

VICINITY MAP

ZONE ATLAS H-17-Z

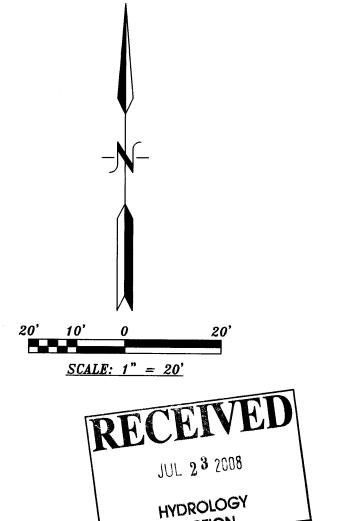
GENERAL NOTES:

- 1: CONTOUR INTERVAL IS ONE (1) FOOT.
- 2: ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE STATION No. "47-20", HAVING AN ELEVATION OF <u>4942.068</u>.
- 3: 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 CON—SIDERATIONS.
- 5: THIS IS <u>NOT</u> A BOUNDARY SURVEY. BEARINGS AND DISTANCES SHOWN HEREON ARE FOR REFERENCE ONLY.

LEGAL DESCRIPTION:

LOT 263-A-2, TOWN OF ATRISCO GRANT, ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

HYDROLOGY LEGEND:			
EXISTING	NEW	DESCRIPTION	
5095	95	CONTOUR	
95.00	95.00 -	SPOT ELEVATION	
-		PROPERTY LINE	
-		SWALE	
←	←	SHEET FLOW	





RADING AND DRAINAGE PLAN
OFFICE BUILDING
ESTANCIA DRIVE NW

3245-2267 * Fax (505) 345-2115 * 300 ALAMOSA RD. NW * Albuquerque, NM * 87107

SHEET NO.

OF.

JOB NO: 689

DATE: July 17, 2008

REVISIONS

As-built drawings on file at the map room, prepared by D. Mark Goodwin & Associates, Sheets 3A and 4A of 6, dated 04/96, show the storm drain that now exists. Dne of the sheets, Sheet 3A of 6, which is xed out, shows the east end of the pond with an 18' RCP from the pond to a 24' RCP in the 60' drainage easement that is now Estancia Street. This sheet has been xed out and another Sheet 3A of 6 shows the 24' RCP which connects to Iliff Road. This sheet calls out a 16" orifice plate for the 24" RCP. which was either never put in or has been removed. It also shows a Q of 15.12 cfs.

2. **DEVELOPED CONDITIONS:**

It is proposed to construct a new office building on the site as shown. Asphalt parking will drain to the 24' RCP culvert. Existing off-site flow from the Motel will be conveyed to the 24' RCP culvert. Detention pond calculations shown on this sheet, shows that a very small retention pond volume is required.

3. 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 Metropolitan Arroyo Flood Control Authority, January, 1993.

4. PRECIPITATION ZONE:

Other studies in the area identified the precipitation zone as being Zone 1.

5. LAND TREATMENT AREAS:

The peak discharge per acre and excess precipitation are shown for the four land treatments in Zone 2 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. TREATMENT 'D'

BUILDING 4, 928 SF SIDEWALK 3, 218 SF ASPHALT PAVEMENT & REFUSE ENCLOSURE 13, 270 SF TOTAL TREATMENT "D" 21,416 SF

LAND g(cfs/ac) E (in) Existing Site Areas Developed Site Areas TREAT. 100-yr. 10-yr. 100-yr. 10-yr. % Sq. Ft. Acres A 1, 29 0, 24 0, 44 0, 08 0, 0 0 2, 4266 0, 0 0 0, 0000 B 2. 03 0. 76 0. 67 0. 22 0. 0 0 0. 0000 20. 8 5, 830 0. 1339 C 2. 87 1. 49 0. 99 0. 44 100. 0 28, 079 0. 6446 1. 9 833 0. 0191 D 4. 37 2. 89 1. 97 1. 24 0. 0 0 0. 0000 76. 3 21, 416 0. 4916 100. 0 28, 079 0. 6446 100. 0 28, 079 0. 6446

6. PEAK DISCHARGE:

EXISTING CONDITIONS: Q100 = 0.6446 * 2.87 = 1.85 cfsQ10 = 0.6446 * 1.49 = 0.96 cfs

DEVELOPED CONDITIONS:

 $Q100 = 0.1339 * 2.03 + 0.0191 * 2.87 + 0.4916 \times 4.37 = 2.47 cfs$ Q10 = 0.1339 * 0.76 + 0.0191 * 1.49 + 0.4916 * 2.89 = 1.55 cfs

7. VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

EXISTING CONDITIONS: V100 = (28,079 * 0.99) / 12 = 2,317 cfV10 = (28,079 * 0.44) / 12 = 1,030 cf

DEVELOPED CONDITIONS:

V100 = (5,830 * 0.67 + 833 * 0.99 + 21,416 * 1.97) / 12 = 3,910 cfV10 = (5,830 * 0.22 + 833 * 0.44 + 21,416 * 1.24) / 12 = 2,350 cf

8. SUMMARY OF ON-SITE VOLUMES AND PEAK DISCHARGE RATES:

DEVELOPED	V100(CF) 3, 910	V10(CF) 2,350	Q100(CFS) 2. 47	Q10(CFS) 1. 55
EXISTING	2, 317	1,030	1. 85	0. <u>96</u>
INCREASE	1,593	1,320	0. 62	0. 59

OFF-SITE FLOW:

THE ONLY OFF-SITE FLOW IS FROM THE MOTEL NORTH OF THE SITE. THERE ARE TWO MOTELS. THE WESTERLY MOTEL DIRECTS ALL FLOW TO ILIFF AVE. THE EASTERLY MOTEL DIRECTS APPROXIMATELY HALF OF THE SITE DISCHARGE TO THE DETENTION POND THAT PREVIOUSLY WAS ON THE SOUTH END OF THAT SITE BUT IS NOW A PART OF THIS SITE. THE DETENTION POND IS NO LONGER NEEDED. HOWEVER, THE FLOW IS STILL DIRECTED TO IT AND SO IT MUST BE ACCEPTED AS OFF-SITE FLOW.

THIS DFF-SITE FLOW WILL ENTER THE SITE THROUGH THE TWO CONCRETE RUNDOWNS AND THE TWO 12" DIA. SCH. 80 PVC PIPES. THE FLOW FROM ALL OF THESE WILL THEN BE DIRECTED TO THE 24" RCP CULVERT WHICH IS CONNECTED TO THE STORM DRAIN SYSTEM IN ILIFF AVE. ALL THREE OF THE PIPES ARE ROUGHLY THE SAME ELEVATION. FOR THIS REASON. A 'COLLECTION BASIN' IS PROPOSED TO COLLECT ALL OF THE OFF-SITE FLOW INTO ONE BASIN, SLIGHTLY LOWER THAN THE 24° RCP DUTLET CULVERT. THE OVERFLOW WILL DISCHARGE THROUGH THE 24' RCP PIPE INTO ILIFF AVE. THE SMALL AMOUNT RETAINED IN THE BASIN WILL PERCOLATE INTO THE GROUND. THE AMOUNT OF OFF-SITE FLOW IS ROUGHLY EQUAL FOR EACH RUNDOWN AND 12' SCH. 80 PIPE. AREA = $200 \times 100 = 20,000 \text{ SF.}$ ASSUME ALL TREAT. D

10. SUBBASINS:

The site is a relatively small site. Essentially the subbasins can be defined as the following areas of Treatment \mathbf{D} :

Subbasin "A" - Approx. 1/3 of all Treat. D, intercepted by ADS area drain. 2. 47 cfs \times 1/3 = 0.8 cfs.

 $Q = (20,000 / 43,560) \times 4.37 \text{ CFS/AC.} = 2.0 \text{ CFS FOR EACH RUNDOWN AND PIPE.}$

Subbasin 'B' - Approx. 2/3 of all Treat. D, intercepted by ADS area drain. 2. 47 cfs \times 2/3 = 1.6 cfs.

All Treatment B. These areas will flow into the various inlets provided.

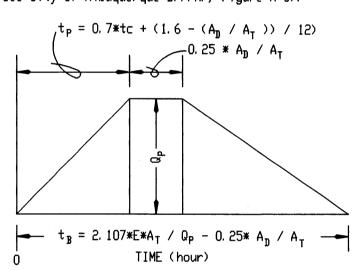
All Land Treatment "C", which is essentially the area around the building west of the sidewalks. It is impractical to direct this small area to an

outfall. It will simply remain where it falls and be absorbed into the ground.

Subbasin boundaries are shown on the plan.

11. DETENTION POND ANALYSIS:

The hydrograph method shown below is used to determine the required volume of the detention pond. (See City of Albuquerque D. P. M., Figure A-3).



E = 0.67 * 0.208 + 0.99 * 0.019 + 1.97 * 0.763 = 1.66 IN.

 $A_{+} = 28,079 \text{ SF} = 0.6446 \text{ AC}$

 $A_{p} = 21,416 \text{ sf} (0.4916 \text{ ac})$ $Q_{\rm p} = 2.47 \, \rm CFS$

 $t_n = 2.107 * 1.66 * 0.6446 / 2.47 - 0.25 * (0.4916 / 0.6446) = 0.7221 hour.$

 $t_P = 0.7*t_C + (1.6 - (A_n / A_T)) / 12)$

 $t_P = (0.7 * 0.2) + (1.6 - (0.4916 / 0.6446)) / 12)$

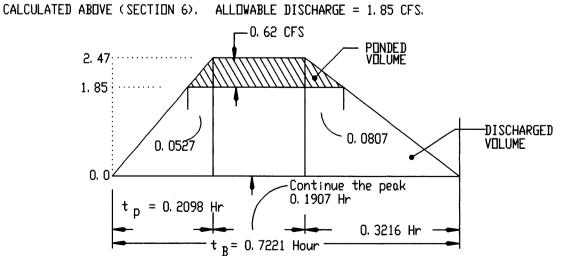
 $t_P = 0.14 + (1.6 - (0.7626)) / 12)$

 $t_P = 0.14 + (0.8374/12) = 0.14 + 0.0698) = 0.2098 hour.$

Continue the peak for $0.25 A_{\pi} / A_{\tau}$ hours. 0. 25 (0. 4916 / 0. 6446 = 0. 1907 hour

12. PONDED AND DISCHARGED VOLUME CALCS:

THE ALLOWABLE DISCHARGE FOR THIS AREA IS THE HISTORIC, UNDEVELOPED RATE OF DISCHARGE WHICH IS



TOTAL VOLUME: V = 1/2 (0.1907 + 0.7221) (2.47) 3600 = 4,058 CF

V = 1/2 (0. 1907 + 0. 3241) (0. 62) (3600) € 574 CF DISCHARGED VOLUME: V = 1/2 (0.3241 + 0.7221) (1.85) (3600) = 3,484 CF

8,627 CF + 7,078 CF = 15,705 CF

13. INLET CAPACITY - DOMED GRATE:

DESIGN Q = 2 CFS

18" DOME GRATE ASSEMBLY. APPROX. DRAINAGE AREA = 170.74 SQ. IN.

ORIFICE EQUATION: $Q = C A (2 X G X H)^{1/2} C = 0.6 A = 170.74 SQ. IN. = 1.19 SQ. FT.$ G = 32.16

H (BASE OF GRATE) = 1.0 FOOT. H (MID POINT OF GRATE) = 1.0 - 0.27 (3.5') = 0.73 FT. (AVE. H) $Q = C A (2 G H)^{1/2} = 0.6 X 1.19 (2 X 32.16 X 0.73)^{1/2} = 4.89 CFS$ ASSUME GRATE IS HALF CLOGGED. $Q = 4.89 / 2 = 2.45 \text{ CFS} \rightarrow 2.0 \text{ CFS}$ ADEQUATE. THE OTHER GRATE WILL ALSO HAVE THE SAME GRATE CAPACITY.

13. INLET CAPACITY - STANDARD (FLAT) GRATE:

DESIGN Q = 2 CFS18" STANDARD GRATE ASSEMBLY. APPROX. DRAINAGE AREA = 116.72 SQ. IN. (0.81 SF)

DRIFICE EQUATION: $Q = C A (2 \times G \times H)^{1/2}$ C = 0.6 $A = 0.81 \times Q.FT.$ G = 32.16

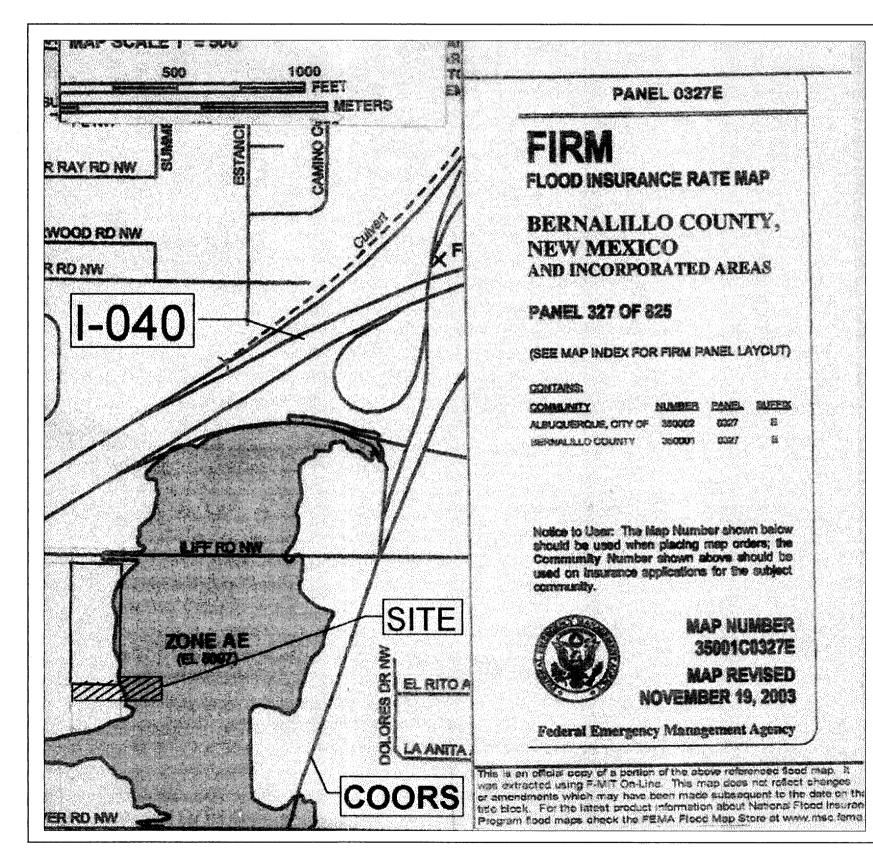
H = 0.5 FOOT.

 $Q = C A (2 G H)^{1/2} = 0.6 \times 0.81 (2 \times 32.16 \times 0.5)^{-1/2} = 2.13 CFS > 2.0 CFS DK$

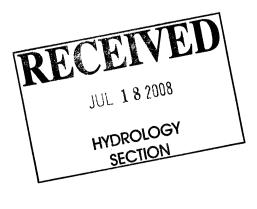
THE STANDARD GRATE IS PROPOSED IN TWO LOCATIONS.

GENERAL NOTES

- 1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATION OF ALL POTENTIAL DBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE TO RESOLVE THE CONFLICT WITH A MINIMUM AMOUNT OF DELAY.
- 2. ALL WORK ON THIS PLAN SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS. RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- 3. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE LOCATION ONLY, AND LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE UTILITY OWNER OR FROM EXISTING PLANS, AND THIS INFORMATION MAY BE INCOMPLETE, OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE ENGINEER HAS NOT UNDERTAKEN ANY FIELD VERIFICATION OF THESE LOCATIONS, LINE SIZES OR MATERIAL TYPE, MAKES NO REPRESENTATION THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATIONS OF ANY UTILITY LINE, PIPELINE OR UNDERGROUND INSTALLATION IN OR NEAR THE AREA IN ADVANCE OF OR DURING ANY EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND FACILITIES. IN PLANNING AND CONDUCTING EXCAVATIONS, THE CONTRACTOR SHALL COMPLY WITH ALL STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
- 4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHTS-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND BY WETTING THE SOIL TO KEEP IT FROM BLOWING.
- 5. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.



FIRMETTE

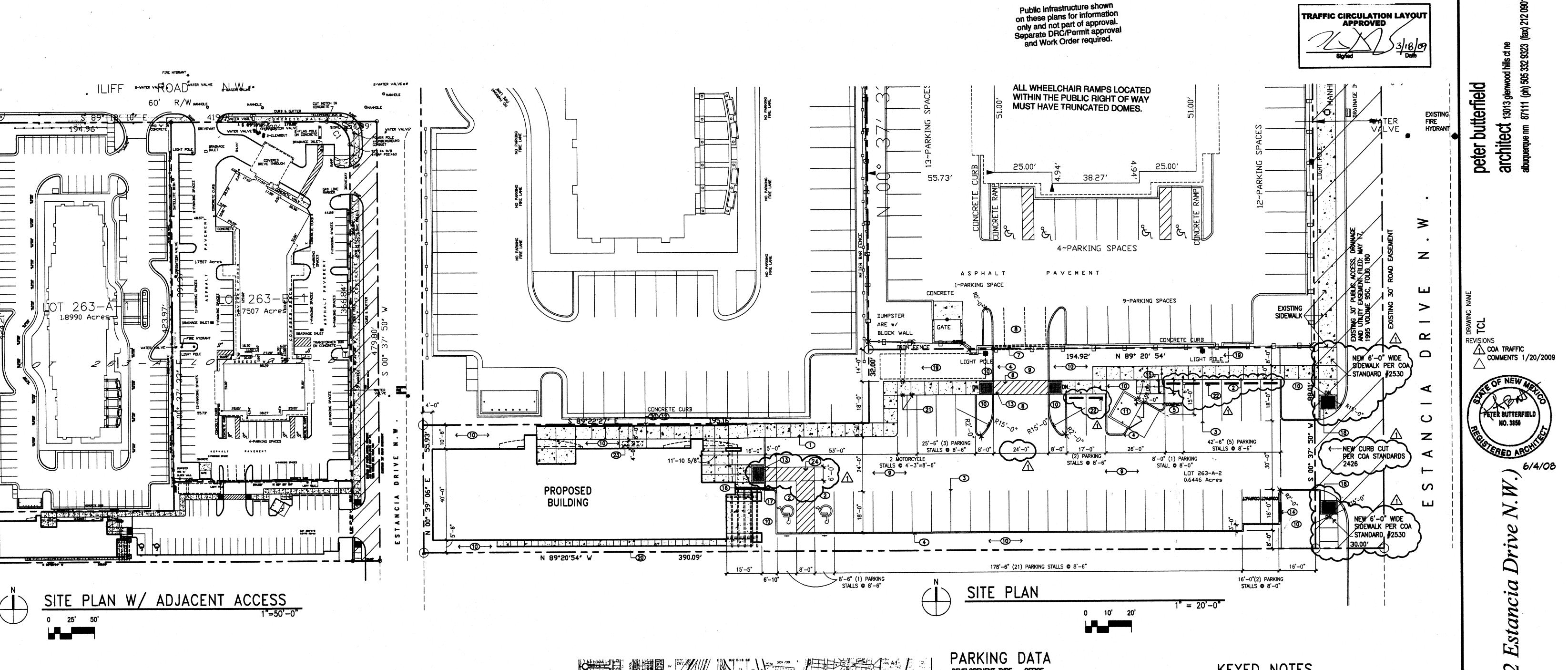




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JOB NO: DATE: July 17, 2008 REVISIONS

SHEET NO.





DEVELOPEMENT TYPE - OFFICE BUILDING AREA - 7,250

OFFICE FIRST FLOOR NET LEASABLE AREA - 3,510 S.F. SECOND FLOOR NET LEASABLE AREA - 2,235 S.F. FIRST FLOOR PARKING REQUIRED - 3,510 S.F./200 = 17.6 STALLS

SECOND FLOOR PARKING REQUIRED - 2,235 S.F./300 = 7.5

TOTAL STALLS REQUIRED = 26 TOTAL PROVIDED = 37 (INCLUDES 2 MOTORCYCLE STALLS) (FULL SIZE STALLS - 32) (SMALL CAR STALLS - 3) (MOTORCYCLE STALLS - 2) STALLS REMOVED AT HOTEL SHARED ACCESS LOT - 4 NET PARKING STALLS = 33

EXECUTIVE SUMMARY

THE PROPOSED 7,250 SQUARE FOOT TWO STORY OFFICE BUILDING IS LOCATED AT 6130 ILIFF ROAD NW, THE PRIMARY ENTRANCE IS LOCATED ON THE WEST SIDE OF ESTANCIA NW, SOUTH OF ILIFF. THE EXISTING SITE IS LONG AND NARROW THAT RUNS IN THE EAST-WEST DIRECTION. THE PARKING AREA HAS BEEN LOCATED TO THE EAST OF THE BUILDING AND A SHARED ACCESS HAS BEEN CREATED TO THE PARKING LOT TO THE SOUTH, EXISTING PARKING STALLS REMOVED TO CREATE THE SHARED ACCESS HAVE BEEN CREATED AND ACCOUNTED FOR WITHIN THE NEW PARKING LOT.

LEGAL DESCRIPTION

LOTS NUMBERED TWO HUNDRED SIXTY-THREE-A (263-A) AND TWO HUNDRED SIXTY-THREE-B (263-B) OF THE PLAT OF LOTS 263-A, 263-B, AND 263-C, TOWN OF ATRISCO GRANT, UNIT 8, ALBUQUERQUE, NEW MEXICO, AS THE SAME ARE SHOWN AND DESIGNATED ON THE PLAT THEREOF, FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON MAY 17, 1995, IN VOLUME 95C, FOLIO 180

KEYED NOTES

- CONCRETE SIDEWALK, WIDTH AS NOTED, RE D4/A002. 2. TYP. ACCESSIBLE PARKING SPACE W/ LOADING ZONE, PAINT WITH 4" WIDE WHITE STRIPES • 45" HATCH LINES • 18" O.C. AND H.C. SYMBOL. PROVIDE SIGNAGE TO INDICATE EACH SPACE. SIGN. 3. 4" WIDE PAINTED PARKING STALL STRIPING, TYP. COLOR: WHITE.
- 4. CURB, 6" HIGH CONCRETE.
- 5. 12" TALL PAINTED 'COMPACT'. 6. PEDESTRIAN CROSSING, PAINT WITH 4" WIDE WHITE STRIPES • 45' HATCH LINES • 18" O.C.
- 7. REMOVE EXISTING CURB, FENCE AND LANDSCAPE FOR SHARED ACCESS
- 8. SHARED ACCESS DRIVE. 9. ASPHALTIC PAVING OVER PREPARED SUBGRADE PER GEOTECHNICAL
- 10. LANDSCAPE AREA, REFER TO LANDSCAPE PLAN.
- 11. 8" CMU REFUSE ENCLOSURE. 12. CONTINIOUS 3'-6" GUARDRAIL.
- 13. ACCESSIBLE WHEELCHAIR RAMP MAXIMUM SLOPE 1:12. 14. MONUMENT SIGN.

LINES • 18" O.C.

- 15. BICYCLE RACK. 16. SIDEWALK TRENCH DRAIN AT DOWNSPOUT NOZZLE, REFER.
- 17. CONCRETE SWALE W/ LANDSCAPE COBBLES. 18. ACCESSIBLE RAMP PER COA STANDARD 2426 W/ TRUNCATED DOMES. 19. COLLECTION BASIN. 20. RETAINING WALL.
 - 21. MOTORCYCLE PARKING SIGN CONSPICUOUSLY POSTED UPRIGHT FREE-STANDING SIGN. EACH SIGN SHALL BE NO SMALLER THAN 12 BY 18 INCHES AND SHALL HAVE ITS LOWER EDGE NO LESS THAN FOUR FEET ABOVE GRADE.
- 22. CONCRETE WHEEL STOP AT PARKING STALLS. 23. 4 OUTDOOR SEATING SPACES - EACH SEAT SHALL BE A MINIMUM OF 24 INCHES IN WIDTH AND 15 INCHES IN HEIGHT. 1-24. 6'-0" WIDE STRIPED PATHWAY FROM ADA STALLS TO WHEELCHAIR RAMP, MAX. SLOPE 1:20, PAINT WITH 4" WIDE WHITE STRIPES @ 45" HATCH

MAR 1 0 2009

HYDROLOGY SECTION

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2 Building liff Ro

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architect

PETER BUTTERFIE