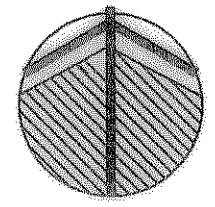


NORTH



GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

STORMWATER DETENTION CALCULATIONS
TRACT SIZE - 0.688+0.512 = 1.2 ACRES

PREDEVELOPMENT CONDITION	POST DEVELOPMENT CONDITION
C = 0.35	Q _{developed} = 0.8; Q _{undeveloped} = 0.35
T _c = 20 min	T _c = 10 min
I-100 = 8.3 in/hr.	I-100 = 9.8 in/hr.
Undeveloped Area = 1.2 Acres	Developed Area = 1.05 Acres
	Undeveloped Area = 0.15 Acres

MAXIMUM RELEASE RATE:		POST DEVELOPMENT INFLOW:	
Q ₁₀₀ = 0.35 x 8.3 x 1.2 =	3.49 cfs	Developed Area	
		Q ₁₀ = 0.8 x 9.8 x (1.05) =	8.23 cfs
		Undeveloped Area	
		Q ₁₀ = 0.35 x 9.8 x (0.15) =	0.51 cfs
		Total Post development inflow	
		Q ₁₀ = 8.23 + 1.18 =	8.75 cfs

POST DEVELOPMENT CONDITION FLOW FOR VARIOUS DURATION STORMS

STORM DURATION Minutes	I in/hr.	POST DEVELOPMENT INFLOW RATE Q _{inflow-Tc} = (0.80 x 1.05 + 0.35 x 0.15) x I, cfs
10	9.8	8.75
20	8.3	7.41
30	6.9	6.16
40	5.9	5.27
50	5.2	4.64
60	4.8	4.28
70	4.5	4.02
80	4.2	3.75
90	3.9	3.48

STORAGE REQUIREMENTS FOR VARIOUS STORM DURATIONS

STORM DURATION T _c , Minutes	INFLOW VOL., cu ft (1)	OUTFLOW VOL., cu ft (2)	STORAGE, cu ft (1) - (2)
10	5248	2092	3156
20	8889	3137	5752
30	11085	4183	6902
40	12638	5229	7409
50	13923	6275	7648
60	15422	7321	8102
70	16868	8366	8502
80	17993	9412	8581
90	18796	10458	8338

(1) (T_c min) * (Q_{inflow-Tc} cfs) * (60 sec./min.)
(2) (T_c+10) * (1/2) * (Q₁₀₀ cfs) * (60 sec./min.); Q₁₀₀ = 3.49 cfs

MAXIMUM REQUIRED STORAGE VOLUME: 8581 cu ft
PIPE STORAGE: 424 cu ft
REQUIRED STORAGE: 8157 cu ft

STORAGE IN UNDERGROUND PIPES AND IN PARKING LOT

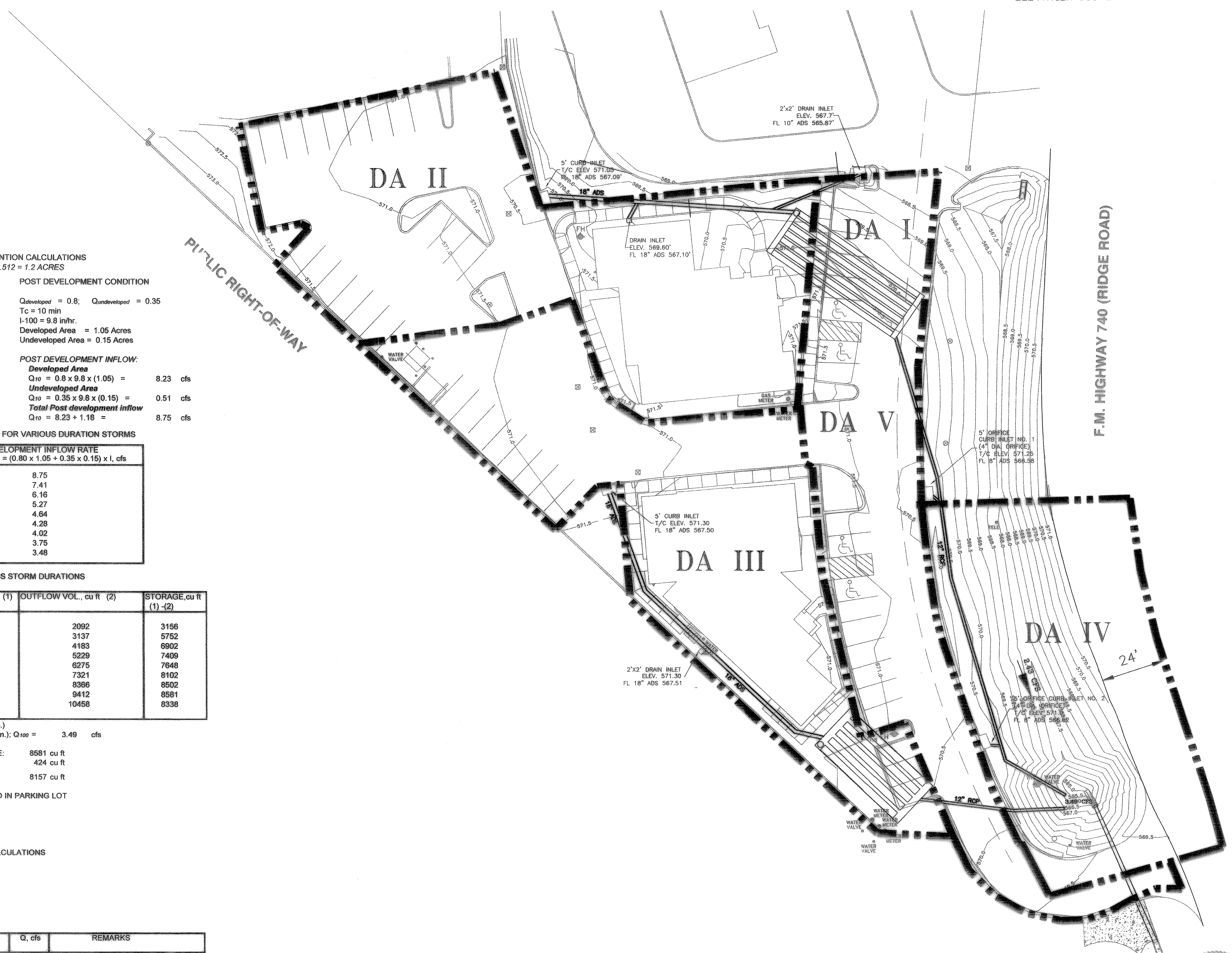
DRAINAGE AREA CALCULATIONS

C = 0.80
T_c = 10 min
I-100 = 9.8 in/hr.

Q = C * I * A

DRAINAGE AREA No.	AREA, acres	Q, cfs	REMARKS
I	0.04	0.27	Flows offsite to adjacent area
II	0.44	3.47	10' Curb Inlet to Pipe Detention Area 1
III	0.35	2.74	10' Curb Inlet to Pipe Detention Area 2
IV	0.31	2.43	2.43 + 3.49 = 5.92 cfs TO CULVERT
V	0.25	1.97	5' Orifice Curb Inlet (Parking Storage)

BENCH MARK
B.M. "□" CUT TOP OF CURB, NORTH SIDE OF
SUMMER LEE DRIVE AND F.M. HIGHWAY NO. 740.
ELEVATION 565.71.



American Title/
Chakmakjian Office Complex
Ridge Road, Rockwall, Texas

Mazidji Group
Civil Engineering & Environmental Consulting
11105 Fernald Avenue,
Dallas, Texas 75218
(214)349-7334

AS-BUILT DRAINAGE AREA MAP
DATE: February 09, 2003
DATE: October 11, 2001
DWG: Chakmakjian / AmTitle
PROJECT NO. MC205
ISSUE LOG:
1.
2.
3.

Sheet No.
C2
Sheet 2 of 9

