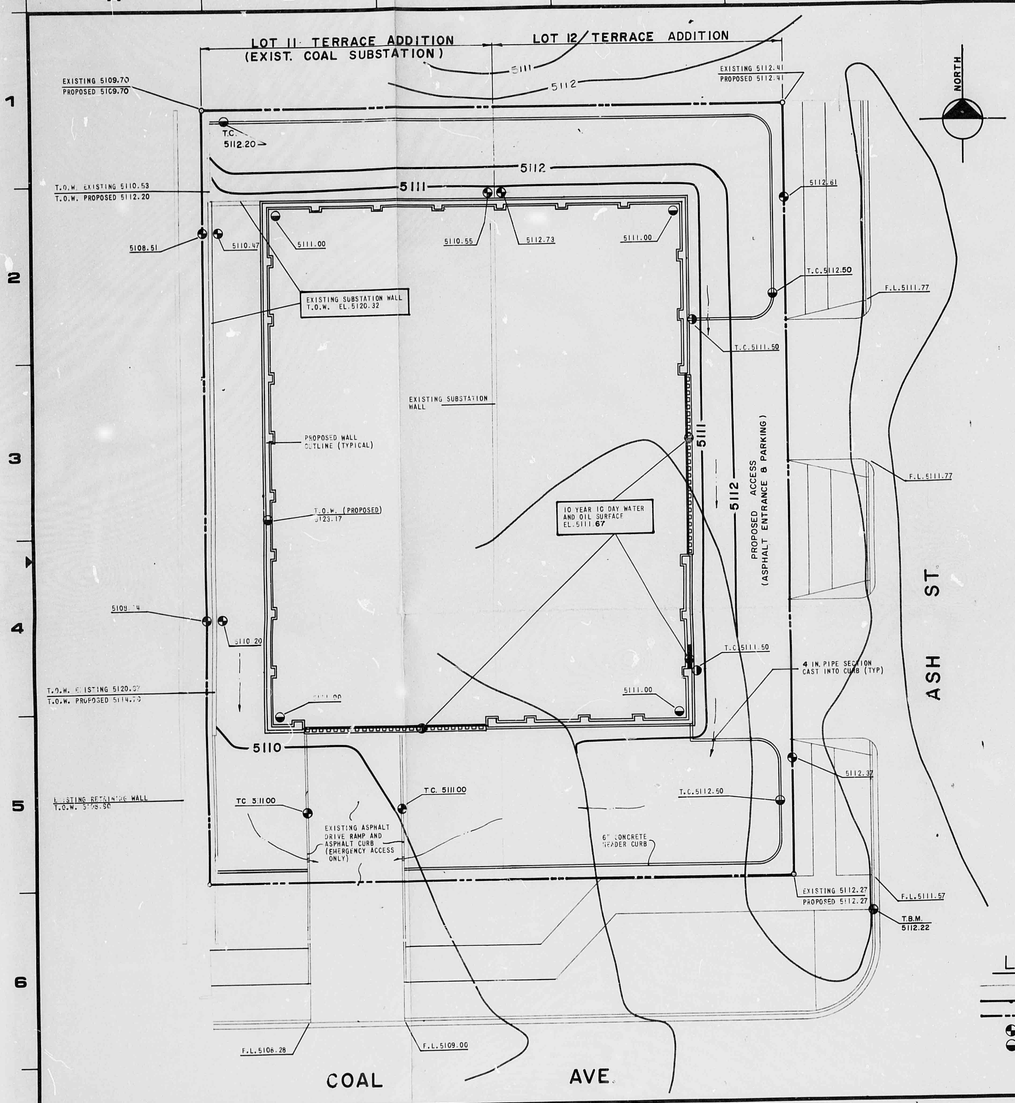
HYDROLOGY K15/D8 1 PLAN

K15/D8

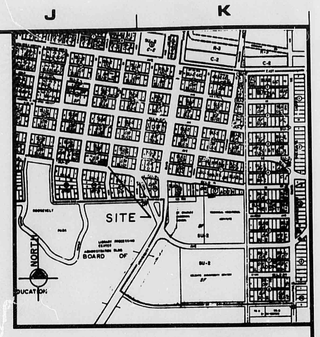
1 Plan

CITY OF ALBUQUERQUE



OFF-SITE DRAINAGE MAP

MAP K-15 SCALE: 1" = 200'



VICINITY MAP

ZONE ATLAS K-15 N.T.S.

K15-D8

Send to approval

Drainage Plan

The following items concerning the Coal Substation Drainage Plan are contained hereon:

1. Vicinity Map
2. Off-site Drainage Map
3. Grading Plan
4. Calculations

The proposed project is an expansion of the existing coal substation. A PNM facility, located in Lot 11 Blk 49 of the Terrace Addition Albuquerque NM. The proposed expansion includes installation of higher capacity equipment and requires an expansion and corresponding reconstruction of the existing block wall enclosure. Some finished grade changes are required as shown on the grading plan. The project: (1) does not lie in a flood plain, (2) does not lie adjacent to a natural or artificial water course, and (3) has no drainage easements on the property.

Any off site flows entering the site would come from Ash Street. They appear to be minimal, and will be routed through the drainage system of the project.

The grading plan shows: (1) existing contours at 1.0 ft. intervals, (2) proposed grades indicated by spot elevations and contours, (3) swales, (4) continuity between proposed and existing elevations, (5) that run-off will be conveyed into a pond before leaving the site, (6) that erosion will not result from off-site run-off or construction.

Ponding volume calculations dealing with rainfall within the confines of the substation wall enclosure are based on a ten-year, ten-day rainfall intensity of four inches over the confined area. Federal regulations regarding oil spills require that PNM pond all water which would be generated within equipment enclosure and not release this water to surrounding waterways. The pond volume calculations demonstrate that the substation enclosure has capacity to do this and at the same time contain 5,000 gallons of oil in case of an oil spill. The ponding volume calculations for ponding of flows generated by rainfall on PNM property, outside of the actual substation enclosure, demonstrate that the pond formed behind the header curb near the south property line will hold in excess of that required, and will allow the water to be released at a controlled rate to Coal Avenue's curb and gutter through the paved south emergency entrance way and curb cut. The water will then follow it's natural flow course to the west. The pond formed behind the header curb is less than 18 inches deep. Therefore, fencing is not required. The existing substation wall on the west side will be reduced in height from elev. 5,120.37 and will remain as a retaining wall at elev. 5,114.70.

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPERTY BOUNDRY
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION

Calculations

Ponding Inside Enclosure

4÷12 (0.40)(73)(90) + 4÷12 (73)(90) = 3,066 cf = Pond volume available

4÷12 (73)(90) + 670 (transformer oil) = 2,860 cf = Pond volume required

Other

East, north, and west portions of property:
Area = (20)(116) + (15)(100) + (10)(116) = 4,980 sf
Impervious area = 4,580 sf = 92%
Pervious area = 400 sf = 8%
Composite curve No. = 0.92 (98) + 0.08 (79) = 96
Plate 4 City of Farmington Study
CN 79/96 = 50% ponding

Area to be retained = 4,980 x 0.50 = 2,490 sf
Required pond volume = 4,890 x 0.50 x 2.4÷12 = 498 cf
Pond volume = (0.5) (1.0) (29) (22) + (0.5) (1.0) (16) (32) = 575 cf

South portion of property:
Area = (25) (100) = 2,500 sf

No ponding required, this portion of property will not change from it's current undeveloped (landscaped) state. Existing landscaping will remain in place.

Project Benchmark:

A standard ACS brass tablet stamped "K15-5" set in the top of a concrete post flush with the ground. The K15-5 station is located along an overhead electric transmission line 250' west of University Boulevard at a point 0.7 miles south of Central Avenue. Elevation = 5,117.817 feet (MSLD 1929).

TBM:

Top of concrete curb at the NNW curb return at the intersection of Ash Street and Coal Avenue, S.E. Elevation = 5,112.22 feet (MSLD 1929).

A number 5 steel rebar with an aluminum cap located inside of the proposed wall enclosure near the northwest corner. Elevation = 5111.67 feet (MSLD 1929).

Construction Notes

All construction shall comply with The New Mexico Standard Specifications for Public Works Construction, and the city of Albuquerque contract documents for city wide utilities.

FILE & FORWARD LETTER OF APPROVAL. 11/15/83

SEE LETTER DATED 12/5/83

DAVID WHITE NEW MEXICO 8933 REGISTERED PROFESSIONAL ENGINEER

Revisions			
NO	DATE	BY	
1	10/25/83	GA	REVISED SOUTH PROPERTY BOUNDARY B.P.
2	11/14/83	GS	SET BACK SIDEWALK 2' FROM COAL AVE

PNM PUBLIC SERVICE CO. OF NEW MEXICO

SITE PREPARATION
TOPOGRAPHY
COAL UNIT SUBSTATION

DR: GG	TR:	DATE: -27-82
CKD:	OK:	SCALE: 1" = 10'-0"
APP:	PRINTED: NOV 14 1983	USS-4502
REV. NO.:		

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT