerque, New Mexico 87102

Re: Hamilton Test Facilities at 9805 Central Avenue N.E.
Certificate of Occupancy.

RECEIVED
MAR 15 1983
ENGINEERING

Dear Fred:

Please find attached the As-built drawings for the Central site. The small sheet shows revised grading of the rear pond that was necessary because pavement grades were too high at the controlled outlet.

I hereby certify that substantial compliance has been met on this project with regard to grading and drainage.

Thank You

John Armstrong, P.E.