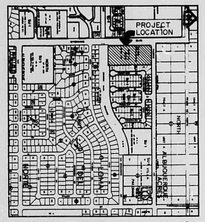
PUBLIC WORKS/HYDROLOGY

D19/D22



VICINITY MAP
SCALE: 1" = 800'

LEGEND

EXISTING	NEW	DESCRIPTION
		CURB & GUTTER
		CURB
485	468	SPOT ELEVATION
	45	CONTOUR
		BUILDING
		DRAINAGE PIPE
		PROPERTY LINE
		BASIN DIVISION LINE
		ROOF DRAINS
		RUNDOWN

LEGAL DESCRIPTION

Tract X-1, Block 22, Tract A, North Albuquerque Acres

ADDRESS

Palomas NE and Wyoming Boulevard NE

BENCH MARK

USC&GS Brass Cap - Heaven 1969, Located on the south side of Los Angeles Boulevard in front of cemetery. Elevation = 5,378.79

CONSTRUCTION NOTES

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT LINE LOCATING SERVICE 765-1234, FOR THE LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

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2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE A "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

DRAINAGE PLAN

The following items concerning the Palomas Office Park Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown on the Vicinity Map, are located at the southeast corner of Palomas Avenue N.E. and Wyoming Boulevard N.E. The site is undeveloped. The land to the east is developed as a residential subdivision. The land to the east is higher than the project site, but an existing block wall diverts stormwater runoff from the project site. The site is higher than Palomas Avenue to the north, the Domingo Baca Arroyo to the south and Wyoming Boulevard to the west. Therefore, offsite flows are negligible.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'-0" intervals, 2) continuity between existing and proposed elevations, 3) the limit and character of existing improvements, and 4) the limit and character of proposed improvements. As shown by this plan, the proposed improvements consist of a branch bank, three office buildings, asphalt parking and associated landscaping. All flows will be conveyed to the west side of the project where they will be routed through inlets and pipe to the Domingo Baca Arroyo. The Domingo Baca is concrete lined. Since the project is adjacent to the channel, the prompt introduction of flows from this project will allow those flows to clear the area before additional flows enter.

The calculations, which appear below, analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational and SCS Methods have been used for this analysis in accordance with the City of Albuquerque Design Process Manual, Volume II. As shown by the calculations, the peak rate of runoff and volume of runoff will increase.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate: 11
Hydrologic Soil Group: Tijeras % - B
Existing Pervious CN = 79 (DPM Plate 22.2 C-2 Pasture or Range Land: Poor condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

Time of Concentration/Time to Peak

$T_c = 0.0078\ L^{0.77}/S^{0.385}$ (Kirpich Equation)

$T_p = T_c = 10$ min.

Point Rainfall

$P_6 = 2.4$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: Q = CiA

where C varies
$i = P_6\ (6.84)\ T_c^{-0.51} = 5.07$ in/hr
$P_6 = 2.4$ in (DPM Plate 22.2 D-1)
$T_c = 10$ min (minimum)
A = area, acres

SCS Method

Volume: V = 3630(DRO) A

Where DRO = Direct runoff in inches
A = area, acres

Existing Condition

A_{total} =	217,800	sf =	5.0	ac
Roof area =	0	sf =	0.0	ac
Paved area =	0	sf =	0.0	ac
Landscaped area =	217,800	sf =	5.0	ac

C = 0.40 (Weighted average per Emergency Rule, 01/14/86

Q_{100} = CiA = 0.40(5.07)5.0 = 10.1 cfs
A_{imp} = 0 sf; % impervious = 0
Composite CN = 79 (DPM Plate 22.2 C-3)
DRO = 0.8 in (DPM Plate 22.2 C-4)
V_{100} = 3630(DRO) A = 14,520 cf

Developed Condition

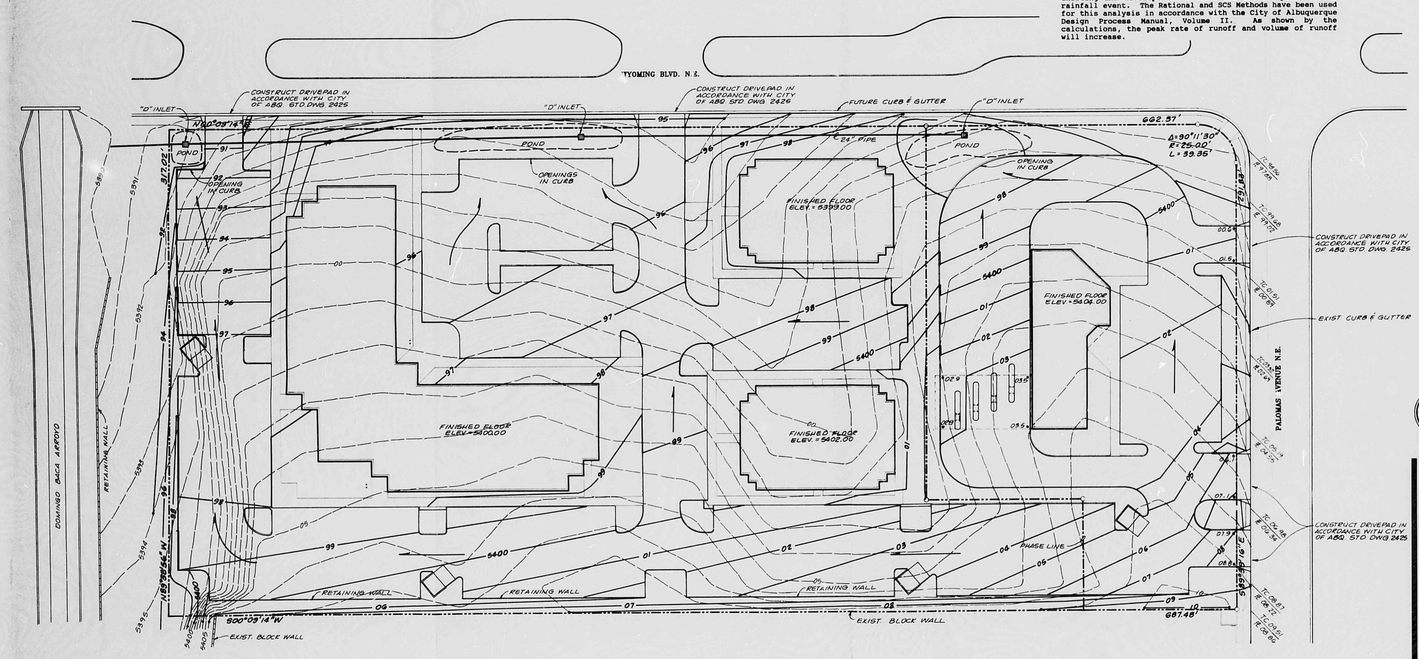
A_{total} =	217,800	sf =	5.00	ac
Roof area =	37,200	sf =	0.85	ac
Paved area =	110,000	sf =	2.53	ac
Landscaped area =	70,600	sf =	1.62	ac

C = 0.76 (Weighted average per Emergency Rule, 01/14/86

Q_{100} = CiA = 0.76(5.07)5.0 = 19.3 cfs
A_{imp} = 147,200 sf; % impervious = 68
Composite CN = 86 (DPM Plate 22.2 C-3)
DRO = 1.2 in (DPM Plate 22.2 C-4)
V_{100} = 3630(DRO) A = 21,780 cf

Comparison

Q_{100} = 19.3 - 10.1 = 9.2 cfs (increase)
V_{100} = 21,780 - 14,520 = 7,260 cf (increase)



CONCEPTUAL GRADING & DRAINAGE PLAN

NORTH

JULY 25, 1989

SCALE: 1" = 20'-0"

RECEIVED AUG 01 1989 HYDROLOGY SECTION

CLAUDIO VIGIL ARCHITECTS

PALOMAS OFFICE PARK

WYOMING & PALOMAS N.E.
ALBUQUERQUE, NEW MEXICO

SHEET C-1 4 of 4

825 Pennsylvania NE Albuquerque NM 87110
505/265-4000

R# 24 DATE 3-15-02 OP ESP

CITY OF ALBUQUERQUE

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DIRECTOR

NOTARY PUBLIC

OFFICIAL SEAL Roberta Duran NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 07/03/02

FILM SHOT TWICE ONCE ON LIGHT ONCE ON DARK

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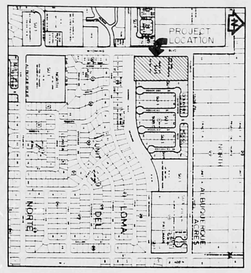
PLANS/PLATS ON FILE

FILE DESC: D19/D22

PLANS/PLATS 2

E 30 D 24 C 20 B 16 A 12 CITY OF ALBUQUERQUE C D F



VICINITY MAP
SCALE: 1" = 800'

D-14

LEGEND

EXISTING	NEW	DESCRIPTION
		CURB & GUTTER
		CURB
499	498	SPOT ELEVATION
	45	CONTOUR
		BUILDING
		DRAINAGE PIPE
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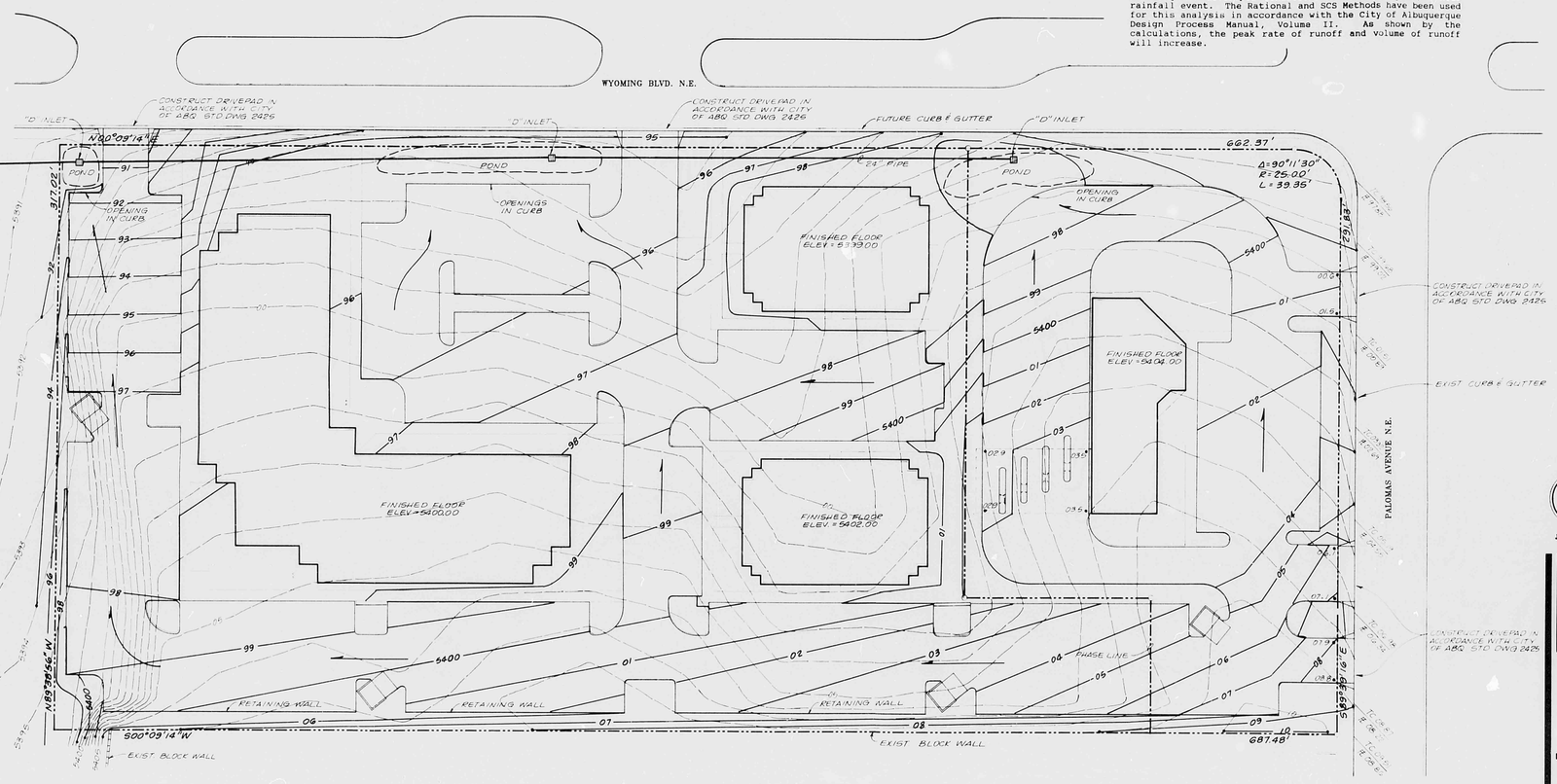

CONCEPTUAL GRADING & DRAINAGE PLAN

NORTH

JULY 25, 1989

SCALE: 1" = 30'-0"

CLAUDIO VIGIL ARCHITECTS

PALOMAS OFFICE PARK

WYOMING & PALOMAS N.E.
ALBUQUERQUE, NEW MEXICO

SHEET C-1

4 of 4

825 Pennsylvania NE · Albuquerque, NM 87110
505/265-3000

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

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R# 24 DATE 3-15-02 OP

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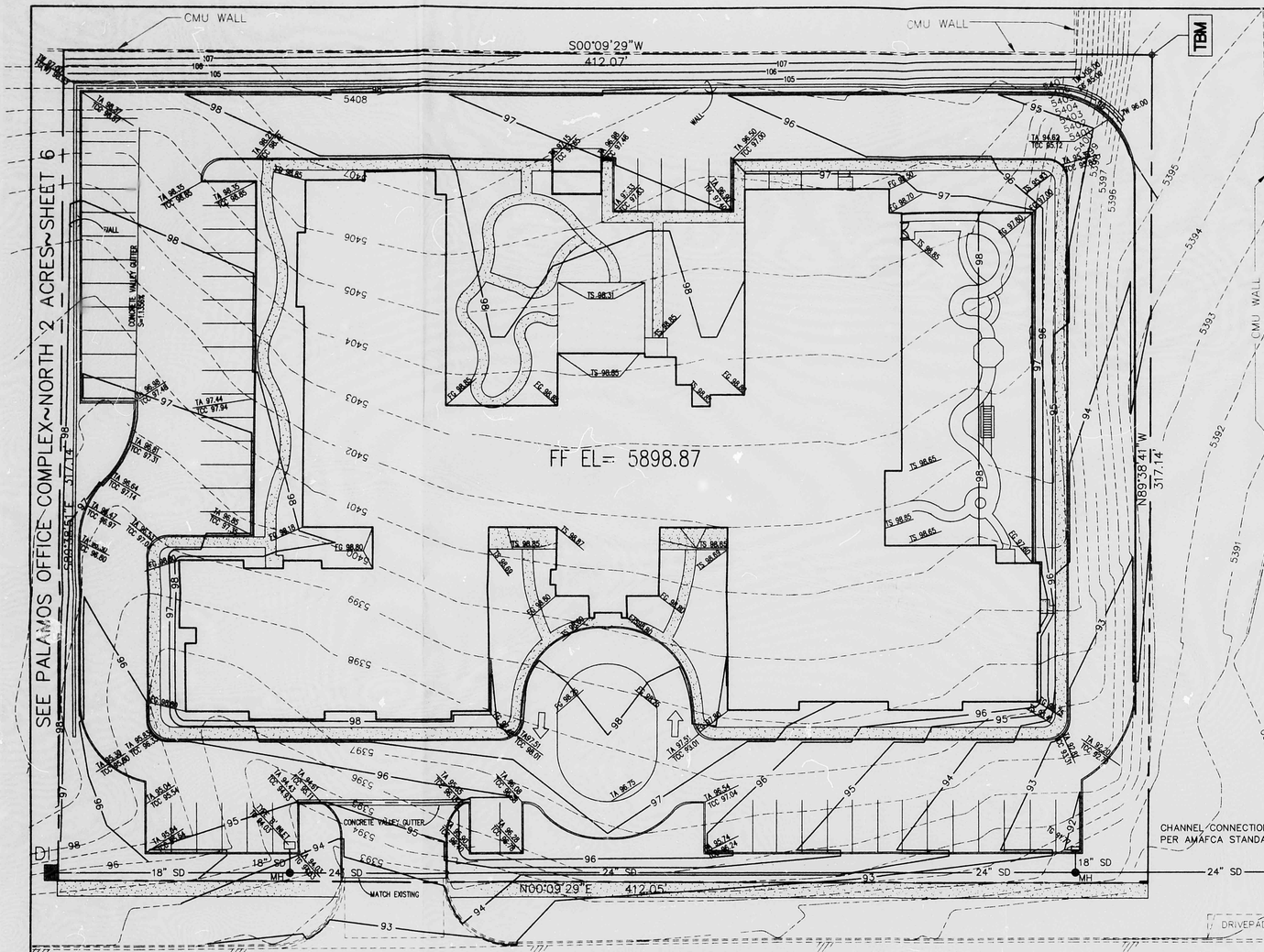
DIRECTOR

NOTARY PUBLIC
OFFICIAL SEAL
Rebecca Duran
07/02/02

D24 C20 B16 A12

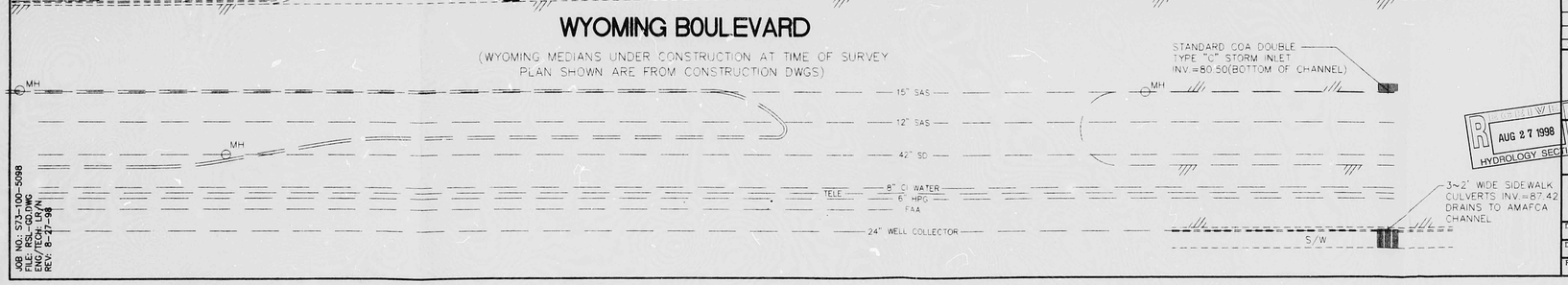
CITY OF ALBUQUERQUE

C D



WYOMING BOULEVARD

(WYOMING MEDIANS UNDER CONSTRUCTION AT TIME OF SURVEY
PLAN SHOWN ARE FROM CONSTRUCTION DWGS)



JOB NO: S73-100-5098
FILE: S73-100.DWG
ENG/TECH: LR/N
REV: 8-27-98

GRADING & DRAINAGE PLAN
FOR
PROPOSED TRACT X-1-B
CHURCHILL HEIGHTS ASSISTED LIVING FACILITY

GENERAL:

The site of this proposed facility is the southern 3 acres of existing lot X1, Tract A, Unit A, North Albuquerque Acres which consists of 5 acres. A proposed replat will separate this 3 acres from the existing parcel. An office building and bank are currently being proposed on the remaining two acres to the north of this site.

LOCATION:

The proposed facility is located on the east side of Wyoming Blvd., and immediately north of the Domingo Baca Arroyo as shown on the Vicinity Map above.

EXISTING CONDITIONS:

Currently, the parcel is unimproved, as are the parcels to the north. The existing Courtywood Residential Subdivision is east of the site.

The site slopes generally east to west at an approximate scale of 0%. The land appears to have been rough graded at some time in the past.

OFF SITE DRAINAGE:

The existing residential subdivision to the east, is walled at the property line. The Domingo Baca Arroyo is to the south and Wyoming Boulevard is to the west of the site. There is no contribution of runoff from these three adjacent facilities.

The north 2 acres of this existing parcel, contribute up to CFS to the north side of the site. However, a bank and office building are currently being proposed with this project. As shown on the proposed grading and drainage plan for Tract X-1-A, that contribution will be directed to a storm drain that will run along the west property line of this site.

The proposed storm drain will be constructed by the developers of Tract X-1-A, in a proposed easement across this 3 acres and will discharge into the existing improved Domingo Baca Arroyo.

PROPOSED CONDITIONS:

The proposed grading for this site will surface flow the onsite generated runoff west toward Wyoming, where it will be collected in storm inlets in the north west and south west corners of the site. These inlets will connect to the storm drain constructed by the developers of Tract X-1-A.

FLOOD PLAIN:

As shown on Panel 3501 100 141 D, dated September 20, 1996, no portion of this site is in a designated flood plain. The Zone A flood plain, shown on the south side of the site, is noted as confined to the constructed channel.

CALCULATIONS:

Precipitation Zone 3
Total site = 3 acres

EXISTING CONDITIONS:

Land treatment – B=100% due to prior grading.

Q100 = 2.60 CFS/ac • 3 ac. = 7.50 CFS
Q10 = 7.80 CFS • 0.667 = 5.20 CFS

$Y100 = \frac{0.92 \text{ in} \cdot 3\text{ac}}{12} \cdot 43560 = 10{,}019$ CF

Y10 = 10,019CF • 0.667 = 6683 CF

PROPOSED CONDITIONS:

Land Treatments: B (Turf) = 16% C (SW Landscape) = 16%
D = 68%

Q100 = (3.0 • .16 • 2.60) + (3.0 • 0.16 • 3.95) + (3.0 • .68 • 5.02)
= 13.4 CFS

Q10 = 13.14 CFS • 0.667 = 8.77 CFS

$V100 = (3.0 \cdot .16 \cdot 92) + (3.0 \cdot .16 \cdot 129) + (3.0 \cdot .68 \cdot 2.36) = \frac{5.87}{12} \cdot 43560 = 21{,}327$ CF

V10 = 21,327 CF • 0.667 = 14,225 CF

Increased due to this project

Q100 = 5.34 CFS
Q10 = 3.57 CFS
V100 = 11,308 CF
V10 = 7,542 CF

Total discharge to the Domingo Baca Arroyo

Tract X-1-A (per T.R. Mann PCAN dated 8/24/98)

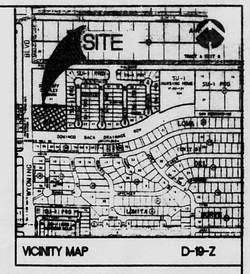
Q100 = 9.31 CFS

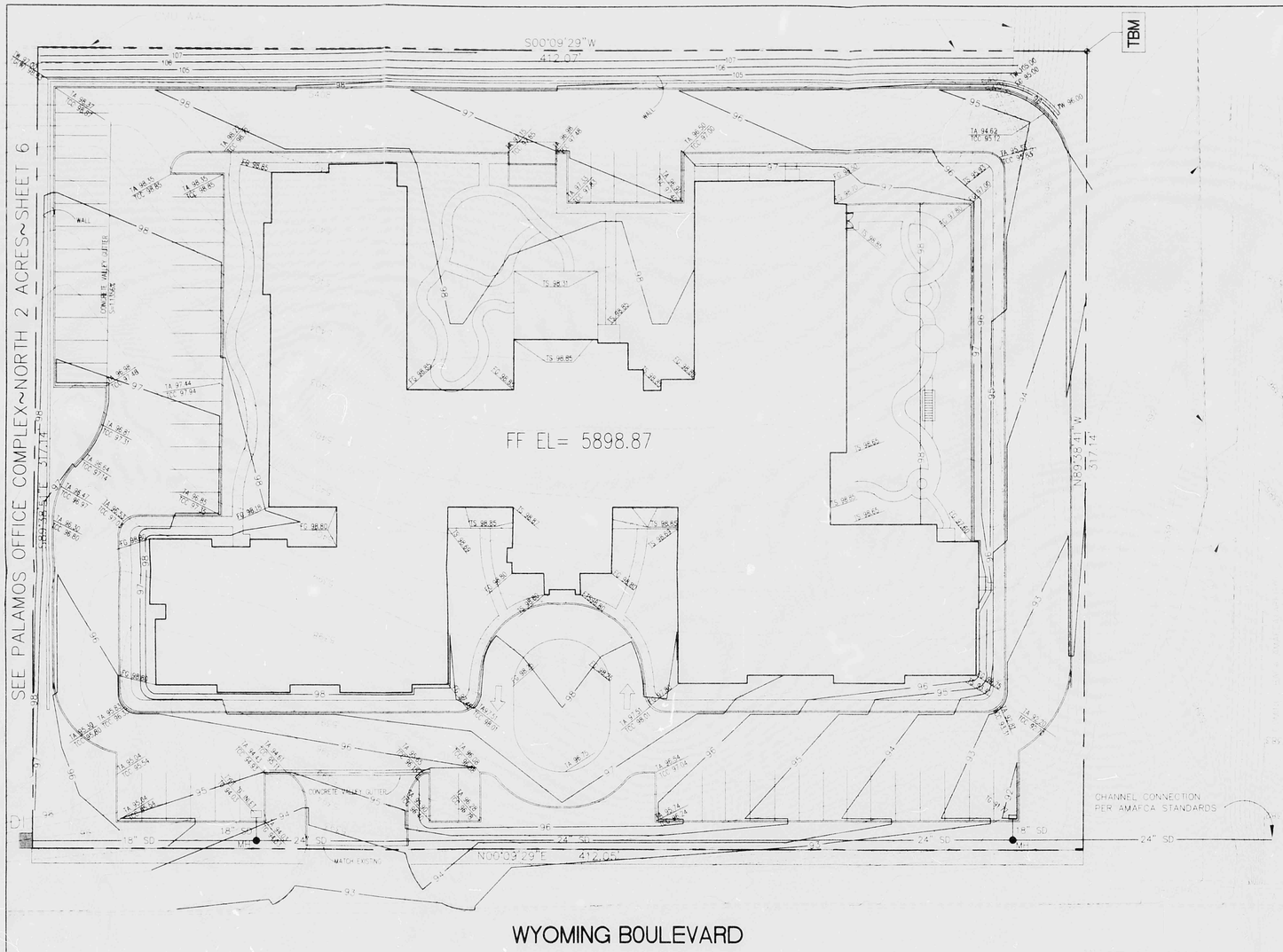
This Tract

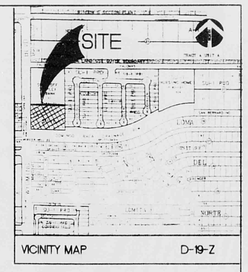
Q100 = 13.14 CFS
Q100 (Total) = 22.45 CFS

Pipe Capacity

18" PVC @ 1% QCAP = 10.5 CFS
24" PVC @ 1% QCAP = 22.4 CFS > Q100 (Total) = 22.45CFS


SITE
WYOMING BLVD
TRACT A UNIT A
TU-1
INSTITUTIONAL
SU-1
PRD 7 DU/AC
SU-1
PRD 7 DU/AC
SU-1
PRD 7 DU/AC





LEGAL DESCRIPTION

TRACT X-1-B (FORMERLY LOTS 1 THRU 5 AND 28, BLOCK 22, TRACT A, UNIT A, NORTH ALBUQUERQUE ACRES) AND TRACTS B-1 AND B-2-B LOMA DEL NORTE UNIT 4

LEGEND

EXIST ASPHALT	
EXIST CONCRETE SIDEWALK	
EXIST CURB AND GUTTER	
EXIST CONTOURS	
PROPERTY BOUNDARY	
NEW SPOT ELEVATION	TS 98.82
NEW COUNTOUR	95
NEW STORM DRAIN LINE	

ABBREVIATIONS

TC/TCC	TOP OF CONCRETE/CONCRETE CURB
FL	FLOWLINE
CMU	CONCRETE MASONARY UNIT
INV	INVERT
TW	TOP OF WALL

TEMPORARY BENCHMARK (TBM)

TOP OF #5 REBAR, SET FOR THE S.E. CORNER OF TRACT X-1-B, LOCATED AS SHOWN ON PLAN
ELEV.=5395.40

SURVEY INFO.

TOPOGRAPHIC SURVEY PERFORMED BY CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC. ALBUQUERQUE, NEW MEXICO AUGUST 1998

NOTES

1. THIS IS NOT A BOUNDARY SURVEY. APPARENT PROPERTY CORNERS ARE SHOWN FOR ORIENTATION ONLY.
2. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL THE UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES, EXCEPT AS NOTED.

8/27/98

AUG 27 1998
HYDROLOGY SECTION

CHAVEZ · GRIEVES CONSULTING ENGINEERS, INC.
1439 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

CHURCHILL HEIGHTS
ASSISTED LIVING
ALBUQUERQUE NEW MEXICO

CONCEPTUAL GRADING AND DRAINAGE PLAN~SOUTH 3 ACRES

DESIGNED BY	LR	DATE	1"=20'
DRAWN BY	S	JOB NUMBER	573-100-5098
REVIEWED BY	B.P.	DATE	08-28-98

7 of

JOB NO. 573-100-5098
FILE: PRE-GRDNG
FIELD BOOK:
REV: 8-27-98

PLAN SHOT TWICE
ONCE ON LIGHT
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DIRECTOR

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OFFICIAL SEAL
Roberta Duran
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07/02/02

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