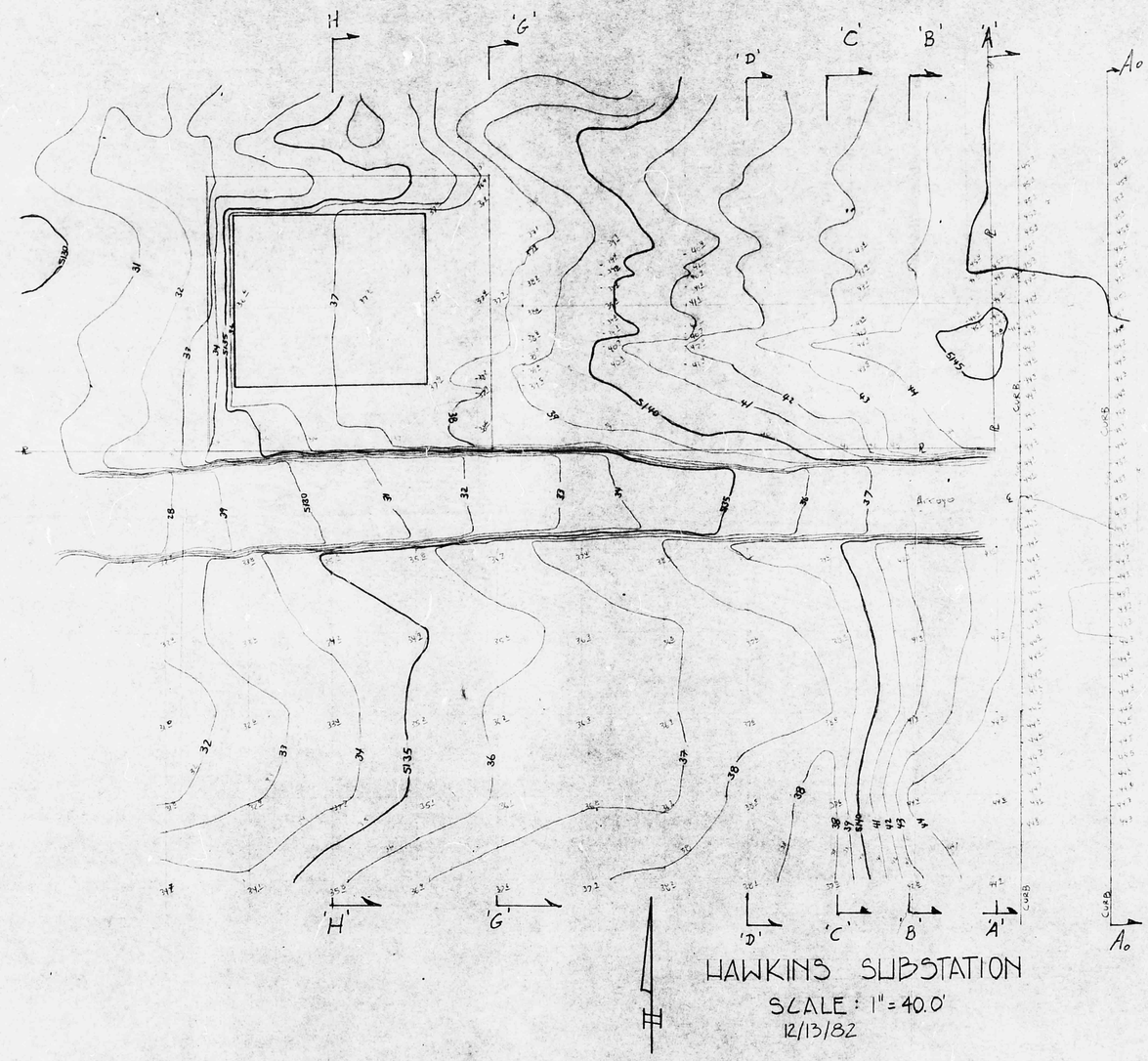
HY-DROLOGY

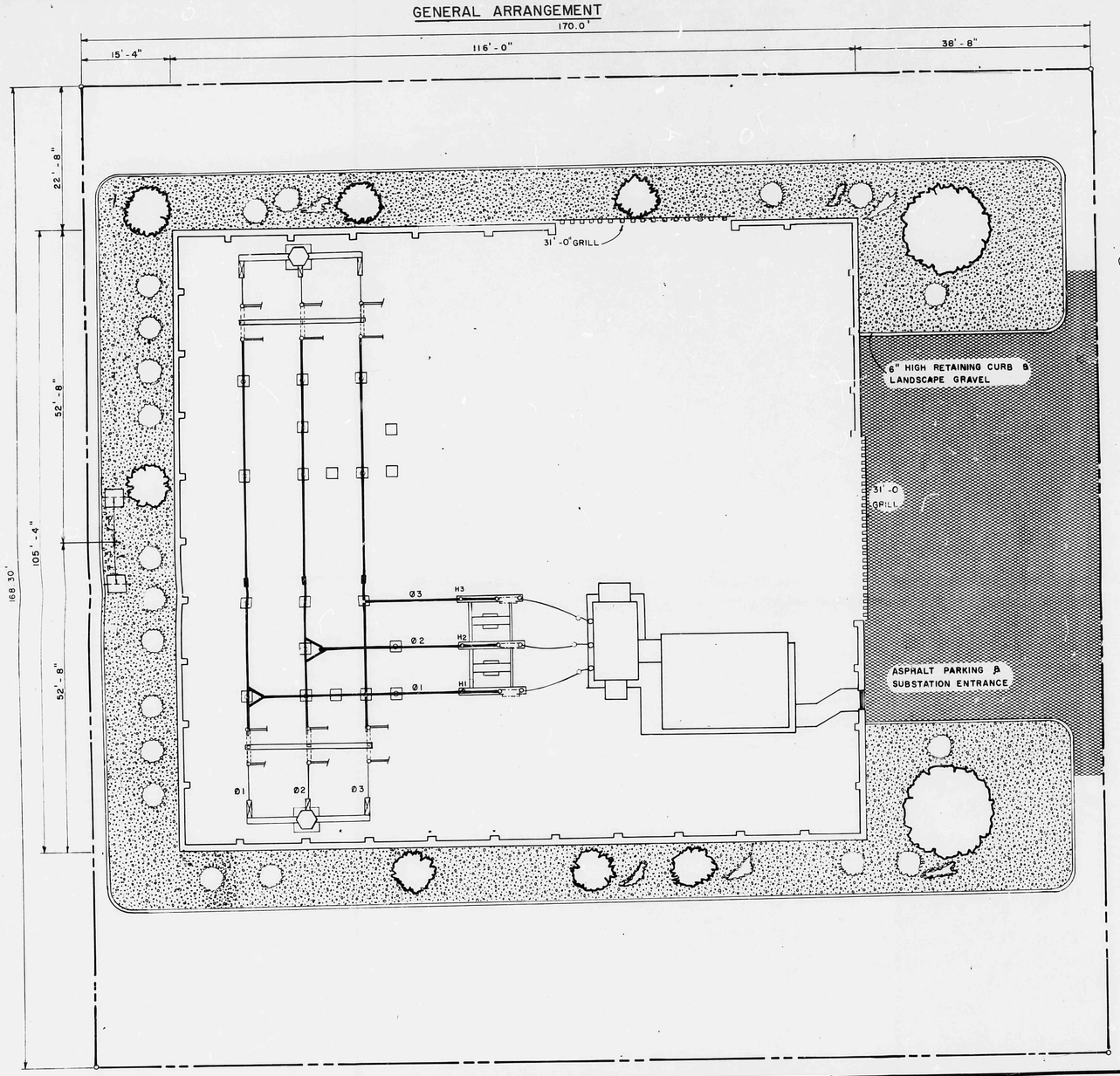
D17/D12
4 PLANS

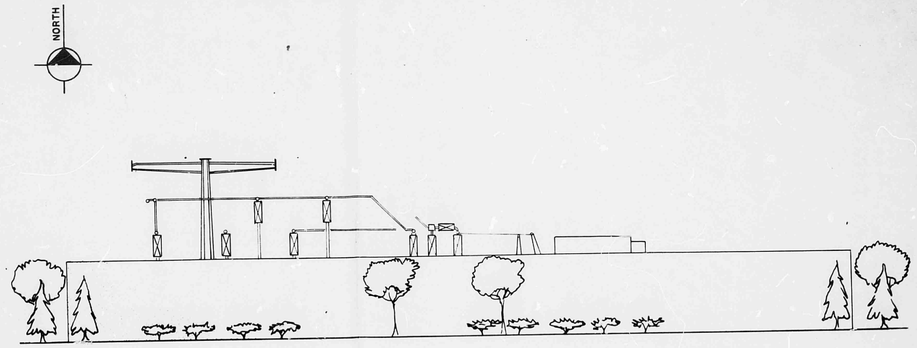
D17/D12

4 Plans


HAWKINS SUBSTATION
SCALE: 1" = 40.0'
12/13/82
'A'
'B'
'C'
'D'
'G'
'H'
Ao
CURB
Arroyo

GENERAL ARRANGEMENT

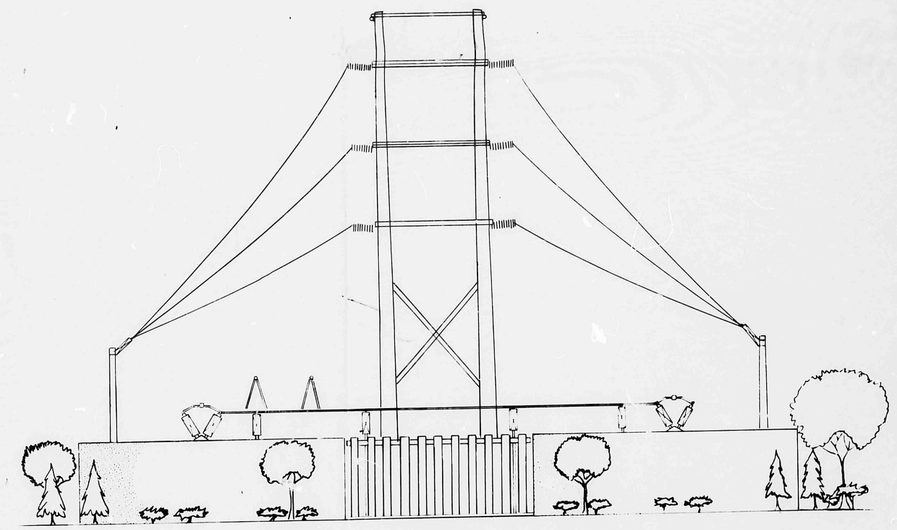




SOUTH ELEVATION

SITE PLAN IS IN CONFORMANCE WITH THE ENVIRONMENTAL PLANNING COMMISSION DECISION MADE ON FEBRUARY 18, 1982
RE: EP-82-1

CITY PLANNING DIVISION: _____
TRAFFIC ENGINEER: _____
A.M.A.F.C.A.: _____
CITY ENGINEER: _____



EAST ELEVATION

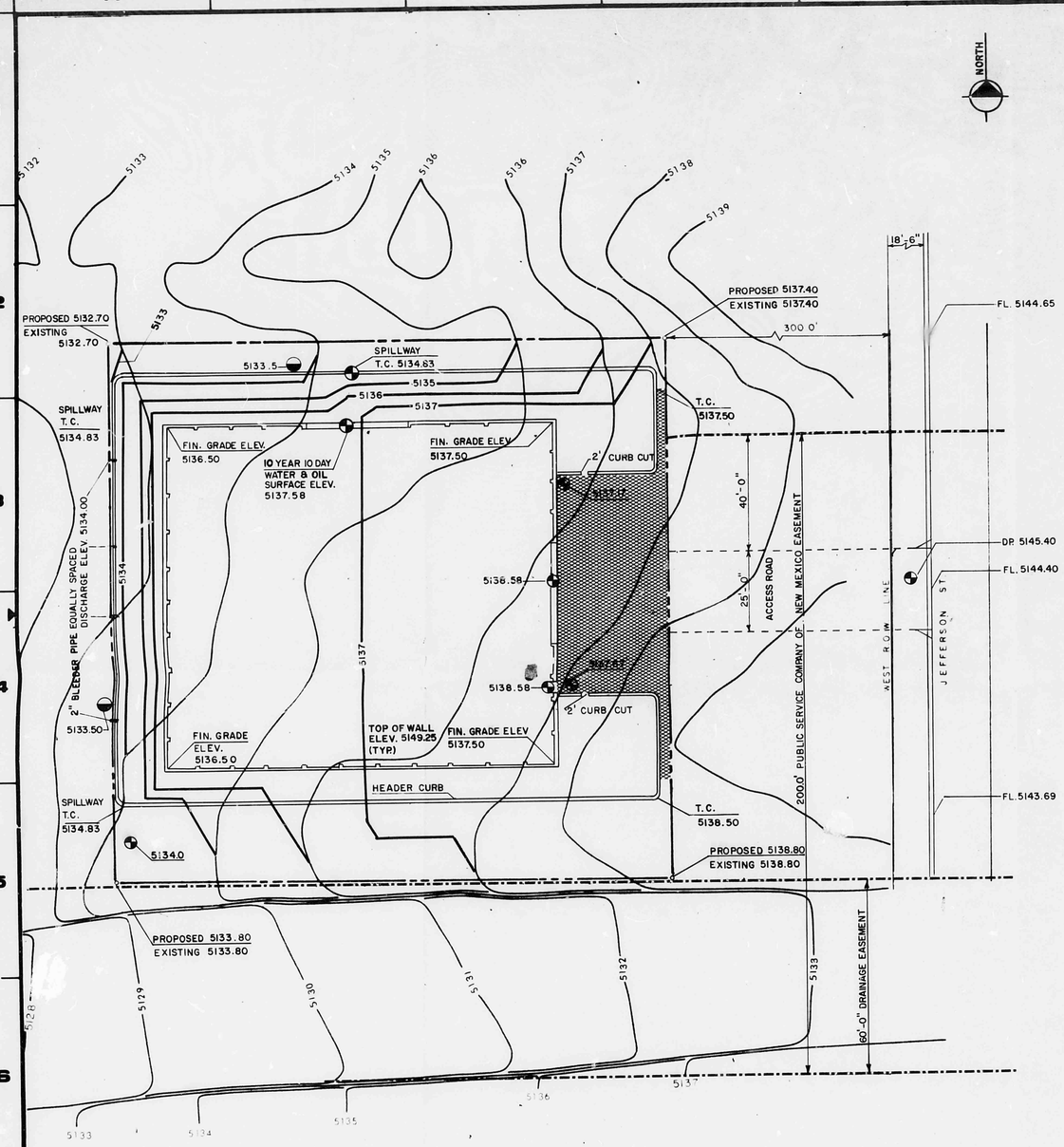
DRB-82-213

Revisions			
NO	DATE	BY	
1	10-28-82	JH	ADDED EPC DECISION NOTE
CKD	OK	APP	

PNM PUBLIC SERVICE CO. OF NEW MEXICO

GENERAL ARRANGEMENT
115KV
HAWKINS UNIT SUBSTATION

DR:	TR:	DATE: 12/7/81
CKD:	DW:	SCALE: 1"=10'-0"
APP:	PRINTED: OCT 8 1982	USS-15 503
REV. NO.: 1		



Drainage Plan

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

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

The proposed substation is located in Tract D, Unit III of the Interstate Industrial Tract. The project site is located 300 ft. to the west of Jefferson Street and 332 ft. south of Ellison Street. The majority of the land encompassed by the project site is located in a 200 ft. wide Public Service Company of New Mexico (PNM) transmission line easement. The project site is bounded on the south by the South Pino Channel's north bank which is located within the confines of a 60 ft. drainage easement, the southern boundary of which coincides with the southern boundary of the 200 ft. wide PNM transmission line easement. The project (1) has no drainage easements on the property, (2) lies adjacent to an artificial water course.

Any off-site flows entering the site would come from the east and would be generated within the area bounded by Jefferson Street on the east, the South Pino Channel on the south, and an easterly extension of the north property line on the north. These off-site flows will most likely enter the site following the course of the proposed access road 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 retaining walls will not be required, and (7) 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 curd on the west and north sides of the property will hold in excess of that required and will allow the water to reach elevation 5134.83 before being released as a sheet flow across a 200 ft. wide section of spillway. The water will then follow it's natural flow course to the north and west. The pond formed behind the west and north spillway is less than 18 inches deep, therefore fencing is not required.

PROJECT BENCHMARK

A 60-penny nail in the north pole of pylon #RE 10 located along an electric transmission line in an open field 0.35 miles west of Highway I-25 and on the projected centerline of San Antonio Drive NE.
ELEVATION = 5145.78 feet (M.S.L.D. ACS 1974)

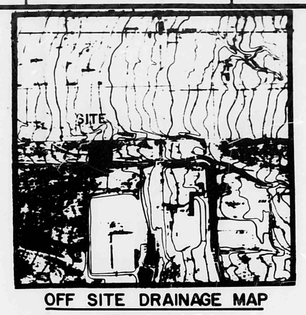
TBM:

A No. 5 steel rebar with an aluminum cap located at the southeast property corner, ELEVATION: 5137.74 feet (M.S.L.D. ACS 1974)

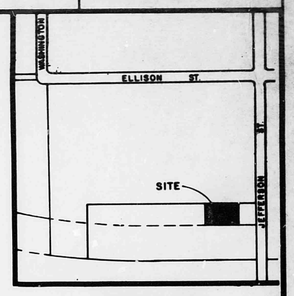
A No. 5 steel rebar with an aluminum cap located at the northwest property corner, ELEVATION 5137.18 feet (M.S.L.D. ACS 1974)

CONSTRUCTION NOTES:

1) 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.



OFF SITE DRAINAGE MAP
ZONE ATLAS D-17-Z
SCALE: 1" = 500' (1:6000)



VICINITY MAP
ZONE ATLAS D-17-Z
NTS

CITY ENGINEERS OFC./HYDROLOGY
FILE NO. D17-D12

SITE PLAN IS IN COMFORMANCE WITH THE ENVIRONMENTAL PLANNING COMMISION, DECISION MADE ON FEBRUARY 18, 1982

RE: EP-82-1

Calculations

Ponding Inside Enclosure

(0.5) · (1.083) · (106)·(116) ≅ 6,660 cf = Pond volume available

4 1/2-12 (106) (116) + 670 (transformer oil) = 4,768 cf = Pond volume required

Other

East, north, and west portions of property:
Area = (168 x 31) + (170 x 21) + (168 x 15) = 11,298 sf
Impervious area = 9,151 sf = 81%
Pervious area = 2,147 sf = 19%
Composite curve No. = 0.81 (98) + 0.19 (79) = 94
Plate 4 City of Farmington Study
CN 79/94 = 45% ponding

Area to be retained = 11,298 x 0.45 = 5,084 sf
Required pond volume = 11,298 x 0.45 x 2.4÷12 = 1,017 cf

Pond volume = (0.5) (1.33) (8.89) (200) = 1,182 cf

South portion of property:
Area = (41.3) (170) = 7,021 sf

No ponding required, this portion of lot has not changed from undeveloped state.

Off-site flow calculations
Area = (300) (168.3) = 50,490 sf = 1.16 Acres
Intensity = 5.7 inches rain/hr.
C = 0.4

Q = CIA = 0.4 (5.7) (1.16) = 2.64 cfs

DRB-82-213

LEGEND

- EXISTING CONTOURS
- 5136 PROPOSED CONTOURS
- PROPERTY BOUNDRY
- EXISTING EASEMENT BOUNDRIES
- PROPOSED ACCESS
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION

Public Service Co. of New Mexico
APPROVED FOR CONSTRUCTION
FINAL

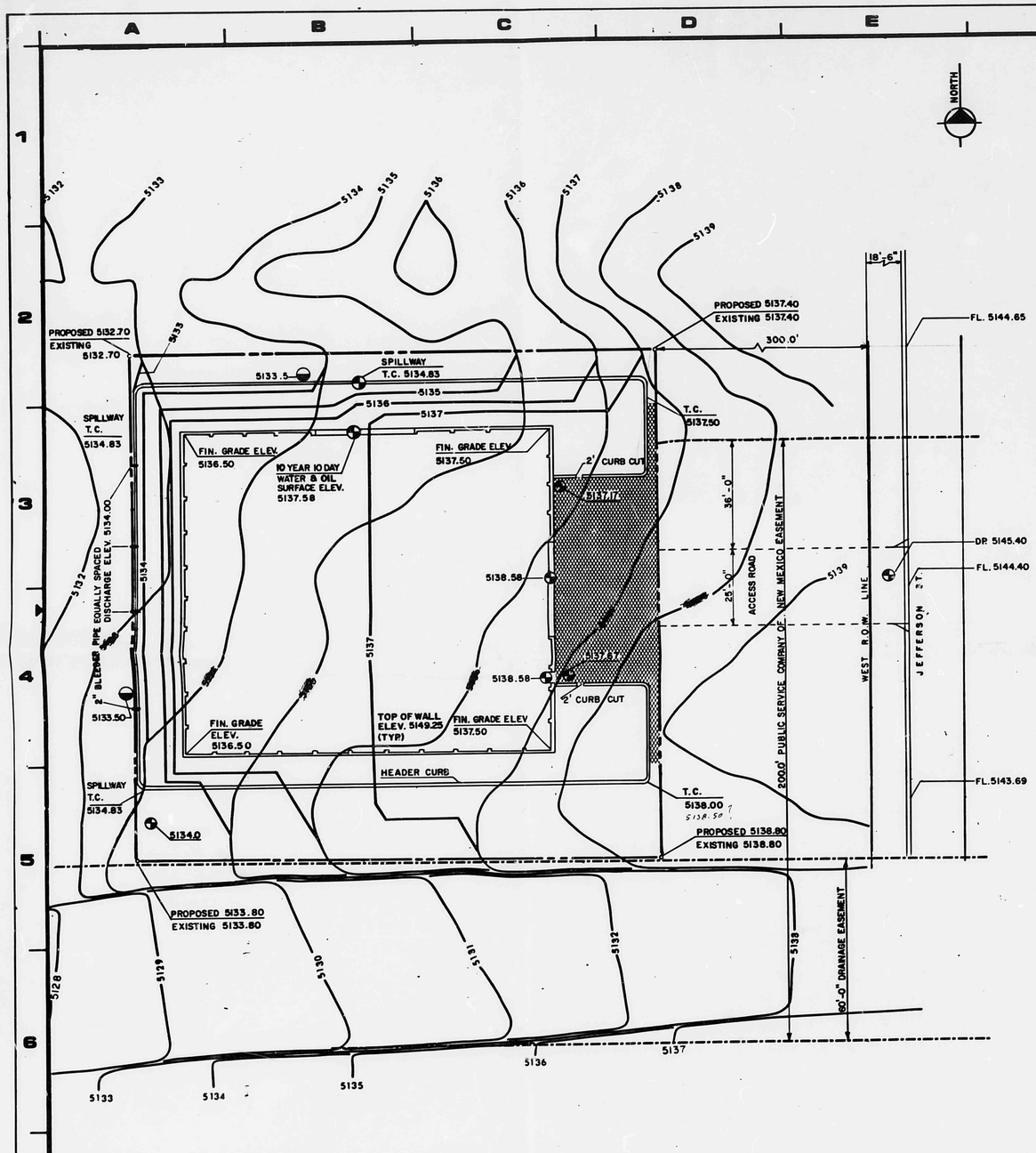
Revisions

NO	DATE	BY	
1	4-29-82	MC	REVISED EXISTING CONTOURS AN SOUTH PINO AREA, CHANGED FINISH GRADE DEV ON SUBSTATION, CHANGED POSITION OF PROPOSED ACCESS ROAD, CHANGED TEM ELEVS, ADDED 2" BLEEDER PIPES, 2'-0" CURB CUTS to HEADER CURB
2	10-28-82	JH	ADDED EPC DECISION NOTE

PNM PUBLIC SERVICE CO. OF NEW MEXICO

SITE PREPARATION
TOPOGRAPHY
HAWKINS UNIT SUBSTATION

DR: MC	TR:	DATE: 3/25/82
CKD:	OK:	SCALE: 1" = 20'-0"
APP:	PRINTED: OCT 8 1982	USS-15,502
REV. NO.: 2		



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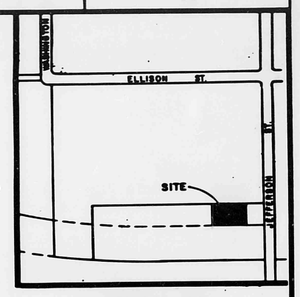
ZONE ATLAS D-17-Z
SCALE: 1" = 800' (1:8000)



VICINITY MAP
ZONE ATLAS D-17-Z
NTS

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RECEIVED
MAY 3 1982

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- 5136 PROPOSED CONTOURS
- PROPERTY BOUNDRY
- EXISTING EASEMENT BOUNDRIES
- PROPOSED ACCESS
- PROPOSED SPOT ELEVATION
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NO	DATE	BY	
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CKD:	OK:		

PNM PUBLIC SERVICE CO. OF NEW MEXICO

SITE PREPARATION
TOPOGRAPHY
ELLISON UNIT SUBSTATION

DR: MC	TR:	DATE: 3/25/82
CKD:	OK:	SCALE: 1" = 20'-0"
APP:	PRINTED:	USS-15,602
REV. NO.: 1		

APPROVED FOR DRAINAGE
5-3-82

① OFF-SITE FLOWS WITH RESPECT TO THE CULVERTS UNDER JEFFERSON, I.E. OVERTOPPING OF THE ROADWAY AND ITS IMPACT ON THE PROJECT AND THE PROJECT'S IMPACT ON THE OFF-SITE FLOWS.
② ~~HOLD HARMLESS~~ AGREEMENT PER E.P.C. REQUIREMENT
③ EASEMENT ~~FROM~~ FROM CLIFFORD DEVELOPMENT AND AN ENCROACHMENT AGREEMENT FROM PNM REQUIRED