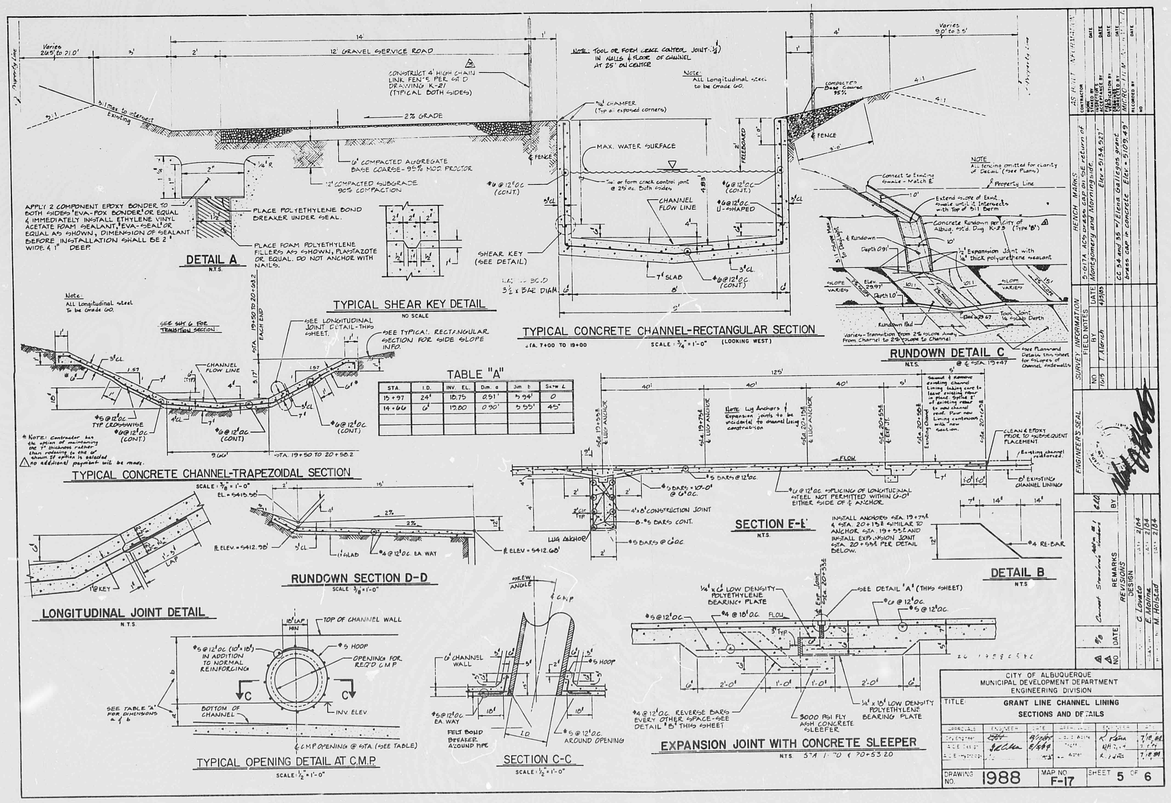
PUBLIC WORKS/HYDROLOGY

F17/D62



PLANS/PLATS ON FILE

FILE DESC: f17/D602

PLANS/PLATS 2

CITY OF ALBUQUERQUE
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R# 35 DATE 3-19-02 OP RP

CITY OF ALBUQUERQUE

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DIRECTOR

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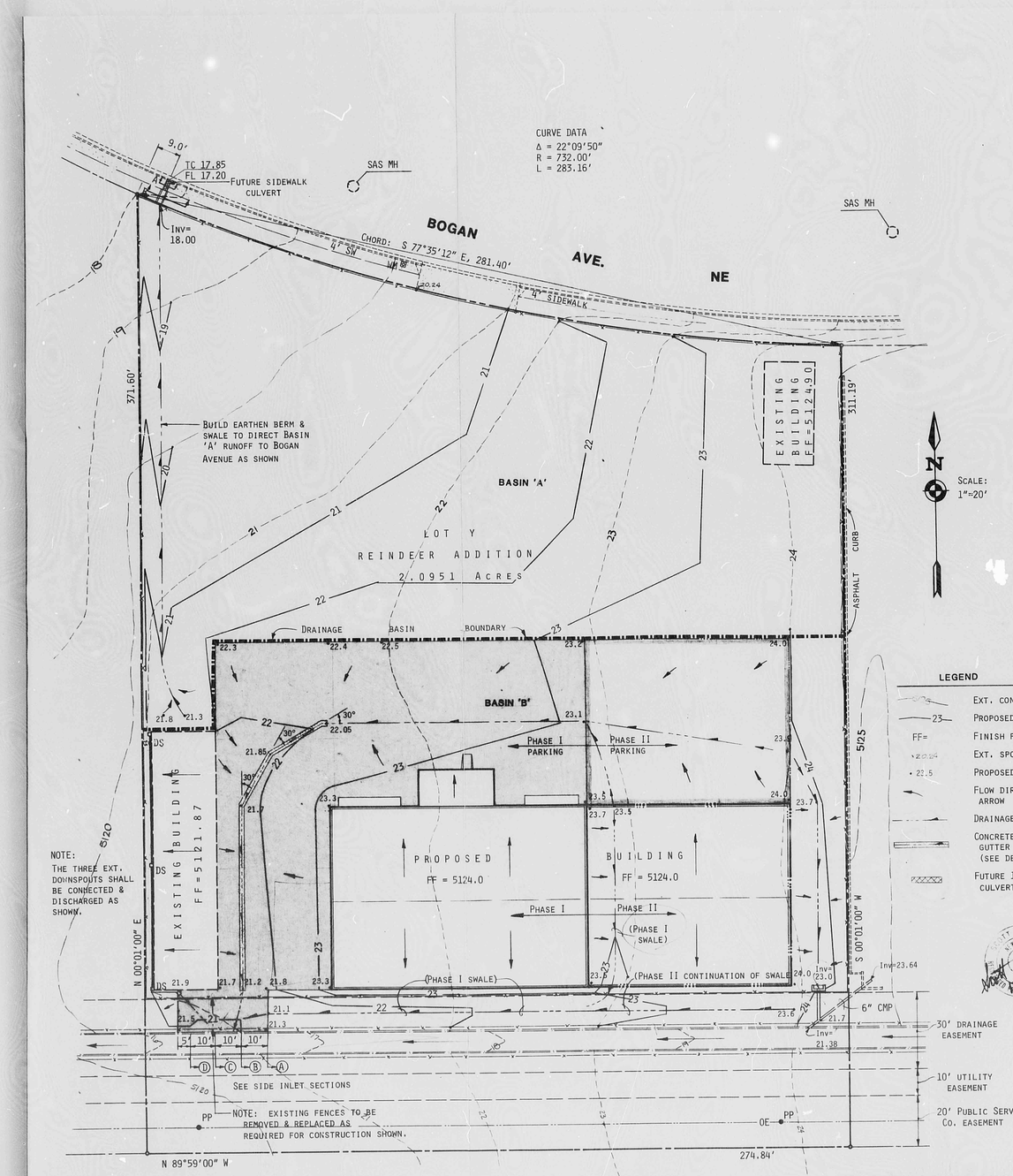
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 07/03/02

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE C D

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE C D



EXISTING DRAINAGE CHARACTERISTICS

RUNOFF FROM THIS SITE CURRENTLY SHEET FLOWS TO THE WEST AND NORTHWEST. THE MAJORITY OF THE SITE IS UNDEVELOPED WITH THE EXCEPTION OF THE TWO EXISTING BUILDINGS SHOWN. A CONCRETE LINED CHANNEL EXISTS ALONG THE SOUTHERN END OF THE SITE AS SHOWN, BUT LITTLE IF ANY OF THE SITE'S RUNOFF ENTERS THIS CHANNEL.

EXISTING COMPOSITE 'C'

UNDEVELOPED:	85,763 / 91,263 @ 0.40 = 0.38	CN = 82 (DIRT SURFACE)	
ROOF:	3,300 / 91,263 @ 0.90 = 0.03	6% IMPERVIOUS	
CONCRETE:	2,200 / 91,263 @ 0.95 = 0.02	COMP. CN = 83	
	'C' = 0.43	DR(Q) = 0.8"	

Q = CIA C = 0.43 I = (2.2)(2.16) = 4.75"/HR

V = QA/12 A = 2.0951 Ac. = 91,263 S.F.

Q_{100} = (0.43)(4.75)(2.0951) = 4.3 CFS Q_{10}=(0.657)(4.3)=2.8 CFS

V_{100} = (0.8)(91,263)/12 = 6084 CF V_{10}=(0.657)(6084)=3997CF

PROPOSED DRAINAGE CONDITIONS

THE DRAINAGE SCHEME FOR THE PROPOSED IMPROVEMENTS CREATES TWO SEPARATE DRAINAGE BASINS. BASIN 'A' WILL BE GRADED AS SHOWN TO PROVIDE THE FILL REQUIRED UNDER THE BUILDING, BUT SHALL REMAIN UNDEVELOPED. THIS BASIN WILL CONTINUE TO DISCHARGE TO BOGAN AVENUE WITH FLOWS CROSSING THE EXISTING DRIVEPAD AND SIDEWALK. THE FUTURE SIDEWALK CULVERT SHALL BE REQUIRED IF AND WHEN DRAINAGE BASIN 'A' DEVELOPS.

BASIN 'B' IS PROPOSED TO BE DEVELOPED IN TWO PHASES. PHASE I WILL CONSIST OF A 7,420 SF BUILDING AND ASSOCIATED ASPHALT PARKING AREA. ALL RUNOFF FROM BASIN 'B' WILL ENTER THE LINED CHANNEL, CROSSING THROUGH THE SOUTHERN PORTION OF THE SITE, VIA AN ASPHALT RUNDOWN AS SHOWN. THE THREE DOWNSPOUTS ON THE EXISTING BUILDING, LOCATED ALONG THE WEST PROPERTY LINE, SHALL BE CONNECTED AND THE RUNOFF ROUTED AS SHOWN TO DISCHARGE ONTO THE ASPHALT RUNDOWN. THE SWALE SHOWN UNDER THE PHASE II BUILDING FOOTPRINT WILL BE CREATED TO DIVERT UPLAND RUNOFF AROUND THE PHASE I BUILDING. PHASE II WILL ADD 5,600 SF OF ROOF AREA AND 5,120 SF OF ADDITIONAL ASPHALT PARKING. THE SWALE SHOWN TO THE EAST OF THE PHASE II BUILDING, AND THE DRAIN LINE SHOWN DISCHARGING TO THE EXISTING 6" CMP, SHALL BE BUILT AS PART OF PHASE II. THE DRAINAGE CALCULATIONS FOR THE TWO BASINS AND TWO PHASES ARE GIVEN BELOW.

BASIN 'A': COMPOSITE 'C' - UNDEV: 36,980/37,780 (0.40) = 0.39

'C' = 0.41, CN = 82, I = 4.75"/HR, 2% IMPER., A = 0.8673 AC = 37780 SF ROOF: 800/37,780 (0.90) = 0.02 'C' = 0.41

(BASIN 'A' REMAINS UNCHANGED IN PHASE II)

Q_{100}=(0.41)(4.75)(0.8673)=1.7 CFS Q_{10}=(0.657)(1.7)=1.1 CFS

V_{100}=(0.8)(37780)/12 = 2519 CF V_{10}=(0.657)(2519)=1655 CF

BASIN B: I=(2.2)(2.16)=4.75"/HR A = 1.2278 AC = 53,483 SF

COMPOSITE 'C' FACTOR

UNDEV: (13,090/37,780)(0.40) = 0.14

ROOF: (9,920/37,780)(0.90) = 0.24

CONCRETE & ASPHALT: (14,770/37,780)(0.95) = 0.37

PHASE I: 'C' = 0.75

COMPOSITE 'C' FACTOR

UNDEV: (2,370/37,780)(0.40) = 0.03

ROOF: (15520/37,780)(0.90) = 0.37

CONCRETE & ASPHALT: (19890/37,780)(0.95) = 0.50

PHASE II: 'C' = 0.90

CN = 82

PHASE I: 65% IMP. COMP CN=92 DR(Q)=1.4"

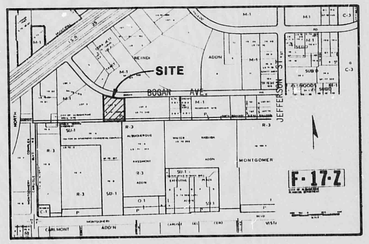
PHASE II: 94% IMP. COMP CN=97 DR(Q)=1.9"

Q_{100}=(0.75)(4.75)(1.2278)=4.4 CFS Q_{100}=(0.90)(4.75)(1.2278)= 5.2CFS

Q_{10} =(0.657)(4.4) = 2.9 CFS Q_{10} =(0.657)(5.2) = 3.4 CFS

V_{100}=(1.4)(37780)/12=4408 CF V_{100}=(1.9)(37780)/12=5982 CF

V_{10} =(0.657)(4408) = 2896 CF V_{10} =(0.657)(5982) = 3930 CF



VICINITY MAP
1" = 750'±

NOTES

OFFSITE FLOWS: THIS SITE DOES NOT ACCEPT ANY OFFSITE FLOWS.

LEGAL DESCRIPTION: LOT Y, REINDEER ADDITION, ALBUQUERQUE, N.M.

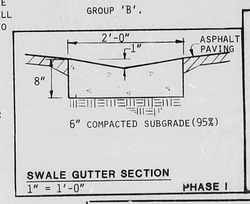
SURVEY: BOUNDARY & TOPOGRAPHIC SURVEY PERFORMED BY WILLIAM P. PETTIT ON NOVEMBER 7, 1988.

BENCHMARKS: NMSHC STATION 'I-25-18' A STANDARD BRASS TABLET SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND.
ELEVATION: 5125.7

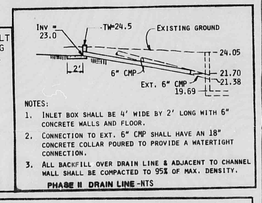
TBM: SOUTH BONNET BOLT OF FIRE HYDRANT ON NORTH SIDE OF BOGAN AVENUE LOCATED APPROXIMATELY 180 FEET WEST OF THE NW CORNER OF LOT Y.
ELEVATION: 5116.88

FLOOD HAZARD STATEMENT: THIS SITE IS NOT WITHIN THE 100-YEAR FLOODPLAIN WITH THE EXCEPTION OF A SOUTHERLY PORTION WHICH IS CONFINED TO A CONCRETE CHANNEL LOCATED WITHIN A DRAINAGE EASEMENT AS SHOWN ON PANEL 16 OF 50 OF THE F.E.M.A. FLOOD MAP.

SOILS: AS DETERMINED BY THE SCS SOIL SURVEY OF BERNALILLO COUNTY, THIS EMBUDO GRAVELLY FINE SANDY LOAM IS IN HYDROLOGIC SOIL GROUP 'B'.

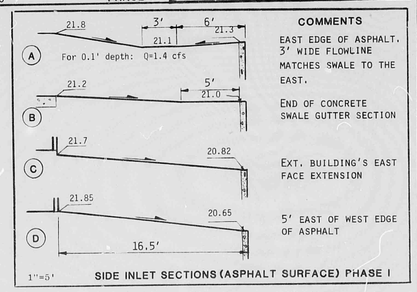


SWALE GUTTER SECTION
1" = 1'-0"
PHASE I



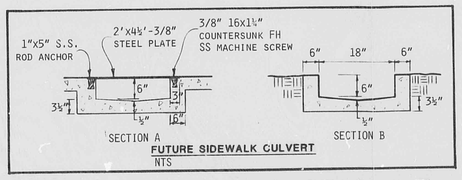
NOTES:
1. INLET BOX SHALL BE 4' WIDE BY 2' LONG WITH 6" CONCRETE WALLS AND FLOOR.
2. CONNECTION TO EXT. 6" CMP SHALL HAVE AN 18" CONCRETE COLLAR POURED TO PROVIDE A WATERTIGHT CONNECTION.
3. ALL BACKFILL OVER DRAIN LINE & ADJACENT TO CHANNEL WALL SHALL BE COMPACTED TO 95% OF MAX. DENSITY.

PHASE II DRAIN LINE-NTS



COMMENTS
A: EAST EDGE OF ASPHALT, 3' WIDE FLOWLINE MATCHES SWALE TO THE EAST.
B: END OF CONCRETE SWALE GUTTER SECTION
C: EXT. BUILDING'S EAST FACE EXTENSION
D: 5' EAST OF WEST EDGE OF ASPHALT

SIDE INLET SECTIONS (ASPHALT SURFACE) PHASE I



FUTURE SIDEWALK CULVERT
NTS

APPROVED FOR DRAINAGE
12/4/88
DATE
SIGNATURE / TITLE

RECEIVED
DEC 09 1988
HYDROLOGY SECTION

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

CITY OF ALBUQUERQUE
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R# 35 DATE 3-19-02 OP EBP

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1/15/02
DIRECTOR

NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
07/03/02

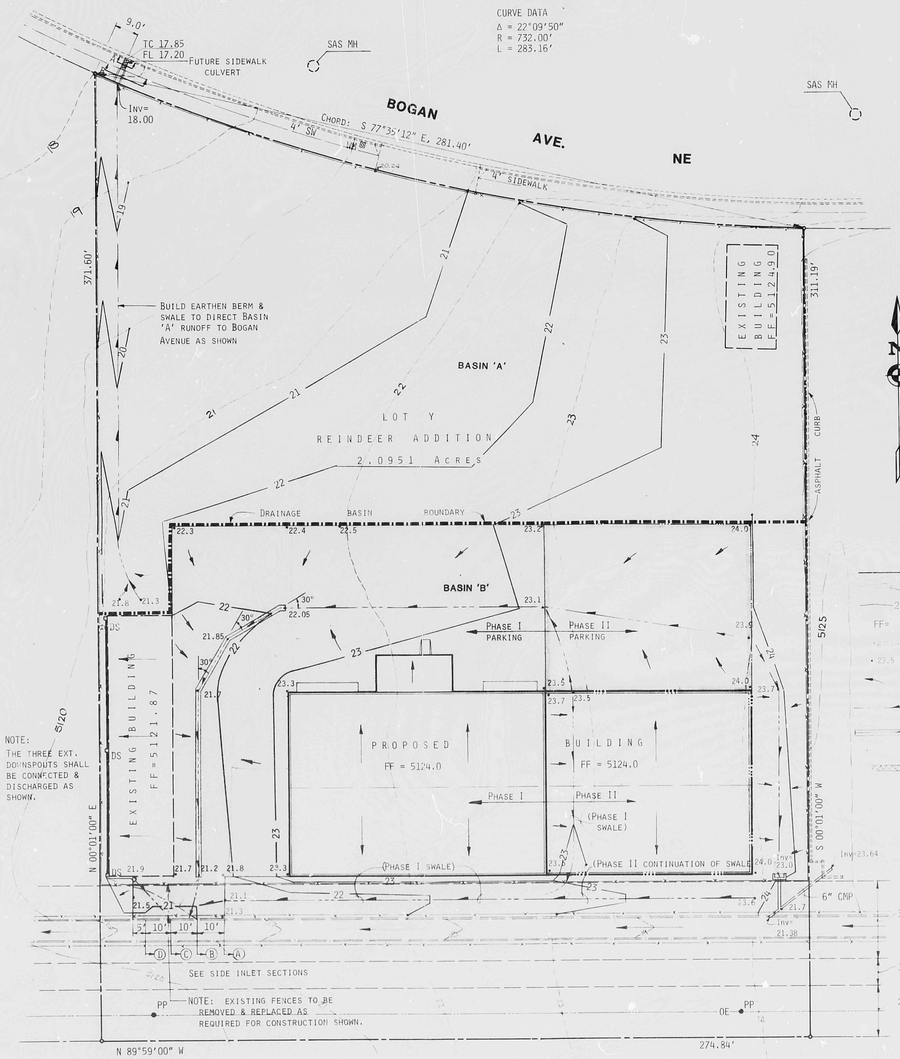
NEW MEXICO SCHOOL PRODUCTS

Grading & Drainage Plan

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D



LEGEND

- Ext. contour
- Proposed contour
- FF= Finish floor elev
- Ext. spot elev
- Proposed spot elev
- Flow directional arrow
- Drainage swale
- Concrete swale gutter 120' long (see detail)
- Future 18" sidewalk culvert (see DTL)
- 30' drainage easement
- 10' utility easement
- 20' Public Service Co. easement

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RUNOFF FROM THIS SITE CURRENTLY SHEET FLOWS TO THE WEST AND NORTHWEST. THE MAJORITY OF THE SITE IS UNDEVELOPED WITH THE EXCEPTION OF THE TWO EXISTING BUILDINGS SHOWN. A CONCRETE LINED CHANNEL EXISTS ALONG THE SOUTHERN END OF THE SITE AS SHOWN, BUT LITTLE IF ANY OF THE SITE'S RUNOFF ENTERS THIS CHANNEL.

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		'C' = 0.43	

Q = CIA C = 0.43 I = (2.2)(2.16) = 4.75"/HR

V = QA/12 A = 2.0951 Ac. = 91,263 s.f.

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'C' = 0.41 CN = 82 } ROOF: 800/37,780 (0.90) = 0.02

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A = 0.8673 AC = 37780 SF 'C' = 0.41

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CONCRETE & ASPHALT: (14,770/37,780)(0.95) = 0.37 CONCRETE & ASPHALT: (19890/37,780)(0.95) = 0.50

PHASE I: 'C' = 0.75 PHASE II: 'C' = 0.90

Q_{100}=(0.75)(4.75)(1.2278)=4.4 CFS Q_{100}=(0.90)(4.75)(1.2278)= 5.2CFS

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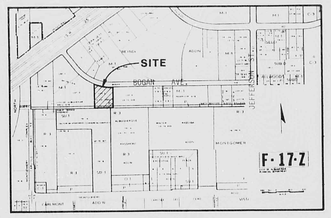

VICINITY MAP
1" = 750'±

NOTES

OFFSITE FLOWS: THIS SITE DOES NOT ACCEPT ANY OFFSITE FLOWS.

LEGAL DESCRIPTION: LOT Y, REINDEER ADDITION, ALBUQUERQUE, N.M.

SURVEY: BOUNDARY & TOPOGRAPHIC SURVEY PERFORMED BY WILLIAM P. PETTIT ON NOVEMBER 7, 1988.

BENCHMARKS: NGSGC STATION 'I-25-18' A STANDARD BRASS TABLET SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND.
ELEVATION: 5125.7

TBM: SOUTH BONNET BOLT OF FIRE HYDRANT ON NORTH SIDE OF BOGAN AVENUE LOCATED APPROXIMATELY 180 FEET WEST OF THE NW CORNER OF LOT Y.
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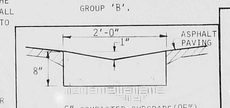
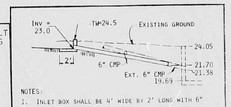
SOILS: AS DETERMINED BY THE SCS SOIL SURVEY OF BERNALILLO COUNTY, THIS EMBUDO GRAVELLY FINE SANDY LOAM IS IN HYDROLOGIC SOIL GROUP 'B'.



SWALE GUTTER SECTION
1" = 1'-0"
PHASE I



NOTES:
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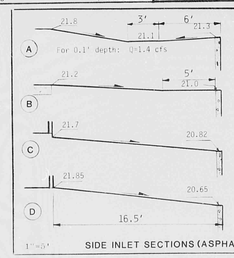
3. ALL BACKFILL OVER DRAIN LINE & ADJACENT TO CHANNEL WALL SHALL BE COMPACTED TO 95% OF MAX. DENSITY.

PHASE II DRAIN LINE NTS



COMMENTS

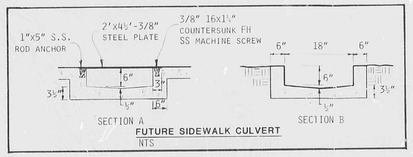
EAST EDGE OF ASPHALT. 3' WIDE FLOWLINE MATCHES SWALE TO THE EAST.

END OF CONCRETE SWALE GUTTER SECTION

EXT. BUILDING'S EAST FACE EXTENSION

5' EAST OF WEST EDGE OF ASPHALT

SIDE INLET SECTIONS (ASPHALT SURFACE) PHASE I



FUTURE SIDEWALK CULVERT
NTS

APPROVED FOR DRAINAGE
12/4/88

NEW MEXICO SCHOOL PRODUCTS

Grading & Drainage Plan

PLAN SHOT TWICE ONCE ON LIGHT ONCE ON DARK

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R# 35 DATE 3-19-02 OP

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STATE OF NEW MEXICO
07/27/02

D24 C20 B16 A12

CITY OF ALBUQUERQUE

C D