RUNOFF FOR REYES CUSTOM WROUGHT IRON WORKS
904 BROADWAY BLVD, NE, ALBUQUERQUE, NEW MEXICO
DECEMBER 14, 2000

TABLE A
RUNOFF ESTIMATE FOR ON-SITE BASIN OF .2915 ACRES.

	Land use	Runoff Factors Zone 2, 100-year Peak CFS/acre	Total inches	CURRENT STATE Area SF	Percent	Peak Runoff CFS	Total Runoff CF	PROPOSED USE Area SF	Percent	Peak Runoff CFS	Total Runoff CF
1	A	1.56	0.53	0.00	0.0	0.0	0.0	0.00	0.0	0.0	0.0
2	B	2.28	0.78	0.00	0.0	0.0	0.0	115.00	0.9	0.0	7.5
3	C	3.14	1.13	8898.00	70.1	0.6	837.9	5827.00	45.9	0.4	548.7
4	D	4.70	2.12	3800.00	29.9	0.4	671.3	6756.00	53.2	0.7	1193.6
TOTALS,				12698.00	100.000	1.1	1509.2	12698.00	100.000	1.2	1749.7
				0.2915 acre				0.2915 acre			

NOTES:
a. Runoff factors from Section 22.2, DPM, December, 1999
b. Land use descriptions: A. Uncompacted soil
B. Landscaped
C. Compacted soil, to include most vacant lots
D. Impervious areas
c. Peak runoff = Area (acres) x factor (CFS/acre) = CFS
d. Total runoff = Area (SF) x factor (inches) / 12 (inches /foot) = CF
e. Peak and total runoff is based on 6 hour, 100 year frequency storm

PURPOSE:
The purpose of this grading and drainage plan is to obtain approval for a construction of an addition to an existing office building on a tract of .2915 acres located at 904 Broadway Boulevard, NE, Albuquerque, New Mexico.

DISCUSSION:
A. The facilities are to be located in the Rio Grande Valley, in the level historic floodplain of the Rio Grande, north of the intersection of Lomas Boulevard and Broadway Boulevard, near downtown Albuquerque.
B. The tract is presently developed with a small office building, a metal shed workshop, and a portland cement concrete pad. The rest of the lot consists of compacted natural soil. The site is presently used for manufacture of wrought iron products. The owner plans to add about 670 square feet of building to the existing building, and to pave the parking area in front of the office building.

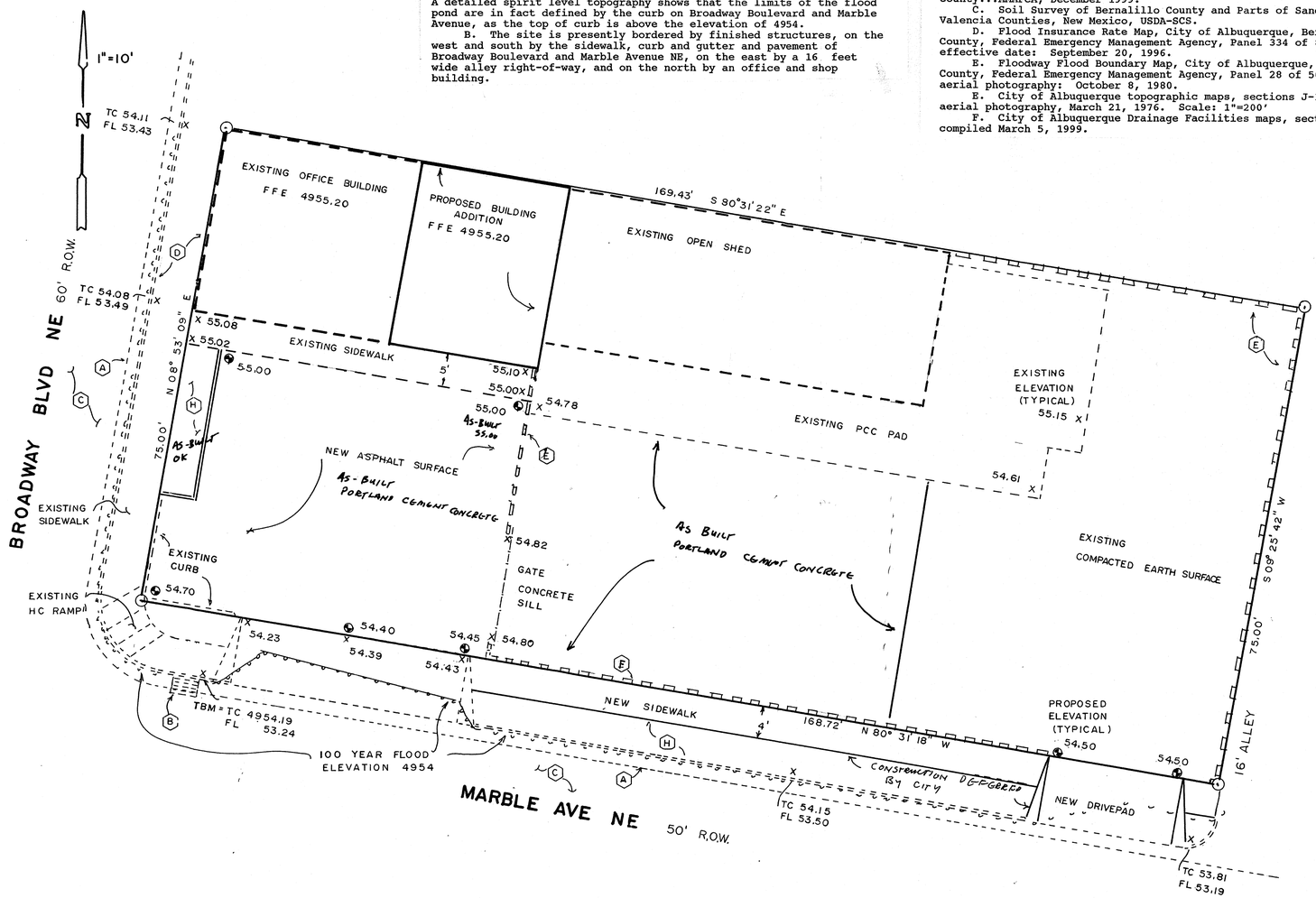
SOILS:
Soils within the area are identified by reference C as Glendale clay loam (Gm). The soils are suited for residential building and associated infrastructure. The soils have a moderate shrink swell potential, and high risk of corrosion to uncoated steel, so imported material may be required for structures, streets and driveways. Soils may be susceptible to consolidation, particularly when wetted, so care must be taken to direct runoff and landscape watering away from building foundations.

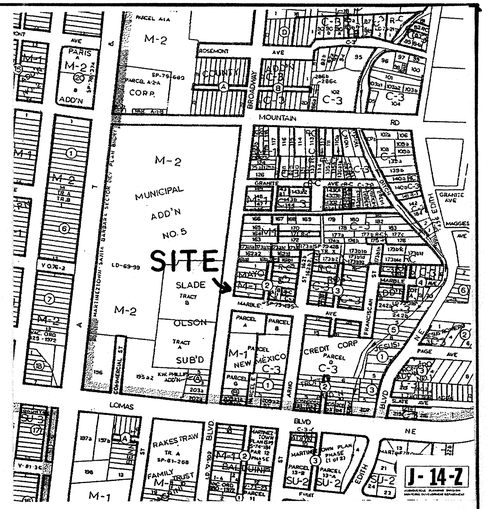
DRAINAGE CONSIDERATIONS:
A. The site is located adjacent to the limits of the 100-year flood hazard area, Zone AH, with flood depths of 1 to 3 feet, usually ponding, with base flood elevation determined. The flood for the pond adjacent to the Reyes site has a base elevation of 4954 (see Flood Insurance Rate Map, panel 334 of 825, effective date, September 20, 1996). The topographic map on which the flood hazard elevation is determined is based on an aerial photograph from October 8, 1980. The flood map shows the pond as extending partially onto the Reyes site. A detailed spirit level topography shows that the limits of the flood pond are in fact defined by the curb on Broadway Boulevard and Marble Avenue, as the top of curb is above the elevation of 4954.
B. The site is presently bordered by finished structures, on the west and south by the sidewalk, curb and gutter and pavement of Broadway Boulevard and Marble Avenue NE, on the east by a 16 feet wide alley right-of-way, and on the north by an office and shop building.
C. Presently all runoff from the site which leaves the site flows out along the south and west boundaries of the site, flowing along gutter to an existing drain inlet located in the northeast quadrant of the intersection of Broadway Boulevard and Marble Avenue. The drain inlet is connected to a 42" and 54" storm drain in Broadway Boulevard, then to the net work of storm drains through downtown Albuquerque. The existing peak flow from the undeveloped site for the 100 year-6 hour storm is estimated as 1.1 CFS (see Table A).

D. The grading scheme proposed is to direct all runoff from the newly developed impervious parking and driveway, and office roof surfaces, through the entry drivepad onto the Marble Avenue right-of-way, and then to the storm drain inlet.
E. The finished floor of the existing building and the proposed addition are 1.4 feet above the 100-year base flood elevation, so no additional floodproofing is required.
F. No off-site flow enters the tract.
G. The site is protected from major flooding from off-site flows by the railroad berm 500 feet west of Broadway Boulevard, the I-40 berm 3000 to the north, and the edge of the mesa 1000 feet to the east. Major flooding would probably come from the north, crossing under the I-40 berm at the railroad and Broadway Boulevard openings, then spreading out over the surfaces between the railroad berm and the mesa edge.

CONCLUSIONS:
A. The proposed construction is adjacent to but not within a designated 100 year floodplain.
B. Construction as proposed will not increase the hazard from flooding to downstream facilities.
C. The proposed grading and construction will protect the property from any off-site or on-site runoff.

REFERENCES:
A. Standard Specifications for Public Works Construction, City of Albuquerque.
B. Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque...Bernalillo County...AMAFCA, December 1999.
C. Soil Survey of Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico, USDA-SCS.
D. Flood Insurance Rate Map, City of Albuquerque, Bernalillo County, Federal Emergency Management Agency, Panel 334 of 825, effective date: September 20, 1996.
E. Floodway Flood Boundary Map, City of Albuquerque, Bernalillo County, Federal Emergency Management Agency, Panel 28 of 50, date of aerial photography: October 8, 1980.
E. City of Albuquerque topographic maps, sections J-14. Date of aerial photography, March 21, 1976. Scale: 1"=200'
F. City of Albuquerque Drainage Facilities maps, section J-14, compiled March 5, 1999.





LEGAL DESCRIPTION
LOTS NUMBERED 5, 6, AND 7 IN BLOCK NUMBERED 2 OF THE MAYO AND ROSS ADDITION TO THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, FILED JULY 11, 1923.

Topography by Marvin R Kortum, December 11, 2000.

BENCHMARK: ACS 25-J15.

NOTES ⬡

A. Existing standard curb and gutter.
B. Existing double C storm drain inlet.
C. Existing asphalt surface.
D. Existing portland cement sidewalk.
E. Existing portland cement drivepad.
F. Existing block wall.
G. Finished Floor elevations (FFE) shown on the drawing are the top surface of the slab.
H. Landscaped area.

Quantities shown on the estimate tables are to the significant figures as shown for the purpose of tracking numbers from one calculation to the next. Actual accuracy of the numbers is about equal to the first significant figure, ie. 5693.5 CF would be some quantity between 5200 CF and 6200 CF.

I certify that I have inspected the Reyes Wrought Iron site and that the construction on-site is in substantial compliance with the grading and drainage plan (J14/D138) as approved by City of Albuquerque letter dated February 15, 2001. Finished floor elevations for all buildigs constructed are above the minimum specified elevation, and concrete yard surfaces slope as required, and specified curbing is in place.

Marvin R. Kortum NMPE 6519 February 6, 2002

MARVIN R. KORTUM NEW MEXICO 6519 REGISTERED PROFESSIONAL ENGINEER

RECEIVED FEB 06 2002 HYDROLOGY SECTION

CERTIFICATION	MRK	FEB 6 2002
PRELIMINARY	MRK	DEC 19 2000
APPROVALS, REVISIONS	BY	DATE

MARVIN R. KORTUM NEW MEXICO 6519 REGISTERED PROFESSIONAL ENGINEER

MARVIN R. KORTUM, P.E.
Civil Engineering
NM PE 6519
1605 Speakman Drive, S.E.
Albuquerque, New Mexico 87123
(505) 299-0774

GRADING AND DRAINAGE PLAN
REYES WROUGHT IRON
904 BROADWAY NE

PROJECT NO	MAP NO	SHEET OF
J-14/D138	J-14	1 2

RUNOFF FOR REYES CUSTOM WROUGHT IRON WORKS
904 BROADWAY BLVD, NE, ALBUQUERQUE, NEW MEXICO
DECEMBER 14, 2000

TABLE A
RUNOFF ESTIMATE FOR ON-SITE BASIN OF .2915 ACRES.

		Runoff Factors Zone 2, 100-year		CURRENT STATE				PROPOSED USE			
Land use		Peak	Total	Area	Percent	Peak Runoff	Total Runoff	Area	Percent	Peak Runoff	Total Runoff
		CFS/acre	inches	SF		CFS	CF	SF		CFS	CF
1	A	1.56	0.53	0.00	0.0	0.0	0.0	0.00	0.0	0.0	0.0
2	B	2.28	0.78	0.00	0.0	0.0	0.0	115.00	0.9	0.0	7.5
3	C	3.14	1.13	8898.00	70.1	0.6	837.9	5827.00	45.9	0.4	548.7
4	D	4.70	2.12	3800.00	29.9	0.4	671.3	6756.00	53.2	0.7	1193.6
TOTALS,				12698.00	100.000	1.1	1509.2	12698.00	100.000	1.2	1749.7
				0.2915 acre				0.2915 acre			

NOTES:
a. Runoff factors from Section 22.2, DPM, December, 1999
b. Land use descriptions: A. Uncompacted soil
B. Landscaped
C. Compacted soil, to include most vacant lots
D. Impervious areas
c. Peak runoff = Area (acres) x factor (CFS/acre) = CFS
d. Total runoff = Area (SF) x factor (inches) / 12 (inches /foot) = CF
e. Peak and total runoff is based on 6 hour, 100 year frequency storm

PURPOSE:
The purpose of this grading and drainage plan is to obtain approval for a construction of an addition to an existing office building on a tract of .2915 acres located at 904 Broadway Boulevard, NE, Albuquerque, New Mexico.

DISCUSSION:
A. The facilities are to be located in the Rio Grande Valley, in the level historic floodplain of the Rio Grande, north of the intersection of Lomas Boulevard and Broadway Boulevard, near downtown Albuquerque.
B. The tract is presently developed with a small office building, a metal shed workshop, and a portland cement concrete pad. The rest of the lot consists of compacted natural soil. The site is presently used for manufacture of wrought iron products. The owner plans to add about 670 square feet of building to the existing building, and to pave the parking area in front of the office building.

SOILS:
Soils within the area are identified by reference C as Glendale clay loam (Gm). The soils are suited for residential building and associated infrastructure. The soils have a moderate shrink swell potential, and high risk of corrosion to uncoated steel; so imported material may be required for structures, streets and driveways. Soils may be susceptible to consolidation, particularly when wetted, so care must be taken to direct runoff and landscape watering away from building foundations.

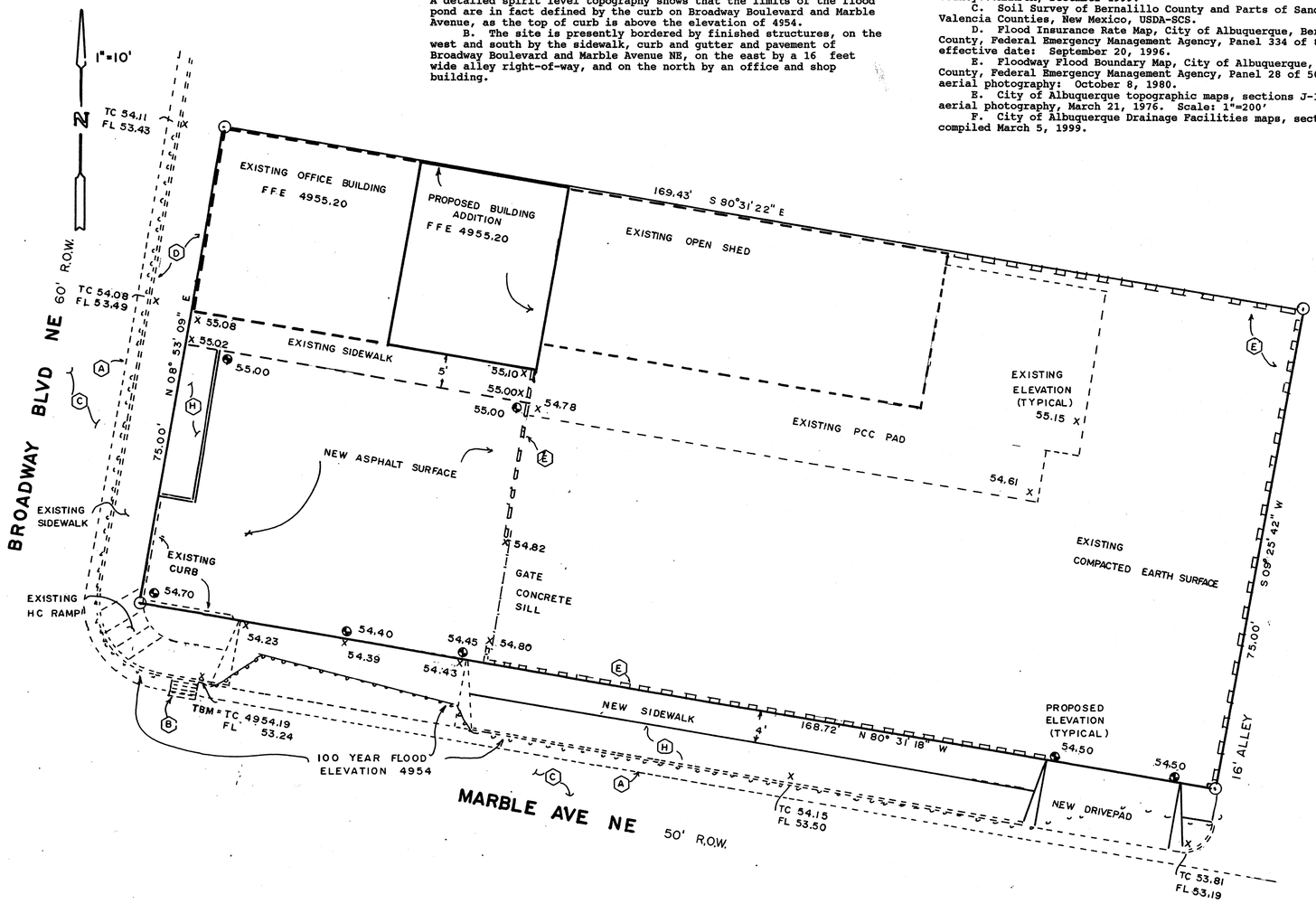
DRAINAGE CONSIDERATIONS:
A. The site is located adjacent to the limits of the 100-year flood hazard area, Zone AH, with flood depths of 1 to 3 feet, usually ponding, with base flood elevation determined. The flood for the pond adjacent to the Reyes site has a base elevation of 4954 (see Flood Insurance Rate Map, panel 334 of 825, effective date, September 20, 1996). The topographic map on which the flood hazard elevation is determined is based on an aerial photograph from October 8, 1980. The flood map shows the pond as extending partially onto the Reyes site. A detailed spirit level topography shows that the limits of the flood pond are in fact defined by the curb on Broadway Boulevard and Marble Avenue, as the top of curb is above the elevation of 4954.
B. The site is presently bordered by finished structures, on the west and south by the sidewalk, curb and gutter and pavement of Broadway Boulevard and Marble Avenue NE, on the east by a 16 feet wide alley right-of-way, and on the north by an office and shop building.

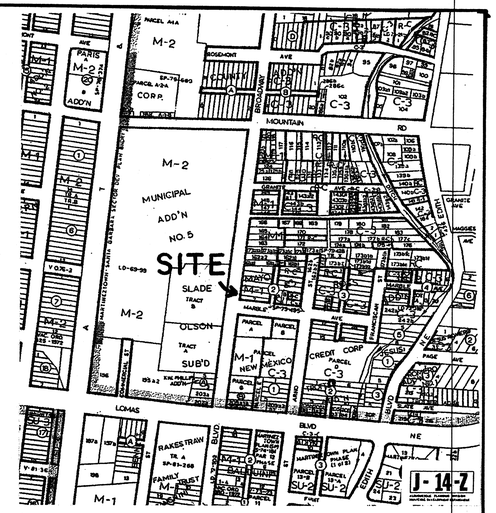
C. Presently all runoff from the site which leaves the site flows out along the south and west boundaries of the site, flowing along gutter to an existing drain inlet located in the northeast quadrant of the intersection of Broadway Boulevard and Marble Avenue. The drain inlet is connected to a 42" and 54" storm drain in Broadway Boulevard, then to the net work of storm drains through downtown Albuquerque. The existing peak flow from the undeveloped site for the 100 year-6 hour storm is estimated as 1.1 CFS (see Table A).

D. The grading scheme proposed is to direct all runoff from the newly developed impervious parking and driveway, and office roof surfaces, through the entry drivepad onto the Marble Avenue right-of-way, and then to the storm drain inlet.
E. The finished floor of the existing building and the proposed addition are 1.4 feet above the 100-year base flood elevation, so no additional floodproofing is required.
F. No off-site flow enters the tract.
G. The site is protected from major flooding from off-site flows by the railroad berm 500 feet west of Broadway Boulevard, the I-40 berm 3000 to the north, and the edge of the mesa 1000 feet to the east. Major flooding would probably come from the north, crossing under the I-40 berm at the railroad and Broadway Boulevard openings, then spreading out over the surfaces between the railroad berm and the mesa edge.

CONCLUSIONS:
A. The proposed construction is adjacent to but not within a designated 100 year floodplain.
B. Construction as proposed will not increase the hazard from flooding to downstream facilities.
C. The proposed grading and construction will protect the property from any off-site or on-site runoff.

REFERENCES:
A. Standard Specifications for Public Works Construction, City of Albuquerque.
B. Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque...Bernalillo County...AMAFCA, December 1999.
C. Soil Survey of Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico, USDA-SCS.
D. Flood Insurance Rate Map, City of Albuquerque, Bernalillo County, Federal Emergency Management Agency, Panel 334 of 825, effective date: September 20, 1996.
E. Floodway Flood Boundary Map, City of Albuquerque, Bernalillo County, Federal Emergency Management Agency, Panel 28 of 50, date of aerial photography: October 8, 1980.
E. City of Albuquerque topographic maps, sections J-14. Date of aerial photography, March 21, 1976. Scale: 1"=200'
F. City of Albuquerque Drainage Facilities maps, section J-14, compiled March 5, 1999.





LEGAL DESCRIPTION
LOTS NUMBERED 5, 6, AND 7 IN BLOCK NUMBERED 2 OF THE MAYO AND ROSS ADDITION TO THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, FILED JULY 11, 1923.

Topography by Marvin R Kortum, December 11, 2000.

BENCHMARK: ACS 25-J15.

NOTES ⬡

A. Existing standard curb and gutter.
B. Existing double C storm drain inlet.
C. Existing asphalt surface.
D. Existing portland cement sidewalk.
E. Existing portland cement drivepad.
F. Existing block wall.
G. Finished Floor elevations (FFE) shown on the drawing are the top surface of the slab.
H. Landscaped area.

Quantities shown on the estimate tables are to the significant figures as shown for the purpose of tracking numbers from one calculation to the next. Actual accuracy of the numbers is about equal to the first significant figure, ie. 5693.5 CF would be some quantity between 5200 CF and 6200 CF.

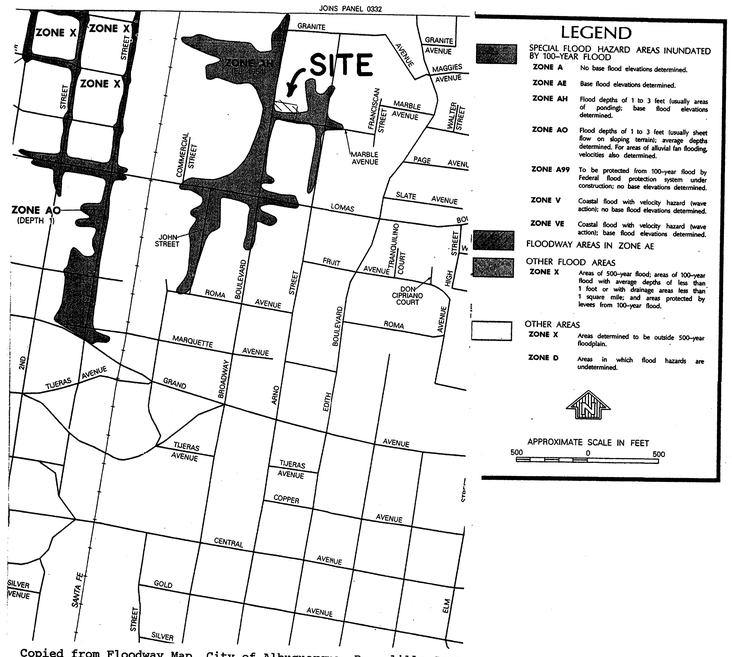
PRELIMINARY	MRK	DEC 19 2000
APPROVALS, REVISIONS	BY	DATE

MARVIN R. KORTUM, P.E.
Civil Engineering
NM PE 6519
1605 Speakman Drive, S.E.
Albuquerque, New Mexico 87123
(505) 299-0774

GRADING AND DRAINAGE PLAN
REYES WROUGHT IRON
904 BROADWAY NE

PROJECT NO	MAP NO	SHEET	OF
J-14/D	J-14	1	2

Copied from Floodway Flood Boundary Map, City of Albuquerque, Bernalillo County, Federal Emergency Management Agency, Panel 28 of 50, date of aerial photography: October 8, 1980. Enlarged to scale 1"=200'.



Copied from Floodway Map, City of Albuquerque, Bernalillo County, Federal Emergency Management Agency, Panel 334 of 825, effective date: September 20, 1996. Scale: 1"=500'

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

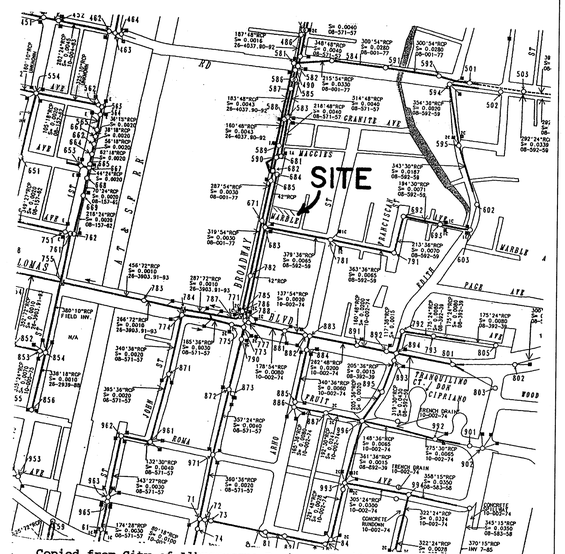
PANEL 334 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0334	D

MAP NUMBER
35001C0334 D

EFFECTIVE DATE:
SEPTEMBER 20, 1996

Federal Emergency Management Agency



Copied from City of Albuquerque Drainage Facilities maps, section J-14, compiled March 5, 1999.

PRELIMINARY	MRK	DEC 19 2000
APPROVALS, REVISIONS	BY	DATE

MARVIN R. KORTUM, P.E.
Civil Engineering
NM PE 6519

1605 Speakman Drive, S.E.
Albuquerque, New Mexico 87123
(505) 299-0774

GRADING AND DRAINAGE PLAN
REYES WROUGHT IRON
904 BROADWAY NE
MAPS

PROJECT NO	MAP NO	SHEET OF
J-14/D	J-14	2 2