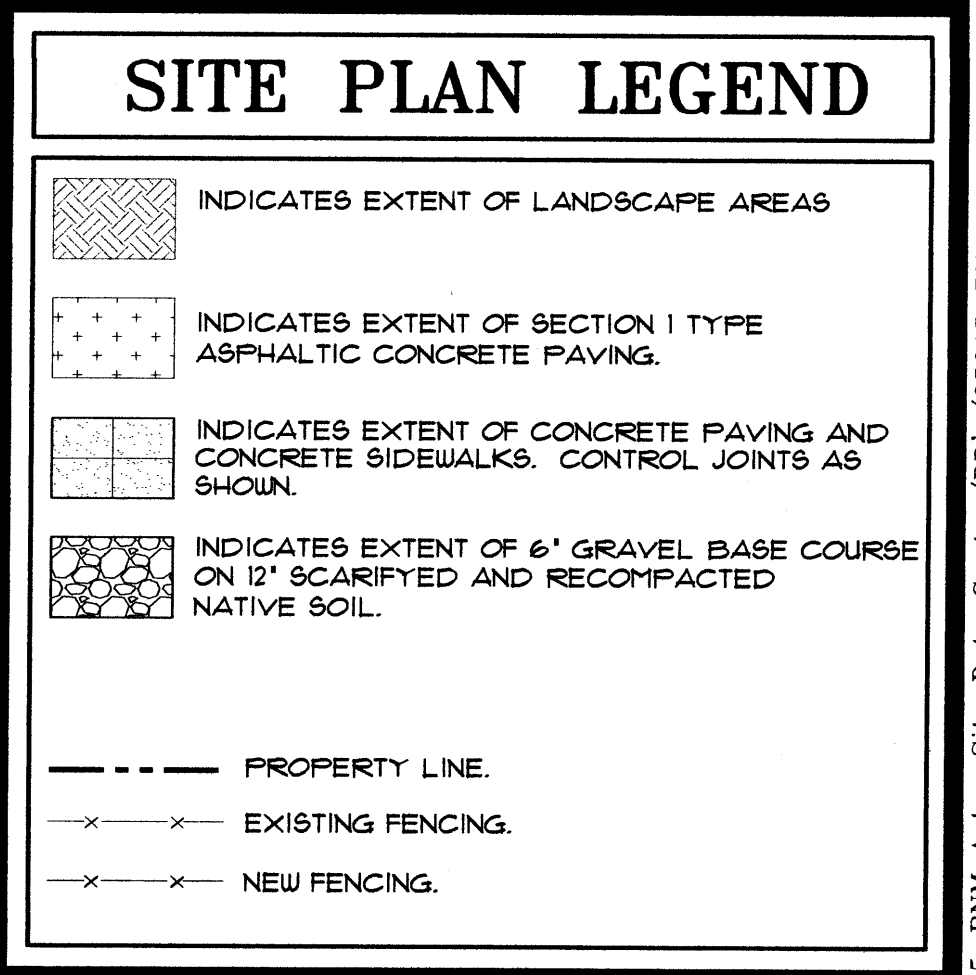
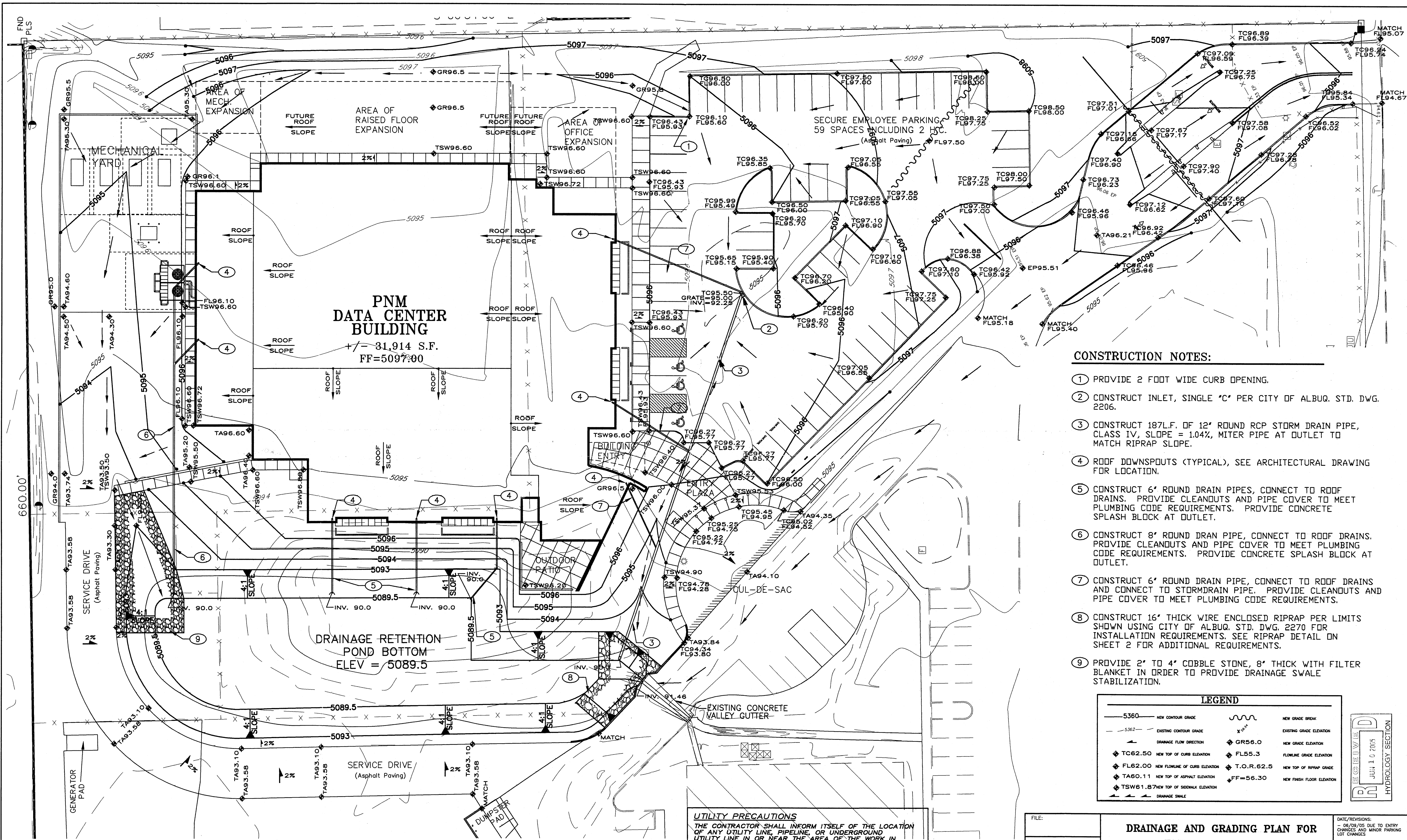




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CONSTRUCTION NOTES:

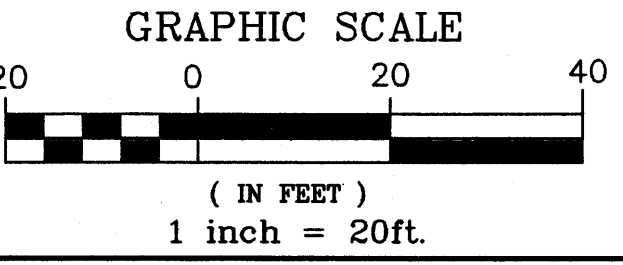
- 1 PROVIDE 2 FOOT WIDE CURB OPENING.
- 2 CONSTRUCT INLET, SINGLE "C" PER CITY OF ALBUQ. STD. DWG. 2206.
- 3 CONSTRUCT 187L.F. OF 12" ROUND RCP STORM DRAIN PIPE, CLASS IV, SLOPE = 1.04%, MITER PIPE AT OUTLET TO MATCH RIPRAP SLOPE.
- 4 ROOF DOWNSPOUTS (TYPICAL), SEE ARCHITECTURAL DRAWING FOR LOCATION.
- 5 CONSTRUCT 6" ROUND DRAIN PIPES, CONNECT TO ROOF DRAINS. PROVIDE CLEANOUTS AND PIPE COVER TO MEET PLUMBING CODE REQUIREMENTS. PROVIDE CONCRETE SPLASH BLOCK AT OUTLET.
- 6 CONSTRUCT 8" ROUND DRAIN PIPE, CONNECT TO ROOF DRAINS. PROVIDE CLEANOUTS AND PIPE COVER TO MEET PLUMBING CODE REQUIREMENTS. PROVIDE CONCRETE SPLASH BLOCK AT OUTLET.
- 7 CONSTRUCT 6" ROUND DRAIN PIPE, CONNECT TO ROOF DRAINS AND CONNECT TO STORMDRAIN PIPE. PROVIDE CLEANOUTS AND PIPE COVER TO MEET PLUMBING CODE REQUIREMENTS.
- 8 CONSTRUCT 16" THICK WIRE ENCLOSED RIPRAP PER LIMITS SHOWN USING CITY OF ALBUQ. STD. DWG. 2270 FOR INSTALLATION REQUIREMENTS. SEE RIPRAP DETAIL ON SHEET 2 FOR ADDITIONAL REQUIREMENTS.
- 9 PROVIDE 2' TO 4' COBBLE STONE, 8" THICK WITH FILTER BLANKET IN ORDER TO PROVIDE DRAINAGE SWALE STABILIZATION.

LEGEND

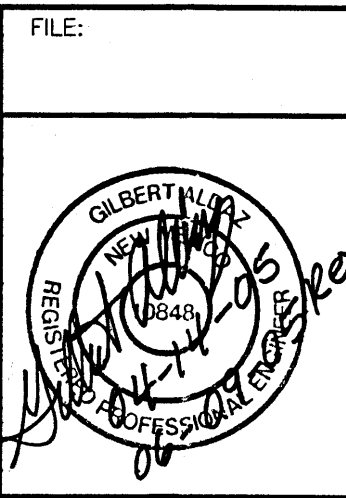
5360	NEW CONTOUR GRADE	GR56.0	NEW GRADE BREAK
5362	EXISTING CONTOUR GRADE	FL55.3	EXISTING GRADE ELEVATION
TC62.50	NEW TOP OF CURB ELEVATION	T.O.R.62.5	NEW TOP OF RIPRAP GRADE
FL62.00	NEW FLOWLINE OF CURB ELEVATION	FF=56.30	NEW FINISH FLOOR ELEVATION
TAG0.11	NEW TOP OF ASPHALT ELEVATION		
TSW61.87	NEW TOP OF SIDEWALK ELEVATION		
	DRAINAGE SWALE		

UTILITY PRECAUTIONS
THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.

GRADING PLAN
SCALE: 1" = 20'



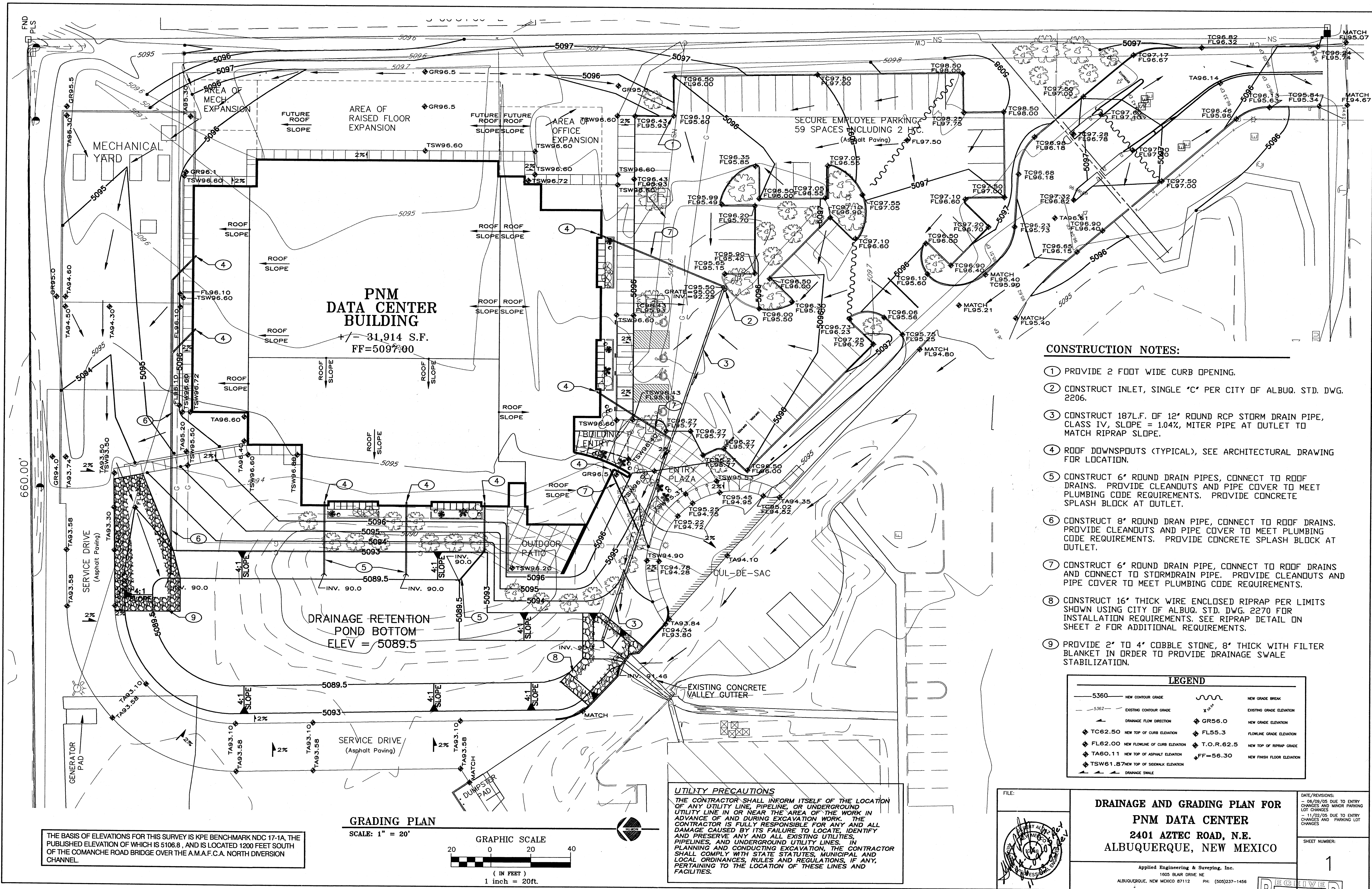
THE BASIS OF ELEVATIONS FOR THIS SURVEY IS KPE BENCHMARK NDC 17-1A, THE PUBLISHED ELEVATION OF WHICH IS 5106.8, AND IS LOCATED 1200 FEET SOUTH OF THE COMANCHE ROAD BRIDGE OVER THE A.M.A.F.C.A. NORTH DIVERSION CHANNEL.



DRAINAGE AND GRADING PLAN FOR
PNM DATA CENTER
2401 AZTEC ROAD, N.E.
ALBUQUERQUE, NEW MEXICO

Applied Engineering & Surveying, Inc.
1605 BLAIR DRIVE NE
ALBUQUERQUE, NEW MEXICO 87112 PH: (505)237-1456

DATE/REVISIONS:
- 06/09/05 DUE TO ENTRY CHANGES AND MINOR PARKING LOT CHANGES
SHEET NUMBER:
1



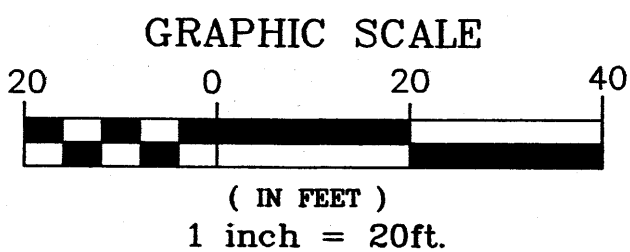
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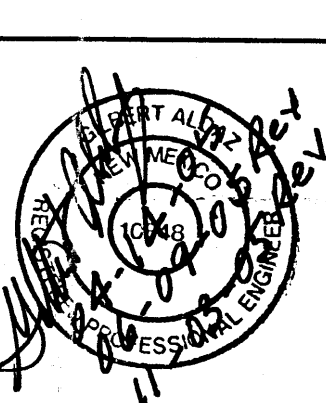
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FILE:



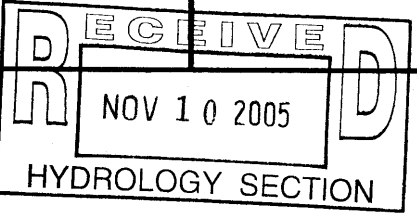
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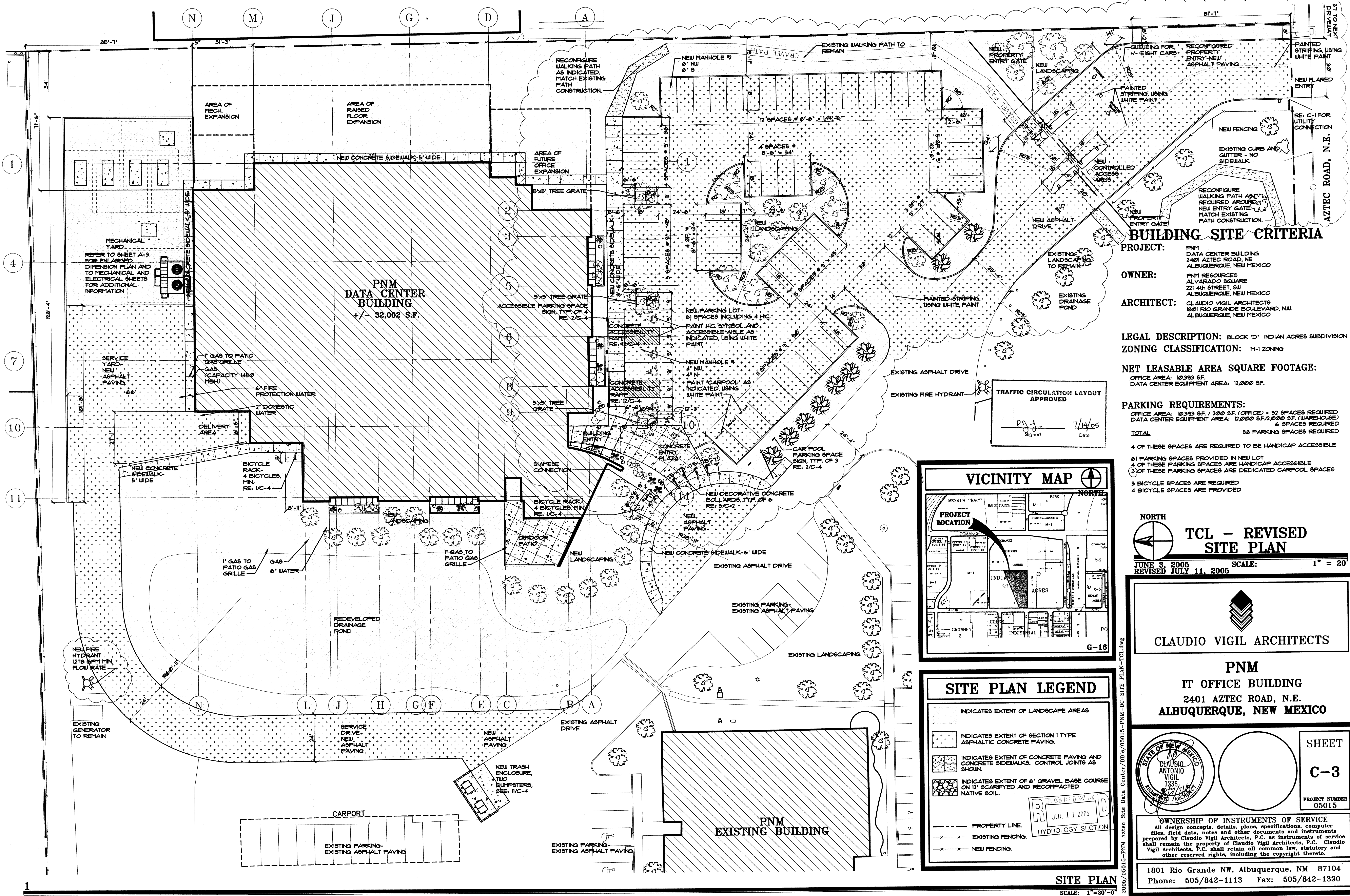
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- 11/02/05 DUE TO ENTRY CHANGES AND PARKING LOT CHANGES

SHEET NUMBER:

1





BUILDING SITE CRITERIA

PROJECT: PNM DATA CENTER BUILDING
2401 AZTEC ROAD, N.E.
ALBUQUERQUE, NEW MEXICO

OWNER: PNM RESOURCES
ALVARADO SQUARE
221 4TH STREET, SW
ALBUQUERQUE, NEW MEXICO

ARCHITECT: CLAUDIO VIGIL ARCHITECTS
1801 RIO GRANDE BOULEVARD, N.W.
ALBUQUERQUE, NEW MEXICO

LEGAL DESCRIPTION: BLOCK 'D' INDIAN ACRES SUBDIVISION

ZONING CLASSIFICATION: M-1 ZONING

NET LEASABLE AREA SQUARE FOOTAGE:
OFFICE AREA: 10,393 S.F.
DATA CENTER EQUIPMENT AREA: 12,000 S.F.

PARKING REQUIREMENTS:
OFFICE AREA: 10,393 S.F. / 1,200 S.F. (OFFICE) = 52 SPACES REQUIRED
DATA CENTER EQUIPMENT AREA: 12,000 S.F. / 1,200 S.F. (WAREHOUSE) = 10 SPACES REQUIRED
TOTAL: 62 PARKING SPACES REQUIRED

4 OF THESE SPACES ARE REQUIRED TO BE HANDICAP ACCESSIBLE
61 PARKING SPACES PROVIDED IN NEW LOT
3 OF THESE PARKING SPACES ARE DEDICATED CARPOOL SPACES
3 BICYCLE SPACES ARE REQUIRED
4 BICYCLE SPACES ARE PROVIDED

TCL - REVISED SITE PLAN
JUNE 3, 2005
REVISED JULY 11, 2005
SCALE: 1" = 20'

CLAUDIO VIGIL ARCHITECTS

**PNM
IT OFFICE BUILDING**
2401 AZTEC ROAD, N.E.
ALBUQUERQUE, NEW MEXICO

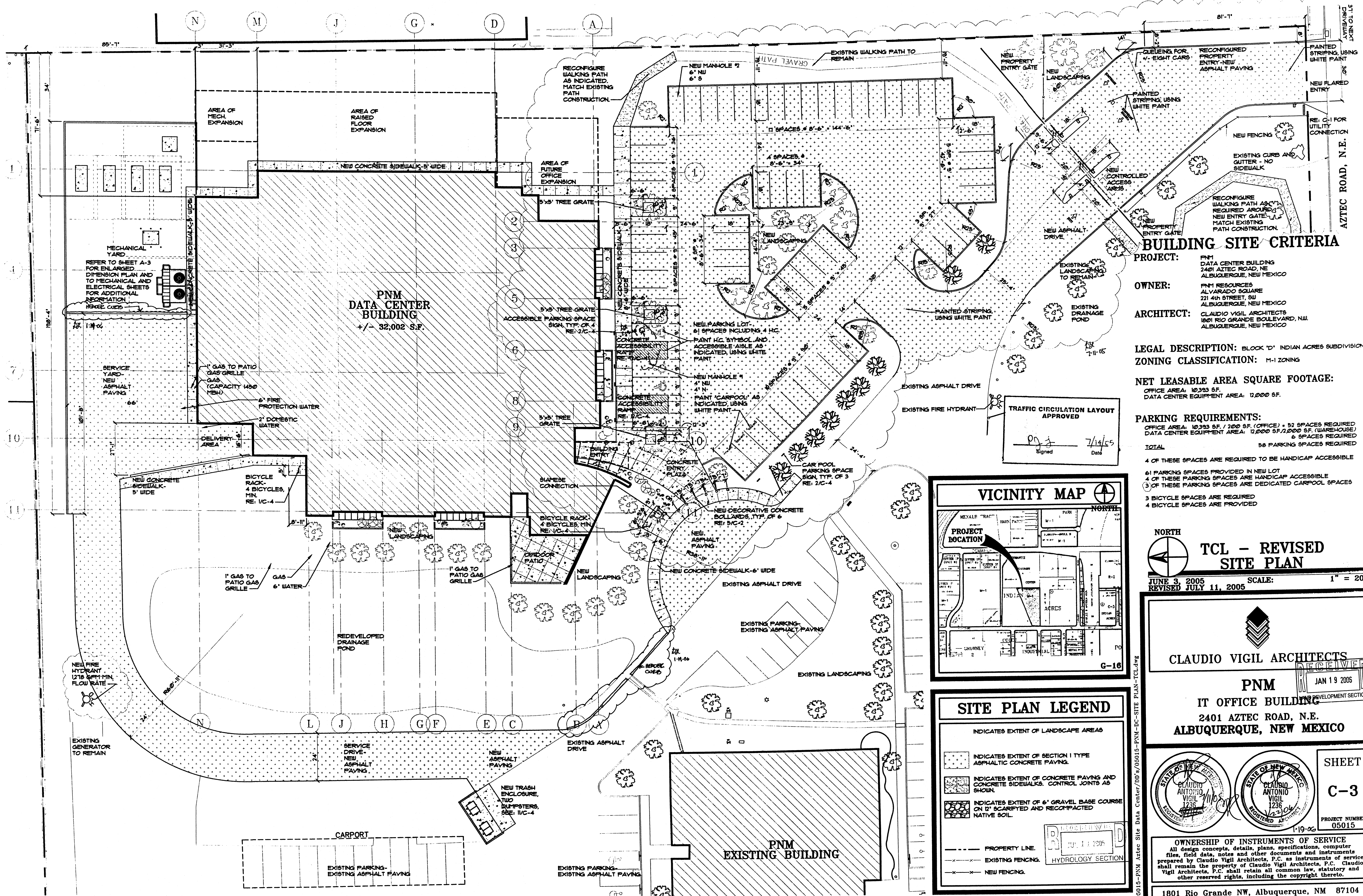
**SHEET
C-3**

PROJECT NUMBER
05015

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1801 Rio Grande NW, Albuquerque, NM 87104
Phone: 505/842-1113 Fax: 505/842-1330

SITE PLAN
SCALE: 1"=20'-0"



BUILDING SITE CRITERIA

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2401 AZTEC ROAD, N.E.
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JUNE 3, 2005 SCALE: 1" = 20'

REVISED JULY 11, 2005

CLAUDIO VIGIL ARCHITECTS

PNM IT OFFICE BUILDING

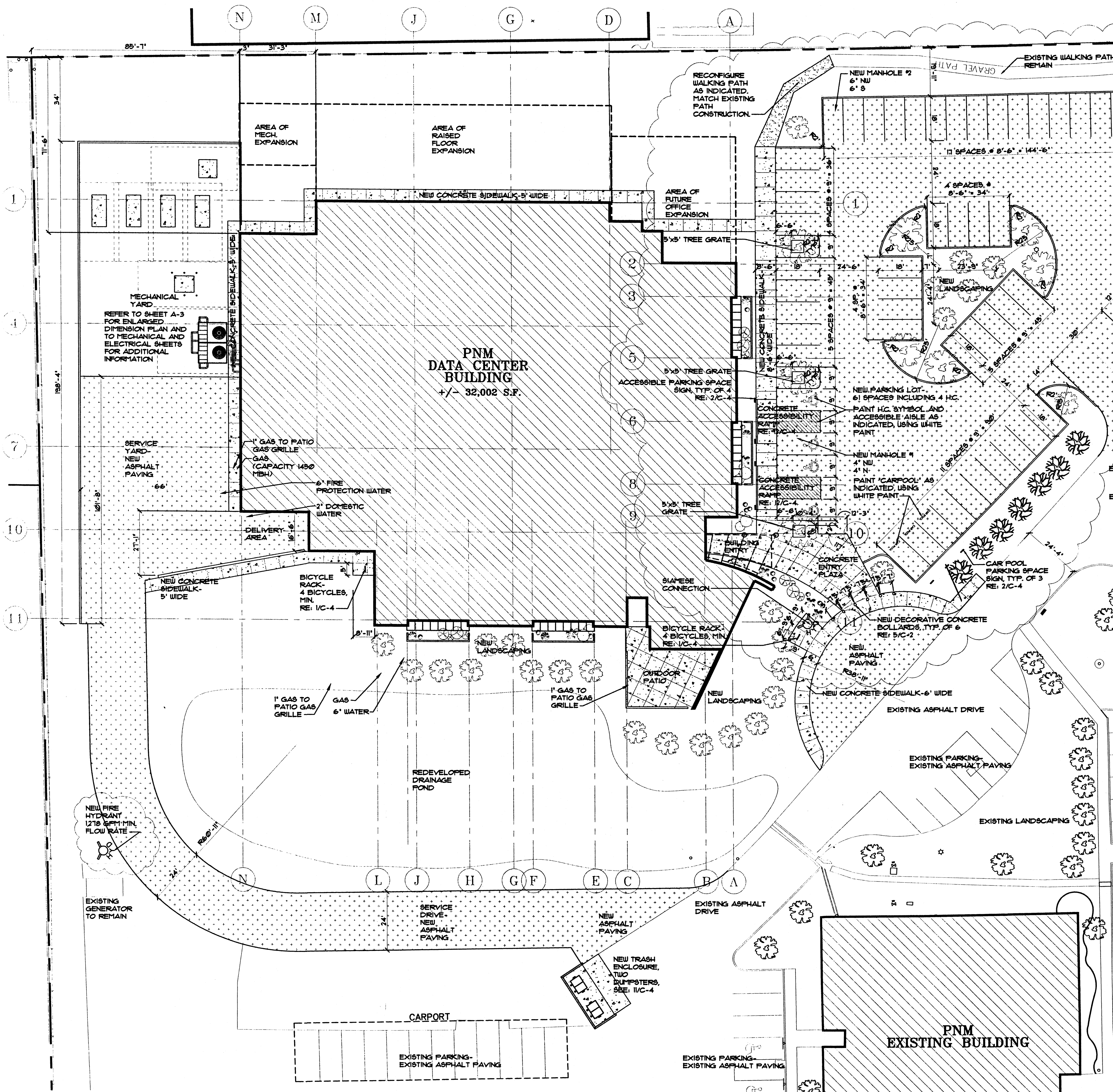
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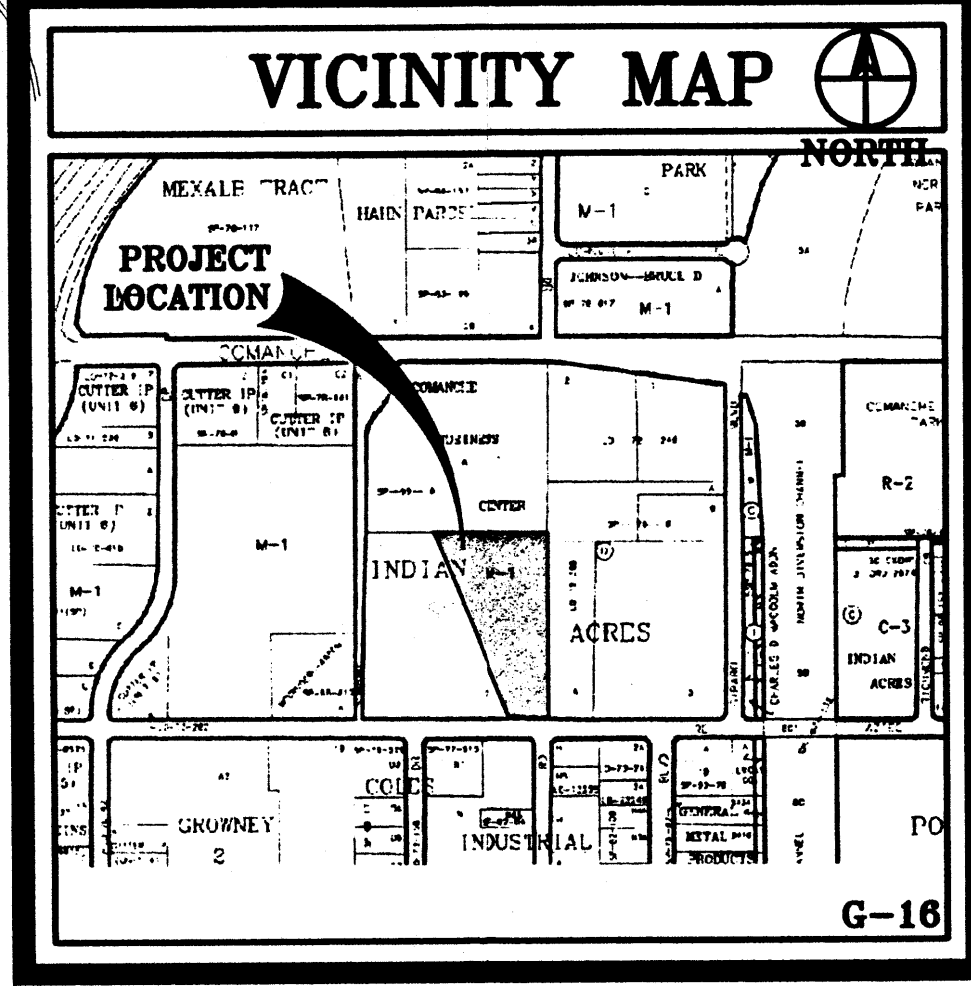
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TRAFFIC CIRCULATION LAYOUT APPROVED

pg. 5
Signed _____
7/14/05
Date



TCL - REVISED SITE PLAN

JUNE 3 2005 SCALE: 1" = 20'

REVISED JULY 11, 2005

SITE PLAN LEGEND	
[Pattern]	INDICATES EXTENT OF LANDSCAPE AREAS
[Pattern]	INDICATES EXTENT OF SECTION 1 TYPE ASPHALTIC CONCRETE PAVING.
[Pattern]	INDICATES EXTENT OF CONCRETE PAVING AND CONCRETE SIDEWALKS. CONTROL JOINTS AS SHOWN.
[Pattern]	INDICATES EXTENT OF 6" GRAVEL BASE COURSE ON 12" SCARIFIED AND RECOMPACTED NATIVE SOIL.
[Line Style]	PROPERTY LINE.
[Line Style]	EXISTING FENCING.
[Line Style]	NEW FENCING.

CLAUDIO VIGIL ARCHITECTS

PNM

IT OFFICE BUILDING

2401 AZTEC ROAD, N.E.

ALBUQUERQUE, NEW MEXICO

SHEET C-3

PROJECT NUMBER 05015

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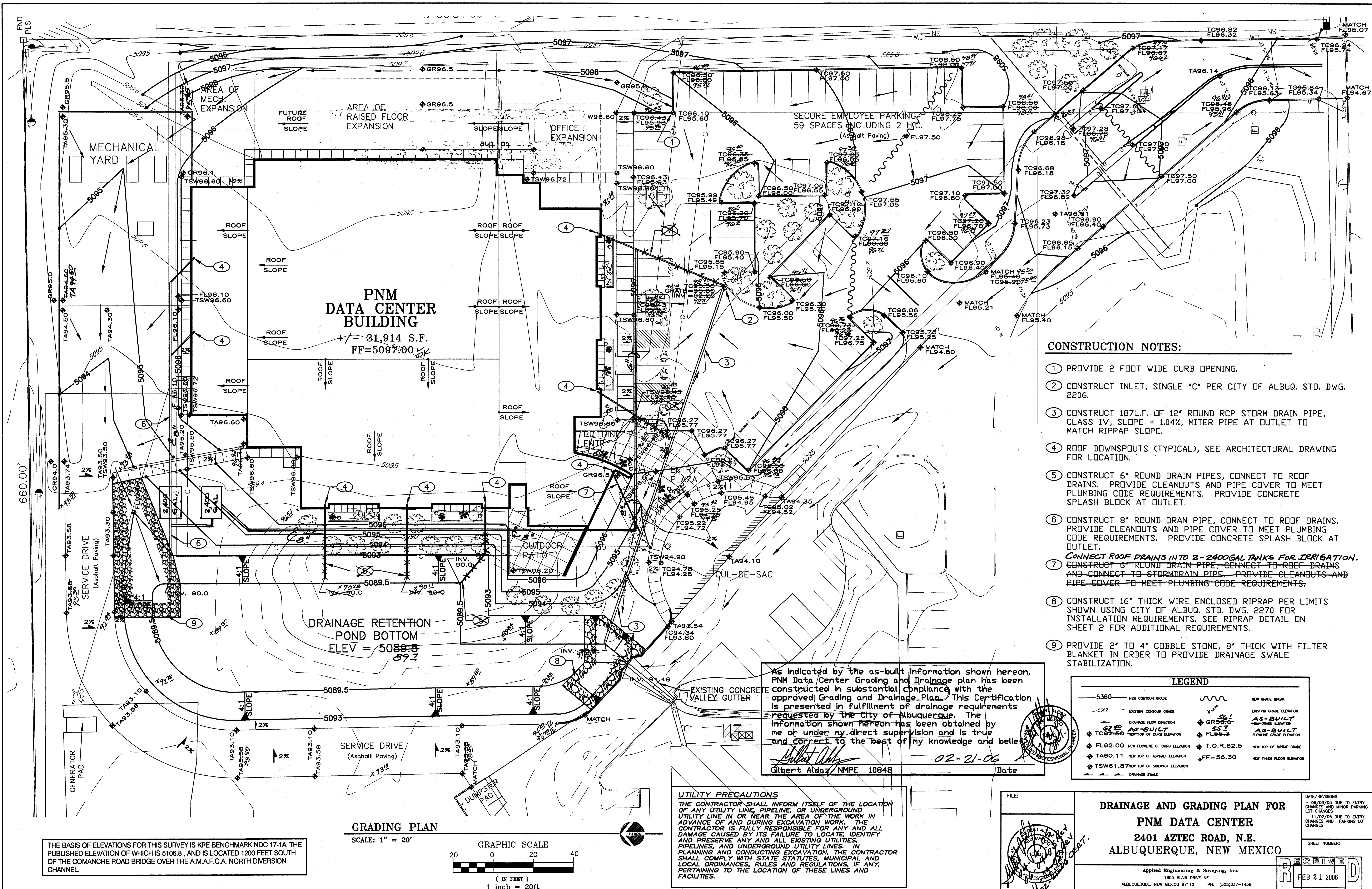
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SITE PLAN

SCALE: 1"=20'-0"



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 - 7 ~~CONNECT ROOF DRAINS INTO 2-2400GAL TANKS FOR IRRIGATION.~~ CONSTRUCT 6" ROUND DRAIN PIPE, CONNECT TO ROOF DRAINS AND CONNECT TO STORM DRAIN PIPE. PROVIDE CLEANOUTS AND PIPE COVER TO MEET PLUMBING CODE REQUIREMENTS.
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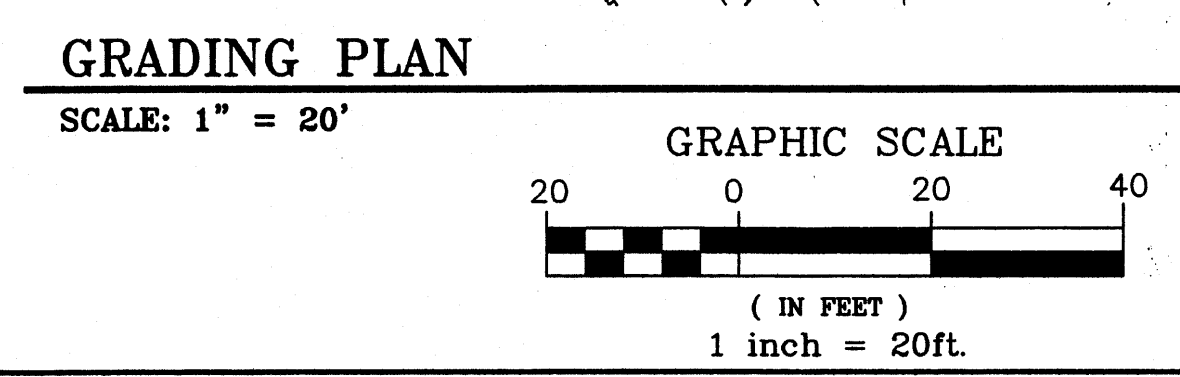
As indicated by the as-built information shown hereon, PNM Data Center Grading and Drainage plan has been constructed in substantial compliance with the approved Grading and Drainage Plan. This Certification is presented in fulfillment of drainage requirements requested by the City of Albuquerque. The information shown hereon has been obtained by me or under my direct supervision and is true and correct to the best of my knowledge and belief.

Gilbert Aldaz
Gilbert Aldaz / NMPE 10848
02-21-06 Date

LEGEND			
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5362	EXISTING CONTOUR GRADE		EXISTING GRADE ELEVATION
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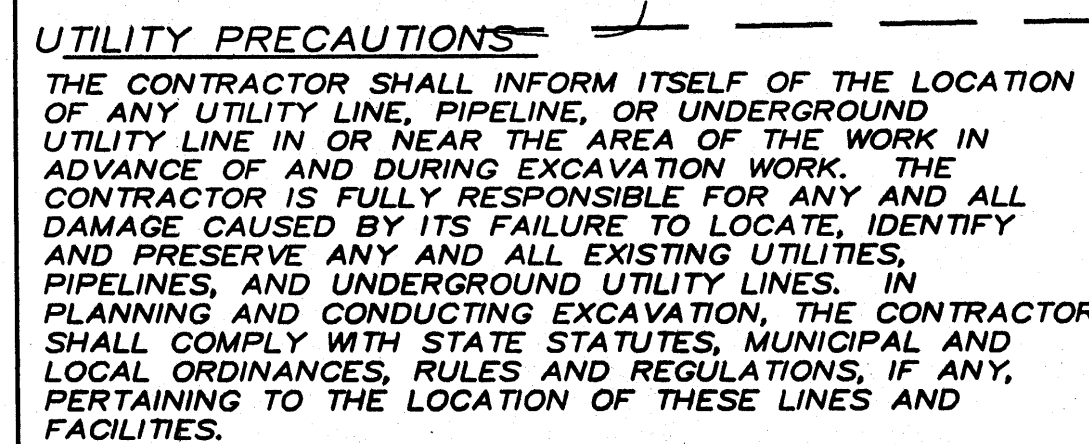
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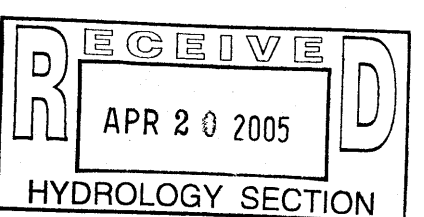
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- 11/02/05 DUE TO ENTRY CHANGES AND PARKING LOT CHANGES

SHEET NUMBER:

RECEIVED
FEB 21 2006
HYDROLOGY SECTION



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Applied Engineering & Suveying, Inc.
1605 BLAIR DRIVE NE
ALBUQUERQUE, NEW MEXICO 87112 PH: (505)237-1456

DATE/REVISIONS:

SHEET NUMBER:

2

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING THE NEW PNM DATA CENTER BUILDING AT 2401 AZTEC ROAD NE, ALBUQUERQUE, NEW MEXICO, GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

1. DRAINAGE CALCULATIONS
2. VICINITY MAP (G-16)
3. FLOOD INSURANCE RATE MAP 35001C0351 D

EXISTING CONDITIONS

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED NORTH OF AZTEC ROAD, NE AND TO THE EAST OF STANFORD DRIVE NE AT 2401 AZTEC ROAD NE, (SEE ATTACHED VICINITY MAP (G-16)). THE PARCEL IS BLOCK D, INDIAN ACRES SUBDIVISION. THE PROPERTY IS BOUNDED ON THE NORTH BY THE COMANCHE BUSINESS CENTER PROPERTY AND TO THE EAST BY THE ALLIED CRANE COMMERCIAL PROPERTY. THIS SITE CONTAINS APPROXIMATELY 10 ACRES AND IS CURRENTLY FULLY DEVELOPED WITH EXISTING OFFICE BUILDING, METAL BUILDING, ASPHALT PAVING FOR PARKING, CONCRETE SIDEWALKS AND LANDSCAPING IMPROVEMENTS.

THE SITE CURRENTLY HAS A MASTER DRAINAGE STUDY THAT HAS BEEN APPROVED BY THE CITY HYDROLOGY DEPARTMENT. THIS PLAN WAS PREPARED BY BPLW DATED MARCH 2002. THE SITE CURRENTLY HAS THREE EXISTING RETENTION PONDS THAT WERE APPROVED WITH THE MASTER PLAN, PONDS A, B AND C.

THIS NEW PNM DATA CENTER BUILDING IS TO BE CONSTRUCTED AT THE NORTHEAST CORNER OF THE ABOVE REFERENCE SITE IN DRAINAGE BASIN P3 OF THE MASTER PLAN. THE EXISTING AREA CURRENTLY HAS GRAVEL TREATMENT WITHIN THE BUILDING PAD SITE AND DRAINS INTO POND B.

PROPOSED CONDITIONS

AS SHOWN BY THE GRADING PLAN PREPARED FOR THIS SITE, THE INTENT IS TO CONSTRUCT A 31,914SF NEW BUILDING, REMOVE AND REPLACE THE EXISTING PARKING LOT SHOWN ON BASIN P4 AND RECONSTRUCT RETENTION POND B TO ACCOMMODATE THE INCREASED RUNOFF FROM THESE PROPOSED IMPROVEMENTS.

THE RECONSTRUCTED RETENTION POND B WILL BE ANALYZED TO HOLD THE 100YR - 24HR EVENTS IN COMPLIANCE WITH THE CURRENT CITY OF ALBUQUERQUE HYDROLOGY REQUIREMENTS. ALL CONVEYANCE CHANNELS, RUNDOWNS, PIPES AND INLETS HAVE BEEN SIZED FOR THE 100YR - 6 HR EVENTS.

THE CALCULATIONS THAT APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL RUNOFF FOR PEAK FLOWS AND STORM DURATION FOR VOLUME REQUIREMENTS. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS AS SET FORTH IN THE REVISION OF SECTION 22.7 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993. THIS D.P.M. PROCEDURE IS USED FOR ANALYZING ONSITE FLOWS.

DOWNSTREAM CAPACITY

BASED ON A REVIEW OF THE SITE AND THE MASTER DRAINAGE STUDY IT APPEARS THAT THERE IS NO DOWNSTREAM CAPACITY AVAILABLE FOR DRAINAGE BASIN P4; THEREFORE, A INCREASE OF THE RETENTION POND CAPACITY WILL BE REQUIRED FOR POND B TO HANDLE THE ADDITIONAL FLOWS DUE TO THIS PROPOSED DEVELOPMENT.

EROSION CONTROL

A SILT FENCE WILL BE REQUIRED ALONG THE WEST END AND NORTH END OF THIS DEVELOPMENT DURING CONSTRUCTION TO MINIMIZE SOIL EROSION FROM LEAVING BASIN P3.

OFFSITE FLOWS

BASED ON A FIELD VISIT OF THE SITE AN OFFSITE ROOF AT THE NORTHEAST CORNER OF THIS SITE DRAINS INTO THIS PROPERTY, ALONG THE NORTHEAST PROPERTY LINE. THESE OFFSITE FLOWS THEN FLOW NORTH ALONG THE BOUNDARY LINE TO AN EXISTING INLET THAT IS OUTSIDE OF THIS PROPERTY ADJACENT TO THE NORTH EAST CORNER OF THIS SITE, THESE FLOWS CONTINUE NORTH ON A SEPARATE STORM DRAINAGE SYSTEM THAT IS NOT PART OF THIS PROJECT.

DRAINAGE CALCULATIONS

1. PRECIPITATION ZONE = 2
2. DESIGN STORM = DEPTH (INCHES) AT 100-YEAR STORM
6-HOUR = 2.35 INCHES
24-HOUR = 2.75 INCHES
10 DAY = 3.95 INCHES
3. PEAK DISCHARGE (CFS/ACRE) FIR 100-YEAR, ZONE 2, TABLE A-9:
Q = 1.56 CFS/ACRE SOIL UNCOMPACTED "A"
Q = 2.28 CFS/ACRE LANDSCAPED "B"
Q = 3.14 CFS/AC COMPACTED SOIL "C"
Q = 4.70 CFS/ACRE IMPERVIOUS AREA "D"
FOR WATERSHEDS LESS THAN OR EQUAL TO 40 ACRES
4. EXCESS PRECIPITATION, E (INCHES), 6 HOUR STORM, ZONE 2, TABLE A-8:
E = 0.53 INCHES SOIL UNCOMPACTED "A"
E = 0.78 INCHES LANDSCAPED "B"
E = 1.13 INCHES COMPACTED SOIL "C"
E = 2.12 INCHES IMPERVIOUS AREA "D"
5. EXISTING CONDITIONS ONSITE PER MASTER DRAINAGE STUDY
THE FOLLOWING BASINS CURRENTLY DRAIN INTO POND "B":
BASINS P3, P4, P5 P8A & P8B
Q(EXISTING-6HR) = 19.9CFS
V(EXISTING -24HR) = 30,528CF = 0.70AC-FT REQUIRED PER MASTER PLAN

CALCULATE EXISTING POND VOLUME WITHOUT BASINS P3 & P4 WITH MASTER PLAN LAND TREATMENTS
LAND TREATMENT "C" = 2.61AC
LAND TREATMENT "D" = 0.74AC
V(EXISTING-6HR) = $[(1.13 \times 2.61) + (2.12 \times 0.74)] / 12 \times 43,560$
= 14,400CF = 0.38AC-FT EXISTING VOLUME FOR BASINS P3 & P4
VOLUME (EXISTING-24HR) = $0.38 + 0.74(2.75 - 2.35)/12$
= 0.40AC-FT = 17,627CF EXISTING VOLUME FOR BASINS P3 & P4

CALCULATE EXISTING POND VOLUME FOR EXISTING BASINS P5, P8A & P8B
VOLUME (EXISTING-24HR) = 30,528CF - 17,627CF = 12,901CF REQUIRED FOR BASINS P5, P8A & P8B

6. PROPOSED CONDITIONS ONSITE WITH PNM DATA CENTER AND REVISED PARKING LOT (BASINS P3 & P4):
PROPOSED TOTAL AREA = 122,673SF = 2.81AC

IMPERVIOUS AREA PROPOSED:
NEW BUILDING ROOF AREA = 31,914SF
FUTURE BUILDING ROOF AREA = 7,178SF
NEW MECHANICAL YARD = 6,450SF
FUTURE MECHANICAL YARD = 794SF
SERVICE ROAD AND MECHANICAL PARKING AREA = 14,038SF
NEW EMPLOYEE PARKING LOT AREA = 23,618SF
ENTRY PLAZA, SIDEWALKS, CUL-DE-SAC AND OUTDOOR PATIO
AREA = 4,204SF
TOTAL IMPERVIOUS AREA PROPOSED,
TREATMENT "D" = 88,196SF = 2.02AC

LANDSCAPED AREA PROPOSED:
LANDSCAPING AT EMPLOYEE PARKING LOT AREA = 3,273SF
RETENTION POND AREA = 28,542SF
MISCELLANEOUS AREA AROUND BUILDING = 2,600SF
TOTAL LANDSCAPED AREA PROPOSED,
TREATMENT "B" = 34,477SF = 0.79AC

Q(PROPOSED-6HR) = $(2.28 \times 0.79) + (4.70 \times 2.02)$
= 6.72CFS PROPOSED ONSITE FLOW INTO POND "B"
V(PROPOSED-6HR) = $[(0.78 \times 0.79) + (2.12 \times 2.02)] / 12 \times 43,560$
= 17,782CF = 0.41AC-FT PROPOSED VOLUME
VOLUME (PROPOSED-24HR) = $0.41 + 2.02(2.75 - 2.35)/12$
= 0.48AC-FT = 20,792CF PROPOSED ONSITE VOLUME REQUIRED FOR BASINS P3 & P4

TOTAL POND VOLUME REQUIRED FOR POND "B"
= 12,901CF (EXISTING) + 20,792CF (PROPOSED)
= 33,693CF REQUIRED - 24HR STORM VOLUME REQUIRED FOR POND "B"

7. PONDING VOLUME PROVIDED FOR POND "B"

ELEV.	AREA	DEPTH DIFF.	VOL. DIFF	VOL. TOTAL
5489.5	8,888SF			
		3.5'	45,892CF	45,892CF
5493	17,336SF			
		0.1'	1,838CF	47,730CF
5493.10	19,416SF			
		0.5'	11,915CF	59,645CF
5493.58	28,244SF			

TOTAL VOLUME PROVIDED = 59,645CF > 33,693CF REQUIRED-OK

8. SIZE INLET IN PARKING LOT (BASIN P4)

IMPERVIOUS AREA PROPOSED:
FUTURE BUILDING ROOF AREA = 2,348SF
NEW EMPLOYEE PARKING LOT AREA = 23,618SF
SIDEWALKS AREA = 1,100SF
TOTAL IMPERVIOUS AREA PROPOSED,
TREATMENT "D" = 27,066SF = 0.62AC

LANDSCAPED AREA PROPOSED:
LANDSCAPING AT EMPLOYEE PARKING LOT AREA = 3,273SF
TOTAL LANDSCAPED AREA PROPOSED,
TREATMENT "B" = 3,273SF = 0.08AC

Q(PROPOSED-6HR) = $(2.28 \times 0.08) + (4.70 \times 0.62)$
= 3.10CFS PROPOSED ONSITE FLOW INTO INLET
V(PROPOSED-6HR) = $[(0.78 \times 0.08) + (2.12 \times 0.62)] / 12 \times 43,560$
= 4,998CF = 0.11AC-FT PROPOSED RUNOFF INTO INLET

TYPE "D" INLET PROPOSED

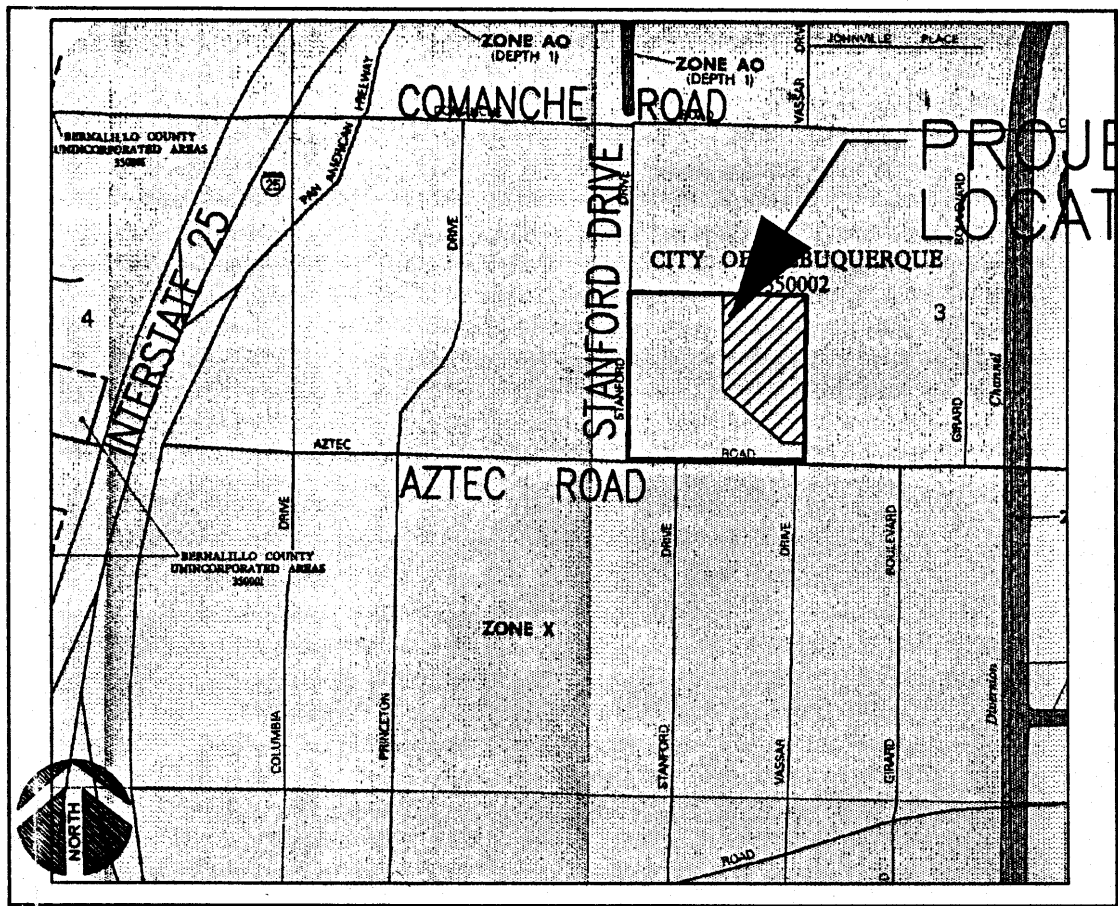
CHECK WEIR CAPACITY:
Q(CAPACITY) = $C \times L \times H^{3/2}$

Q(CAPACITY) 7.4CFS > 3.1CFS - OK
 $= 3.0 \times (2' + 3' + 2') \times (0.5)^{3/2} = 7.4CFS$

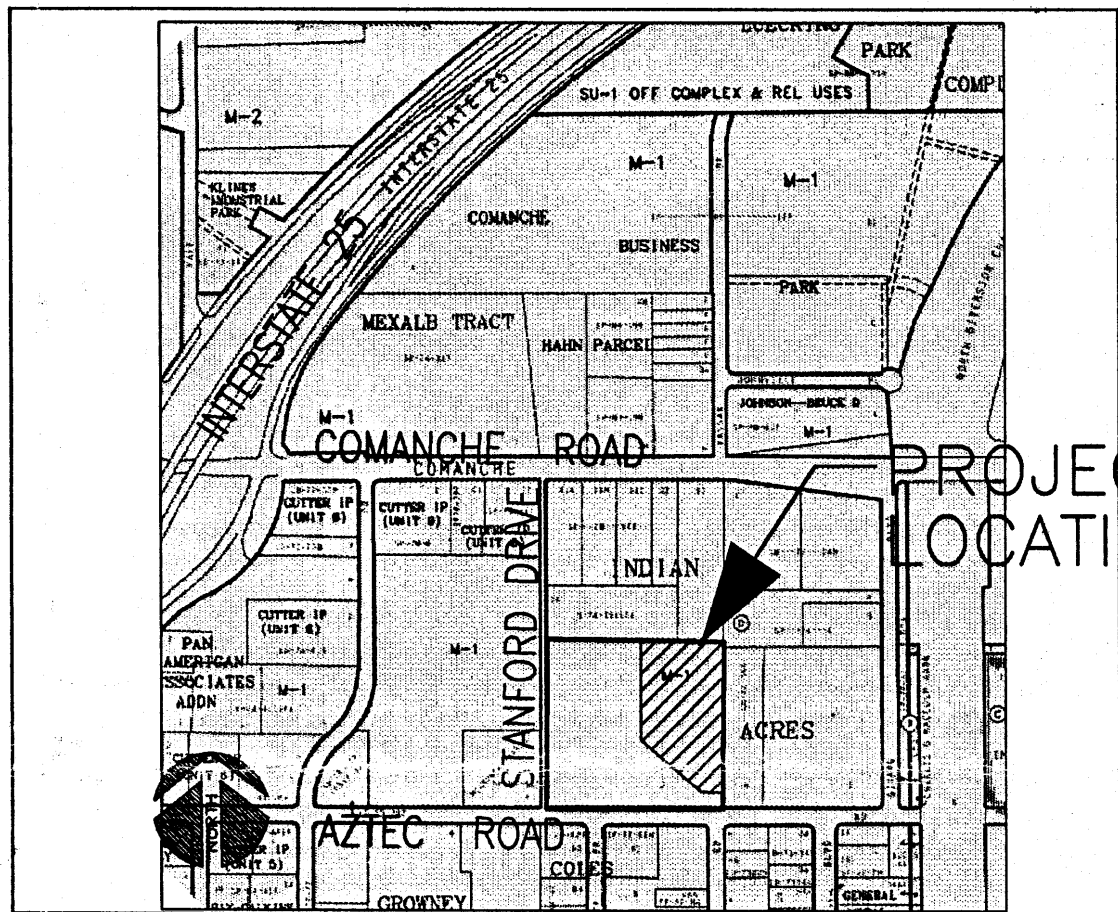
CHECK ORIFICE CAPACITY:
ASSUME INLET SUBMERGED WITH 12" STORM DRAIN
Q = $C \times A \times \sqrt{2gh}$
H = 4.6(INLET DEPTH) - 1.0'/2(HALF DIAMETER) = 4.1'
G = 32.2 FT/SEC²
C = 0.65 COEFFICIENT
A = 3.14 X (1.0 x 1.0)/4 = 0.78SF
Q(CAPACITY) = 0.65 x 0.78 x $\sqrt{2 \times 32.2 \times 4.1}$
Q(CAPACITY) = 8.24 CFS > 3.1CFS - OK

8. SIZE STORM DRAIN CULVERT PIPE IN PARKING LOT (BASIN P4)

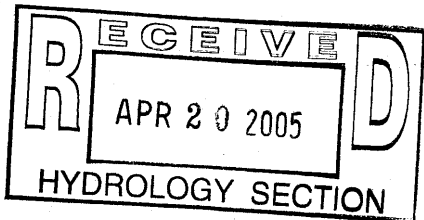
USE PIPE CULVERT ANALYSIS
Q = 3.1 CFS, SLOPE = 1.1 %, n = 0.015, CULVERT LENGTH = 183'
FHWA CHART #1, SCALE NUMBER ON CHART = 1
USE 12" ROUND PIPE MAIN LINE
PROGRAM RESULTS:
HEADWATER INLET DEPTH = 1.32'
NORMAL DEPTH = 0.71'
CRITICAL DEPTH = 0.76'
DEPTH AT OUTLET = 0.70'
OUTLET VELOCITY = 5.64FPS



FIRM MAP 35001C0351 D



VICINITY MAP (G-16)



FILE:	DRAINAGE AND GRADING PLAN FOR PNM DATA CENTER 2401 AZTEC ROAD, N.E. ALBUQUERQUE, NEW MEXICO	DATE/REVISIONS:
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