City of Albuquerque

P.O. BOX 1293   ALBUQUERQUE, NEW MEXICO 87103

ALBUQUERQUE
NEW MEXICO
1706

KEN SCHULTZ
MAYOR

October 31, 1988

Jeff Mortensen, P.E.
Jeff Mortensen & Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR AN ADDITION TO PARADISE VILLAGE, INC.
     (G-17/D34) ENGINEER'S STAMP DATED OCTOBER 8, 1988

Dear Mr. Mortensen:

Based on the information provided on your submittal of October 10, 1988, the above referenced plan is approved for Building Permit.

Please attach a copy of this plan to the construction sets prior to sign-off by Hydrology.

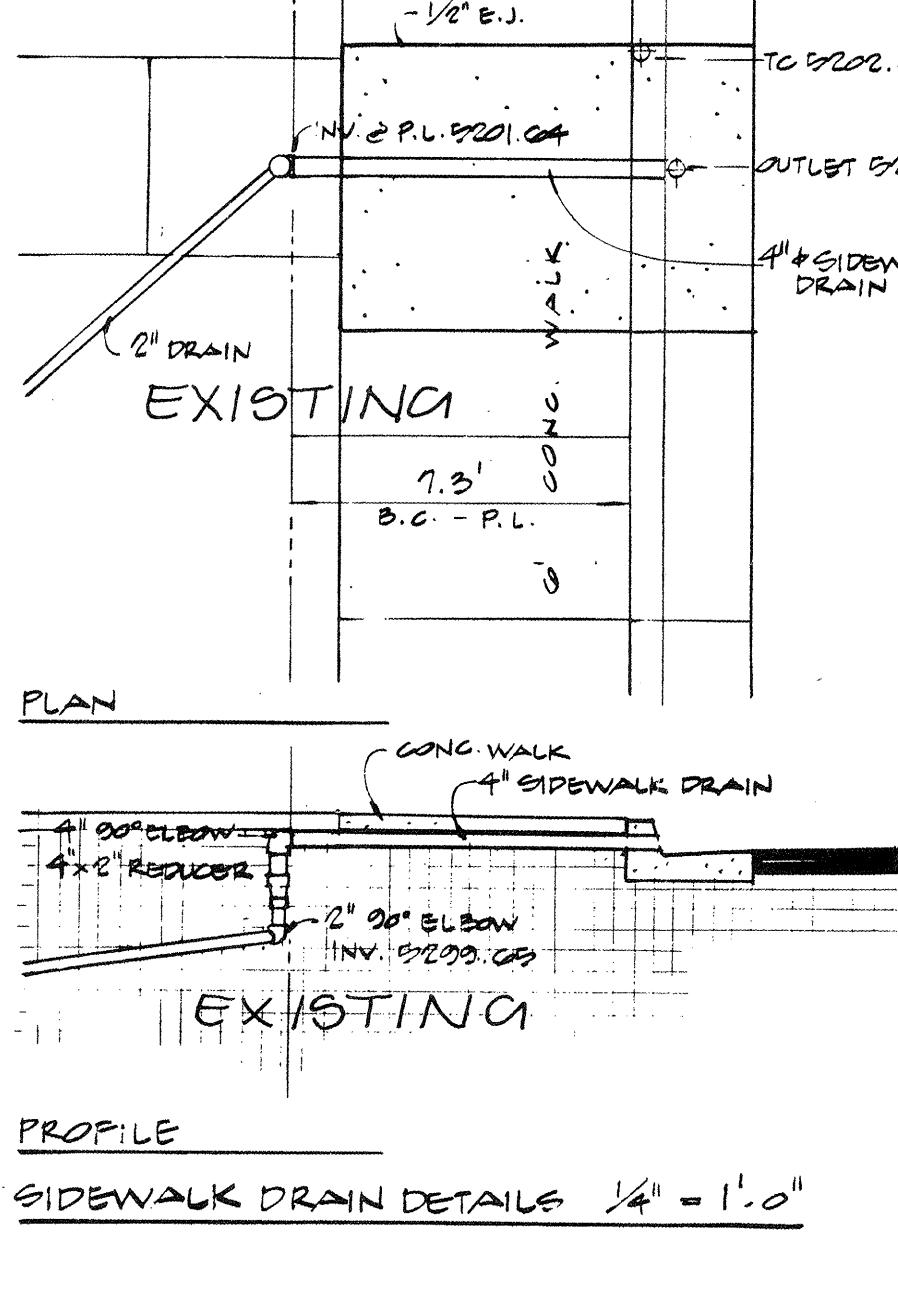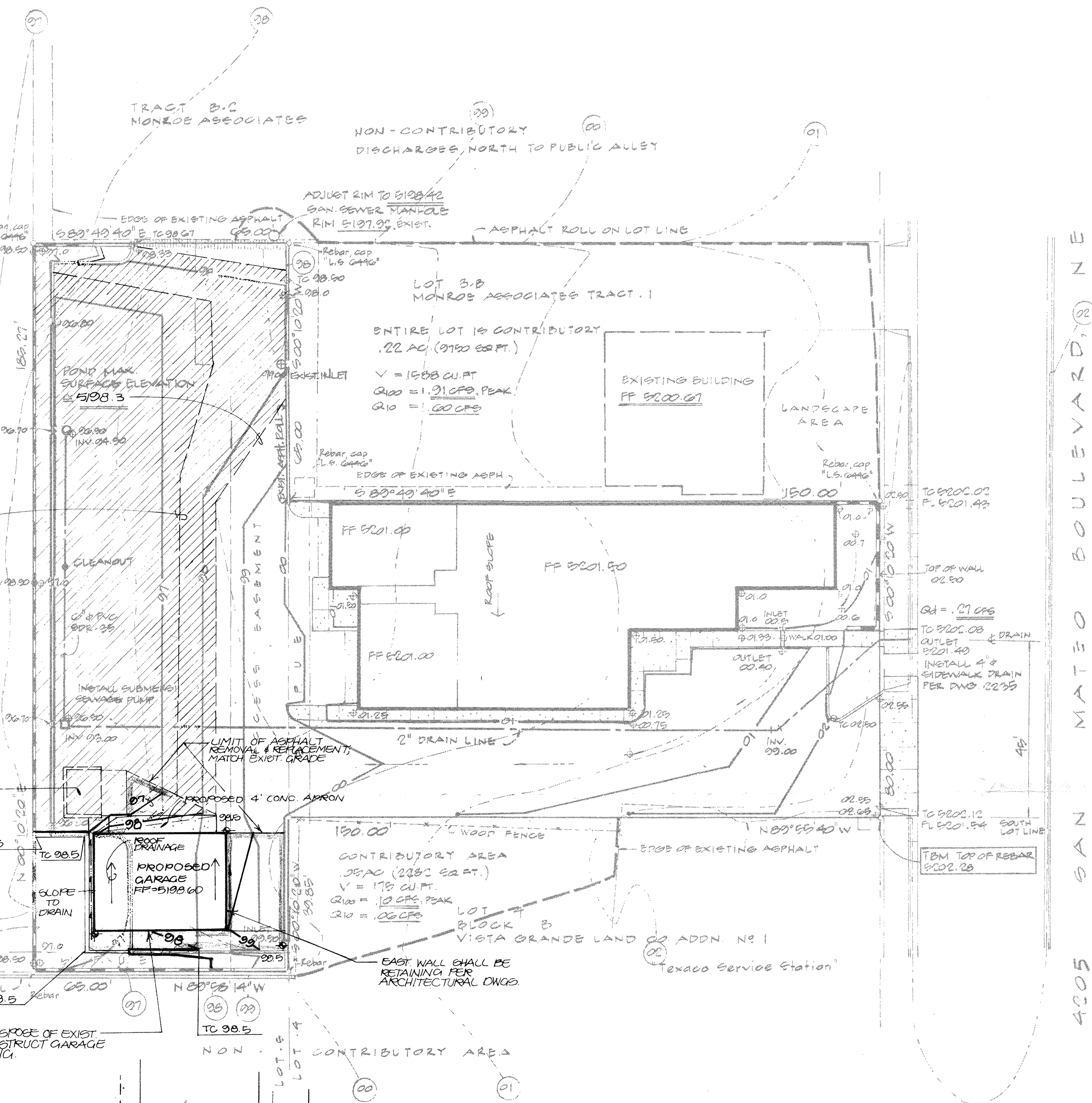If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj
(WP+691)

DRAINAGE PLAN

The following items concerning the Paradise Village Drainage Plan are contained hereon:
1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located on the west side of San Mateo Boulevard N.E. between Montgomery Boulevard N.E. and Douglas MacArthur N.E. At present, the site is developed with a building, paving and landscaping. The surrounding area is mostly developed. The proposed improvements consist of the addition of a 2-car garage and minor repaving.

As shown by Plate G-17 of the Albuquerque Master Drainage Study, (AMDS), this site does not lie within a designated Flood Hazard Zone, however, downstream flooding is noted at the intersection of Montgomery Boulevard N.E. and San Mateo Boulevard N.E. Because of this, this site detains its runoff with an existing submersible pump which discharges to San Mateo Boulevard N.E.

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 grades, 3) the limit and character of the existing improvements, and 4) the limit and character of the proposed improvements. At present, the site drains from east to west to an existing detention pond at the west side of the site. From this point, the ponded runoff is pumped east onto San Mateo Boulevard N.E. and released at a controlled rate of 0.3 cfs. No offsite flows enter the site from the east because of the presence of the adjacent developed site. Offsite flows enter the site from the north and south and are included in the pond storage volumes. No offsite flows enter the site from the west, as the adjacent property is topographically lower than the project site.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to quantify the volume of runoff. However, the SCS Method was not employed in the previous submittal for this project site dated 3-1-88, 6-1-88, and 7-6-88. Therefore, any differences in the volume quantities from the previous submittals are due to this. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, and the Mayor's Emergency Rule adopted January 14, 1986. As shown by these calculations, the proposed improvements will have a negligible affect on the runoff generated by the site.
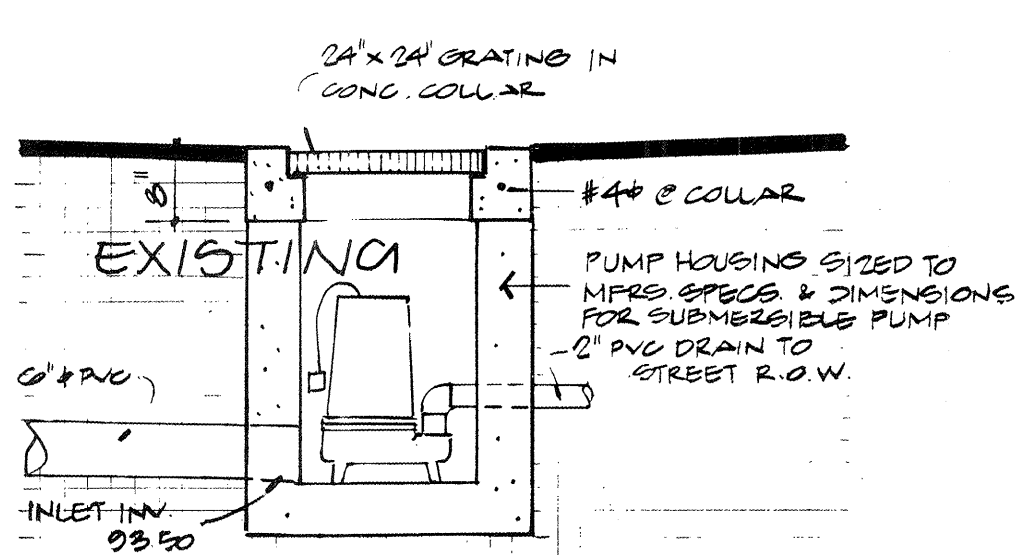
CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 21: TgB - Tijeras
Hydrologic Soil Group: B
Existing Pervious CN = 61 (DPM Plate 22.2 C-2
   Open Spaces: good condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2
   Open Spaces: Good Condition)

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

$P_6 = 2.3$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6(6.84) \, T_c^{-0.51} = 4.86$ in/hr
$P_6 = 2.20$ in (DPM Plate 22.2D-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} = 24,045 sf = 0.55 Ac
Roof area = 530 sf (0.22)
Paved area = 16,905 sf (0.70)
Landscaped area = 1,830 sf (0.08)
C = 0.88 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.88(4.86)(0.55) = 2.4$ cfs
A_{imp} = 17,435 sf; % impervious = 73 %
DRO = 1.3 in (DPM Plate 22.2 C-3)
V_{100} = 3630 (DRO)A = 2,600 cf

Developed Condition

A_{total} = 24,045 sf = 0.55 Ac
Roof area = 6,110 sf (0.25)
Paved area = 16,885 sf (0.70)
Landscaped area = 1,050 sf (0.04)
C = 0.90 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.90(4.86)(0.55) = 2.4$ cfs
A_{imp} = 22,995 sf; % impervious = 95 %
Composite CN = 96 (DPM Plate 22.2 C-3)
DRO = 1.9 in (DPM Plate 22.2 C-4)
V_{100} = 3630 (DRO)A = 3,800 cf

Comparison

ΔQ_{100} = 2.4 - 2.4 = 0 cfs (Unchanged)
ΔV_{100} = 3,800 - 2,600 = 1,200 cf (Increase)

Offsite Contributing Flows

$Q_{offsite}$ = 1.0 cfs
$V_{offsite}$ = 1,760 cf

Pond Calculations

Q_{total} = 2.4 + 1.0 = 3.4 cfs
V_{total} = 3800 + 1730 = 5530 cf
V_{total} = $V_{Required}$ (Required on Site Volume)

Volume Provided

- 96.5 to 97.0
  Area @ 97.0 contour = 4215 sf
  Volume = 1/2(4215+0)(97-96.5) = 1055 cf

- 97 to 98
  Area @ 98 contour = 7100 sf
  Volume = 1/2(7100+4215)(98-97) = 5660
     Total Volume = 6715

100 year WSL @ Approx. 5197.4 (Volume = 5500 cf)

Site Plan Annotations (Grading Plan)

TRACT 3-C
MONROE ASSOCIATES

NON-CONTRIBUTORY
DISCHARGES NORTH TO PUBLIC ALLEY

ADJUST RIM TO 5198.42
SAN SEWER MANHOLE
RIM 5197.90 EXIST.

ASPHALT ROLL ON LOT LINE

LOT 3-B
MONROE ASSOCIATES TRACT 1

ENTIRE LOT IS CONTRIBUTORY
.22 AC (9760 SQ.FT.)

V = 1508 CU.FT
Q_{100} = 1.21 CFS PEAK
Q_{10} = .00 CFS

EXISTING BUILDING
FF 5200.00

LANDSCAPE AREA

POND MAX SURFACE ELEVATION
± 5198.3

100 YR POND WSL ± 5197.4

CLEANOUT

INSTALL SUBMERSIBLE SEWER PUMP

FF 5201.00
FF 5201.40
FF 5201.90

TOP OF WALL 00.50

2" DRAIN LINE

2" PVC DRAIN
OUTLET 00.40
INSTALL 4" SIDEWALK DRAIN PER DWG .2235

TREAT INSIDE FACE OF RETAINING WALL WITH CONCRETE SEALER. CONTRACTOR SHALL REFER TO ARCHITECT'S SPECIFICATIONS

EXIST. REFUSE PAD & ENCLOSURE

PROPOSED 4" CONC APRON

TO DRAIN

ROOF DRAINAGE

PROPOSED GARAGE
FF 5199.60

CONTRIBUTORY AREA
.01 AC (228± SQ.FT.)
V = 178 CU.FT
Q_{100} = .10 CFS PEAK
Q_{10} = .00 CFS

SLOPE TO DRAIN

SAN MATEO BOULEVARD N.E.
4005 SAN MATEO BOULEVARD

TBM TOP OF REBAR 5202.28

NON-CONTRIBUTORY AREA

EDGE OF EXISTING ASPHALT

LOT 1
BLOCK B
VISTA GRANDE LAND CO. ADDN No 1

TEXACO SERVICE STATION

EAST WALL SHALL BE RETAINING PER ARCHITECTURAL DWGS

EXIST. CMU WALL

REMOVE & DISPOSE OF EXIST PAVING, CONSTRUCT GARAGE & NEW PAVING.

Detail (Pump Housing)

24"x 24" GRATING IN CONC. COLLAR

EXISTING

PUMP HOUSING SIZED TO MFRS SPECS & DIMENSIONS FOR SUBMERSIBLE PUMP

2" PVC DRAIN TO STREET R.O.W.

#4 @ COLLAR

2" PVC

INLET INV. 93.50

BENCH MARK

B-P18A STANDARD ACS BRASS TABLET SET IN MEDIAN STRIP OF MONTGOMERY BOULEVARD, NE EAST SIDE OF INTERSECTION WITH SAN MATEO BLVD.
ELEV. 5201.83

T.B.M.

TOP OF REBAR FOUND AT SOUTHEAST PROPERTY CORNER OF SITE (ALONG SAN MATEO BLVD.)
ELEV. 5202.28

LEGEND

CONTOUR INTERVAL ONE FOOT (1.0')

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(01)  ————  EXISTING CONTOUR
————  PROPOSED CONTOUR
+01.0  EXISTING SPOT ELEVATION
+01.00  PROPOSED SPOT ELEVATION
✕✕✕✕  EXISTING CMU WALL
————  EXISTING FENCE
▪▪▪▪  PROPOSED CMU WALL
"T.W." INDICATES LEVEL OF CONCRETE FILL
▨▨▨▨  EXTENT OF DETENTION BASIN
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PROPOSED SPOT ELEVATIONS AND CONTOURS ARE TO FINISHED SURFACES. CONTRACTOR SHALL DETERMINE APPROPRIATE SUBGRADES.

DESCRIPTION OF PROPERTY

LOT 3-A
MONROE ASSOCIATES - TRACT 1
ALBUQUERQUE, NEW MEXICO
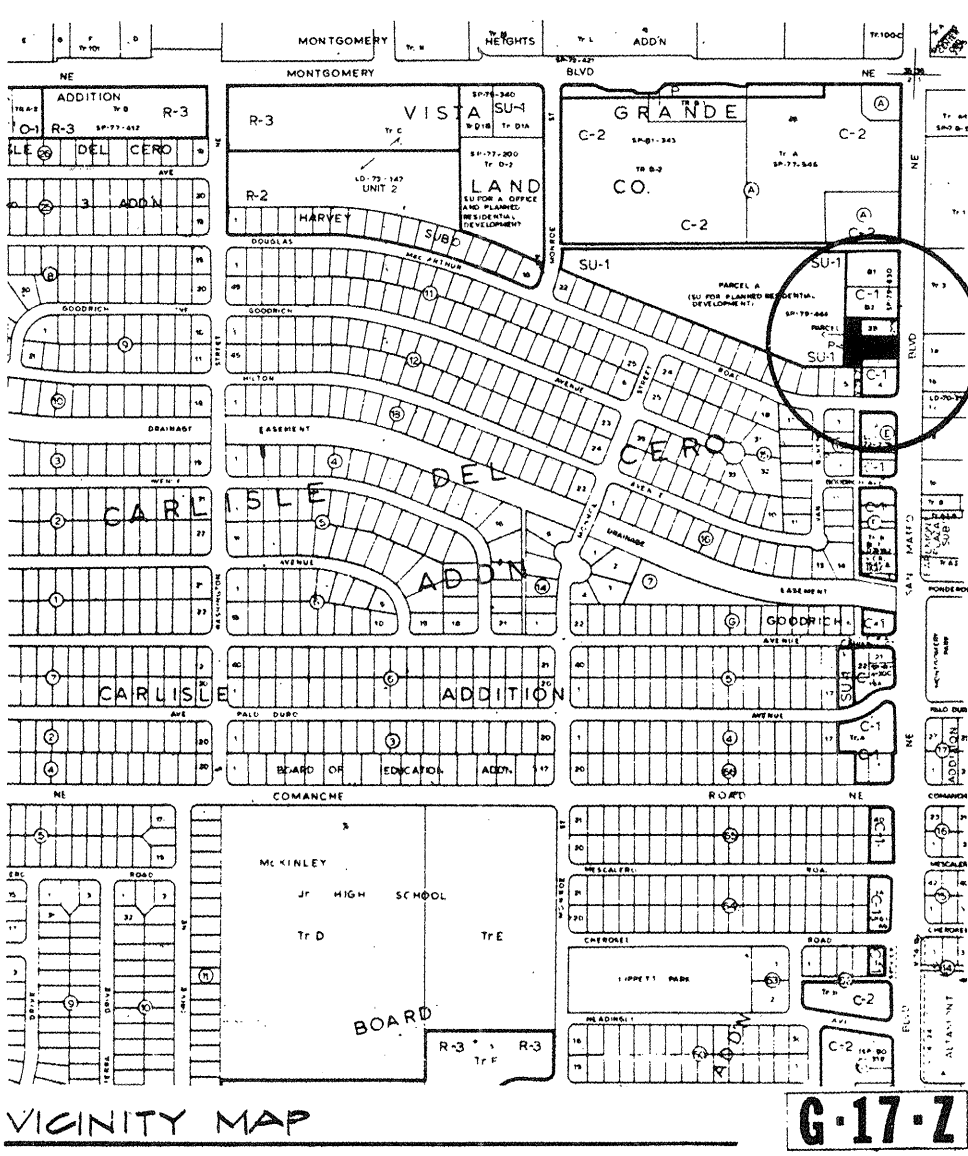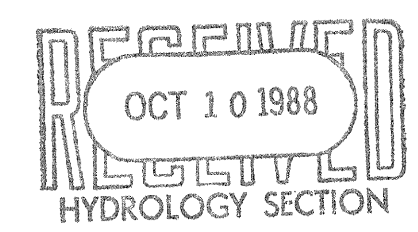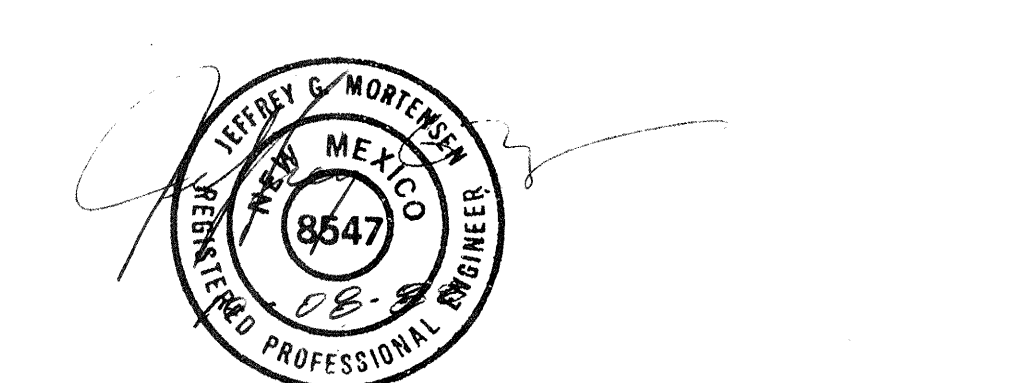4005 SAN MATEO BOULEVARD, NE

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LOCATING SERVICE 765-1234, FOR 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.

5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL UNDERTAKE NO PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND LOCAL REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.

2. All work detailed on these plans to be performed, except as otherwise stated or provided herein, shall be constructed in accordance with "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 1986".

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of any existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum of delay.

5. Backfill and compaction shall be according to ARTERIAL street use.

6. Maintenance of this facility shall be the responsibility of the owner served.

PLAN / PROFILE (Sidewalk Drain Details)

PLAN
EXISTING

4" SIDEWALK DRAIN

90° ELBOW
4" REDUCER
2" 90° ELBOW INV. 5200.00

CONC. WALK

PROFILE
SIDEWALK DRAIN DETAILS 1/4" = 1'.0"

APPROVALS

APPROVALS	NAME	DATE
HYDROLOGY/DESIGN		
INSPECTOR/DESIGN		
CONST/ACPT.		

VICINITY MAP

G-17-Z

Title Block

S & J ENTERPRISES CONST, INC.
3535 PRINCETON DRIVE N.E.
ALBUQUERQUE, NEW MEXICO 87107
505-884-6234

A RETAIL BUILDING
FOR PARADISE VILLAGE, INC.
4005 SAN MATEO BLVD. N.E.
ALBUQUERQUE, NEW MEXICO

JEFFREY G. MORTENSEN
NEW MEXICO
8547
REGISTERED PROFESSIONAL ENGINEER

SHEET 1
1 OF 1