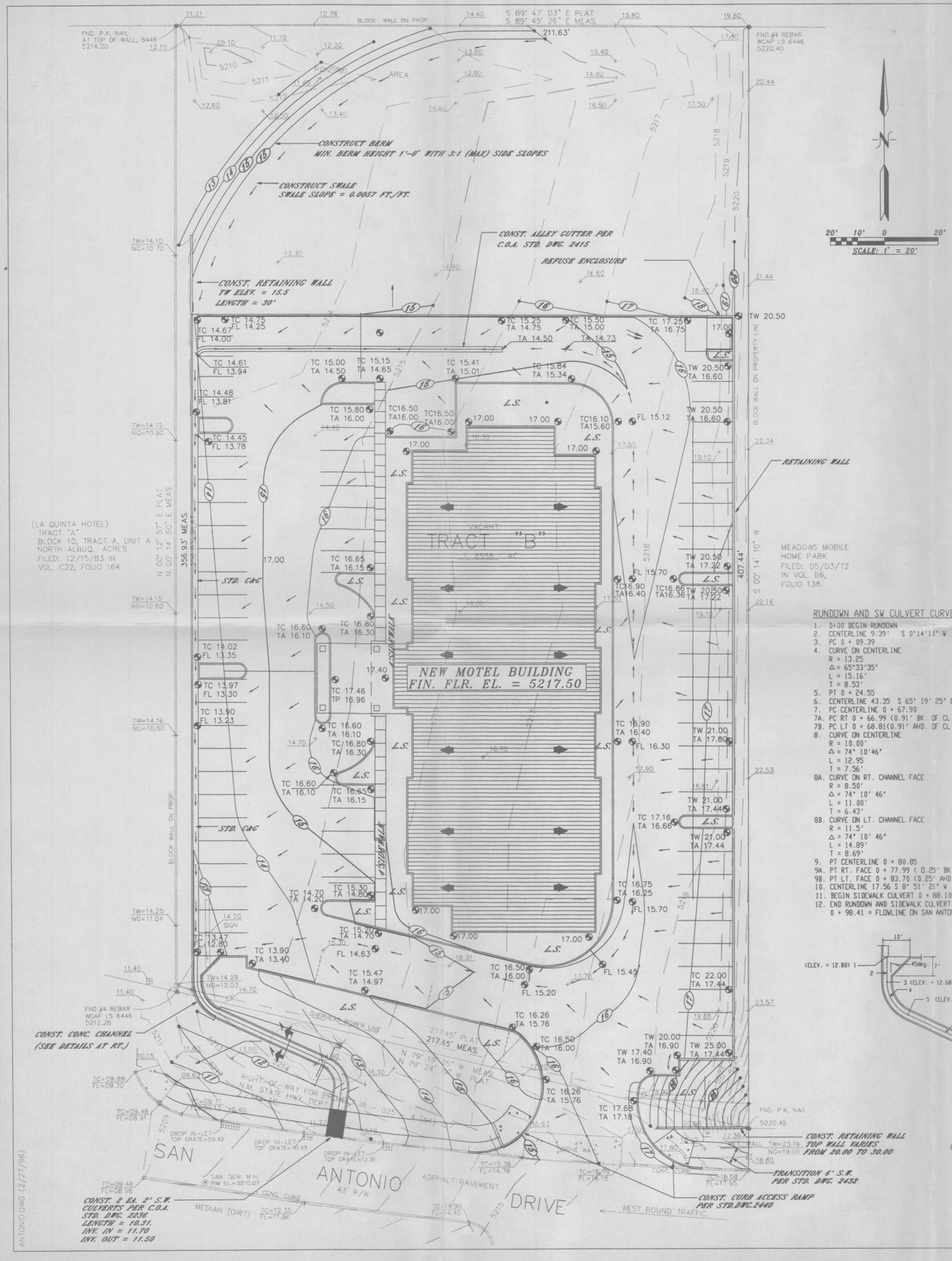
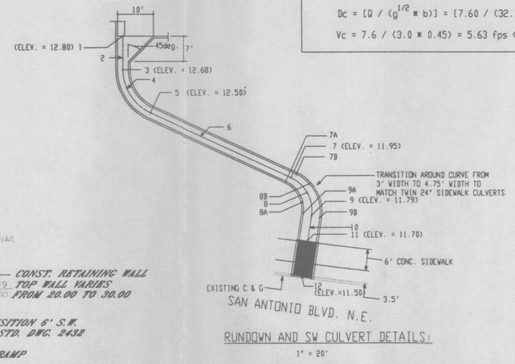


RUNDOWN AND SW CULVERT CURVE DATA:

1. 0+00 BEGIN RUNDOWN
2. CENTERLINE 9.39' S 0°14'10" W
3. PC 0 + 09.39
4. CURVE ON CENTERLINE
   R = 13.25
   Δ = 65°33'35"
   L = 15.16'
   T = 8.53'
5. PT 0 + 24.55
6. CENTERLINE 43.35 S 65° 19' 25" E
7. PC CENTERLINE 0 + 67.90
7A. PC RT 0 + 66.99 (0.91' BK. OF CL PC)
7B. PC LT 0 + 68.81(0.91' AHD. OF CL PC)
8. CURVE ON CENTERLINE
   R = 10.00'
   Δ = 74° 10'46"
   L = 12.95
   T = 7.56'
8A. CURVE ON RT. CHANNEL FACE
   R = 8.50'
   Δ = 74° 10' 46"
   L = 11.00'
   T = 6.43'
8B. CURVE ON LT. CHANNEL FACE
   R = 11.5'
   Δ = 74° 10' 46"
   L = 14.89'
   T = 8.69'
9. PT CENTERLINE 0 + 80.85
9A. PT RT. FACE 0 + 77.99 (0.25' BK OF CL PT)
9B. PT LT. FACE 0 + 83.70 (0.25' AHD OF CL PT)
10. CENTERLINE 17.56 S 8° 51' 21" W
11. BEGIN SIDEWALK CULVERT 0 + 88.10
12. END RUNDOWN AND SIDEWALK CULVERT 0 + 98.41 = FLOWLINE ON SAN ANTONIO BLVD.



GENERAL NOTES:

1: ADD 5200 TO SPOT ELEVATIONS TO SHOW TRUE ELEVATION.
2: CONTOUR INTERVAL IS ONE (1) FOOT.
3: ELEVATIONS SHOWN ARE BASED ON A STANDARD N.M.S.H.C. BRASS TABLET STAMPED "I-25-14, 1969", ELEVATION OF 5196.73.
4: UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR EXACT LOCATION AND/ OR DEPTH PRIOR TO EXCAVATION OR DESIGN CONSIDERATIONS.
5: THIS IS NOT A BOUNDARY SURVEY. BEARINGS AND DISTANCES SHOWN ARE FOR REFERENCE ONLY.
6: THIS PLAN IS FOR THE PURPOSE OF SHOWING DRAINAGE FEATURES ONLY. FOR DIMENSIONS OF BUILDING AND PARKING LOT LAYOUT, SEE ARCHITECTURAL SITE PLAN.

LEGAL DESCRIPTION:

TRACT LETTERED "B" OF THE PLAT OF TRACTS A AND B, McKAY SUBDIVISION, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT OF SAID SUBDIVISION, FILED IN THE OFFICE OF THE COUNTY CERLK OF BERNALILLO COUNTY, NEW MEXICO ON DECEMBER 15, 1983 IN VOLUME C22, FOLIO 164.

DRAINAGE CALCULATIONS

EXISTING CONDITIONS:

The site is located on the north side of San Antonio Boulevard, N.E., a short east of Interstate Higway 25. The site is surrounded on the north and east by a mobile home park and on the west by the La Quinta Motor Inn. There is a retaining wall on the east boundary of the La Quinta Motor Inn. The wall has three drainage weirs, at the middle and on each end, for accepting offsite flow from the undeveloped site. This offsite flow will now, mostly, be directed to San Antonio Boulevard. The site is relatively flat except for the extreme east side where it slopes fairly sharply up to the base of the wall of the mobile home park. Also, there is a low spot in the NW corner of the site that does not drain over the wall into the La Qhinta Motor Inn.

PROPOSED CONDITIONS:

It is proposed to construct a motel on the site as shown. All runoff will be directed to the southwestern corner where it will drain by means of a concrete channel and sidewalk culvert into San Antonio Boulevard. Nearly all of the undeveloped area of the site will be drained into the parking lot by means of a swale. In the extreme northwest corner , runoff will drain into the low spot and infiltrate.

DRAINAGE CRITERIA:

The calculations shown on this plan were prepared in accordance with Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque, in cooperation with Bernalillo County, New Mexico and the Albuquerque Metropolitan Arroyo Flood Control Authority, January, 1993.

PRECIPITATION ZONE:

The site is slightly east of San Mateo Boulevard and is, therefore, in Precipitation Zone 3.

LAND TREATMENT AREAS, EXCESS PRECIPITATION AND UNIT PEAK DISCHARGE:

The peak discharge per acre and excess precipitation are shown for the four land treatments in Zone 3 in the table below, and the values shown are from the City of Albuquerque D.P.M. Also shown are the existing and proposed land treatment areas.

LAND TREATMENT	q(cfs/ac) 100-yr.	q(cfs/ac) 10-yr.	E (in) 100-yr.	E (in) 10-yr.	Existing Site Areas %	Existing Site Areas Sq.Ft.	Existing Site Areas Acres	Developed Site Areas %	Developed Site Areas Sq.Ft.	Developed Site Areas Acres
A	1.87	0.58	0.66	0.19	100.0	80,839	1.8558	13.8	11,183	0.2567
B	2.60	1.19	0.92	0.36	0.0	0	0.0	11.2	9,063	0.2081
C	3.45	2.00	1.29	0.62	0.0	0	0.0	13.8	11,183	0.2567
D	5.02	3.39	2.36	1.50	0.0	0	0.0	61.2	49,410	1.1343
Totals					100.0	80,839	1.8558	100.0	80,839	1.8558

PEAK DISCHARGE:

EXISTING CONDITIONS:

Q100 = 1.8558 * 1.87 = 3.47 cfs Q10 = 1.8558 * 0.58 = 1.08 cfs

DEVELOPED CONDITIONS:

Q100 = 1.87 * 0.2567 + 2.60 * 0.2081 + 3.45 * 0.2567 + 5.02 * 1.1343 = 7.60 cfs

Q10 = 0.58 * 0.2567 + 1.19 * 0.2081 + 2.00 * 0.2567 + 3.39 * 1.1343 = 4.76 cfs

VOLUME, 100-YEAR, 6-HOUR:

EXISTING CONDITIONS:

V100 = (0.66 * 80,839)/12 = 4,446 cf V10 = (0.19 * 80,839)/12 = 1,280 cf

DEVELOPED CONDITIONS:

V100 = (0.66 * 11,183 + 0.92 * 9,063 + 1.29 * 11,183 + 2.36 * 49,410)/12 = 12,229 cf

V10 = (0.19 * 11,183 + 0.36 * 9,063 + 0.62 * 11,183 + 1.50 * 49,410)/12 = 7,203 cf

SUMMARY OF VOLUMES AND PEAK DISCHARGE RATES:

	V100(CF)	V10(CF)	Q100(CFS)	Q10(CFS)
EXISTING	4,446	1,280	3.47	1.08
DEVELOPED	12,229	7,203	7.60	4.76
DECREASE / Increase	7,783	5,923	4.13	3.68

OUTFALL CALCULATIONS:

WIDTH OF CHANNEL AT UPPER END. Use Weir Equation $Q = CLH^{3/2}$ $C = 2.60$ $H = 0.5'$ $L = Q / (CH^{3/2})$

$L = 7.6 / (2.6 \times 0.5^{1/2}) = 8.27'$ Use 10' width at inlet. $H = (Q/CL)^{2/3} = (7.6/(2.6 \times 10))^{2/3} = 0.44'$

WIDTH OF CHANNEL AT DOWNSTREAM END OF TRANSITION: Use a width of 3.0'. Assume a depth of flow of 5' or 0.42'. $S = (12.8 - 11.70)/ 88.41 = 0.0124$ FT./FT.

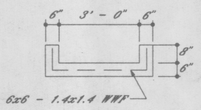
Use Manning's Equation $V = (1.486/n)R^{2/3}S^{1/2}$ $n = 0.013$ $S = 0.0124$ ft./ft. $d = 0.42$ $A = 1.26$

$P = 3.84$ $R = 0.33$ $V = (1.486/0.013)(0.33)^{2/3}(0.0124)^{1/2} = 6.07$ fps

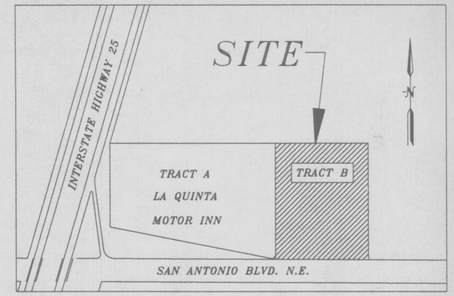
$Q = AV = 1.26 \times 6.07 = 7.65$ cfs > 7.60 cfs. Check critical depth.

$Dc = [Q / (g^{1/2} * b)] = (7.60 / (32.16 * 3.0^{1/2}) = 0.45$ ft. Actual depth = 0.42 ft.

$Vc = 7.6 / (3.0 * 0.45) = 5.63$ fps < 6.07 fps. Flow is supercritical.



SECTION A-A
3/8" = 1'-0"



VICINITY MAP ZONE ATLAS NO. D-18

CITY OF ALBUQUERQUE
DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY (S.0.19)
NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PALNS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
2. ALL WORK DETAILED ON THIS PLAN TO BE PERMORMED UNDER CONTRACT, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986, AS UPDATED THROUGH REVISION NO. 6.
3. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, INC., 260-1990, FOR LOCATION OF 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 AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO ARTERIAL STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. THE ADDRESS OF THE PROPERTY SERVED IS SAN ANTONIO BOULEVARD, N.E.

APPROVALS:

HYDROLOGY _____ NAME 3-13-96 DATE

INSPECTOR _____ NAME _____ DATE

CONSTRUCTION _____ NAME _____ DATE

EROSION CONTROL REQUIREMENTS:

The Contractor shall be responsible for compliance with the following:

1. No sediment-bearing water shall be allowed to discharge from the site during construction.
2. During grading operations and until the project has been completed, all adjacent property rights-of-way, and easements shall be protected from flooding by runoff from the site.
3. Should the contractor fail to prevent sediment-bearing water from entering public right-of-way, he shall promptly remove from the public right-of-way any and all sedimentation originating from the site.
4. Control of sediment-bearing waters will be accomplished by use of a compacted earth berm of adequate height. The berm shall be located along the downstream perimeter of the property.

D18-D6A

1/1

Frank D. Lovelady 2/7/96

Revised 3/4/96

RECEIVED MAR - 5 1996 HYDROLOGY DIVISION

LEGEND:

- TELEPHONE BOX
- POWER POLE W/ OVERHEAD LINES & GUY WIRE
- STORM DRAINAGE INLET
- 5219 EXISTING CONTOUR
- (18) DEVELOPED CONTOUR
- TC=18.58 FL=17.95 EXISTING SPOT ELEVATION
- TC 16.50 NEW SPOT ELEVATION
- SHEET FLOW
- DRAINAGE SWALE
- ROOF DRAIN
- TC TOP OF CURB/CONCRETE SIDEWALK
- TA TOP OF ASPHALT
- FL FLOWLINE
- TW TOP OF WALL
- LS LANDSCAPING

FRANK D. LOVELADY, P.E.
300 ALAMOSA ROAD NW
ALBUQUERQUE, NEW MEXICO 87107
(505)345-2267

GRADING AND DRAINAGE PLAN
QUALITY SUITES HOTEL
SAN ANTONIO BOULEVARD, N.E.
ALBUQUERQUE, N.M.

SHEET 1 OF 1

Designed: FDL | Drawn: FDL | Checked: FDL | Scale: 1" = 20' | Date: FEB., 1996 | Job No. 510

ANTONIO.DWG (2/27/96)