

October 23, 1996

Martin J. Chávez, Mayor

Mark Burak
Burak Consulting
1512 Sagebrush Trail SE
Albuquerque, NM 87123

**RE: REVISED DRAINAGE PLAN FOR MANZANO AUTO SALES (K19-D113)
REVISION DATED 10/10/96.**

Dear Mr. Burak:

Based on the information provided on your October 15, 1996 resubmittal, the above referenced site is approved for Building Permit.

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

Prior to Certificate of Occupancy release, Engineer Certification per the D.P.M. checklist will be required.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
Frank Valencia
File

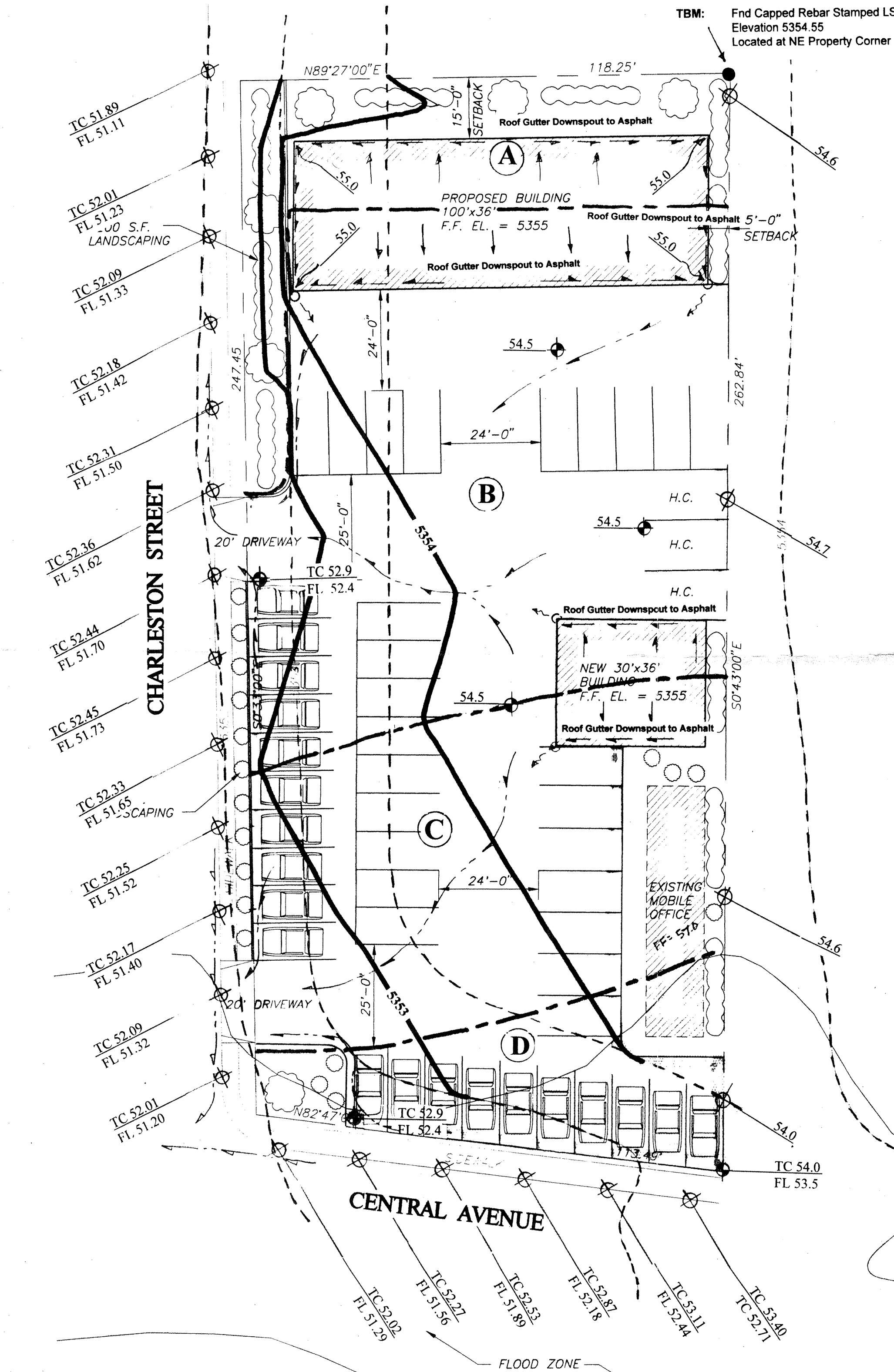
Good for You, Albuquerque!



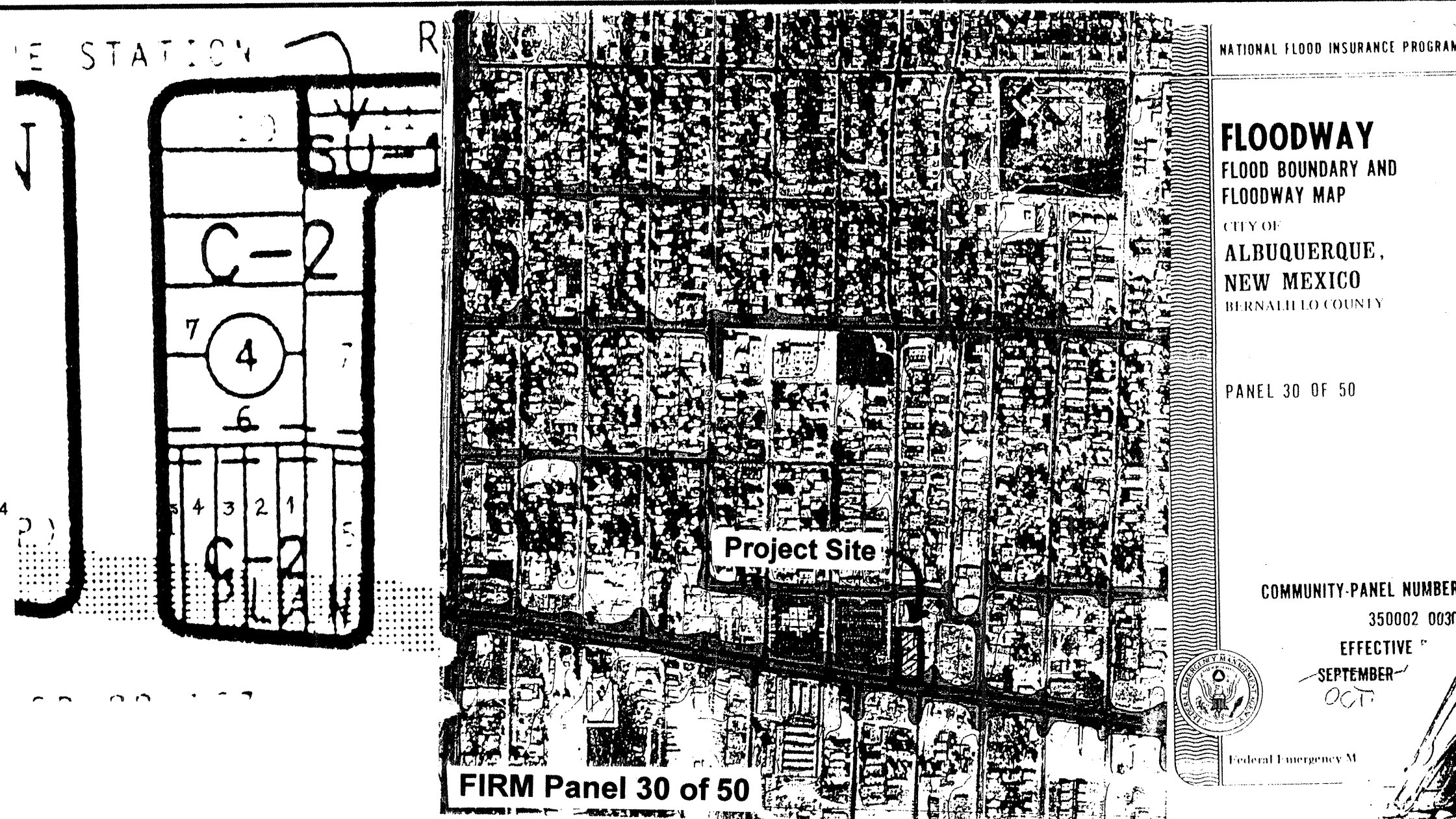
| STREET FLOWS | | | |
|---|---------|--------------------|----------|
| Manning's Equation for flow capacity in a street section. | | | |
| Charleston Street between Central and Chico | | | |
| Input variables: | | Output Parameters: | |
| Flow depth, d | 0.30 ft | Capacity at d | 3.5 cfs |
| Road width | 40.0 ft | @ top of curb | 68.4 cfs |
| Crown height | 0.49 ft | @ back of walk | 85.2 cfs |
| Street slope | 0.50 % | Velocity at d | 1.4 fps |
| Sidewalk width | 5.0 ft | V'd FACTOR | 0.4 |
| Curb height | 9 in | Gutter width | 2 ft |
| Median width | 0.0 ft | Gutter depression | 1.6 in |
| Rt back of walk | 100.0 % | Asphalt lip | 0 in |
| Lt back of walk | 100.0 % | Manning's n | 0.017 |

Note: Input 100% slope at back of walk for vertical walls.

BURAK



- Legend:**
- Existing Spot Elevation
 - Proposed Spot Elevation
 - Existing Contour
 - Proposed Contour
 - Existing Flowline
 - Proposed Flowline
 - Drainage Basin Boundary
 - Proposed Edge of Asphalt



| Hydrologic Calculations - COA DPM 22.2 | | | | | | | | | | 100-Year, 6-Hour Peak Runoff | | | | | |
|--|--|---------------------------------------|-----------|--------|--------------------|-----------|--|-----------|---------|------------------------------|-----------|-------------|------|-------|--|
| 7801 Central at Charleston | | | | | Manzano Auto Sales | | | | | | | | | | |
| Precipitation Zone 3 | | (inches) | | | | P80 | P360 | P1440 | P40days | P10days | | | | | |
| | | | | | | 2.14 | 2.6 | 3.1 | 3.95 | 4.9 | | | | | |
| Excess Precipitation | | (inches) | | | | | | | | | | | | | |
| | | 0.66 | 0.92 | 1.29 | 2.36 | | | | | | 0.66 | 0.92 | 1.29 | 2.36 | |
| Peak Discharge | | (cfs/acre) | | | | | | | | | | | | | |
| | | 1.87 | 2.6 | 3.45 | 5.02 | | | | | | 1.87 | 2.6 | 3.45 | 5.02 | |
| Onsite Areas | | Land Treatments - Existing Conditions | | | | | Land Treatments - Developed Conditions | | | | | | | | |
| | | A | B | C | D | Area (sf) | A | B | C | D | Area (sf) | | | | |
| Basin A | | 0 | 0 | 4,624 | 0 | 4,624 | 0 | 2,824 | 0 | 1,800 | 4,624 | | | | |
| Basin B | | 0 | 0 | 11,275 | 0 | 11,275 | 0 | 975 | 0 | 10,300 | 11,275 | | | | |
| Basin C | | 0 | 0 | 8,700 | 840 | 9,540 | 0 | 775 | 0 | 8,765 | 9,540 | | | | |
| Basin D | | 0 | 0 | 2,856 | 0 | 2,856 | 0 | 500 | 0 | 2,356 | 2,856 | | | | |
| | | 2,856 | | | | | | | | | | 2,856 | | | |
| Onsite Discharge | | Peak Flow Rate - Existing Conditions | | | | | Peak Flow Rate - Developed Condition | | | | | | | | |
| | | A | B | C | D | Q (cfs) | A | B | C | D | Q (cfs) | | | | |
| Basin A | | 0.00 | 0.00 | 0.37 | 0.00 | 0.37 | 0.00 | 0.17 | 0.00 | 0.21 | 0.38 | | | | |
| Basin B | | 0.00 | 0.00 | 0.89 | 0.00 | 0.89 | 0.00 | 0.06 | 0.00 | 1.19 | 1.25 | | | | |
| Basin C | | 0.00 | 0.00 | 0.69 | 0.10 | 0.79 | 0.00 | 0.05 | 0.00 | 1.01 | 1.06 | | | | |
| Basin D | | 0.00 | 0.00 | 0.23 | 0.00 | 0.23 | 0.00 | 0.03 | 0.00 | 0.27 | 0.30 | | | | |
| | | Unattenuated Peak Flow Rate | | | | | 2.21 | | | | | 2.96 | | | |
| Volume Six Hour | | Runoff Volume - Existing Conditions | | | | | Runoff Volume - Developed Conditions | | | | | | | | |
| | | Six Hour Storm | V (cu-ft) | | | | Six Hour Storm | V (cu-ft) | | | | | | | |
| Basin A | | 0 | 0 | 497 | 0 | 497 | 0 | 217 | 0 | 354 | 571 | | | | |
| Basin B | | 0 | 0 | 1,212 | 0 | 1,212 | 0 | 75 | 0 | 2,026 | 2,100 | | | | |
| Basin C | | 0 | 0 | 935 | 165 | 1,100 | 0 | 59 | 0 | 1,724 | 1,783 | | | | |
| Basin D | | 0 | 0 | 307 | 0 | 307 | 0 | 38 | 0 | 463 | 502 | | | | |
| | | 3,117 | | | | | | | | | | 4,956 | | | |
| Volume Ten Day | | Runoff Volume - Existing Conditions | | | | | Runoff Volume - Developed Conditions | | | | | | | | |
| | | Ten Day Storm Event | V (cu-ft) | | | | Ten Day Storm Event | V (cu-ft) | | | | | | | |
| Basin A | | 497 | | | | | 311 | | | | | | | | |
| Basin B | | 1,212 | | | | | 4,071 | | | | | | | | |
| Basin C | | 1,261 | | | | | 3,461 | | | | | | | | |
| Basin D | | 307 | | | | | 925 | | | | | | | | |
| | | 9,406 | | | | | Differential Volume | | | | | 6,129 cu-ft | | 9,406 | |

| Hydrologic Calculations - COA DPM 22.2 | | | | | | | | | | 10-Year, 6-Hour Peak Runoff | | | | | | |
|--|------------|---------------------------------------|------|--------|--------------------|-----------|-----------|--------------------------------------|--|-----------------------------|--------|---------|-------------|-------|------|--|
| 7801 Central at Charleston | | | | | Manzano Auto Sales | | | | | | | | | | | |
| Precipitation Zone 3 | (inches) | | | | P80 | 1.43 | P360 | 1.73 | P140 | 2.07 | P4days | 2.83 | P10days | 3.27 | | |
| Excess | (inches) | | | | | | | | | | | | | | | |
| Precipitation | 0.19 | 0.36 | 0.62 | 1.5 | | | | | | 0.19 | 0.36 | 0.62 | 1.5 | | | |
| Peak | (cfs/acre) | | | | | | | | | | | | | | | |
| Discharge | 0.58 | 1.19 | 2 | 3.39 | | | | | | 0.58 | 1.19 | 2 | 3.39 | | | |
| | | | | | | | | | | | | | | | | |
| Onsite Areas | | Land Treatments - Existing Conditions | | | | | | | Land Treatments - Developed Conditions | | | | | | | |
| | | A | B | C | D | Area (sf) | | | A | B | C | D | Area (sf) | | | |
| Basin A | | 0 | 0 | 4,624 | 0 | 4,624 | | | 0 | 2,824 | 0 | 1,800 | 4,624 | | | |
| Basin B | | 0 | 0 | 11,275 | 0 | 11,275 | | | 0 | 975 | 0 | 10,300 | 11,275 | | | |
| Basin C | | 0 | 0 | 8,700 | 840 | 9,540 | | | 0 | 775 | 0 | 8,765 | 9,540 | | | |
| Basin D | | 0 | 0 | 2,856 | 0 | 2,856 | | | 0 | 500 | 0 | 2,356 | 2,856 | | | |
| | | 2,856 | | | | | | | | | | | | 2,856 | | |
| Onsite Discharge | | Peak Flow Rate - Existing Conditions | | | | | 100 yr | Peak Flow Rate - Developed Condition | | | | | 100 yr | | | |
| | | A | B | C | D | Q (cfs) | | A | B | C | D | Q (cfs) | | | | |
| Basin A | | 0.00 | 0.00 | 0.21 | 0.00 | 0.21 | | 0.00 | 0.08 | 0.00 | 0.14 | 0.22 | | | | |
| Basin B | | 0.00 | 0.00 | 0.52 | 0.00 | 0.52 | | 0.00 | 0.03 | 0.00 | 0.80 | 0.83 | | | | |
| Basin C | | 0.00 | 0.00 | 0.40 | 0.07 | 0.46 | | 0.00 | 0.02 | 0.00 | 0.68 | 0.70 | | | | |
| Basin D | | 0.00 | 0.00 | 0.13 | 0.00 | 0.13 | | 0.00 | 0.01 | 0.00 | 0.18 | 0.20 | | | | |
| | | Unattenuated Peak Flow Rate | | | | | | 1.33 | Unattenuated Peak Flow Rate | | | | | | 1.33 | |
| Volume Six Hour | | Runoff Volume - Existing Conditions | | | | | 100 yr | Runoff Volume - Developed Conditions | | | | | 100 yr | | | |
| | | Six Hour Storm | | | | | V (cu-ft) | Six Hour Storm | | | | | V (cu-ft) | | | |
| Basin A | | 0 | 0 | 239 | 0 | 239 | | 0 | 85 | 0 | 225 | 310 | | | | |
| Basin B | | 0 | 0 | 583 | 0 | 583 | | 0 | 29 | 0 | 1,288 | 1,317 | | | | |
| Basin C | | 0 | 0 | 450 | 105 | 555 | | 0 | 23 | 0 | 1,096 | 1,119 | | | | |
| Basin D | | 0 | 0 | 148 | 0 | 148 | | 0 | 15 | 0 | 295 | 310 | | | | |
| | | 1,524 | | | | | | | | | | | 3,055 | | | |
| Volume Ten Day | | Runoff Volume - Existing Conditions | | | | | 100 yr | Runoff Volume - Developed Conditions | | | | | 100 yr | | | |
| | | Ten Day Storm Event | | | | | V (cu-ft) | Ten Day Storm Event | | | | | V (cu-ft) | | | |
| Basin A | | | | | | | 239 | | | | | | 239 | | | |
| Basin B | | | | | | | 583 | | | | | | 2,633 | | | |
| Basin C | | | | | | | 662 | | | | | | 2,233 | | | |
| Basin D | | | | | | | 148 | | | | | | 61 | | | |
| | | | | | | | 1,631 | Differential Volume | | | | | 4,393 cu-ft | 6,023 | | |

DRAINAGE PLAN

Site Location - As shown by the Vicinity Map, the site is located at the northeast corner of the intersection of Central Avenue and Charleston Street NE. At present, the site is partially developed with a portable office building. The vast majority of the surrounding area is fully developed, thereby making this a modification to an existing site within an infill area. The proposed improvements consist of the addition of two buildings and paved parking with landscape buffer.

Legal Description - Lot No. 1-7, Block 4, Loma Verde Subdivision. This plan is prepared to establish on-site drainage and grading criteria only. The property boundary shown on this Plan is given for information only to describe the project limits. Property boundary information shown hereon does not constitute a boundary survey. A boundary survey performed by a licensed New Mexico Registered Professional Surveyor is recommended prior to construction.

Benchmark - Station is BM No. 15-K19 located at the intersection of Central Ave. and Espanola St. NE, in the NW quadrant of intersection. The BM is an ACS 1 3/4" Aluminum Disk Stamped "A.C.S., B.M. 15-K19", set on top of the curb at the W.N.W. curb return.

Flood Zone - As shown by Panel 30 of 50 of the National Flood Insurance Program Flood Boundary and Floodway Maps for the City of Albuquerque, New Mexico, dated October 14, 1983, a portion of this site does lie within a designated flood hazard zone. This flooding is a direct result of Central Avenue's limited capacity in the area between Wyoming and Louisiana and the absence of storm drain facilities.

Existing Conditions - No offsite runoff impacts the project site other than the overflow from Central Avenue. The local east/west streets in this area are intended to carry the runoff to the west where it is intercepted in the existing storm drainage facilities at the State Fair Grounds. The flooding within Central Avenue and Chico Road demonstrates this and shows that the runoff is primarily localized within the right of way and should not be characterized as potentially damaging to the subject property. The property currently has a free discharge of 2.27 cfs and 3,117 cubic feet of runoff onto Charleston Street. The runoff in Charleston Street splits and flows south to Central and north to Chico. The peak discharge from the site will not coincide with the peak design flow in Central Avenue due to the large discrepancy in the peak timing and routing.

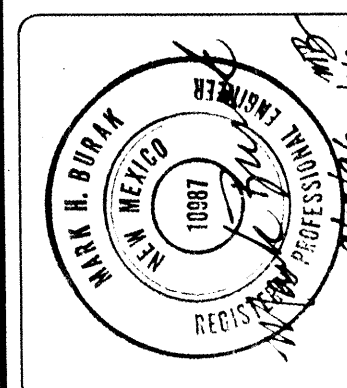
Proposed Conditions - Minimal grading is proposed for this site. Improvements consist of the addition of two buildings; paving; and landscaping. It is recommended that all runoff associated with the proposed construction of the site be allowed free discharge to Charleston Street via the two existing driveways. The runoff generated by the project site construction is minimal and will not have a significant impact on the surrounding properties. The peak timing of the runoff will not coincide with the peak flooding associated with the FIRM. The peak flow rate generated for proposed conditions increases less than one cfs above existing conditions. Master planning of the Central Corridor was conducted assuming fully developed conditions along the commercial frontage, i.e. minimal pervious area along Central Avenue. Onsite retention has not been utilized within the corridor and is not recommended for this site. This property is one of the very few parcels remaining unpaved within the corridor.

Hydrologic Methods - The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event and the 10-year, 6-hour rainfall event. The process outlined in the DPM, Section 22.2 for Zone 3 was used to quantify the peak flow rates and volumes. As shown by these calculations, the proposed improvements will result in an insignificant increase in runoff generated by the additional construction primarily due to the flat grade and addition of landscape area.

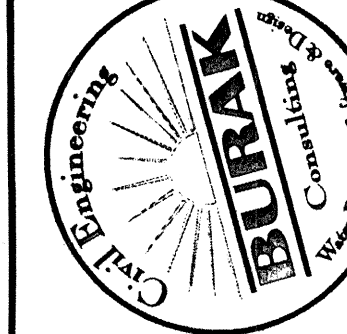
Erosion Control Measures - The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property. This can be achieved by constructing temporary berms at the property lines and wetting the soil to keep it from blowing. The contractor shall promptly clean up any material excavated within the public right-of-way so that the excavated material is not susceptible to being washed down the street. The contractor shall secure "Topsoil Disturbance Permits" prior to beginning construction.

| | | |
|---------------------|-------|-----------|
| DESIGNED BY: M.H.B. | 10/10 | DATE MARK |
| DRAWN BY: T.D.S. | 10/10 | REVISION |
| CHECKED BY: | | |

| | | |
|--|-------|-----------|
| 1. Add TBM info, show roof drains show for impact for 7 cars | 10/10 | DATE MARK |
|--|-------|-----------|



Mark H. Burak, P.E.
1512 Sogabur Trail SE
Albuquerque, NM 87123
Email: maburak@aol.com
296-0461
296-0462
296-0467 fax



Grading and Drainage Plan
Manzano Auto Sales
7801 Central NE

| | |
|----------------|----|
| DRAWING NUMBER | C1 |
|----------------|----|