PUBLIC WORKS/HYDROLOGY

E18/D44

REPLAT OF TRACTS B-1, B-2 & B-3 ACADEMY ACRES, UNIT 16

WITHIN THE

ELENA GALLEGOS GRANT, WITHIN PROJECTED SECTION 25, T11N, R3E, NMPM

ALBUQUERQUE, NEW MEXICO

JUNE 1992

JUN 5 1992

HYDROLOGY SECTION

APPROVALS AND ACCEPTED

PLANNING DIRECTOR, CITY OF ALBUQUERQUE, NM	DATE
CITY ENGINEER, CITY OF ALBUQUERQUE, NM	DATE
AMAFCA	DATE
TRAFFIC ENGINEER, CITY OF ALBUQUERQUE, NM	DATE
WATER UTILITIES DEPT., CITY OF ALBUQUERQUE, NM	DATE
PARKS & RECREATION DEPT., CITY OF ALBUQUERQUE, NM	DATE
CITY SURVEYOR, CITY OF ALBUQUERQUE, NM	DATE
PROPERTY MANAGEMENT, CITY OF ALBUQUERQUE, NM	DATE
GAS COMPANY OF NEW MEXICO	DATE
US WEST TELEPHONE	DATE
PUBLIC SERVICE COMPANY OF NEW MEXICO	DATE
ZONING INTRACTABLE	DATE
PUBLIC WORKS DEPARTMENT, BERNALILLO COUNTY, NM	DATE

FREE CONSENT STATEMENT

THE UNDERSIGNED OWNER(S) AND PROPRIETOR(S) OF THE PROPERTY DESCRIBED HEREON, DO HEREBY GRANT ALL EASEMENTS AS SHOWN OR NOTED HEREON AND DO HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THIS PLAT WITH THEIR FREE CONSENT AND IN ADVANCE OF SALE OF ANY LOTS DESCRIBED AND DO HEREBY REQUEST THAT THEY ARE AUTHORIZED TO DO SO.

OWNER(S) OF TRACTS B-1, B-2 & B-3

JAMES F. SMITH & SONS

KENNETH D. JOHNSON, JAMES BEHLAND, LEROY KELLEY, HARVEY W. SELLEY, ALBUQUERQUE, NEW MEXICO

STATE OF NEW MEXICO) ss
COUNTY OF BERNALILLO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGE BEFORE ME THIS 4th DAY OF June, 1992 BY JAMES F. SMITH & SONS, A NEW MEXICO PARTNERSHIP, KENNETH D. JOHNSON, JAMES BEHLAND, LEROY KELLEY, HARVEY W. SELLEY, ALBUQUERQUE, NEW MEXICO.

OFFICIAL SEAL
Melanie Sherrin
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires 3/19/95

My commission expires 3/19/95

PUBLIC EASEMENTS

P.S.N.M. UTILITY EASEMENTS GRANTED TO THE PUBLIC FOR THE CONSTRUCTION, OPERATION, MAINTENANCE AND REMOVAL OF ELECTRIC, GAS, TELEPHONE, CABLE TELEVISION AND STREET LIGHTING FACILITIES AS MAY BE NECESSARY TO PROVIDE ELECTRIC SERVICE.

1. THE UTILITY SHALL HAVE THE RIGHT TO CUT TREES, BRUSH, UNDERGROWTH AND OTHER OBSTRUCTIONS WITHIN THE EASEMENTS AS SHOWN ON THIS PLAT AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN, AND THE RIGHT TO TRIM OR CUT TREES OR OVERHANGING BRANCHES OUTSIDE THE EASEMENTS AS SHOWN ON THIS PLAT AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN.
2. THE UTILITY SHALL HAVE THE RIGHT TO INSTALL, MAINTAIN AND USE GATES IN ALL FENCES WHICH NOW CROSS OR HEREAFTER MAY CROSS THE EASEMENTS GRANTED HEREIN.
3. ALL UTILITY INSTALLATIONS, EXCAVATIONS, FILLS AND GRADING SHALL BE DONE IN A WORKMANLIKE MANNER AND ANY DISTURBED GROUND WITHIN THE EASEMENTS SHALL BE RESTORED AS NEARLY AS PRACTICABLE TO ITS ORIGINAL CONDITION.
4. NO BUILDINGS, STRUCTURES, OR OTHER OBSTRUCTIONS SHALL BE PLACED OR PERMITTED TO REMAIN WITHIN THE EASEMENTS GRANTED HEREIN WHICH MAY INTERFERE WITH THE EXERCISE OF THE FOREGOING EASEMENTS OR WITH THE CONSTRUCTION, OPERATION AND MAINTENANCE OF THE UTILITY FACILITIES LOCATED THEREIN.
5. THE GRANTEE SHALL INDEMNIFY THE GRANTOR AGAINST ANY DAMAGE OR EXPENSE WHICH MAY BE INCURRED BY REASON OF THE NEGLIGENCE OF THE GRANTEE IN THE EXERCISE OF THE EASEMENTS GRANTED HEREIN.
6. THE GRANTOR RESERVES THE RIGHT TO USE THE EASEMENTS HEREIN GRANTED FOR ANY PURPOSE NOT INCONSISTENT WITH THE RIGHTS HEREIN GRANTED.

PUBLIC UTILITY EASEMENTS

INCLUDES 15 FOOT WIDE PUBLIC UTILITY EASEMENT ADJACENT TO ALL PUBLIC RIGHTS-OF-WAY AND 10 FOOT WIDE PUBLIC UTILITY EASEMENT ADJACENT TO ALL INTERIOR LOT LINES AS SHOWN HEREON, AND THE EASEMENTS AS SHOWN HEREON, FOR THE CONSTRUCTION, MAINTENANCE AND SERVICE OF ALL BURIED AND AERIAL UTILITIES AND APPURTENANCES, INCLUDING BUT NOT LIMITED TO ELECTRICAL, GAS, TELEPHONE, CABLE TELEVISION AND STREET LIGHTING SERVICES, ALONG WITH THE RIGHT TO BUILD, REBUILD, CONSTRUCT, RECONSTRUCT, ADD TO, CHANGE THE SIZE OF, IMPROVE, REMOVE, OPERATE, REPAIR, INSPECT AND PATROL THE FACILITIES THEREIN AND MAKE CONNECTIONS THERETO AS REQUIRED FROM TIME TO TIME. TOGETHER WITH THE RIGHT TO INSTALL SERVICE CONNECTIONS UNDERNEATH ANY PORTION OF THE LOTS AS SHOWN HEREON TO SERVE IMPROVEMENTS THEREON OR ADJACENT THERETO, AND THE RIGHT TO ALLOW ANY OTHER PUBLIC UTILITY TO DO SO. THE PUBLIC UTILITY EASEMENTS SHALL BE FREE OF OBSTRUCTIONS AND VEGETATION WHICH MAY INTERFERE WITH THE RIGHTS GRANTED HEREIN. THE PUBLIC UTILITY SHALL HAVE THE RIGHT TO CUT TREES, BRUSH, UNDERGROWTH AND OTHER OBSTRUCTIONS WITHIN THE EASEMENTS AS SHOWN ON THIS PLAT AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN, AND THE RIGHT TO TRIM OR CUT TREES OR OVERHANGING BRANCHES OUTSIDE THE EASEMENTS AS SHOWN ON THIS PLAT AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN.

BY APPROVING THIS PLAT, PUBLIC SERVICE COMPANY OF NEW MEXICO DOES NOT WAIVE OR RELEASE ANY EASEMENT OR RIGHT OF ACTION WHICH IT MAY HAVE OR BE GRANTED.

PUBLIC SERVICE COMPANY OF NEW MEXICO

DATE

CERTIFICATION

I, SANTIAGO ROMERO, REGISTERED NEW MEXICO LAND SURVEYOR NO. 9672, HEREBY CERTIFY THAT THIS PLAT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, THAT IT COMPLIES WITH THE REQUIREMENTS OF THE CITY OF ALBUQUERQUE ORDINANCES AND REGULATIONS, AND THAT IT MEETS THE MINIMUM REQUIREMENTS FOR MONUMENTATION AND SURVEY ACCURACY OF THE CITY OF ALBUQUERQUE, AND THAT THE SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SURVEYED: MARCH, 1992

6/4/92

DATE OF SURVEY

SANTIAGO ROMERO, NEW MEXICO 9672

REGISTERED PROFESSIONAL SURVEYOR

SEAL

VICINITY MAP
ZONE ATLAS E-18

PROJECT SITE

LOUISIANA

N.T.S.

REFERENCE DOCUMENTS

1. PLAT OF TRACTS B-1, B-2, AND B-3, ACADEMY ACRES UNIT 16, FILED JANUARY 19, 1989, VOL. C50, FOLIO 124.
2. PLAT OF LOTS 1 THRU 14, TRACT A, BLK. 55, ACADEMY ACRES, UNIT 15, FILED NOVEMBER 6, 1986, VOL. C38, FOLIO 281.
3. PLAT OF LOTS 1 THRU 3, TRACT A, BLK. 55, ACADEMY ACRES, UNIT 15, FILED NOVEMBER 6, 1986, VOL. C38, FOLIO 281.
4. BLK 3 AND 4 DESIGN MAP FOR ACADEMY ACRES UNIT 16 FILED NOVEMBER 6, 1986, VOL.

GENERAL NOTES

1. BASIS OF BEARING IS NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
2. MONUMENTS AND BEARINGS ARE SHOWN THUS ●
3. DISTANCES ARE GROUND DISTANCES.
4. PROPERTY CORNERS ARE SET WITH #4 REBAR WITH YELLOW PLASTIC CAP STAMPED "S.R.V."
5. BEARINGS SHOWN IN PARENTHESES ARE RECORDED BEARINGS. ALL OTHER BEARINGS ARE MEASURED.
6. SCHOOL BOARD FEES PAID.

PROJECT: 92-0-04
SHEET 1 OF 2

SHT 1 of 2

REPLAT OF TRACTS B-1, B-2 & B-3 ACADEMY ACRES, UNIT 16

WITHIN THE

ELENA GALLEGOS GRANT

WITHIN PROJECTED SECTION 25, T11N, R3E, NMPM

ALBUQUERQUE, NEW MEXICO

JUNE, 1992

MATCH LINE - SEE BELOW

FOUND MONUMENT AS NOTED

SET #4 REBAR W/ YELLOW PLASTIC CAP STAMPED "S.R.V."

SET PROJECTION MARKER ON TOP OF CURB

BEARINGS SHOWN IN PARENTHESES ARE RECORDED BEARINGS. ALL OTHER BEARINGS ARE MEASURED.

SCHOOL BOARD FEES PAID

FOUND #4 REBAR W/ YELLOW PLASTIC CAP STAMPED "S.R.V."

FOUND #4 REBAR W/ YELLOW PLASTIC CAP STAMPED "LS 5992"

FOUND #4 REBAR W/ YELLOW PLASTIC CAP STAMPED "LS 7719"

FOUND #4 REBAR W/ YELLOW PLASTIC CAP STAMPED "LS 9672"

FOUND #4 REBAR W/ YELLOW PLASTIC CAP STAMPED "LS 7719" FLUSH WITH GROUND

FOUND #4 REBAR W/ YELLOW PLASTIC CAP STAMPED "LS 9672" FLUSH WITH GROUND

DRAINAGE PLAN COMPUTATIONS

A. BASIC ASSUMPTIONS

1. Discharge from the proposed subdivision will drain onto two separate locations. One point of discharge is the concrete drainage channel being constructed at Glendora and Forest Hills Drive. The other point is at the intersection of San Pedro Blvd and Forest Hills Drive. No significant increase to the discharge amount will occur at this intersection as a result of this development.
2. This subdivision comprises of two drainage basins (on-site) a third basin (off-site) will discharge into the above mentioned drainage channel at Glendora, which presently drains into the Pino Arroyo.
3. All the lots being constructed on the north side of Forest Hills Drive will free discharge, sheet flow, into the Pino Arroyo.
4. No other off-site flows will be accepted onto this site. The flows from east of Louisiana Blvd. are intercepted by drop inlets and discharged to the Pino Arroyo via a 30" RCP storm sewer in Louisiana Blvd.

B. CONTRIBUTING AREAS

1. Basin "A" (On-Site)
   a) Total Area = 170,271 S.F.
   b) Paved Area = 95,250 S.F.
   c) Roof Area = 31,909 S.F.
   d) Lawn & Landscaping = 64,318 S.F.
2. Basin "B" (On-Site)
   a) Total Area = 57,075 S.F.
   b) Paved Area = 45,525 S.F.
   c) Landscaping = 11,750 S.F.
3. Basin "C" (Off-Site)
   a) Q = 99 CFS

C. RUNOFF COEFFICIENTS (COMPOSITE C)

1. Basin "A" = $\frac{95,950}{170,271} \times 0.95 + \frac{31,909}{170,271} \times 0.90 + \frac{64,318}{170,271} \times 0.35$

   C = 0.70
2. Basin "B" = $\frac{45,325}{57,075} \times 0.95 + \frac{11,750}{57,075} \times 0.35$

   C = 0.80

D. TIME OF CONCENTRATION (T_c)

$T_c = 0.0078 \pm (L^{0.77} / S^{0.385})$

1. Basin "A" = L = 1563 S = 2.67% T_c = 7.05 Min
2. Basin "B" = L = 1011 S = 3.09% T_c = 6.20 Min
3. Basin "C" = L = 1900 S = 2.46% T_c = 11.10 Min (Use 10 min)

E. RAINFALL INTENSITY (I)

1. Rainfall Volume 2.9" (100 Yr. Freq.) Plate 22.2 D-1
   a) Basin "A" $I = 2.3 \pm 6.84 \pm 9.20^{-0.51} = I = 3.07"$
   b) Basin "B" $I = 2.3 \pm 6.84 \pm 6.20^{-0.51} = I = 4.20"$

F. PEAKFLOW RUNOFF (Q = CIA)

1. Basin "A"
   Q = 0.70 x 3.07 x 4.46 = Q = 15.91 CFS USE 16 CFS
2. Basin "B"
   Q = 0.80 x 4.20 x 1.31 = Q = 8.51 CFS
3. Basin "C"
   Q = 99 CFS (From previous drainage report, See Appendix)

G. STREET FLOW CAPACITY (1/2 STREET WIDTH)

1. Slope = 2.67%
2. Manning = 0.017
3. Flow Rate = Q = 8 x 87.41 x 0.61 x 0.16
   Q = 68.24 CFS

H. DRAINAGE CHANNEL

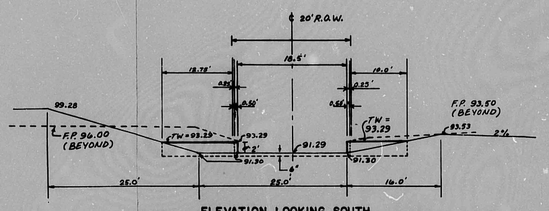
1. Required Flow Capacity Q_{100} = 115 CFS (99 cfs from Glendora + 16 cfs from Basin "A")
2. Actual Flow Capacity at 1' depth

   $Q = A \times \frac{1.486}{0.015} \times R^{2/3} \times S^{1/2}$

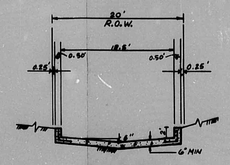
   Q = 18.5 x 114.30 x 0.93 x 0.061
   Q = 119.96 CFS > 115 CFS Required

I. CONCLUSIONS

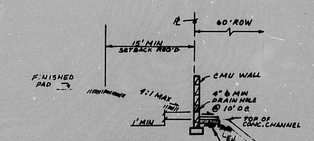
1. The street capacity for those streets within this development will not be exceeded by the 100 year run off at any point in this subdivision.
2. The off-site flows being accepted onto this subdivision from Glendora Ave. along with the on-site flows being generated will not exceed the drainage structures constructed as part of this project. Flow depth in the 18.5' wide channel will not exceed 1' depth. The T_c for both the office Basin "C" flows and the flow from Basin "A" will peak at the same time at 18.5 wide channel. Finished floor elevations for existing residences and new residences within this development will not be jeopardized by high water levels resulting during the 100 year event.



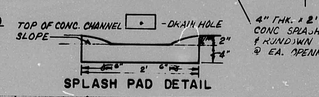
ELEVATION LOOKING SOUTH
AT CHANNEL LINING CONNECTION TO EXISTING RUNDOWN



SECTION 'B-B'
TYPE "B"
DRAINAGE R.O.W.
FOR DETAILS SEE COA STD. DWG. 2260



SECTION A-A
DETAIL AT NORTH PROPERTY LINE



SPLASH PAD DETAIL

LEGEND

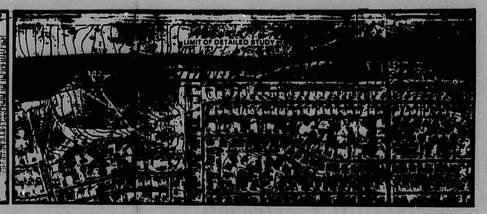
- FINISHED CONTOUR
- EXISTING CONTOUR
- FINISHED SPOT ELEV.
- EXIST. SPOT ELEV.
- FLOW LINE
- EXIST. PAVEMENT
- CONCRETE
- EXIST. BUILDING
- EXIST. CURB & GUTTER
- PROPERTY LINE
- T.C. TOP OF CURB
- T.A. TOP OF ASPHALT

GRADING AND DRAINAGE PLAN
FOR
ACADEMY ACRES UNIT 16 SUBDIVISION
REPLAT OF TRACT "B"

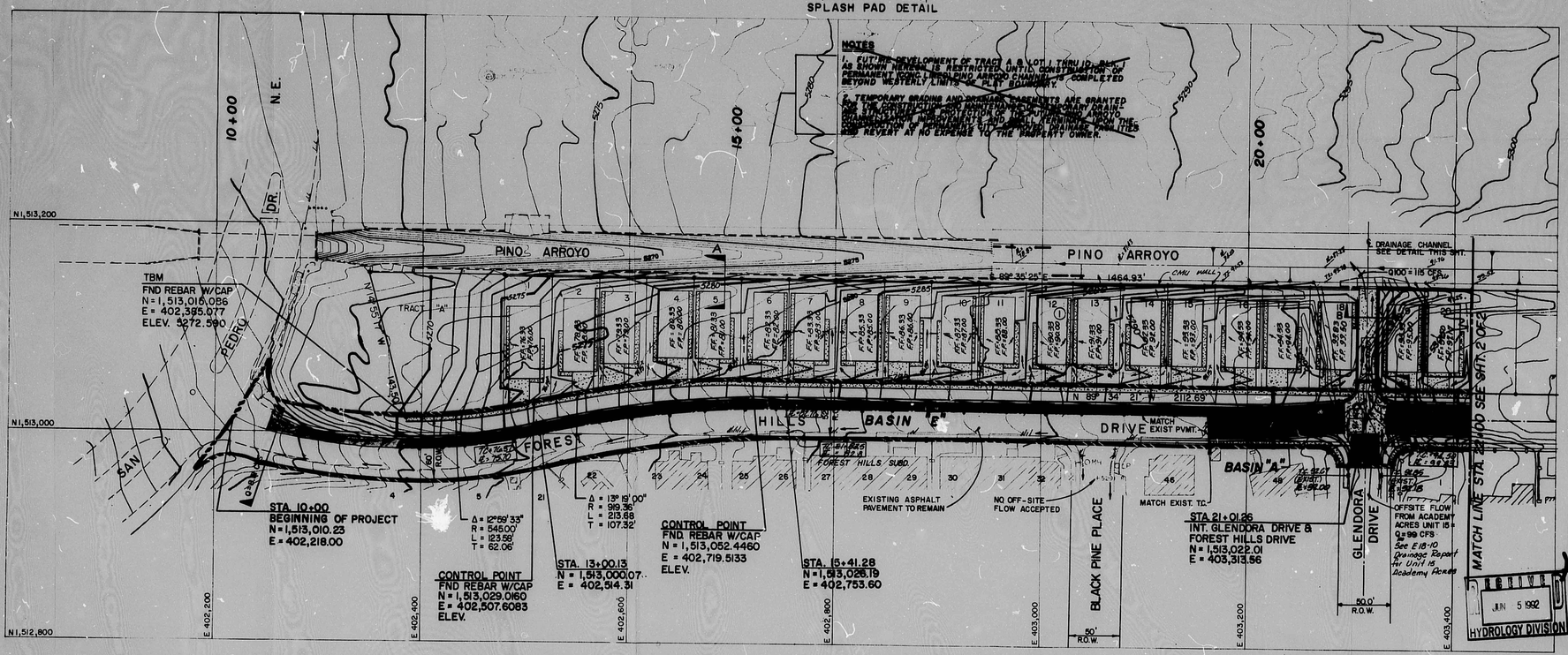
N

SCALE : 1"=50'

LOCATION MAP E-18



FLOODWAY MAP



* STREET CAPACITY POINT OF ANALYSIS

NOTES:
1. CONTRACTOR SHALL PLAN HIS OPERATION TO MINIMIZE EROSION DURING THE CONSTRUCTION PHASE.
2. THE ENGINEER WILL SUBMIT TO THE CITY OF ALBUQUERQUE, HYDROLOGY DEPT., A STATEMENT OF PROJECT COMPLETION WITH REFERENCE TO GENERAL COMPLIANCE WITH INFORMATION AND CRITERIA SET FORTH HEREIN.

JUNE 1992 RESUBMITTAL

RESUBMITAL

FIG IV

FOR INFO only

RECEIVED
JUN 5 1992
HYDROLOGY DIVISION

DRAWING NO.	3260	MAP NO	E-18	SHEET	11of12

SANTIAGO ROMERO JR. & ASSOCIATES INC. 2828 12TH STREET NW ALBUQUERQUE, NEW MEXICO 87107 (505) 345-2733

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

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

R# 25 DATE 3-15-12 OCR ESP

CITY OF ALBUQUERQUE
This microimage is certified to be a complete and accurate copy of the original as it appears in the files of the Public Works Department and was created in the normal course of business.
The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (NS115-1977)
DIRECTOR
NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires

B24 C20 B16 A12 | CITY OF ALBUQUERQUE C D

DRAINAGE PLAN COMPUTATIONS

A. BASIC ASSUMPTIONS

1. Discharge from the proposed subdivision will drain onto two separate locations. One point of discharge is the concrete drainage channel being constructed at Glendora and Forest Hills Drive. The other point is at the intersection of San Pedro Blvd and Forest Hills Drive. No significant increase to the discharge amount will occur at this intersection as a result of this development.
2. This subdivision comprises of two drainage basins (on-site) a third basin (off-site) will discharge into the above mentioned drainage channel at Glendora, which presently drains into the Pino Arroyo.
3. All the lots being constructed on the north side of Forest Hills Drive will free discharge, sheet flow, into the Pino Arroyo.
4. No other off-site flows will be accepted onto this site. The flows from east of Louisiana Blvd are intercepted by drop inlets and discharged to the Pino Arroyo via a 30" RCP storm sewer in Louisiana Blvd.

B. CONTRIBUTING AREAS

1. Basin "A" (On-Site)
   a) Total Area = 170,275 S.F.
   b) Paved Area = 98,850 S.F.
   c) Roof Area = 31,500 S.F.
   d) Lawn & Landscaping = 64,318 S.F.
2. Basin "B" (On-Site)
   a) Total Area = 57,075 S.F.
   b) Paved Area = 45,325 S.F.
   c) Landscaping = 11,750 S.F.
3. Basin "C" (Off-Site)
   a) Q = 99 CFS

C. RUNOFF COEFFICIENTS (COMPOSITE C)

1. Basin "A" =
   98,850 / 194,277 × 0.95 + 31,500 / 194,277 × 0.90 + 64,318 / 194,277 × 0.33
   C = 0.70
2. Basin "B" =
   45,325 / 57,075 × 0.95 + 11,750 / 57,075 × 0.25
   C = 0.80

D. TIME OF CONCRETION (T_c)

$T_c = 0.0078 \times (L^{0.77} / S^{0.385})$

1. Basin "A" = L = 1583 S = 2.67% T_c = 9.20 Min
2. Basin "B" = L = 1011 S = 3.09% T_c = 6.20 Min
3. Basin "C" = L = 1950 S = 2.46% T_c = 11.10 Min (Use 10 min)

E. RAINFALL INTENSITY (I)

1. Rainfall Volume 2.3" (100 Yr. Freq.) Plate 22.2 D-1
   a) Basin "A" $I = 23 \times 6.84 \times 9.20^{-0.51} = I = 5.07"$
   b) Basin "B" $I = 23 \times 6.84 \times 6.20^{-0.51} = I = 6.20"$

F. PEAKFLOW RUNOFF (Q = CIA)

1. Basin "A"
   Q = 0.70 x 5.07 x 4.46 = Q = 13.91 CFS USE 16 CFS
2. Basin "B"
   Q = 0.80 x 6.20 x 1.31 = Q = 8.51 CFS
3. Basin "C"
   Q = 99 CFS (From previous drainage report, See Appendix.

G. STREET FLOW CAPACITY (1/2 STREET WIDTH)

1. Slope = 2.67%
2. Manning = 0.017
3. Flow Rate = Q = .5 x 87.41 x 0.61 x 0.16
   Q = 68.24 CFS

H. DRAINAGE CHANNEL

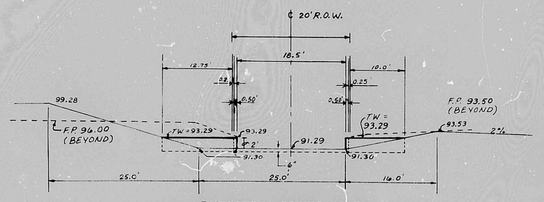
1. Required Flow Capacity Q_{100} = 115 CFS (99 cfs from Glendora + 16 cfs from Basin "A")
2. Actual Flow Capacity at 1' depth

$Q = A \times \frac{1.486}{0.013} \times R^{2/3} \times S^{1/2}$

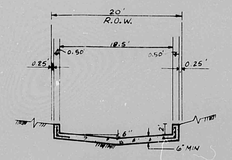
Q = 18.5 x 114.30 x 0.93 x 0.061
Q = 119.96 CFS > 115 CFS Required

I. CONCLUSIONS

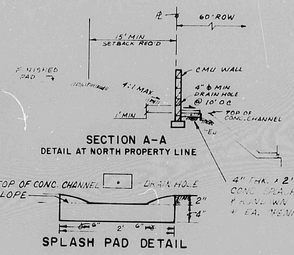
1. The street capacity for those streets within this development will not be exceeded by the 100 year run off at any point in this subdivision.
2. The off-site flows being accepted onto this subdivision from Glendora Ave. along with the on-site flows being generated will not exceed the drainage structures constructed as part of this project. Flow depth in the 18.5' wide channel will not exceed 1' depth. The T_c for both the offsite Basin "C" flows and the flow from Basin "A" will peak at the same time at 18.5 wide channel. Finished floor elevations for existing residences and new residences within this development will not be jeopardized by high water levels resulting during the 100 year event.



ELEVATION LOOKING SOUTH
AT CHANNEL LINING CONNECTION TO EXISTING RUNDOWN

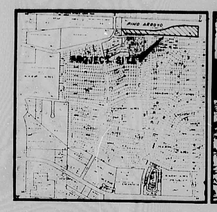


SECTION "B-B"
TYPE "B"
DRAINAGE R.O.W.
FOR DETAILS SEE COA STD. DWG. 2260

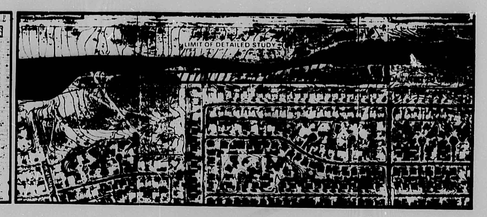


SECTION A-A
DETAIL AT NORTH PROPERTY LINE

SPLASH PAD DETAIL



LOCATION MAP E-18



FLOODWAY MAP

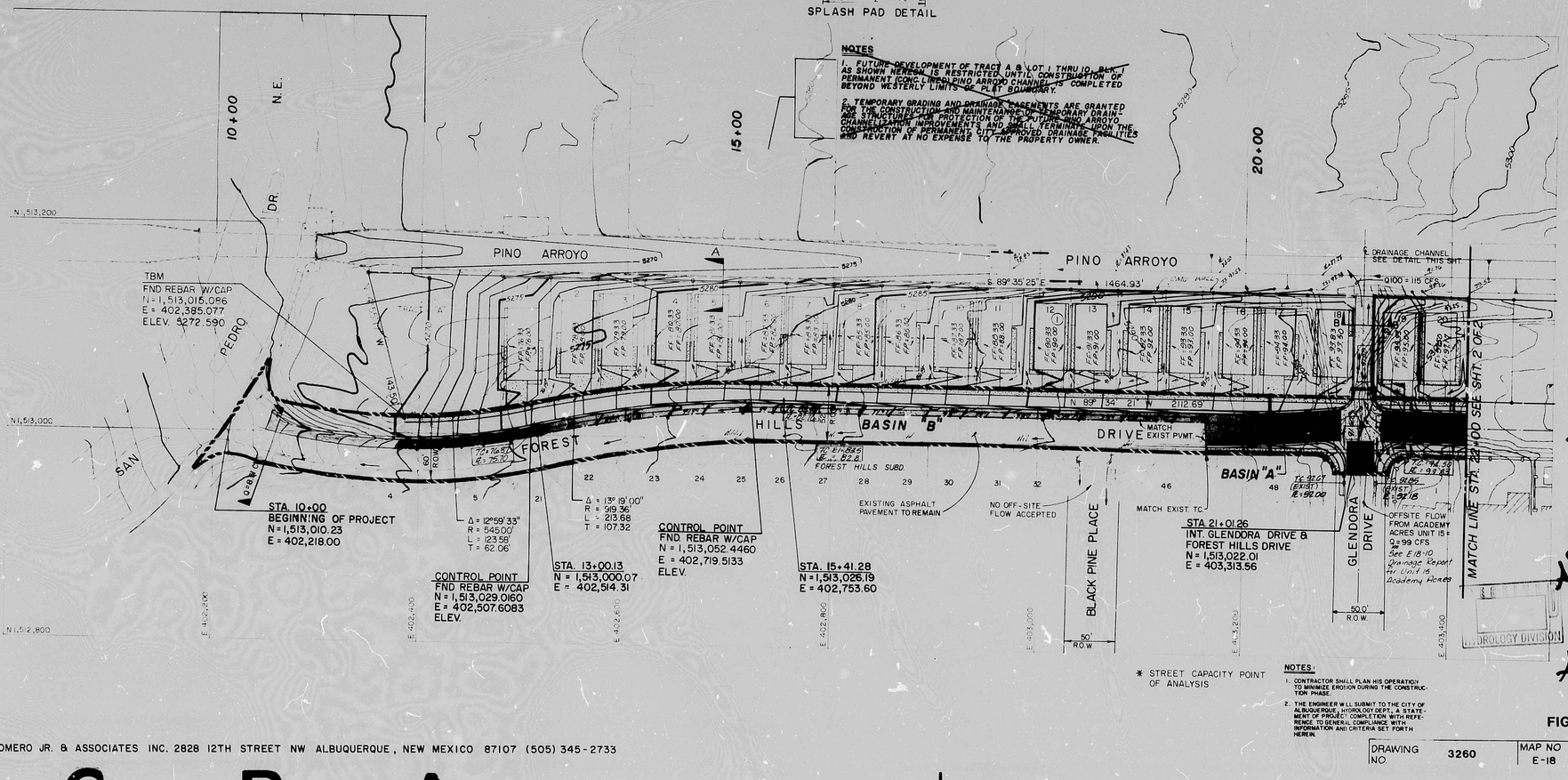
LEGEND

- 41 — FINISHED CONTOUR
- 41 — EXISTING CONTOUR
- FINISHED SPOT ELEV.
- EXIST. SPOT ELEV.
- FLOW LINE
- EXIST. PAVEMENT
- CONCRETE
- EXIST. BUILDING
- EXIST. CURB & GUTTER
- PROPERTY LINE
- T.C. TOP OF CURB
- T.A. TOP OF ASPHALT

GRADING AND DRAINAGE PLAN FOR ACADEMY ACRES UNIT 16 SUBDIVISION REPLAT OF TRACT "B"

N

SCALE : 1"=50'



* STREET CAPACITY POINT OF ANALYSIS

NOTES

1. FUTURE DEVELOPMENT OF TRACT A & LOT 1 THRU 10, BLK 1 AS SHOWN HEREON IS RESTRICTED UNTIL CONSTRUCTION OF PERMANENT (CONC LINED) PINO ARROYO CHANNEL IS COMPLETED BEYOND WESTERLY LIMITS OF PLAT BOUNDARY.
2. TEMPORARY GRADING AND DRAINAGE EASEMENTS ARE GRANTED FOR THE CONSTRUCTION AND MAINTENANCE OF TEMPORARY DRAINAGE STRUCTURES FOR PROTECTION OF THE FUTURE PINO ARROYO CHANNELIZATION IMPROVEMENTS AND SHALL TERMINATE UPON THE CONSTRUCTION OF PERMANENT SITE IMPROVED DRAINAGE FACILITIES AND REVERT AT NO EXPENSE TO THE PROPERTY OWNER.

NOTES:

1. CONTRACTOR SHALL PLAN HIS OPERATION TO MINIMIZE EROSION DURING THE CONSTRUCTION PHASE.
2. THE ENGINEER WILL SUBMIT TO THE CITY OF ALBUQUERQUE, HYDROLOGY DEPT., A STATEMENT OF PROJECT COMPLETION WITH REFERENCE TO GENERAL COMPLIANCE WITH INFORMATION AND CRITERIA SET FORTH HEREIN.

6/4/92
JUNE 1992 RESUBMITTAL

SANTIAGO ROMERO JR. NEW MEXICO 8710 REGISTERED PROFESSIONAL ENGINEER

6/4/92
RESUBMITAL

FIG IV

FOR INFO ONLY

DRAWING NO.	3260	MAP NO E-18	SHEET 11 of 12

SANTIAGO ROMERO JR. & ASSOCIATES INC. 2828 12TH STREET NW ALBUQUERQUE, NEW MEXICO 87107 (505) 345-2733

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

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

R# 25 DATE 3-15-92 OP E.P.

CITY OF ALBUQUERQUE

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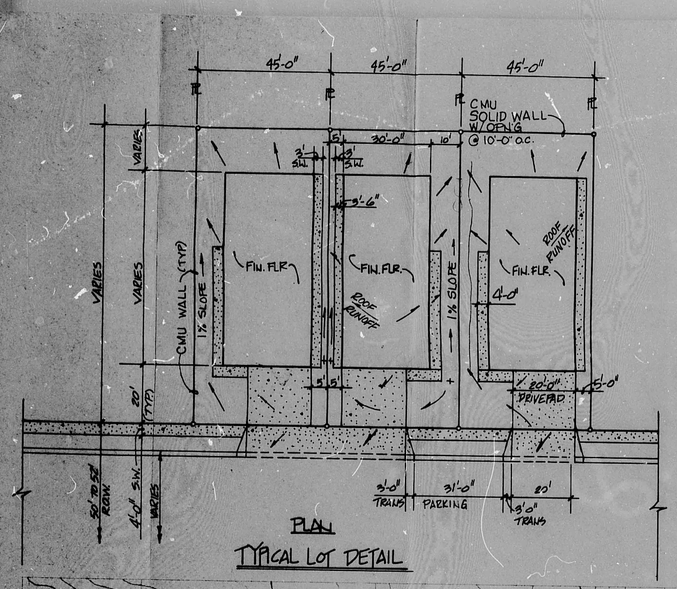
The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (MS115-1977)

DIRECTOR 11/5/92

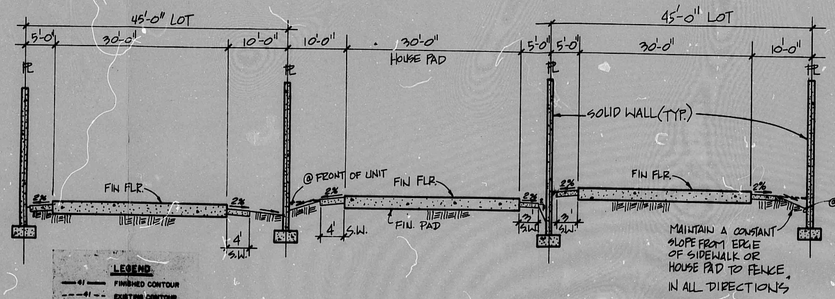
NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires
8/08/92 Rmd

D24 C20 B16 A12 | CITY OF ALBUQERQUE C D



PLAN

TYPICAL LOT DETAIL



SECTION

TYPICAL LOT GRADING SECTION

N.T.S.

LEGEND

61	FINISHED CONTOUR
61	EXISTING CONTOUR
61.00	FINISHED SPOT ELEV.
59.00	EXIST. SPOT ELEV.
	FLOW LINE
	EXIST. PAVEMENT
	CONCRETE
	EXIST. BUILDING
	EXIST. CURB & GUTTER
	PROPERTY LINE
T.C.	TOP OF CURB
T.A.	TOP OF ASPHALT

EARTHWORK RECOMMENDATIONS

(FROM "GEOTECHNICAL ENGINEERING EVALUATION" PREPARED BY WESTERN TECHNOLOGIES, INC.)

GENERAL

1. THE CONCLUSIONS CONTAINED IN THIS REPORT FOR THE PROPOSED CONSTRUCTION ARE CONTINGENT UPON COMPLIANCE WITH RECOMMENDATIONS PRESENTED THIS SECTION.
2. ALTHOUGH FILLS OR UNDERGROUND FACILITIES SUCH AS SEPTIC TANKS, CESSPOOLS, BASEMENTS, UTILITIES AND DRY WELLS WERE NOT OBSERVED, SUCH FEATURES MAY BE ENCOUNTERED DURING CONSTRUCTION.

SITE PREPARATION

1. STRIP AND REMOVE EXISTING VEGETATION, DEBRIS, EXISTING FILL, AND OTHER DELETERIOUS MATERIALS FROM THE BUILDING AREA. ALL EXPOSED SURFACES SHOULD BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.
2. SUBSEQUENT TO SUCH STRIPPING AND PRIOR TO FILL BEING PLACED, THE EXPOSED SUBGRADE SHOULD BE MOISTURE AND COMPACTED WITH A MINIMUM OF 12 PASSES WITH A VIBRATORY ROLLER (10-TON MINIMUM).

EXCAVATION:

WE ANTICIPATE THAT EXCAVATIONS FOR THE PROPOSED CONSTRUCTION CAN BE ACCOMPLISHED WITH CONVENTIONAL EQUIPMENT.

SLAB TURNDOWN PREPARATION:

AFTER EXCAVATION OF SLAB TURNDOWNS, THE EXPOSED SURFACE IN THE TRENCH SHOULD BE COMPACTED.

MATERIALS

1. CLEAN, ON-SITE NATIVE OR IMPORTED SOILS PLACED AT NEAR OPTIMUM MOISTURE CONDITIONS MAY BE USED AS FILL MATERIAL FOR THE FOLLOWING:
   - FOUNDATION AREAS
   - BACK FILL
2. FROZEN SOILS SHOULD NOT BE USED AS FILL OR BACKFILL.
3. IMPORTED SOILS SHOULD CONFORM TO THE FOLLOWING:

GRADATION (ASTM C136)
PERCENT PASSING BY WEIGHT

6"	100
4"	75-100
NO. 4 SIEVE	20-100
NO. 200 SIEVE	40 (MAX.)

MAXIMUM EXPANSIVE POTENTIAL (%)* 1.50

MAXIMUM SOLUBLE SULFATES (%) 0.1

* MEASURED ON A SAMPLES COMPACTED TO APPROXIMATELY 95 PERCENT OF THE ASTM D1557 MAXIMUM DRY DENSITY AT NEAR OPTIMUM MOISTURE CONTENT. WATER CONTENT OF SAMPLE AFTER SOAKED UNDER A 100 PSF SURCHARGE AND SUBMERGED.

PLACEMENT AND COMPACTION

1. PLACE AND COMPACT FILL IN HORIZONTAL LIFTS USING EQUIPMENT AND PROCEDURES THAT WILL PRODUCE RECOMMENDED WATER CONTENTS AND DENSITIES THROUGHOUT THE LIFT.
2. NO FILL SHOULD BE PLACED OVER FROZEN GROUND.
3. MATERIALS SHOULD BE COMPACTED TO THE FOLLOWING:

MATERIAL	MINIMUM % COMPACTION (ASTM D1557)
ON-SITE SUBGRADE SOILS, SUBBASE FILL AND IMPORTED FILL:	
BELOW FOUNDATIONS	95
MISCELLANEOUS BACKFILL	95

4. ON-SITE AND IMPORTED SOILS SHOULD BE COMPACTED WITHIN A MOISTURE RANGE OF OPTIMUM TO 3 PERCENT ABOVE OPTIMUM.

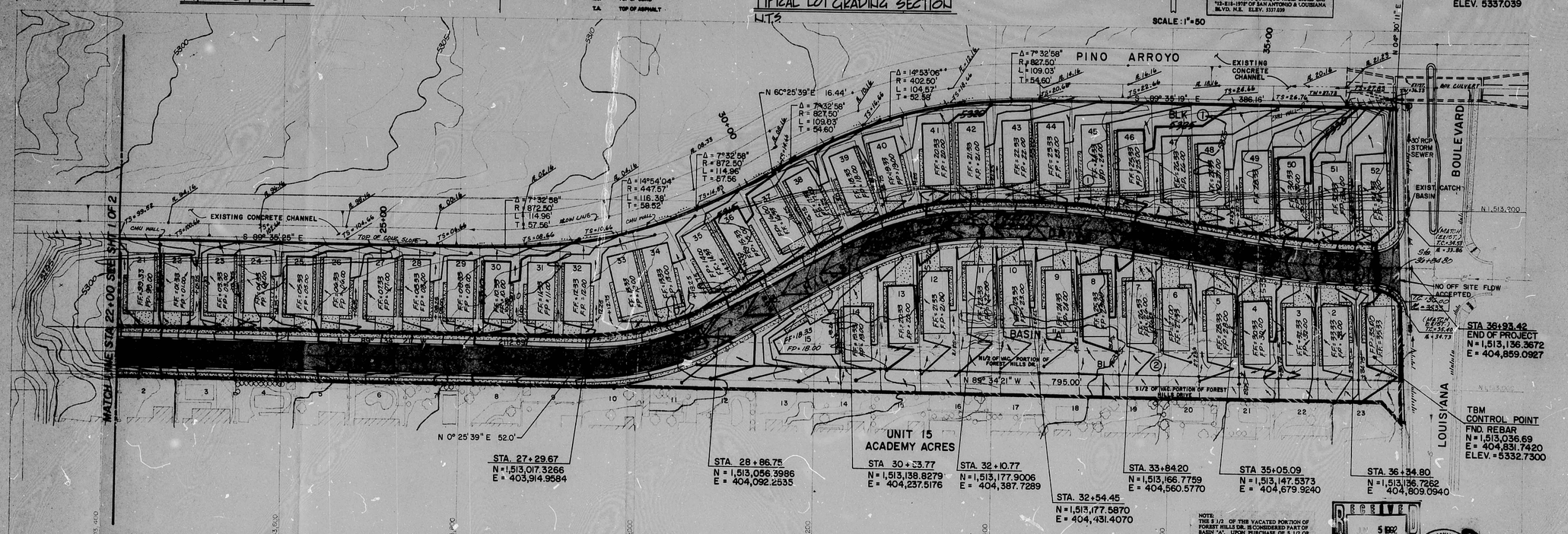
CONFORMANCE:

RECOMMENDATIONS FOR FOUNDATIONS SUPPORTED ON COMPACTED FILLS OR PREPARED SUBGRADE ARE DEPENDENT UPON CONFORMANCE TO "EARTHWORK" RECOMMENDATIONS. TO ASSURE COMPLIANCE WITH THESE RECOMMENDATIONS, QUALITY ASSURANCE SHOULD BE FULLY DOCUMENTED, FULL-TIME, AND SHOULD BE SUPERVISED BY A PROFESSIONAL ENGINEER. THESE SERVICES SHOULD BE CONTRACTED BY THE OWNER AND WILL NOT BE A PART OF THE CONSTRUCTION CONTRACT.

SCALE: 1"=50

BENCH MARK
CITY OF ALBUQUERQUE A.C.S. BRASS CAP "12-E18-1978" OF SAN ANTONIO & LOUISIANA BLVD. N.E. ELEV. 5337.039

CONTROL POINT
ACS BRASS CAP
"12-E18-1978"
N 1,513,520.17
E 404,867.87
ELEV. 5337.039



NOTE:
THE E 1/2 OF THE VACATED PORTION OF FOREST HILLS DR. IS CONSIDERED PART OF BASIN "A". UPON PURCHASE OF E 1/2 OR VACATION, FOREST HILLS DR. BLOCK W/LLS WILL BE EXTENDED TO THE N. BOUNDARY UNIT 15, ACADEMY ACRES.

RECEIVED
MAY 5 1982
HYDROLOGY

FOR LIVED ONLY

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

CITY OF ALBUQUERQUE
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R# 25 DATE 3-15-12 OR ERP.

CITY OF ALBUQUERQUE

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DIRECTOR 11/5/12

NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 11-5-12

SANTIAGO ROMERO JR. & ASSOCIATES INC. 2828 12TH STREET NW ALBUQUERQUE, NEW MEXICO 87107 (505) 345-2733

DRAWING NO.	RESUBMITAL	MAP NO.	SHEET
3260		E-18	12 of 12

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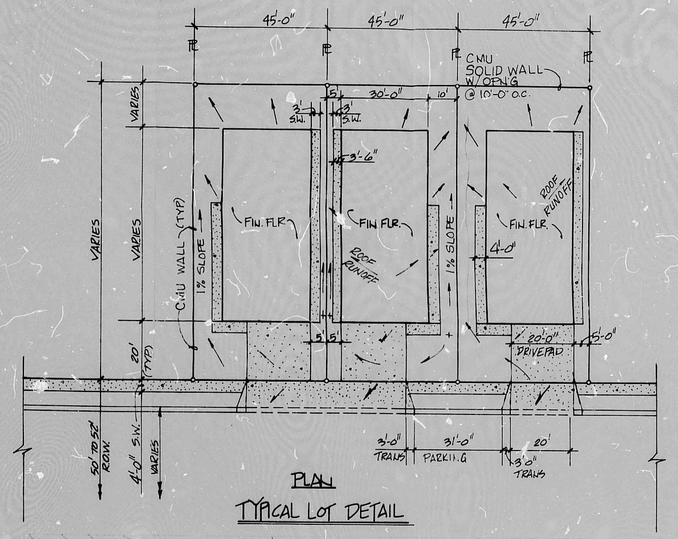
CITY OF ALBUQUERQUE C D

PUBLIC WORKS/HYDROLOGY

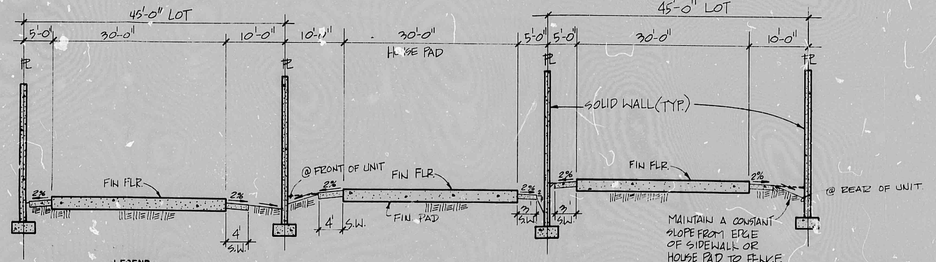
2 OF 2

E18/D44



PLAN

TYPICAL LOT DETAIL



SECTION

TYPICAL LOT GRADING SECTION

N.T.S.

LEGEND

- FINISHED CONTOUR
- EXISTING CONTOUR
- FINISHED SPOT ELEV.
- EXIST. SPOT ELEV.
- FLOW LINE
- EXIST. PAVEMENT
- CONCRETE
- EXIST. BUILDING
- EXIST. CURB & GUTTER
- PROPERTY LINE
- T.C. TOP OF CURB
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SITE PREPARATION

1. STRIP AND REMOVE EXISTING VEGETATION, DEBRIS, EXISTING FILL, AND OTHER DELETERIOUS MATERIALS FROM THE BUILDING AREAS. ALL EXPOSED SURFACES SHOULD BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.
2. PRIOR TO PLACING ROUGH GRADING AND FOUNDATIONS, TO A DEPTH OF 6 INCHES, THE EXPOSED SUBGRADE SHOULD BE SCARIFIED AND COMPACTED WITH A MINIMUM OF 10 PASSES WITH A VIBRATORY ROLLER (10-TON MINIMUM).

EXCAVATION

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   - THE SUBMISION AREAS
   - BACKFILL
2. FROZEN SOILS SHOULD NOT BE USED AS FILL OR BACKFILL.
3. IMPORTED SOILS SHOULD CONFORM TO THE FOLLOWING:

GRADATION (ASTM C136)

	PERCENT FINER BY WEIGHT
6"	100
4"	25-100
NO. 4 SIEVE	50-100
NO. 200 SIEVE	60 (MAX)

MAXIMUM EXPANSIVE POTENTIAL (%)* 1.50

MAXIMUM SOLUBLE SULFATES (%) 0.10

* MEASURED ON A SAMPLE COMPACTED TO APPROXIMATELY 95 PERCENT OF THE ASTM D1557 MAXIMUM DRY DENSITY AT A MOISTURE CONTENT NEAR OPTIMUM WATER CONTENT. THE SAMPLE IS CONFINED UNDER A 150 PSF SURCHARGE AND SUBMERGED.

PLACEMENT AND COMPACTION:

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2. NO FILL SHOULD BE PLACED OVER FROZEN GROUND.
3. MATERIALS SHOULD BE COMPACTED TO THE FOLLOWING:

MATERIAL	MINIMUM % COMPACTION (ASTM D1557)
ON-SITE SUBGRADE SOILS, SUBBASE FILL AND IMPORTED FILL BELOW FOUNDATIONS	95
MISCELLANEOUS BACKFILL	95

4. ON-SITE AND IMPORTED SOILS SHOULD BE OPTIMUM MOISTURE WITHIN A MOISTURE RANGE OF OPTIMUM TO 3 PERCENT ABOVE OPTIMUM.

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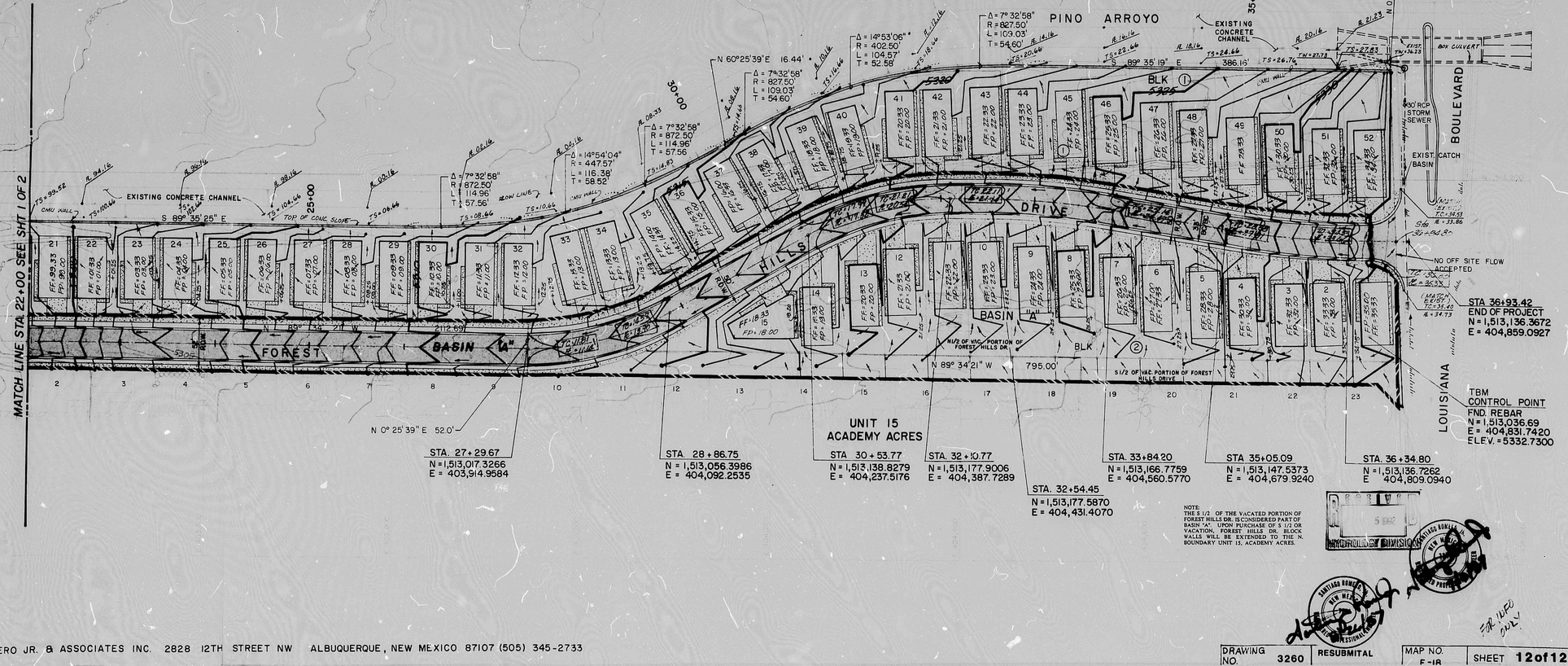

NOTE:
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HYDROLOGY DIVISION

SANTIAGO ROMERO NEW MEXICO 9083 REGISTERED PROFESSIONAL ENGINEER

FOR INFO ONLY

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ONCE ON LIGHT
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R# 25 DATE 3-15-12 OPER

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3/15/12
DIRECTOR

Roberta Duran
NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My commission expires: 7/6/12 and

SANTIAGO ROMERO JR. & ASSOCIATES INC. 2828 12TH STREET NW ALBUQUERQUE, NEW MEXICO 87107 (505) 345-2733

DRAWING NO.	RESUBMITAL	MAP NO.	SHEET
3260		F-18	12of12

D24 C20 B16 A12

CITY OF ALBUQUERQUE

C D

DRAINAGE PLAN COMPUTATIONS

A. BASIC ASSUMPTIONS

1. Discharge from the proposed subdivision will drain into two separate locations. One point of discharge is the existing drainage channel being constructed at Glendora and Forest Hills Drive. The other point is at the intersection of Pan Pedro Blvd and Forest Hills Drive. The drainage computations in the drainage reports will cover at this intersection at 1 mouth of this development.
2. This subdivision comprises of two drainage basins (so-called) a third basin (off-site) will discharge into the above mentioned drainage channel at Glendora, which presently drains into the Pan Pedro Arroyo.
3. All the lots being encountered on the south side of Forest Hills Drive will free discharge, sheet flow, into the Pan Pedro Arroyo.
4. No other off-site flows will be accepted onto this site. The flows from east of Louisiana Blvd, are intercepted by storm inlets and discharged in the Pine Arroyo via a 30" RCP storm sewer in Louisiana Blvd.

B. CONTRIBUTING AREAS

1. Basin "A" (On-Site)
   a) Total Area = 178,771 S.F.
   b) Paved Area = 91,228 S.F.
   c) Road Area = 31,200 S.F.
   d) Less & Landscaping = 44,315 S.F.
2. Basin "B" (On-Site)
   a) Total Area = 77,972 S.F.
   b) Paved Area = 42,252 S.F.
   c) Landscaping = 11,720 S.F.
3. Basin "C" (Off-Site)
   a) Q = 99 CFS

C. RUNOFF COEFFICIENTS (COMPOSITE C)

1. Basin "A"
   $\frac{91,228}{178,771} \times 0.95 + \frac{44,315}{178,771} \times 0.35 + \frac{43,228}{178,771} \times 0.35$
   C = 0.70
2. Basin "B"
   $\frac{42,252}{77,972} \times 0.95 + \frac{11,720}{77,972} \times 0.35$
   C = 0.80

D. TIME OF CONCENTRATION (T_c)

$T_c = 0.0078 \times L^{0.77} \times S^{-0.385}$

1. Basin "A" = L = 1265 S = 3.00% T_c = 0.20 hrs
2. Basin "B" = L = 1011 S = 3.00% T_c = 0.20 hrs
3. Basin "C" = L = 1930 S = 2.40% T_c = 11.35 hrs (Use 10 min)

E. RAINFALL INTENSITY (I)

1. Rainfall Volume 2.3" (100 Yr. Prob.) Plate 22.2 D-1
   a) Basin "A" I = 2.3 x 0.84 x 0.20$^{-0.51}$ = I = 3.87"
   b) Basin "B" I = 2.3 x 0.84 x 0.20$^{-0.51}$ = I = 3.87"

F. PEAK FLOW RUNOFF (Q = CIA)

1. Basin "A"
   Q = 0.70 x 3.87 x 4.46 = Q = 12.01 CFS USE 14 CFS
2. Basin "B"
   Q = 0.80 x 3.87 x 1.31 = Q = 8.31 CFS
3. Basin "C"
   Q = N CFS (From previous drainage report, See Appendix)

G. STREET FLOW CAPACITY (1/2 STREET WIDTH)

1. Slope = 3.00%
2. Manning = 0.017
3. Flow Rate = Q = 1.5 x 27.41 x 0.61 x 0.16
   Q = 28.54 CFS

H. DRAINAGE CHANNEL

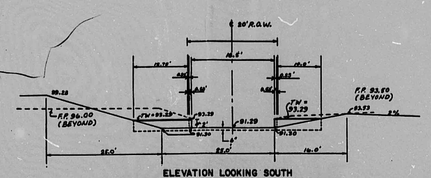
1. Required Flow Capacity Q_{100} = 113 CFS (99 cfs from Glendora + 14 cfs from Basin "A")
2. Actual Flow Capacity at 1' depth

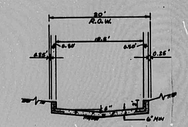
$$Q = A \times \frac{1.486}{0.013} \times R^{2/3} \times S^{1/2}$$

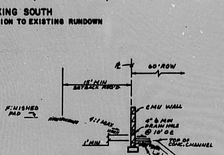
Q = 10.5 x 114.30 x 0.23 x 0.061
Q = 113.26 CFS > 113 CFS Required

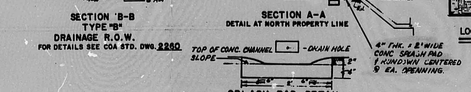
I. CONCLUSIONS

1. The street capacity for these streets within this development will not be exceeded by the 100 year run off at any point in this subdivision.
2. The off-site flows being accepted into P.I. 4+00 from Glendora Ave. along with the on-site flows being generated will not exceed the drainage structures constructed as part of this project. Flow depth in the 12'-0" wide channel will not exceed 1' depth. The T_c for both the offsite Basin "C" flows and the flow from Basin "A" will peak at the same inlet at 12.1 wide channel. Finished flow elevations for existing residences and new residences within this development will not be jeopardized by high water levels occuring during the 100 year event.









LEGEND

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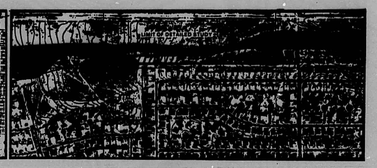
- EXISTING CONTOUR
- FINISHED SPOT ELEV.
- EXIST SPOT ELEV.
- FLOW LINE
- EXIST. PAVEMENT
- CONCRETE
- EXIST. BUILDING
- EXIST. CURB & GUTTER
- PROPERTY LINE
- T.C. TOP OF CURB
- T.A. TOP OF ASPHALT

GRADING AND DRAINAGE PLAN
FOR
ACADEMY ACRES UNIT 16 SUBDIVISION
REPLAT OF TRACT "B"

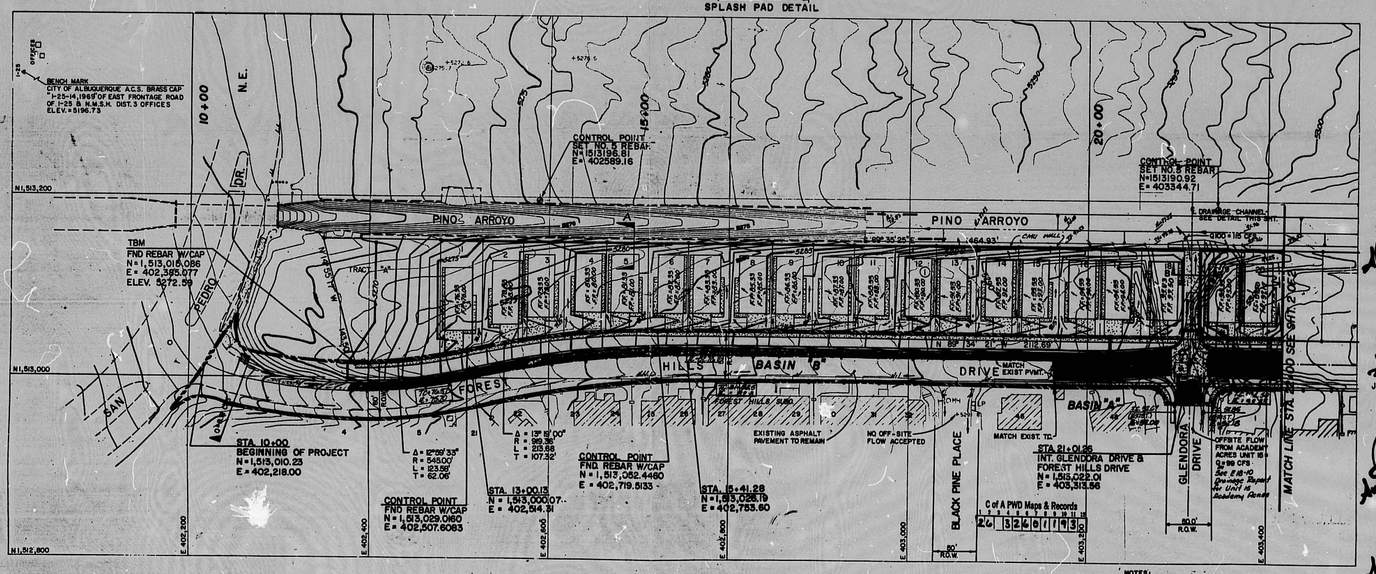
N

SCALE 1" = 80'

LOCATION MAP E-18



FLOODWAY MAP



* STREET CAPACITY POINT OF ANALYSIS

NOTES:

1. CONTRACTOR SHALL PLAN HIS OPERATION TO MINIMIZE EROSION DURING THE CONSTRUCTION PHASE.
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JUNE 1992 RESUBMITTAL

RESUBMITAL

FIG IV

SANTIAGO ROMERO JR. & ASSOCIATES INC. 2828 12TH STREET NW ALBUQUERQUE, NEW MEXICO 87107 (505) 345-2733

RECEIVED
JUN 14
HYDROLOGY SECTION

DRAWING NO.	MAP NO	SHEET
3260	E-18	11 of 12

PLAN SHOT TWICE
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R# 25 DATE 3-15-12 OP ESP

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DIRECTOR 11/5/92

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STATE OF NEW MEXICO
My Comm. Exp. 7/07/92

C B A

C 20 B 16 A 12

CITY OF ALBUQUERQUE C

DRAINAGE PLAN COMPUTATIONS

A. BASIC ASSUMPTIONS

1. Discharge from the proposed subdivision will divide into two separate locations. One point of discharge is the crescent drainage channel system to be constructed in Glendora and Forest Hills Drive, which will discharge to the Pino Arroyo at the Los Pedro Blvd and Forest Hills Drive. No additional increase in the discharge amount will occur at this intersection as a result of this development.
2. This subdivision comprises of two drainage basins (on-site) & third basin (off-site) will flow to the above mentioned drainage channel in Glendora, which presently drains into the Pino Arroyo.
3. All the lots being constructed on the north side of Forest Hills Drive will free discharge, sheet flow, into the Pino Arroyo.
4. No other off-site flows will be accepted onto this site. The flows from east of Louisiana Blvd. are intercepted by drop inlets and discharged to the Pino Arroyo via a 30" RCP storm sewer in Louisiana Blvd.

B. CONTRIBUTING AREAS

1. Basin "A" (On-Site)
   a) Total Area = 190,371 S.F.
   b) Paved Area = 97,650 S.F.
   c) Pino Arroyo = 31,500 S.F.
   d) Lawn & Landscaping = 60,315 S.F.
2. Basin "B" (On-Site)
   a) Total Area = 37,071 S.F.
   b) Paved Area = 41,313 S.F.
   c) Landscaping = 11,756 S.F.
3. Basin "C" (Off-Site)
   a) Q = 99 CFS

C. RUNOFF COEFFICIENTS (COMPOSITE C)

1. Basin "A" = $\frac{38,535}{194,371} \times 0.95 + \frac{31,500}{194,371} \times 0.90 + \frac{64,318}{194,371} \times 0.33$

   C = 0.70
2. Basin "B" = $\frac{41,313}{37,071} \times 0.95 + \frac{11,756}{37,071} \times 0.25$

   C = 0.80

D. TIME OF CONCENTRATION (T_c)

$T_c = 0.0078 \times (L^{0.77} S^{-0.385})$

1. Basin "A" = L = 1581 | S = 2.07% T_c = 9.20 Min
2. Basin "B" = L = 1511 | S = 3.09% T_c = 8.20 Min
3. Basin "C" = L = 1950 | S = 3.48% T_c = 11.10 Min (Use 10 min)

E. RAINFALL INTENSITY (I)

1. Rainfall Volume 2.3" (100 Yr. Frea.) Plate 22.2 D-1
   a) Basin "A" I = 2.3 x 6.84 x $8.20^{-0.51}$ I = 3.07"
   b) Basin "B" I = 2.3 x 6.84 x $8.20^{-0.51}$ I = 3.20"

F. PEAK FLOW RUNOFF (Q = CIA)

1. Basin "A"
   Q = 0.70 x 3.07 x 4.46 = Q = 13.91 CFS USE 14 CFS
2. Basin "B"
   Q = 0.80 x 8.20 x 1.31 = Q = 8.51 CFS
3. Basin "C"
   Q = 99 CFS (From previous drainage report, See Appendix)

G. STREET FLOW CAPACITY (1/2 STREET WIDTH)

1. Slope = 3.67%
2. Manning = 0.017
3. Flow Rate = Q
   Q = 2.21 x 7.41 x 0.61 x 0.16
   Q = 16.24 CFS

H. DRAINAGE CHANNEL

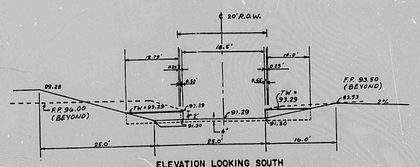
1. Required Flow Capacity Q_{100} = 113 CFS (99 cfs from Glendora + 16 cfs from Basin "A")
2. Actual Flow Capacity at 1' depth

   $Q = A \times \frac{1.486}{0.013} \times R^{2/3} \times S^{1/2}$

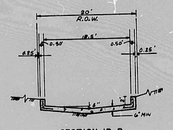
   Q = 18.5 x 114.30 x 0.53 x 0.061
   Q = 119.96 CFS > 113 CFS Required

I. CONCLUSIONS

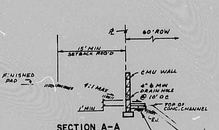
1. The street capacity for those streets within this development will not be exceeded by the 100 year run off at any point in this subdivision.
2. The off-site flows being accepted onto this subdivision from Glendora Ave. along with the on-site flows being generated will not exceed the drainage structures constructed as part of this project. Flow depth in the 18.5' wide channel will not exceed 1' depth. The T_c for both the offsite Basin "C" flows and the flow from Basin "A" will peak at the same time in the 18.5 wide channel. Flooded Flow elevations for the 100 year storm event within the development will not be jeopardized by high water levels resulting during the 100 year event.



ELEVATION LOOKING SOUTH
AT CHANIEL LINING CONNECTION TO EXISTING RUNDOWN



SECTION 'B-B
TYPE "B"
DRAINAGE R.O.W.
FOR DETAILS SEE COA STD. DWG. 2240



SECTION A-A
DETAIL AT NORTH PROPERTY LINE

SPLASH PAD DETAIL

LEGEND

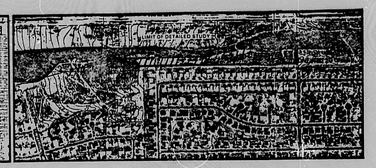
61	FINISHED CONTOUR
61	EXISTING CONTOUR
FS 93.50	FINISHED SPOT ELEV.
EX.93.50	EXIST. SPOT ELEV.
	FLOW LINE
	EXIST. PAVEMENT
	CONCRETE
	EXIST. BUILDING
	EXIST. CURB & GUTTER
	PROPERTY LINE
T.C.	TOP OF CURB
T.A.	TOP OF ASPHALT

GRADING AND DRAINAGE PLAN
FOR
ACADEMY ACRES UNIT 16 SUBDIVISION
REPLAT OF TRACT "B"

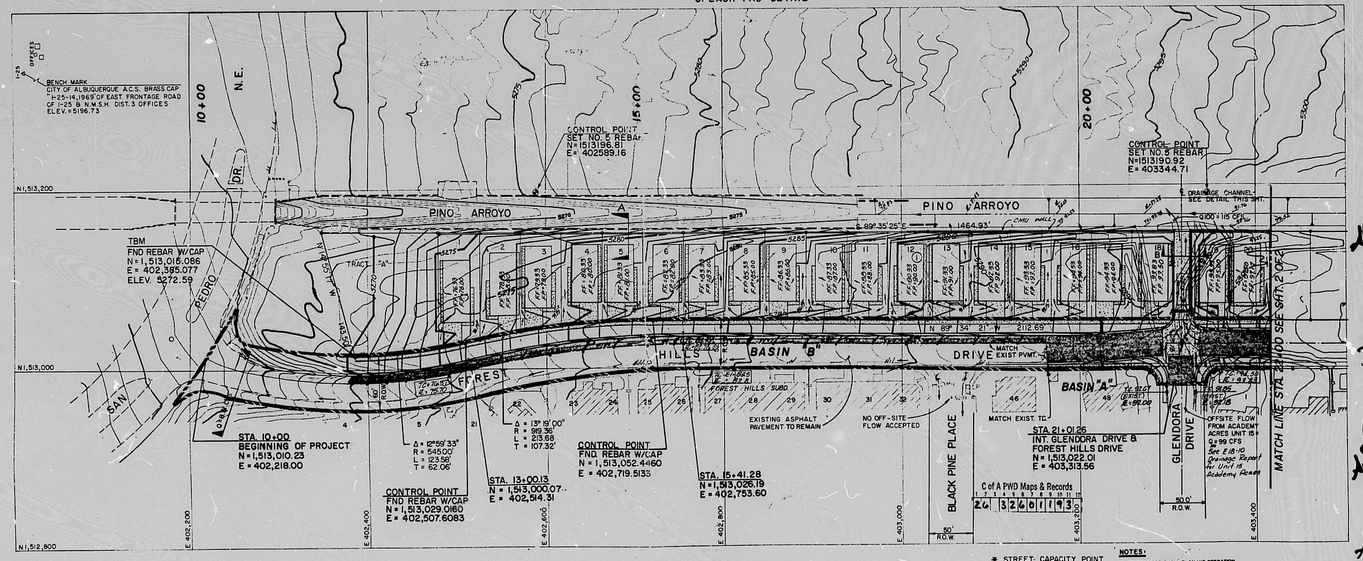
N

SCALE : 1"=50'

LOCATION MAP E-18



FLOODWAY MAP



* STREET CAPACITY POINT OF ANALYSIS

NOTES:
1. CONTRACTOR SHALL PLAN HIS OPERATION TO MINIMIZE EROSION DURING THE CONSTRUCTION PHASE.
2. THE ENGINEER WILL SUBMIT TO THE CITY OF ALBUQUERQUE HYDROLOGY DEPT. A STATEMENT OF PROJECT COMPLETION WITH REFERENCE TO GENERAL COMPLIANCE WITH INFORMATION AND CRITERIA SET FORTH HEREIN.

JUNE 1992 RESUBMITTAL

RESUBMITAL

FIG IV

DRAWING NO.	MAP NO	SHEET
3260	E-18	11of12

SANTIAGO ROMERO JR. & ASSOCIATES INC. 2828 12TH STREET NW ALBUQUERQUE, NEW MEXICO 87107 (505) 345-2733

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

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NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
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C B A

C 20 B 16 A 12

CITY OF ALBUQUERQUE C