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AUGUST 16, 1996

Hydrology Department
City of Albuquerque

Attn: Lisa Ann Manwill

Subject: J-14/D115, DRB-96-166, Project No. 548081

This memorandum is tendered to document the adequacy of the Double "D" Inlet and the 18" RCP for the design of the Storm Drain System for the San Ignacio Subdivision.

The flows through the inlet of the Double "D" inlet will simulate an orifice and be governed by the orifice equation. The inlet is located in a low point at the end of the cul-de-sac. The inlet area in square feet was calculated from the Dwg. 2206 as 1.771 S.F. The head required at the Q_{100} design flow of 7.2 CFS for a Double "D" inlet is $0.172' = 2$ inches. The available head before overflowing the curb is 0.50 feet.

To check the adequacy of the head available for getting a flow rate of 7.2 CFS into the 18" RCP, the culvert equation was used. With the headwater at the full pipe depth (18") and the flow being inlet controlled, the flow rate is 7.49 CFS. Therefore the 2' plus headwater is more than adequate to allow an intake of 7.2 CFS.

The Auto Civil auto-storm program shows the Plan and Profile, utilizing 7.2 CFS, $n = 0.013$, the slopes as designed, and three manholes with two angular changes in the system. This shows a flow depth of 0.75' (50% of the pipe) at the outfall in Broadway Blvd. Computer printout are attached.

Sincerely yours,



C. A. Coonce
N.M.P.E. # 2934

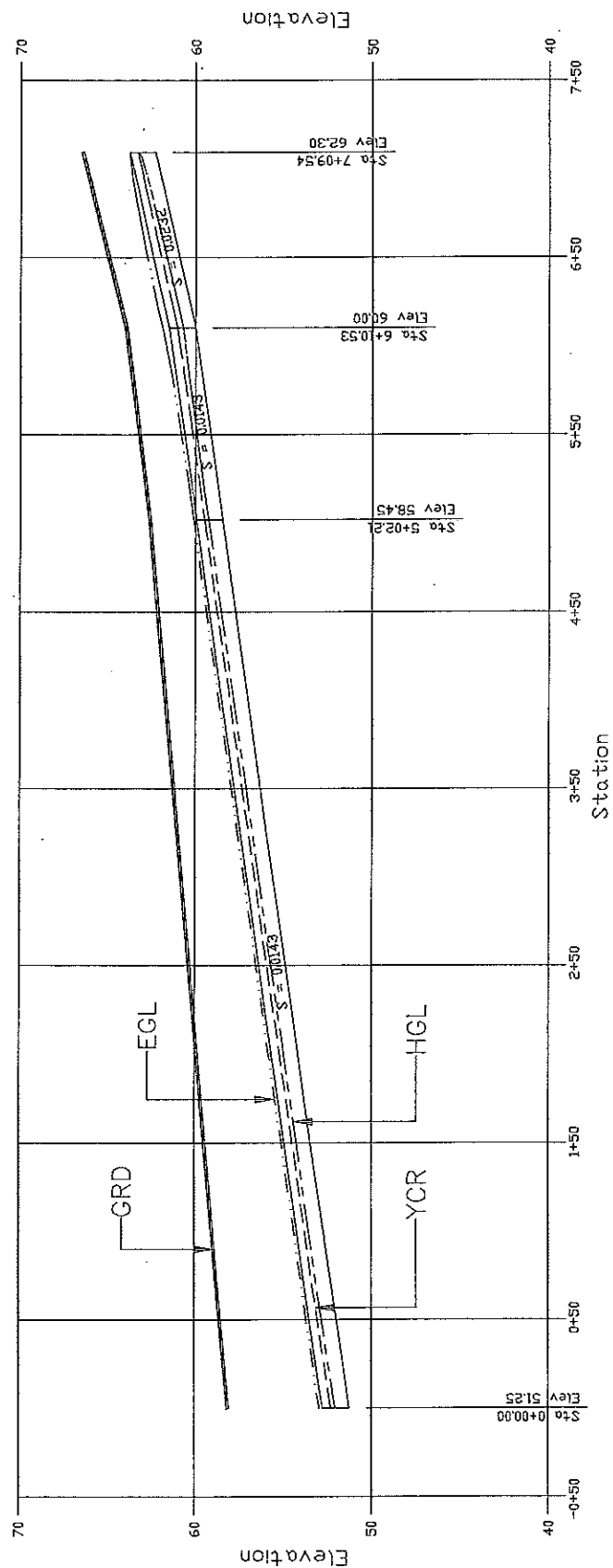
AUG 16 1996

SAN IGNACIO



BROADWAY

- GRD
- HGL
- EGL
- YCR
- PIPE



SAN IGNACIO STORM DRAIN SYSTEM HYDRAULICS
 $Q_{100} = 7.2$ CFS, $n = 0.013$, PIPE $D = 18"$, 3 MANHOLES
 BETWEEN SYSTEM OUTLET AND SYSTEM HEADWATERS

SAN IGNACIO SINGLE & DOUBLE "D" INLET

CALCULATED PARAMETERS & C = 0.61

Orifices -- English Units

Civil Tools for Windows

(08-07-1996, 10:47:20)

Flowrate	Area	Coeff	Headwater	Center	Tailwater	
cfs	sf	---	ft	ft	ft	
7.200	1.771	0.610	0.690	0.000	0.000	- SINGLE "D"
7.200	3.542	0.610	0.172	0.000	0.000	- DOUBLE "D"

With H of 0.5' Available a Double "D" is required
0.172' \approx 2" which gives a margin of safety if
grate is not kept free of debris.

SAN IGNACIO COURT

DROP INLET

Culverts -- English Units

Civil Tools for Windows

(07-31-1996, 16:38:05)

Diameter = 18 in
Length = 100 ft
Friction Coeff = .015
Ent+Exit Coeff =
Inlet Control Coeff = .61
Inv Elev Out = 97 ft
Inv Elev In = 100 ft
Tailwater Elev = 98 ft
Elev Increment = .1 ft

Headwater		Flowrate
ft		cfs
101.50	IC	7.49
101.60	IC	7.98
101.70	IC	8.43
101.80	IC	8.86
101.90	IC	9.28
102.00	IC	9.67
102.10	IC	10.05
102.20	IC	10.42
102.30	IC	10.77
102.40	IC	11.11
102.50	IC	11.44
102.60	IC	11.77
102.70	IC	12.08
102.80	IC	12.39
102.90	IC	12.68
103.00	IC	12.98