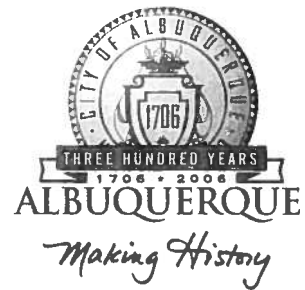


CITY OF ALBUQUERQUE



June 7, 2005

Mr. Michael Brewer, P.E.
CH2M HILL, INC.
6001 Indian School Rd. NE
Suite 350
Albuquerque, NM 87110

Re: CORONADO NONPOTABLE WATER PUMP STATION
6739 Palomas Ave. NE
Approval of Permanent Certificate of Occupancy (C.O.)
Engineer's Stamp dated 05/19/2003 (d-18/d37)
Certification dated 06/06/2005

P.O. Box 1293

Dear Mike:

Albuquerque

Based upon the information provided in your submittal received 06/07/2005, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

New Mexico 87103

If you have any questions, you can contact me at 924-3982.

www.cabq.gov

Sincerely,

Arlene V. Portillo
Plan Checker, Planning Dept. - Hydrology
Development and Building Services

C: Phyllis Villanueva
File



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 16, 1999

Joseph D. Chwirka, P.E.
CH2M HILL
6001 Indian School Road, NE - Suite 350
Albuquerque, N.M. 87110

Attn: Michael Brewer, P.E.

RE: NORTH I-25 NONPOTABLE WATER PROJECT, CORONADO RESERVOIR SITE (D18-D37). DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT, AND FOR BUILDING PERMIT AND WORK ORDER APPROVALS. ENGINEER'S STAMP DATED JANUARY 19, 1999.

Dear Mr. Chwika:

Based on the information provided on your January 22, 1999 submittal, the above referenced project is approved for Site Development Plan for Building Permit, and for Building Permit and Work Order. See also C.O.A. Approval Letter dated November 19, 1998, now superseded.

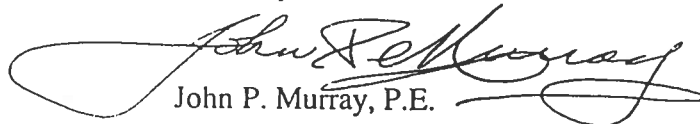
Have the real property issues, referred to last year, been resolved ?

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

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,


John P. Murray, P.E.
Hydrology

c: Andrew Garcia
File



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 31, 2003

Michael Brewer, PE
CH2M HILL, Inc.
6001 Indian School Rd., NE Suite 350
Albuquerque, NM 87110

**RE: Coronado Non-potable Water Pump Station
Grading and Drainage Plan (D-18/D37)
Engineer's Stamp Dated May 19, 2003**

Dear Mr. Brewer:

The above referenced grading and drainage plan received July 15, 2003 is approved for Building Permit. Please attach a copy of the approved plan to the construction set. Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM is required on the above referenced plan.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. Refer to the attachment that is provided with this letter for details. If you have any questions please feel free to call the Public Works Hydrology section at 768-3654 (Charles Caruso) or 768-3645 (Brian Wolfe).

If you have any questions please call me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Sr. Engineer, Planning Dept.
Development and Building Services

C: Charles Caruso, Public Works Hydrology
File

HOLLY AVENUE

EXISTING CONDITIONS:

The existing storm drainage runoff discharges into 4 - 48" x 212' CMP's that eventually drain in a westerly direction under I-25. See Figure 3. Currently Holly Avenue is an unpaved street. Holly drains from San Pedro west to the existing 48" CMP's. Two inlets on the north west and north east corner of the intersection will be constructed with the PDN project to drain a low spot on the north east corner and to ensure that flows are not conveyed down Holly from adjacent areas. The runoff from San Pedro will be conveyed to Paseo Del Norte through the proposed storm sewer system to be constructed for PDN. The existing drainage runoff pattern within the Holly Avenue corridor will essentially remain the same.

PROPOSED CONDITIONS:

Holly Avenue is to be asphalt paved and 40' Face/Face within the street right-of-way width. A 40' radius cul-de-sac (to the north) at the terminus of Holly Avenue is to be constructed. Sidewalk culverts with a asphalt channel will be built to allow positive drainage from Holly into an existing ditch along the east frontage road of I-25, that will then convey the proposed drainage runoff into existing 4 - 48" x 212' CMP's.

TABLE 1.7 - HOLLY AVENUE EXISTING AND PROPOSED CONDITIONS

BASIN NAME	CONDITION	BASIN AREA (ac)	HYDRO ZONE	A" LAND (ac)	B" LAND (ac)	C" LAND (ac)	D" LAND (ac)	Etotal (in)	VOLUME (ac-ft)	Q100 (cfs)
HOLLY	EXISTING	22.91	2	9.00	0.00	9.00	5.00	1.11	2.13	65.80
HOLLY	PROPOSED	22.91	2	2.29	3.44	2.29	14.89	1.66	3.17	88.59

REFERENCE FIGURE 3



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 28, 1999

Michael Brewer, P.E.
CH2MHILL
6001 Indian School Road, NE - Suite 350
Albuquerque, N.M. 87110

RE: NORTH I-25 NONPOTABLE WATER PROJECT, CORONADO RESERVOIR SITE (D18-D37). GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT AND WORK ORDER APPROVALS. ENGINEER'S STAMP DATED MAY 19, 1999.

Dear Mr. Brewer:

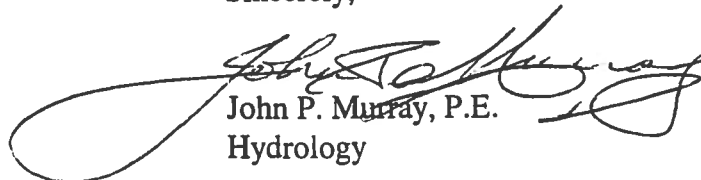
Based on the information provided on your May 20, 1999 submittal, the above referenced project is approved for Building Permit and Work Order. This action updates the approval dated February 16, 1999.

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

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,


John P. Murray, P.E.
Hydrology

c: ✓ File

**City of Albuquerque**

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 16, 1999

Joseph D. Chwirka, P.E.
CH2M HILL
6001 Indian School Road, NE - Suite 350
Albuquerque, N.M. 87110

Attn: Michael Brewer, P.E.

RE: NORTH I-25 NONPOTABLE WATER PROJECT, CORONADO RESERVOIR SITE (D18-D37). DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT, AND FOR BUILDING PERMIT AND WORK ORDER APPROVALS. ENGINEER'S STAMP DATED JANUARY 19, 1999.

Dear Mr. Chwika:

Based on the information provided on your January 22, 1999 submittal, the above referenced project is approved for Site Development Plan for Building Permit, and for Building Permit and Work Order. See also C.O.A. Approval Letter dated November 19, 1998, now superseded.

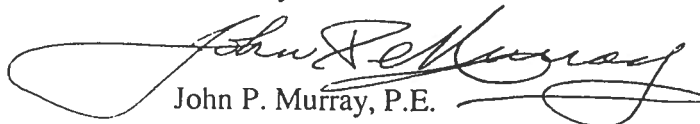
Have the real property issues, referred to last year, been resolved ?

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

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,


John P. Murray, P.E.
Hydrology

c: Andrew Garcia
File

CITY OF ALBUQUERQUE

NORTH I-25 NONPOTABLE WATER PROJECT

DRAINAGE REPORT FOR CORONADO RESERVOIR SITE



The following items concerning the Coronado Reservoir site grading and drainage improvements are contained herein:

- Vicinity Map
- Site Grading and Drainage Plan ~~for~~ Proposed for the Nonpotable Reservoir Site
- Calculations

The site of the proposed improvements, as shown on the Site Vicinity Map (Attachment A), is located west of Louisiana Boulevard, between Paseo Del Norte and Palomas Avenue. Access to the proposed site improvements will be via the existing access drive from Palomas Avenue. The site is the current location of an existing 5.0 million-gallon, above ground, potable water storage reservoir, and potable water well with associated piping and appurtenances.

Improvements to the site include the immediate construction of a 2.5-million-gallon, above-grade, nonpotable water storage reservoir, associated piping and appurtenances, site grading, storm sewer modifications, and landscaping. Future modifications proposed for the site include a nonpotable water pumping facility, potable water pumping facility, 4.0 million-gallon potable water storage reservoir and additional piping and appurtenances.

The runoff calculations (see Attachment D) analyze the existing and fully developed conditions for the 100-year, 6-hour rainfall event for the entire site. The Rational Method was used to quantify the peak rate of discharge and the Soil Conservation Service (SCS) method was used to quantify the volume of runoff. Both methods were used in accordance with the City of Albuquerque *Development Process Manual* (DPM), Section 22.2.

The existing site drainage flows generally from east to west across the site. Runoff from the site will be directed towards a new catch basin, to be located along the western property line of the site and connected to the existing site storm sewer facilities.

As shown by Panel 137 of the Federal Emergency Management Agency, Flood Insurance Rate Map, dated September 20, 1996 (Attachment B), this site does not lie within a designated flood hazard area. Due to the fact that this property is located within and adjacent to existing developed sites, it would be classified as an infill site and it would not be expected to contribute runoff to an existing flooding problem. One hundred percent of the developed runoff will be collected and diverted to the existing storm sewer system serving the site. The existing storm sewer system will then convey the surface runoff and the emergency overflow from the existing potable water reservoir and the new nonpotable storage reservoir, to the South Domingo Baca Arroyo.

Existing Conditions

The existing site comprises an area of 3.55 acres and is currently partially developed. The site is bounded by Paseo Del Norte to the north; Lots 10 and 23, Block 11, Tract A, Unit A of North Albuquerque Acres to the west, lots 13 and 20, Block 11, Tract A, Unit A of North Albuquerque Acres to the east, and Palomas Avenue to the south. Site runoff flows generally from east to west across the site. △

Surface runoff from the existing potable water site is currently collected and conveyed off-site by an underground storm sewer system. This conveyance system also carries the emergency overflow and reservoir drain flow from the existing 5.0-million-gallon potable water storage reservoir. Hydraulic capacity is also available for emergency overflow and drain flows from a future 5.0-million-gallon potable reservoir. These combined reservoir overflow and site runoff are conveyed to the South Domingo Baca Arroyo via a system of 36-inch and 42-inch diameter storm drain piping.

Proposed Improvements

Proposed improvements will consist of the construction of a 115-foot diameter, 2.5-million-gallon, above-grade, non-potable water storage reservoir, associated underground utilities and appurtenances, site grading, and landscaping, as shown on Attachments D and E. Underground utilities and appurtenances will include 24-inch reuse water transmission pipeline, emergency reservoir overflow piping and site drainage piping as shown on Attachment E. Provisions will be left open for future construction of a nonpotable water pump station, potable water pump station, and an additional 4.0 million-gallon potable water storage reservoir.

The existing site will be regraded such that all drainage originating on-site will be collected, conveyed, and discharged to the existing storm sewer already servicing the site. Minor regrading of the site along with relocation of the existing catch basin will be required to divert 100% of the potential runoff to the existing storm sewer facilities. Access to the proposed site will continue to be served by the existing paved access road from Palomas Avenue, N.E. Minor rework of the existing paved access road is proposed and shown on Attachment D.

Storm Sewer Modifications

New storm sewer piping, as shown on attachment E, will be constructed to convey the nonpotable storage reservoir emergency overflow ($Q = 9.21 \text{ mgd} = 14.25 \text{ cfs}$) and surface runoff flow ($Q_{100} = 3.17 \text{ cfs}$) to the existing drainage system. The proposed storm sewer addition will consist of 18 and 24-inch diameter reinforced concrete pipe (RCP). A 24-inch RCP will carry the site runoff from a new catch basin to the existing storm sewer facilities. A new 18-inch RCP will convey emergency overflow from the new nonpotable water storage reservoir to the existing storm sewer facilities. All modifications and additions to the existing storm sewer facilities will be done with the existing site property.

Also attached for informational purposes are Attachment F— Proposed Landscaping Plan for the Nonpotable Reservoir Site.

Attachments

- A. Site Vicinity Map
- B. Portion of Panel 137 of the Federal Emergency Agency, Flood Insurance Rate Map, showing location of proposed site development
- C. Calculations on existing and proposed runoff flow and volume
- D. Site Grading and Drainage Plan for the Coronado Site
- E. Site Layout and Piping Plan for the Coronado Site
- F. Proposed Landscaping Plan for Site Development

ATTACHMENT C

The following calculations quantify the change in runoff flow and volumes due to the proposed site improvements.

Ground Cover Information

From SCS Bernalillo County Soil Survey

Sheet 11 Soil Type for This Site is: **EtC - Embudo Tijeras Complex - gravelly fine sandy loam**

Hydrologic Soil Group: **B**

From DPM Section 22.2 Table A-1: **Precipitation Zone for this site is Zone 3 (between San Mateo and Eubank, North of I-40.)**

Land Treatments Present: **A—Soil uncompacted by human activity with 0-10% slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, ground cover and infiltration capacity.**

B—Irrigated lawns (slope < 10%), native grasses, weeds and shrubs, and soil uncompacted by human activity (slope 10%<20%)

C—Soil compacted by human activity. Minimal vegetation, vacant lots, unpaved parking/roads, gravel or rock on plastic.

D—Impervious areas, pavement and roofs.

Time of Concentration

T_c (Inches/Hour) per
DPM Section 22.2 **= 0.2 hours = 12 minutes**

100 Year 6-Hour Depth (R)

"R" Depth (Inches) per
DPM Section 22.2 Table A-2 **= 2.60 inches**

Rational Method

Discharge (cfs): **$Q = CiA$**

Where: **C = Runoff Coefficient (from DPM Section 22.2 Table A-11)**

i = From DPM Section 22.2 Table A-10 = 5.38 in/hr

A = Area (acres)

SCS Method

Volume (cf):

$$V = 3630 \times \Sigma(E \times A)$$

Where E = Excess Precipitation "E", from DPM Section 22.2, Table A-8.

A = Area (acres)

3630 = conversion factor (acre-feet to cubic feet)

Existing Conditions - Site Data

✓ Area = 3.55 ac.

	Area (acres)	Runoff Coefficient (C)	Excess Precipitation (E)
Landscaped Area (Treatment B)	0.51	0.48	0.92
Undeveloped Area (Treatment C)	2.30	0.64	1.29
Roof Area (Treatment D)	.50	0.93	2.36
Paved Area (Treatment D)	.24	0.93	2.36

$$Q_{100} = \Sigma(CiA) = (.48)(5.38)(.51) + (.64)(5.38)(2.30) + (.93)(5.38)(.50) + (.93)(5.38)(.24)$$

$$Q_{100} = 12.94 \text{ cfs}$$

Area impervious = 0.00 ac.: % impervious = 0.0%

$$V_{100} = 3630 \times \Sigma(E \times A) = 3630 [(.92)(.51) + (1.29)(2.30) + (2.36)(.74)] = 18,813 \text{ cf}$$

Fully Developed Conditions - Site Data

Area = 3.55 ac.

	Area (acres)	Runoff Coefficient (C)	Excess Precipitation (E)
Landscaped Area (Treatment B)	0.32	0.48	0.92
Undeveloped Area (Treatment C)	1.77	0.64	1.29
Roof Area (Treatment D)	1.25	0.93	2.36
Paved Area (Treatment D)	.21	0.93	2.36

$$Q_{100} = \Sigma(CiA) = (.48)(5.38)(.32) + (.64)(5.38)(1.77) + (.93)(5.38)(1.25) + (.93)(5.38)(.21)$$

$$Q_{100} = 14.23 \text{ cfs}$$

Area impervious = 0.28 ac.: % impervious = 31.5%

$$V_{100} = 3630 \times \Sigma(E \times A) = 3630 [(.92)(.32) + (1.29)(1.77) + (2.36)(1.46)] = 21,865 \text{ cf}$$

Comparison

Change in Q_{100} = 14.23 cfs – 12.94 cfs = 1.29 cfs (increase)

Change in V_{100} = 21,865 cf – 18,813 cf = 3,052 cf (increase)