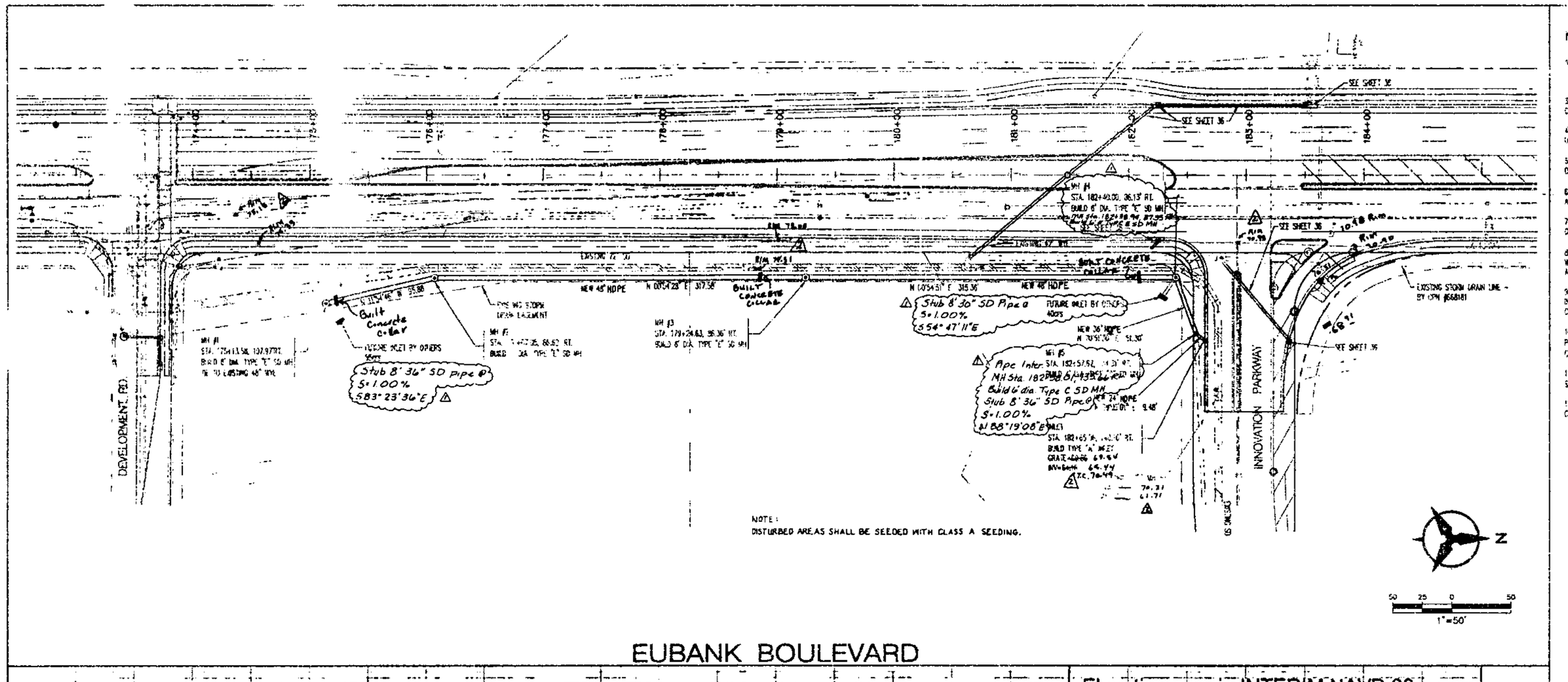
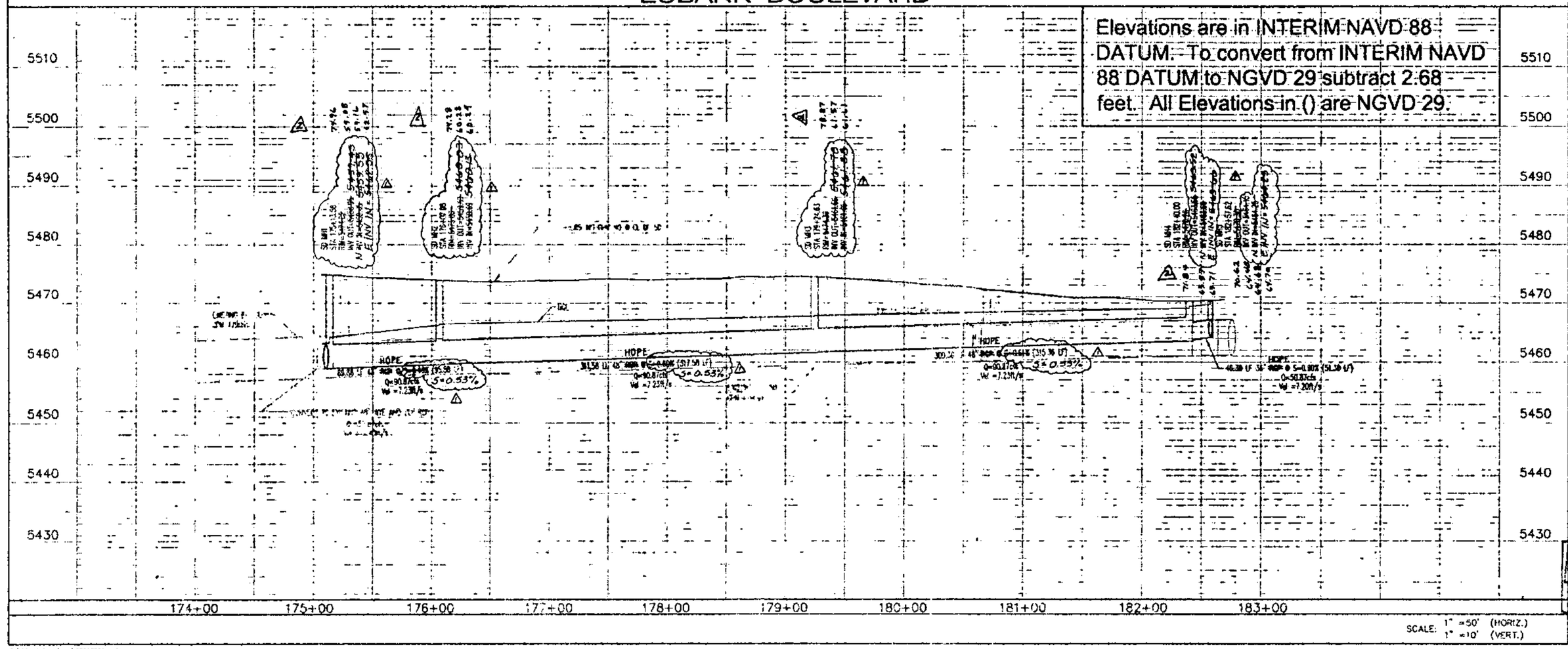



# EUBANK BOULEVARD




SCALE: 1" =50' (HORIZ.)
1" =10' (VERT.)

## NOTES

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

ALL CURB RETURN RADII SHALL BE 30' UNLESS OTHERWISE SPECIFIED.

3. ALL CURVE DATA AND DIMENSIONS REFER TO FACE OF CURB UNLESS OTHERWISE SPECIFIED.

4. GRADE ELEVATIONS, WHERE NOTED, ARE FLOW LINE OF STANDARD CURB UNLESS OTHERWISE SPECIFIED.

5. CONTRACTOR IS TO INSTALL A 4" [illegible] AT THE END OF EACH SANITARY SEWER SERVICE.

6. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.

7. ANY ADDITIONAL GRADING REQUIRED TO MATCH PROPOSED STREET GRADES SHALL BE INCIDENTAL TO PAVING ITEMS.

8. CONTRACTOR SHALL PROVIDE THE INSPECTOR, (CITY AND PRIVATE) WITH THE PROPOSED HYDROSTATIC TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.

9. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.

10. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

11. REMOVAL OF THE EXISTING CURB & GUTTER SHALL BE AS PER COA STD. DWG. 2415 (SHT. ONLY).

12. [illegible] RAMPS SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB & GUTTER.

SURVEY INFORMATION
FIELD NOTES BY: [illegible] DATE:

BENCH MARKS
1. [illegible] 1986/92"
2. [illegible] Geographic Coordinates (NAD 1927) in feet N.M. State Plane Coordinate System (Central Zone) Vertical Datum (Sea Level) in feet [illegible]

AS-BUILT INFORMATION
CONTRACTOR: [illegible] DATE: 7/6/02
FIELD SURVEY: [illegible] DATE: 7/6/02
DRAWN: JM DATE: 7/6/02
FIELD BOOK: [illegible] PAGE: [illegible]
CHECKED: [illegible] DATE: [illegible]
MICRO-FILM INFORMATION
RECORDED ON: DATE:

ENGINEER'S SEAL
BRUCE J. STOWELL NEW MEXICO 14528 REGISTERED PROFESSIONAL ENGINEER
5/22/02
10/16/02

| No. | Date | REMARKS / REVISIONS / DESIGN | By |
|---|---|---|---|
| 1 | 10/16/02 | Field revision, revised curb @ 24th ave. added 8" long stubouts, as-built | RJS |
| 2 | 11/13/02 | Add Pipe Inter. MH #5 | RJN |

DESIGNED BY: RJN DATE: 05/22/02
DRAWN BY: RJS DATE: 05/22/02
CHECKED BY: DATE: 05/23/02

26 6061.10/16/02

Bohannan Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

EUBANK BOULEVARD IMPROVEMENTS
SS&TP TRACT "B" STORM DRAIN PROFILE
STA. 173+50 TO STA. 185+50

Design Review Committee: APPROVED — DESIGN REVIEW COMMITTEE
APPROVED — CITY ENGINEER

City Project No. 6061.01
Zone Map No. L-21-Z, M-21-Z
Sheet 36A of 114

BHI JOB NO. 030032
Date: MAY 2002

P:\030032\cadd\proj\030032SSDprofile.dwg
May 22, 2002 - 8:23am

## UTILITY CROSSING TABLE

| CROSSING | SD | GAS | SAS | WL | COMM | CLEARANCE |
|---|---|---|---|---|---|---|
| 1 | BP=69.83 | N/A | TP=67.26' | N/A | TP=69.43' | 1.57' / 0.40' |
| 2 | BP=69.85' | N/A | N/A | TP=68.78' | N/A | 1.07' |
| 3 | TP=71.70' | N/A | N/A | N/A | BP=70.13' | 0.43' |
| 4 | BP=62.24' | N/A | TP=62.04' | N/A | N/A | 9.20' |
| 5 | TP=64.72' | N/A | N/A | N/A | BP=63.22' / BP=61.92' | 2.34' / 3.09 |
| 6 | TP=64.77' | N/A | N/A | N/A | BP=63.65' | 1.92' |

## UTILITY CROSSING TABLE

| CROSSING | SD | GAS | SAS | WL | COMM | CLEARANCE |
|---|---|---|---|---|---|---|
| 7 | | | CONFLICT WITH CATV, NEED ADJUST CATV | | | |
| 8 | TP=64.88' | N/A | N/A | BP=65.09' | N/A | 0.21' |
| 9 | TP=64.95' | BP=62.51' | N/A | N/A | N/A | 2.50' |
| 10 | BP=67.72' | N/A | TP=62.53' | N/A | N/A | 5.20' |
| 11 | BP=63.75' | N/A | TP=63.25' | N/A | N/A | 0.50' |

## CONTROL POINT DATA TABLE (GROUND COORDINATES)

| POINT NAME | NORTHING | EASTING | ELEV |
|---|---|---|---|
| BHI PHOTO CONTROL | 1479958.90 | 1555960.12 | 5483.21 |
| BHI CP 514 | 1479043.08 | 1555662.87 | 5481.77 |
| BHI CP 516 | 1477917.89 | 1557156.71 | 5480.06 |
| BHI CP 517 | | | |

NOTES:
1. ALL CONTROL POINTS ARE 2" ALUM CAP STAMPED BH# ON 5/8" REBAR
2. COORDINATES ARE IN THE NAD83 DATUM AND ELEVATIONS ARE IN THE NAVD88 DATUM

## STORM DRAIN TANGENT DATA

| NUMBER | BEARING | DISTANCE |
|---|---|---|
| T1 | S00°56'59"W | 122.12' |
| T2 | S37°54'43"E | 94.1' |
| T3 | S39°04'W'E | 108.18' |
| T4 | S41°42'48"E | 8.00' |
| T5 | S54°22'58"E | 36.83' |
| T6 | N89°55'21"E | 15.33' |
| T7 | S03°06'53"W | 25.76' |

## POT HOLE DATA

| PH# | UTIL | NORTHING | EASTING | ELEV | DEPTH |
|---|---|---|---|---|---|
| 5 | GAS | 1477705.48 | 1556412.09 | 5475.29 | 34" |
| 6 | CATV | 1477774.30 | 1556424.92 | 5471.89 | 81" |
| 7 | WATER | 1477764.58 | 1556453.86 | 5471.59 | 58" |
| 8 | F.O. | 1477789.41 | 1556431.55 | 5472.29 | 28" |
| 9 | COMM | 1477764.00 | 1556432.81 | 5472.24 | 24" |

## POT HOLE DATA

| PH# | UTIL | NORTHING | EASTING | ELEV | DEPTH |
|---|---|---|---|---|---|
| 10 | GAS | 1477704.20 | 1556500.74 | 5475.72 | 36" |
| 11 | ELEC | 1477697.98 | 1556501.67 | 5475.91 | 28" |
| 12 | F.O. | 1477704.45 | 1556501.57 | 5475.92 | 18" |
| 13 | WATER | 1477648.28 | 1556555.38 | 5474.96 | CLEAR TO 94" |
| 27 | WATER | 1477649.15 | 1556448.43 | 5474.67 | 72" |
| 28 | COMM | 1477651.48 | 1556543.67 | 5475.33 | 33" |

EUBANK BOULEVARD

DEVELOPMENT ROAD

INNOVATION PARKWAY

Elevations are in INTERIM NAVD 88 DATUM. To convert from INTERIM NAVD 88 to NGVD 29 subtract 2.68 feet. All Elevations in ( ) are NGVD 29.

SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)

P:\00268\Hydro\Design\PNP\00268pnp02.mxj
May 22, 2002 - 8:29am

BENCH MARKS

AS-BUILT INFORMATION

SURVEY INFORMATION
FIELD NOTES

| NO | BY | DATE |
|---|---|---|

ENGINEER'S SEAL

| No. | Date | REMARKS / REVISIONS | By |
|---|---|---|---|
| | | DESIGN | DATE: 04/02 |
| | | Designed By: M.P.C. | DATE: 04/02 |
| | | Drawn By: MTD | DATE: 04/02 |
| | | Checked By: M.P.C./T.W.H. | |

MICRO-FILM INFORMATION

29 6061.01 56014

Bohannan Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

EUBANK BOULEVARD IMPROVEMENTS
STORM DRAIN
STA. 174+00 TO STA. 185+00

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
|---|---|---|---|---|
| APPROVED DESIGN | APPROVED CITY ENGINEER | | | |

| City Project No. | Zone Map No. | Sheet | Of |
|---|---|---|---|
| 6061.01 | L-21&M-21 | 36 | 114 |

BHI JOB NO. 00268

MARCH 2002

6-30-09

Spoke w/ Vince Carrico Concerning SD in Innovation Parkway

He spoke with Jeff Mortensen who said he (Jeff) spoke w/ Brad and that since that lot wasn't subdivided, the storm drain down Innovation is not req'd.

Spoke w/ Gary, 7-7-09, told him it appears the Storm Drain in Innovation Pkwy is required, Have to wait on Building Permit until it is resolved Need to see Analysis of area.

7-7-09

Agreed to approve 9-23-09 plan for Grading & Foundation Permit, but hold off on Building Permit until Innovation Pkwy Storm Drain/master plan is figured out.

7-8-09 Spoke with Jeff Mortensen He said he didn't do any "science" to support not extending the storm drain. He figured sizing was not req'd, Hydrology has signed the Work Order, Just Stephen and Richard have not.

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103


September 27, 2001

Bruce Stidworthy, PE
Bohannan Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

**Re: Sandia Science & Technology Park Master Drainage Report**
**Engineer's Stamp dated 9-12-01 (M21/D7A)**

Dear Mr. Stidworthy,

Based upon the information provided in your submittal dated 9-12-01, the above referenced report is approved as a Master Plan for the SSTP. All site-specific grading plans must adhere to this plan.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Sr. Engineer, Hydrology

C: file


THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

Options 2 & 5 cross
Landfill 4 should be
eliminated.

September 12, 2001

Mr. Brad Bingham, P.E.
Hydrology Project Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

BOHANNAN-HUSTON, INC.

Courtyard One

7500 JEFFERSON NE

Albuquerque

NM 87109-4335

voice 505.823.1000

fax 505.821.0892

Re: Response to Hydrology Comments regarding the Sandia Science and Technology Master Drainage Report.

Dear Brad:

The following is in response to comments in a letter from Loren Meinz dated July 9, 2001, addressed to James Topmiller and me.

1. Footnotes remain, as per comments in a letter from Loren Meinz dated August 24, 2001.

2. Text stating, "may require landfill mitigation" has been added to Option #2 sketch (Figure 1 pg. 2) and Option #5 sketch (Figure 1 pg. 5).

3. Appendix D has been amended with an updated pipe table and corresponding pipe map. The updated table and map give clarification to the four separate storm drain systems in SS&TP, as follows: North System, Main System, South System and East System with pipe designations NP, P, SP and EP respectively.

4. A plan and profile of the pipes along Eubank, North of Opportunity Rd. (North System in DMP App. D) has been added to Exhibit 3.

In addition to the items above, we have made other minor revisions and clarifications to the Basin Map in order to improve its clarity and accuracy. With this submittal, all comments and concerns have been addressed. We, therefore, request final approval of the Master Plan.

Sincerely,
Bohannan Huston, Inc.

Bruce Stidworthy, P.E.
Community Development
and Planning Group

BS/ca
Enclosures

cc: James Topmiller, BHI

P:\01222\cdp\corres\2ndMeinz Response.doc

# MASTER DRAINAGE REPORT FOR SANDIA SCIENCE & TECHNOLOGY PARK

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823.1000

fax 505 821 0892

## FEBRUARY 8, 2001

updated SEPT 12, 2001

## PREPARED FOR:

## SANDIA SCIENCE & TECHNOLOGY PARK
## PROGRAM OFFICE
## 10520 RESEARCH ROAD SE
## ALBUQUERQUE, NM 87123

# MASTER DRAINAGE REPORT

# FOR

# SANDIA SCIENCE & TECHNOLOGY PARK

Prepared for:

SANDIA SCIENCE & TECHNOLOGY PARK
PROGRAM OFFICE
10520 RESEARCH ROAD SE
ALBUQUERQUE, NM 87123

Prepared by:

BOHANNAN HUSTON, INC.
COURTYARD I
7500 JEFFERSON STREET NE
ALBUQUERQUE, NM 87109

PREPARED BY:

Bruce J. Stidworthy, P. E. Date 2/9/01

9/12/01



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B. Drainage From Existing Tracts ..... 2

**IV. PROPOSED CONDITIONS ..... 3**

**V. SUMMARY / CONCLUSION ..... 6**


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FIGURE 2 - VICINITY MAP

FIGURE 3 - ORTHO PHOTO – SANDIA SCIENCE & TECHNOLOGY PARK AND SURROUNDING AREA


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APPENDIX A - ALLOWABLE DISCHARGE RATES

APPENDIX B - ANALYSIS POINT CALCULATIONS

APPENDIX C - STREET CAPACITY CALCULATIONS

APPENDIX D - STORM DRAIN CAPACITY CALCULATIONS


## EXHIBITS


EXHIBIT 1 - EXISTING CONDITIONS MAP

EXHIBIT 2 - PROPOSED CONDITIONS BASIN MAP

EXHIBIT 3 - CONCEPTUAL PAVING AND STORM DRAIN PLAN & PROFILES

EXHIBIT 4 - SOUTH EUBANK STORM DRAINAGE ANALYSIS AMENDMENT #2, NOVEMBER 1998 - EXCERPTS

EXHIBIT 5 - MANZANO MESA MASTER DRAINAGE STUDY, AUGUST 1996 - EXCERPTS

## I. SITE LOCATION

Sandia Science and Technology Park (SS&TP) is approximately 219 acres located south of Steven Moody Street, east of Eubank Boulevard, north of the Tijeras Arroyo, and west of the existing Willow Wood Subdivision and South Point Mobile Home Park. The site is in Zone Atlas Map No. L-21 and M-21 and is within Precipitation Zone 3 as defined in the DPM Section 22.2. See Figure 2, Vicinity Map.

## II. PURPOSE / BACKGROUND

There are a number of existing drainage reports, master drainage plans, and drainage studies which address the drainage conditions within the SS&TP vicinity. These governing documents are as follows:

- The South Eubank Storm Drainage Analysis (dated November 1995, prepared by Smith Engineering Company).
- Amendment #2 to the South Eubank Storm Drainage Analysis (dated November 2, 1998, prepared by Smith Engineering Company).
- The Manzano Mesa Master Drainage Plan (dated August 1996, prepared by Smith Engineering Company).

This Master Drainage Plan conforms to these plans

## III. EXISTING CONDITIONS

Existing vegetation on the site consists almost exclusively of a light covering of native grasses. Some small trees and higher-water use vegetation exists along the path of the runoff from South Pointe Mobile Home Park. Much of the site has been scarred by vehicular use on existing dirt roads criss-crossing the site.

Typical ground slopes range between 1 and 3 percent from east to west. Extremely steep slopes of approximately 50 percent (2 feet horizontally for every 1 foot vertically) are found along the edge of the Tijeras Arroyo

Based on information from the Soil Conservation Services' Soil Survey of Bernalillo County, the site consists of a number of soil types, primarily: Tijerras gravelly fine sand loam, Embudo gravelly fine sand loam, and Madurez Wink association. These soils are common in the Northeast Heights area and are suitable for development purposes.

### A. Existing Drainage Infrastructure

The most important drainage feature for the SS&TP is the existing and planned large-diameter South Eubank Storm Drain. Phase 1 of this storm drainage project, which runs from the Manzano Mesa Park Detention Pond to the Tijeras Arroyo, is complete. Phase 2 is currently under construction and runs from the Manzano Mesa Park Detention Pond north up Elizabeth Street to Central Avenue. The large majority of SS&TP currently drains to this existing storm drain.

### B. Drainage From Existing Tracts

All of the land within the SS&TP, with the exception of the approximately 40-acre State Land Office (SLO) lands holding the existing landfill, generally drains via surface runoff from east to west. Flows are conveyed across the tracts by natural sheet flow and shallow concentrated flows within existing natural swales. Again, with the exception of the above SLO tract, none of the lands within the SS&TP are impacted by offsite drainage. Flows from the SS&TP lands drain to Eubank, where they are picked up by the Phase 1 South Eubank Storm Drain. For the far southern portion of the site, small amounts of drainage may cross the Eubank alignment and enter the base via sheet flow and shallow concentrated flows.

The existing South Pointe Mobile Home Park (MHP), located east of the SMM Partnership Tract A, currently drains to the southwest corner of the MHP and south across the SLO lands, directly to the Tijeras Arroyo in a un-engineered fashion. There is no existing drainage easement for this MHP drainage. Drainage from the SLO tract runs to the southwest corner of the SLO tract, where flows join the offsite drainage from the MHP. The combined flows then drain directly to the Tijeras Arroyo.

The western half of the approximately 20-acre SLO tract located north of the existing PNM switching station is currently being developed by EMCORE. The drainage plan calls for the site to drain to a large pond on the south side of the site. The controlled discharge from the pond drains to a new storm drain to be constructed with the EMCORE project. The new storm drain will tie to the South Eubank Storm Drain and extend east to the edge of the EMCORE site. The eastern half of the tract drains to a small pond located adjacent to the EMCORE project. That pond also drains to the new storm drain. (See "Drainage Report for EMCORE III" prepared by Brasher & Lorenz Inc. dated September 2000.)

## IV. PROPOSED CONDITIONS

The significant proposed drainage management concepts and goals are as follows:

- Minimize or eliminate large, dedicated ponds that reduce buildable area.
- Minimize expensive public and private storm drainage infrastructure.
- Encourage shallow water harvesting area within parking lot islands and other landscape areas.
- Individual tracts will drain to the streets or public storm drains, to the greatest extent possible and/or practical.
- All development within the SS&TP will conform to this master plan's drainage requirements.

- Where the sites cannot drain to the street, private ribbon channels, with easements, will be constructed to convey drainage to proposed public storm drains or to public streets.

- With the exception of Tract E-1 and the SLO tract in the vicinity of the old landfill (Lots 1-8 and Lots 23-29, 33 and 34) of the Master Development Plan), most of the SS&TP has restricted allowable discharge rates. Peak flow rates will be mitigated using on-site detention ponds and control structures.

- Public storm drains will be constructed throughout the site such that all streets within the Park are restricted to the depth of street flow at the top of curb height and the energy grade line within the right-of-way.

The Master Plan identifies primary streets and potential lot configurations. The street system is anticipated to remain throughout the project life; however, the lot lines shown should be construed only as conceptual, for reference and subject to change as individual developments arise.

Lots 1-8 have an allowable discharge of 167cfs in the 100-yr storm. This will allow free discharge from that portion of the SS&TP, provided that the developed impervious area (including public streets) does not exceed 90% of the total area. The Manzano Mesa Master Drainage Plan defines allowable discharge for this portion of the SS&TP.

Lots 20, 21, 39 and 40 will follow the guidelines provided in Amendment #2 to the South Eubank Storm Drainage Analysis, which indicates that those areas may discharge 1.3cfs/acre (including public streets) to the South Eubank Storm Drain. Since Progress Place and Innovation Parkway are public streets, they must be allowed free discharge. The resultant allowable discharge for Lots 20 and 21 is 0.94cfs/acre; the resultant allowable discharge for Lots 31 and 40 is 0.90cfs/acre. This breakdown between streets and lots is shown in Appendix A. Lots 20 and 21 will require onsite ponds that will drain to the proposed storm drain in Innovation Parkway. Similarly, Lots 39 and 40 will require onsite ponds that will drain to the proposed storm drain in Progress Place.

This Drainage Master Plan proposes to construct a new storm drain from the southwest corner of the existing MHP and south through the SS&TP (the SLO lands) directly to the Tijeras Arroyo (Option 1). This new storm drain would accept flows from the MHP, as well as accept fully developed flows from Lots 23-29 and 33-34. The City has committed to pay for all or a significant portion of the MHP storm drain outfall. The MHP is required to construct a pond (on MHP property) in order to reduce the peak discharge to 56cfs, per Amendment #2. Alternatively, the MHP could contribute money to enlarge the new storm drain outfall to the Tijeras Arroyo. A new outfall line, energy dissipation structure, and easements to the Tijeras Arroyo will be required. Phasing of the Park will allow deferral of this new line to Phase 2. This phase begins to develop the eastern SLO lands (Lots 22-36), and thus the storm line is not required until that time. Allowable discharge for Lots 23-29, 33 and 34 is 4.82cfs/acre (free discharge); allowable discharge for Lots 22, 30-32, 35 and 36 is 1.57cfs/acre.

2.20

The above-proposed Option 1 is the most direct and economical solution for the existing 125cfs from the MHP. This option is practical if the current landowners agree to provide a storm drain easement through their property from the border of the proposed site to the Tijeras Arroyo.

The outfall location for the drainage from the existing MHP does not need to be constructed until Phase 2 of the proposed Sandia Science & Technology Park. If the easement required for Option 1 cannot be acquired, there are several other options available for the storm discharge from the existing mobile home park. See Figure 1 for graphical exhibits of the following options. Below is a list of the feasible options for the MHP discharge.

outfall need addressed as part of Ph I

- Option 1: Storm Drain Easement through private property directly to Tijeras Arroyo (as shown in plans)
- Option 2: Divert storm drain East within Property and discharge to Tijeras Arroyo
- Option 3: Divert flows via storm drain in Ventura Road and along the Phase II side of Innovation Parkway to a detention pond at the southwest corner of Innovation Parkway and Progress Place. The detention pond will then discharge flows within the capacity of the South Eubank storm drain.
- Option 4: Divert flows via storm drain in Ventura, Innovation, Progress Place, through a PNM easement into a pond North of the cul-de-sac on Progress Place. The detention pond will then discharge flows within the capacity of the South Eubank storm drain.

- Option 5: Divert flows via storm drain directly east to a soil cement stabilization with the Tijeras Arroyo.

Allowable discharge rates for all of the remaining lands (Lots 9-19, 22, 30-32, and 35-38) within the Park are defined by Amendment #2 to the South Eubank Storm Drainage Analysis, with a minor modification. This plan proposes to modify Amendment #2 by allowing the MHP to have free discharge to the new storm drain (discharging MHP and site flows to the Tijeras Arroyo) described in the paragraph above. This modification has a number of advantages:

- No land within the Park will have to be encumbered for massive dedicated public ponding areas, instead reducing the ponding requirements sufficiently to allow ponding within the developments (parking and driveway areas, landscaping areas, etc.).

- Lots 23-29 and 33-34 get free discharge. This is an advantage, since ponding over the existing landfill areas has the potential to increase methane gas generation.

- Lots 9-19, 22, 30-32, and 35-37 have a less restrictive allowable discharge rate, which will allow those lots to have smaller ponds than would otherwise be required.

This Drainage Master Plan provides a safe, innovative and economical solution to drainage management requirements of the SS&TP.

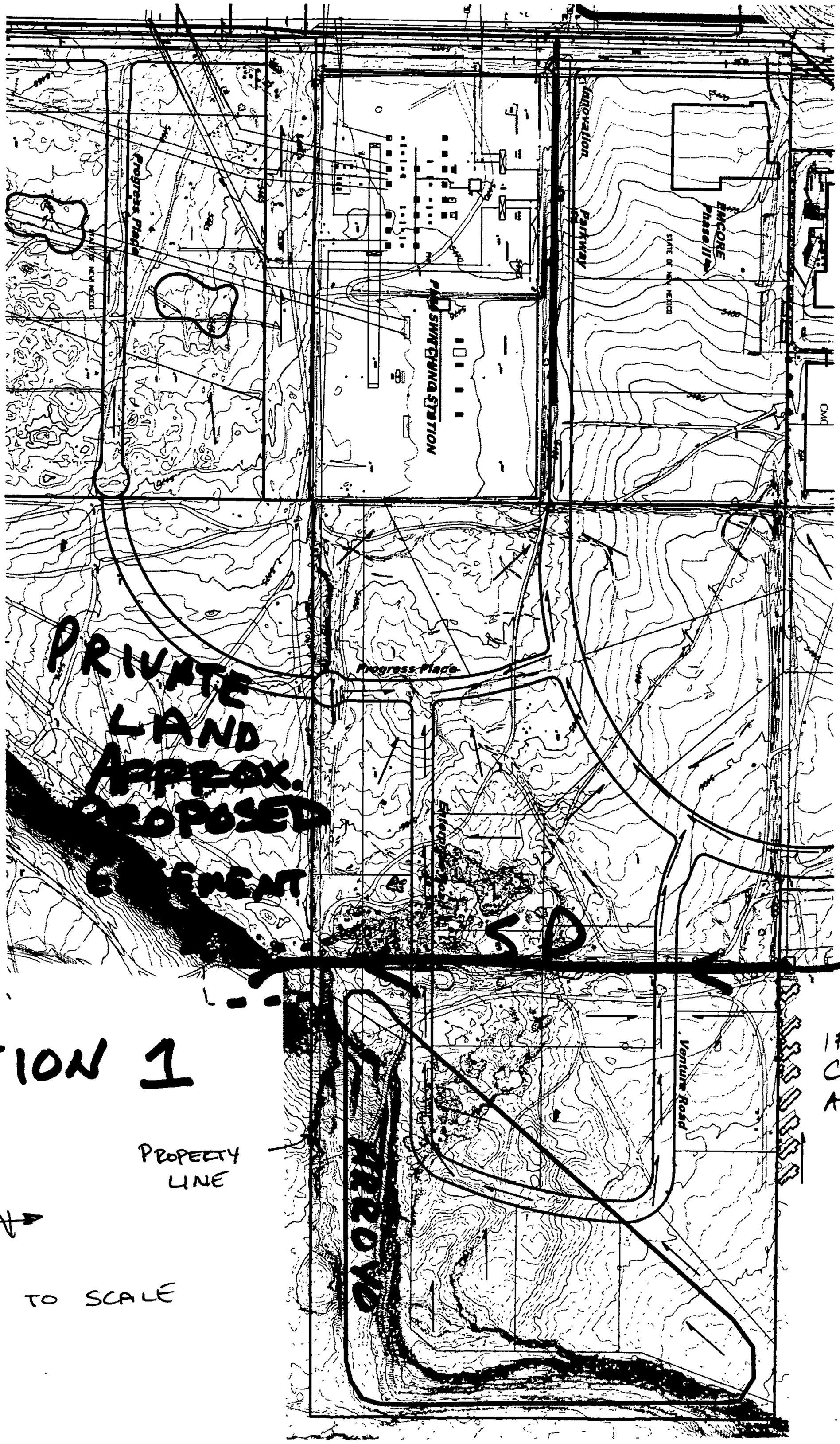
Specifically, the allowable peak discharge rate for Lots 9-19, 22, 30-32, and 35-38 is 1.57cfs/acre. See Appendix A for detailed allowable discharge information.

## V. SUMMARY / CONCLUSION

This Master Drainage Plan provides a safe, innovative and economical solution to the drainage management requirements of the Sandia Science & Technology Park. The report conforms to the drainage criteria set forth in the South Eubank Storm Drainage Analysis, Amendment #2, and the Manzano Mesa Master Drainage Plan. Required storm drain and allowable peak discharge are clearly identified for the development of individual lots/tracts within the Sandia Science & Technology Park.

# FIGURE 1

## MHP DISCHARGE OPTIONS




OPTION 1

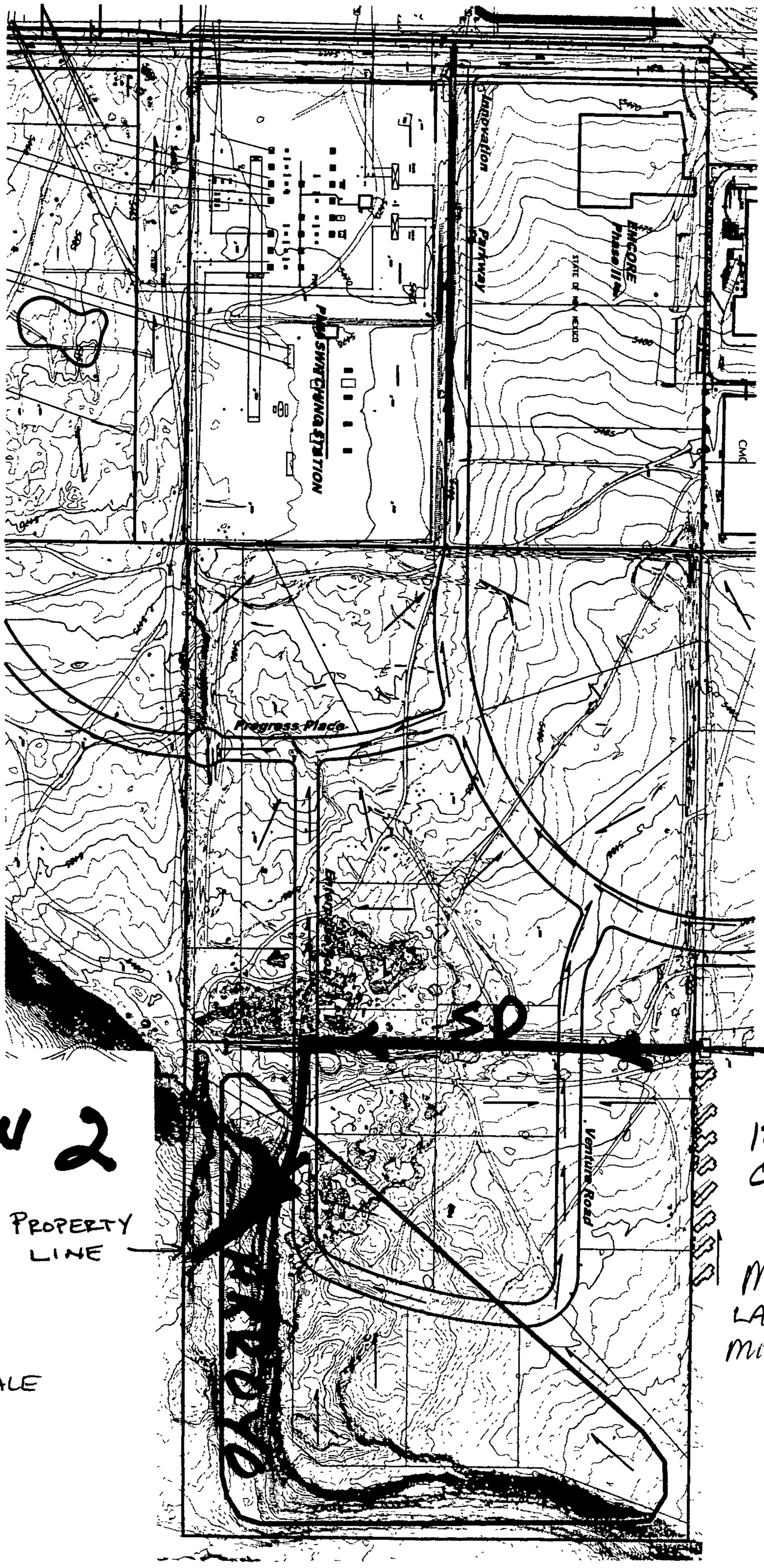
PROPERTY LINE

N

NOT TO SCALE

125 CFS FROM MHP OR 56 CFS IF MHP CONSTRUCTS A POND

FIG. 1.15




OPTION 2

PROPERTY LINE

N

NOT TO SCALE

125 CFS FROM MHP

OR 56 CFS IF MHP CONSTRUCTS POND

MAY REQUIRE LANDFILL MITIGATION

Ron S.
9/12/07

FIG. 1/2/5

# OPTION 3

N

NOT TO SCALE

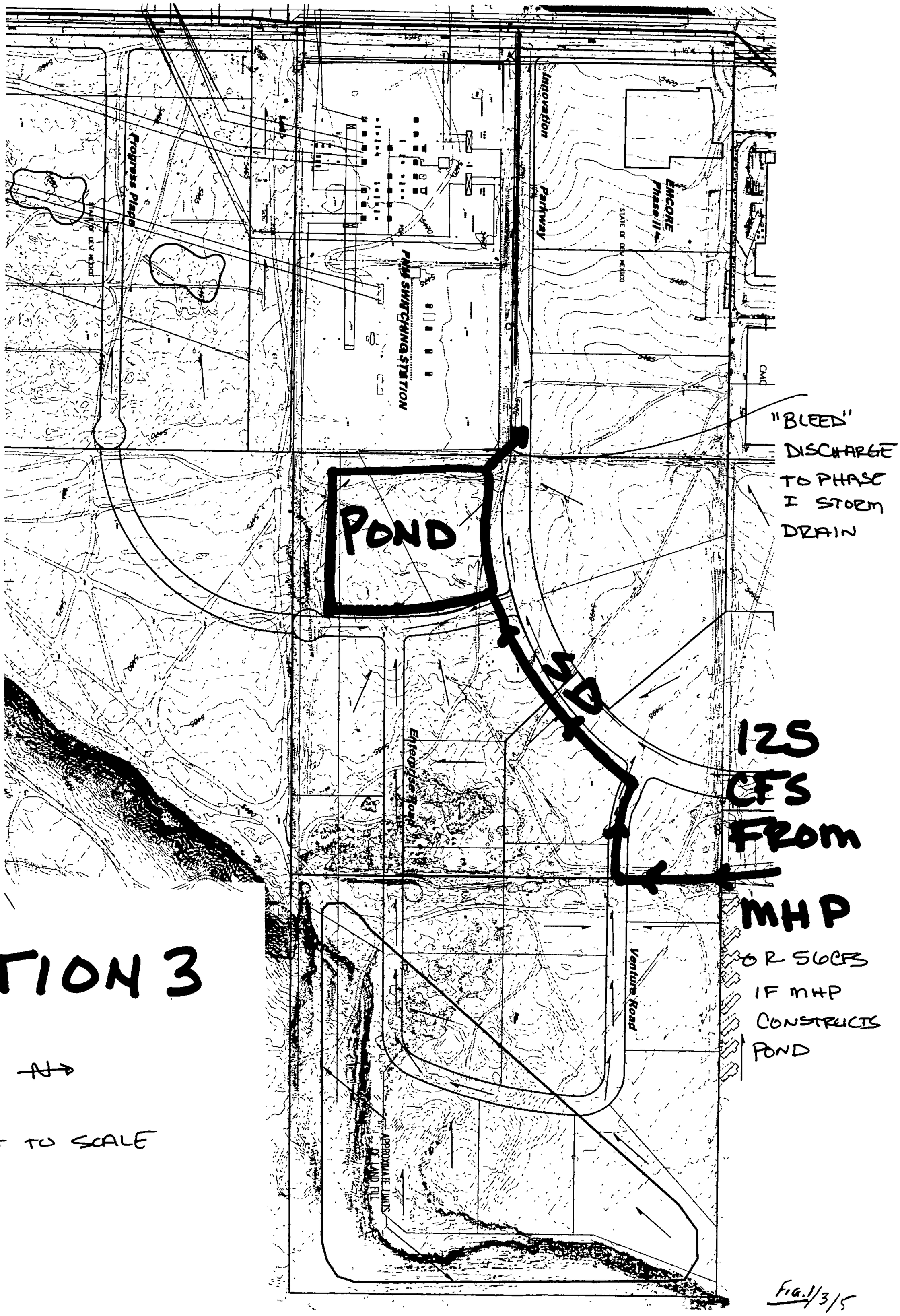
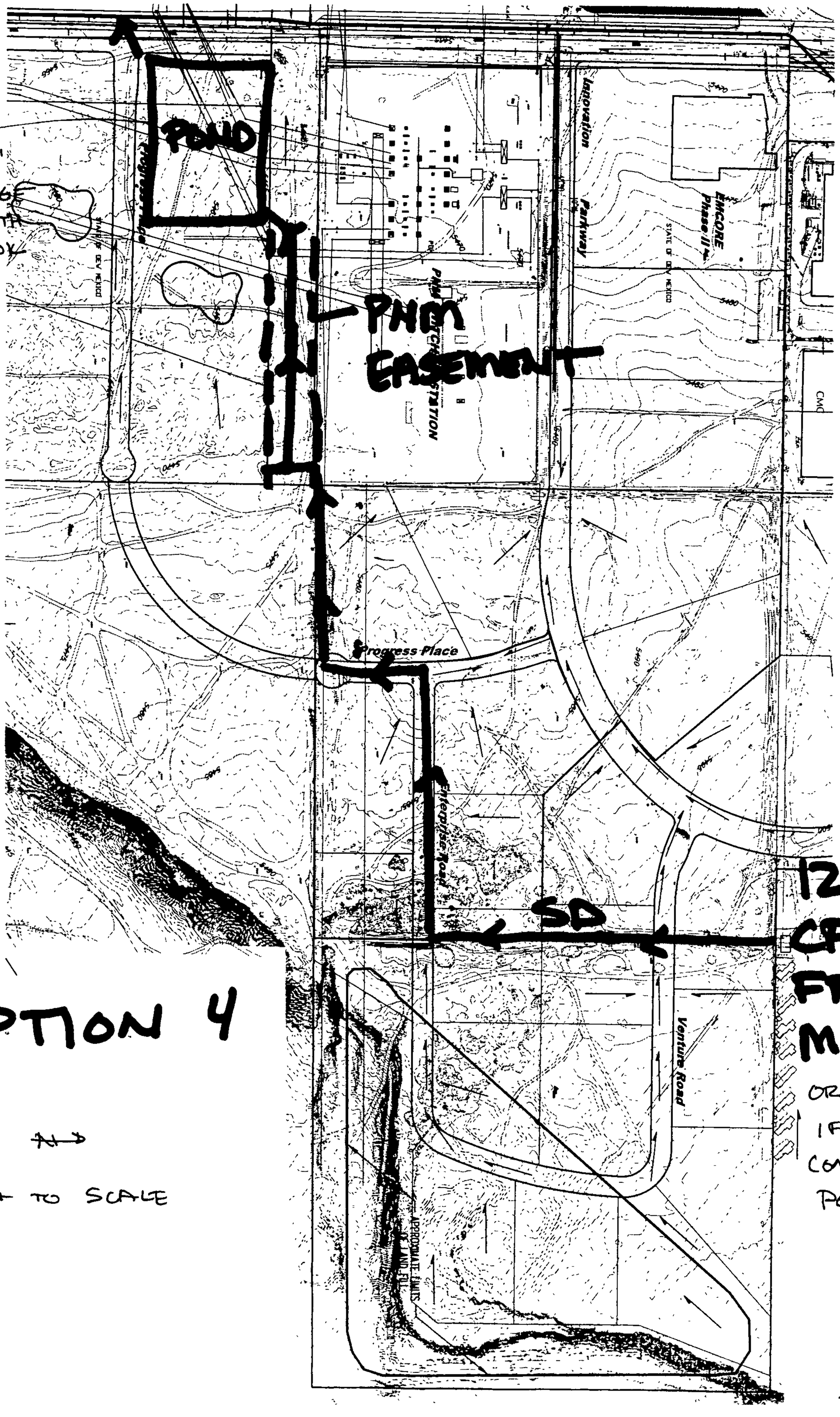



FIG. 1/3/5

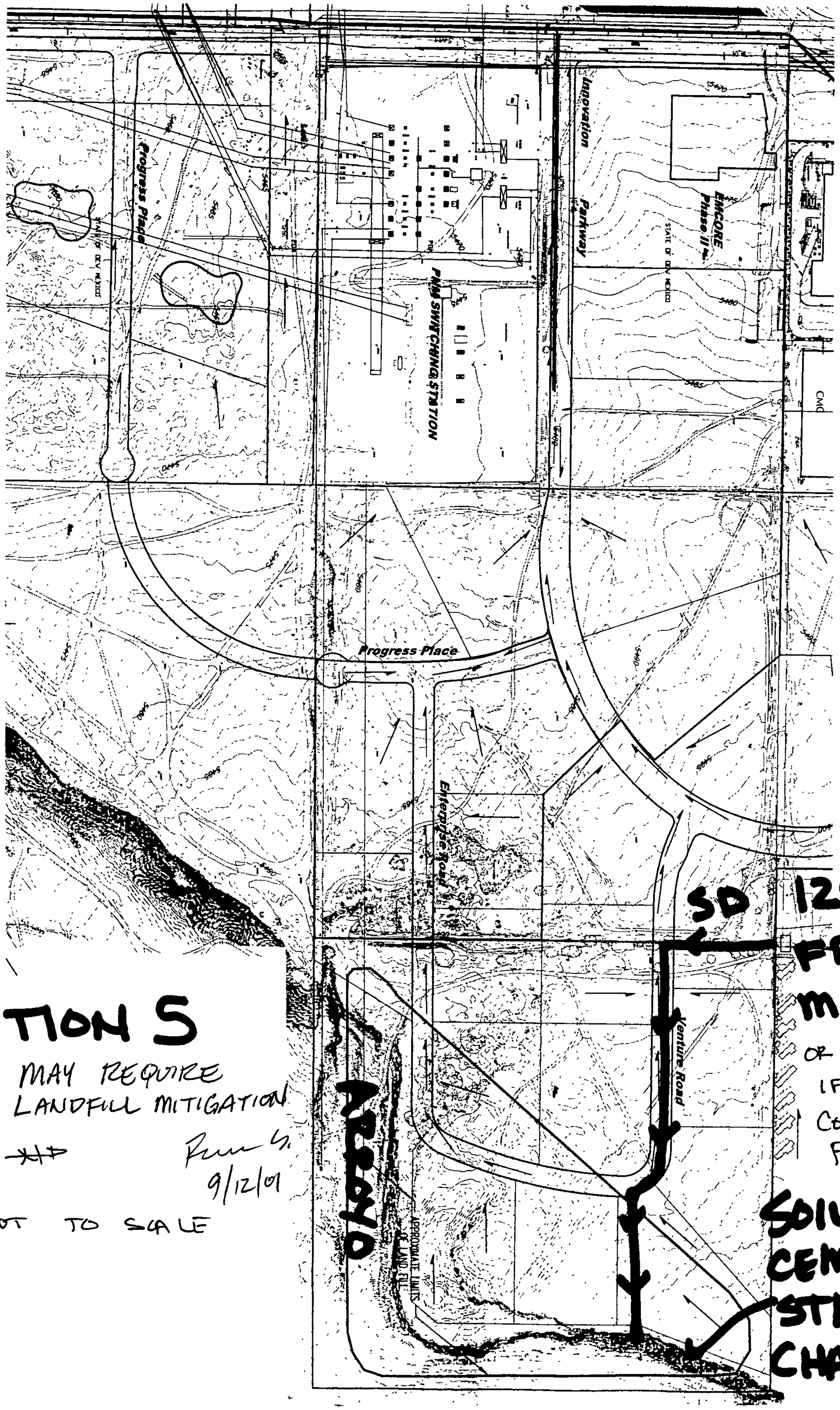



# OPTION 4

~~ALT~~

NOT TO SCALE

Fig 1/4/5




# OPTION 5

MAY REQUIRE LANDFILL MITIGATION

~~HP~~

Ron S.
9/12/01

NOT TO SCALE

FIG. 1/5/5

# FIGURE 2

## VICINITY MAP

CITY OF
Albuquerque

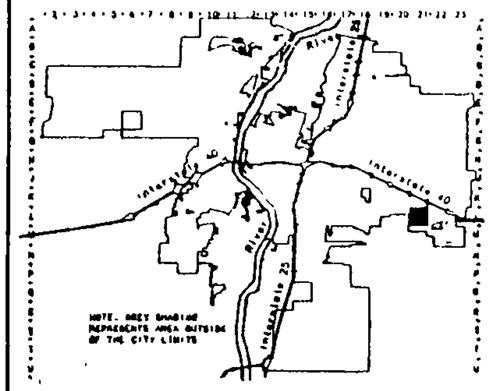
A lbuquerque G eographic I nformation S ystem

PLANNING DEPARTMENT

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**GRAPHIC SCALE IN FEET**

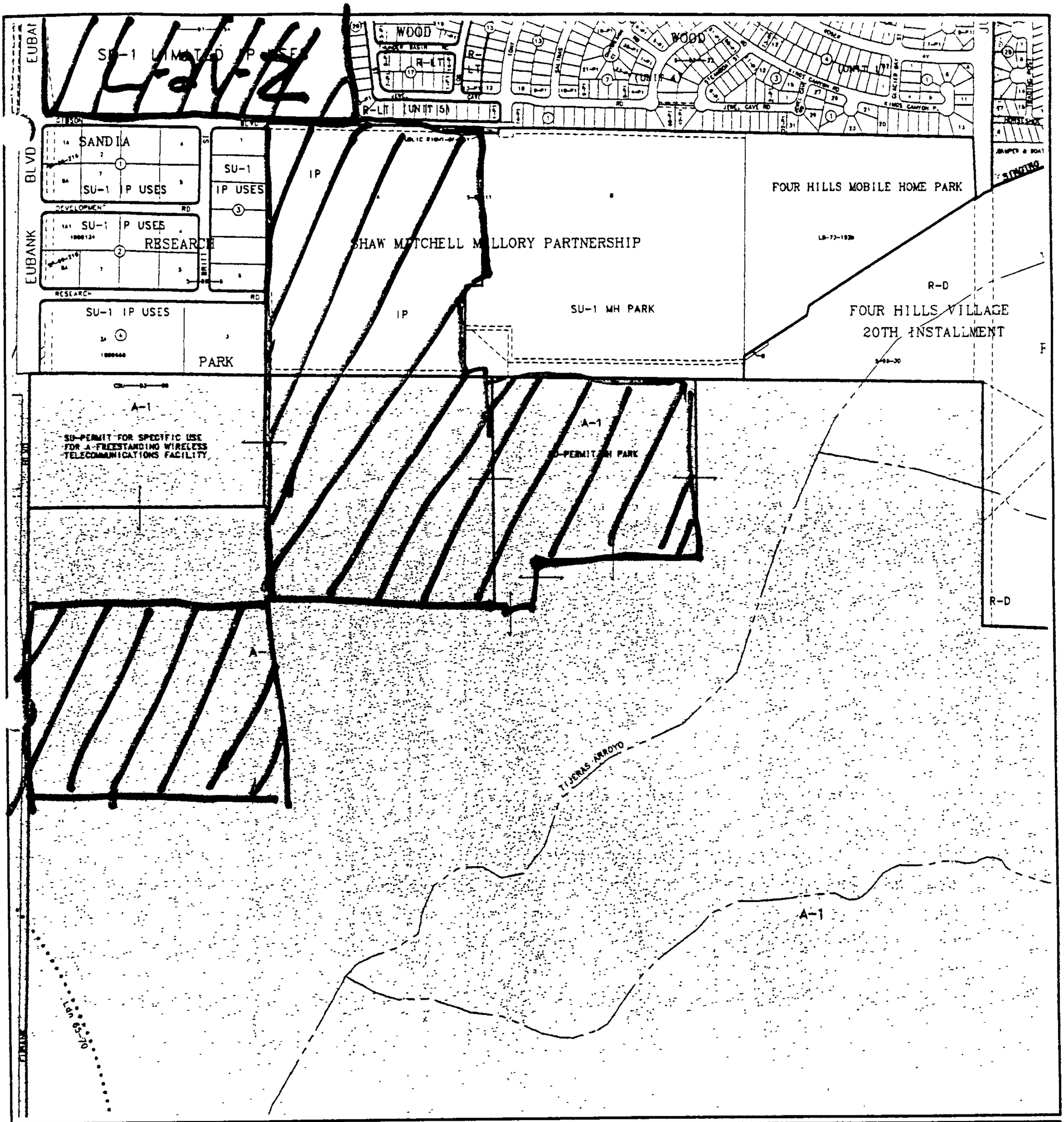
250 0 500 1000

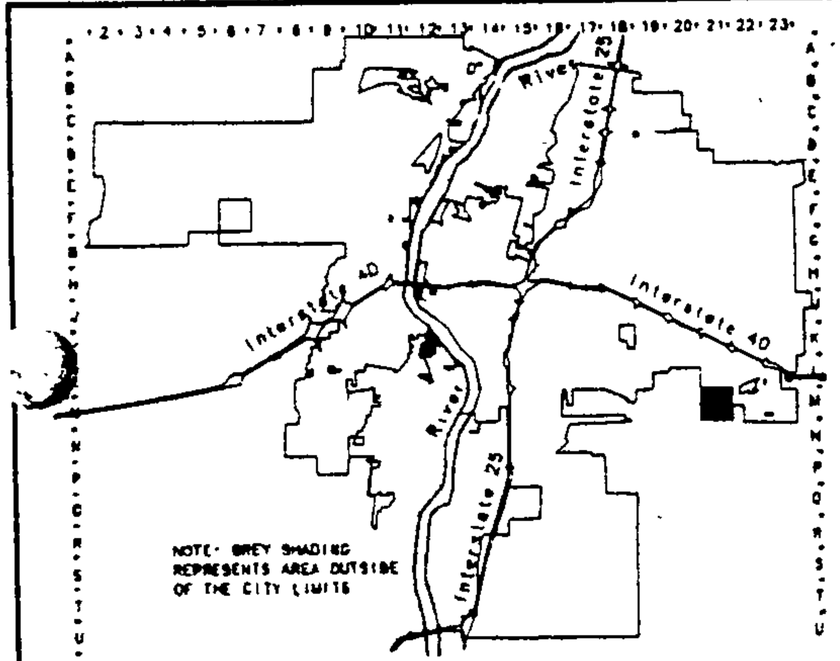



## Zone Atlas Page
# L-21-Z

Map Amended through
December 20, 1999

Fig. 2 1/2




CITY OF
Albuquerque

A Albuquerque G eographic I nformation S ystem
PLANNING DEPARTMENT

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GRAPHIC SCALE IN FEET

250 0 750 1000

# Zone Atlas Page

# M-21-Z

Map Amended through December 08, 2000

FIG. 2 2/2

# FIGURE 3

ORTHO PHOTO – SANDIA SCIENCE & TECHNOLOGY PARK

AND SURROUNDING AREA




N

200 100 0 200

1" = 200'

LEGEND

- SANDIA SCIENCE & TECHNOLOGY PARK BOUNDARY
- TRACT BOUNDARIES
- 5305 EXISTING CONTOURS
- EASEMENT

P:\01222\cdp\general\01222trtho.dwg
Feb 07, 2001 - 5:33pm

Ortho Photo

# Sandia Science and Technology Park

Prepared For:

Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

Prepared By:

CONSENSUS PLANNING, INC.
Planning / Landscape Architecture
924 Park Avenue SW
Albuquerque, NM 87102
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Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

need for discharge to Opportunity @ Eubank exist stubout) 13.96

**APPENDIX A: ALLOWABLE DISCHARGE RATES**
**Sandia Science & Technology Park**

| Discharge Point | Contributing Basins | Contributing Lots | Total Allowable Discharge (cfs) | Area (acres) | Allowable Discharge (cfs/acre) | Total Discharge (cfs) |
|---|---|---|---|---|---|---|
| Eubank Storm Drain (1) at Steven Mooody | 702.1, 702.2, 702.3 702.4, 702.5 | 1-8 | 167 Lots 154.18 ST 12.82 | 42.17 Lots=39.51 Streets=2.66 | ~~4.78~~ Lots=~~4.78~~ Streets=~~4.78~~ 4.82 | 167 3.90 |
| South Eubank Storm Drain (2) | 609.3, 609R.1, 609R.2 | 39, 40 PNM Easement | 45 Lots=36.71 Street=8.29 | 34.63 Lots=32.91 Streets=1.72 | 1.3 Lots=~~0.90~~ 1.12 Streets=4.82 | 45 |
| Emcore Storm Drain (2) existing stub to Lots (3) 20 & 21 | | 20, 21 | 13 Lots=8.43 Streets=4.43 | 9.89 Lots=8.97 Streets=0.92 | 1.3 Lots=0.94 Streets= 4.82 | 13 |
| Tijeras Arroyo (4) | MHP, 603.1, 603.2 | 23-29, 33, 34 MHP (125 CFS) | 264 Lots=126.14 Street=12.63 | 28.79 Lots=26.17 Streets=2.62 | 4.82 Lots=4.82 Streets=4.82 | 264 |
| Emcore Storm Drain (5) SE corner of Emcore Site (sump) | 606R.1, 606R.2, 606R.3, 606R.4, 607R.1, 607R.2 607R.3, 607R.4 | 9-19, 22 30-32, 35-38 | 154 Lots=103.31 Street=50.08 | 76.19 Lots=65.80 Streets=10.39 | 2.02 Lots=1.57 Street=4.82 | 153 |

(1) Per AHYMO results from Manzano Mesa Master Drainage Study, August 1996 (Basin 702) Allowable Discharge is 167 cfs. ~~Per DMP~~ discharge is ~~4.78 cfs/acre~~ calculated using 90% D and 10 % B land treatment types. (Streets are approximately 90% D also) ~~Note: The allowable discharge of 167 cfs is less than 4.78 x 42.17 acres. This is due to routing and/or time-to-peak factors built into AHYMO. Lots 1-3 discharge to strom drain via stub outside R/W.~~

(2) Guidelines provided in Amendment #2 of the South Eubank Storm Drain Analysis indicates that Lots 20, 21, 39, ~~and~~ 40 may discharge 1.3 cfs/acre to the South Eubank Storm drain. Per typical street/comercial site DPM Land treatments of 90%D, 5%C, & 5%B ~~discharge 4.82 cfs/acre~~

(3) Lots 20 and 21 will require onsite ponds that will drain into the existing stub from Emcore storm drain.

(4) Per typical street/comercial site DMP Land treatments of 5% B, 5% C, 90% D ~~or 4.82 cfs/acre~~

(5) Streets are allowed free discharge from the site. Lots may discharge 1.57 cfs w/ small onsite private ponds.



4-11

Cleanup:

see current
Basin Map

# APPENDIX A

## ALLOWABLE DISCHARGE RATES

# APPENDICES

APPENDIX A - ALLOWABLE DISCHARGE RATES

APPENDIX B - ANALYSIS POINT CALCULATIONS

APPENDIX C - STREET CAPACITY CALCULATIONS

APPENDIX D - STORM DRAIN CALCULATIONS

# APPENDIX B

## ANALYSIS POINT CALCULATIONS

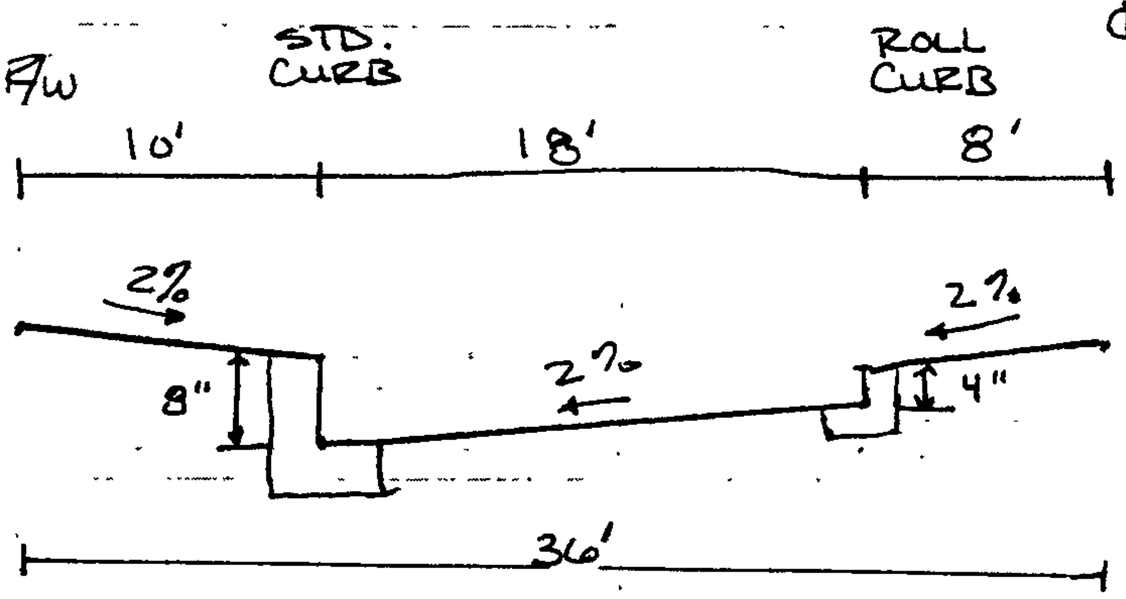
**APPENDIX B: ANALYSIS POINT CALCULATIONS**
**Sandia Science & Technology Park**

| Analysis Point | Contributing Basin (s) | Site vs. Road Discharge Rates | | | | Total Flow (CFS) | Road* Capacity (CFS) | Street Slope (%) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | Site Area (AC) | Site Flow (CFS) | R/W Area (AC) | R/W Flow (CFS) | | | | |
| A | 609.3 | 12.51 | 16.26 | 1.72 | 8.29 | 24.55 | 52.20 | 0.6-sump | 609R.3 & Progress Place |
| C-North | 607R.4 | 7.78 | 12.21 | 0.71 | 3.42 | 15.64 | 26.10 | 0.63-sump | Lots 18, 19 & 1/2 Innov. R/W |
| C-South | 607R.3 | 7.40 | 11.62 | 0.71 | 3.42 | 15.04 | 26.10 | 0.63-sump | Lots 37 & 38 & 1/2 Innov. R/W |
| D | 607R.2 | 9.83 | 15.43 | 1.45 | 6.99 | 22.42 | 48.10 | 0.51 | Lots 31, 32, 36, Ent. & Prog. R/W |
| E | 603.2 | 12.63 | 60.88 | 2.62 | 12.63 | 57.51 | 57.90 | 0.74-sump | Total Basin - 16 cfs from Inlets (E2) |
| E2 | 603.2. | 7.81 | 37.64 | 1.40 | 6.75 | 44.39 | 57.90 | 0.74 | @ Inlets upstream of sump (16 cfs) |
| F | 603.1 | 14.85 | 71.58 | 0.71 | 3.42 | 75.00 | 75.30 | 1.25-sump | Lots 23-25, 28 & Vent. R/W |
| G-North | 607R.1 | 4.38 | 6.88 | 0.88 | 4.24 | 11.12 | 46.00 | 1.96 | Lot 17 & 1/2 Innov. R/W |
| G-South | 607R.1 | 5.93 | 9.31 | 1.32 | 6.36 | 15.67 | 46.00 | 1.96 | Lot 30 & 1/2 Innov. R/W |
| I | 606R.2 | 3.06 | 4.80 | 0.79 | 3.81 | 8.61 | 31.90 | 0.94 | Lot 11 & 1/2 Innov. R/w |
| J | 606R.4 | 6.87 | 10.79 | 1.10 | 5.30 | 16.09 | 106.70 | 2.51 sump | Lost 15, 16 & Reasearch R/W |
| K | 606R.3 | 3.55 | 5.57 | 0.30 | 1.45 | 7.02 | 31.90 | 0.94 | Part of Lot 10 & 1/2 Innov. R/W |
| L-East | 606R.3 | 2.95 | 4.63 | 1.41 | 6.80 | 11.43 | 31.90 | 0.94-sump | Opport. & 1/2 Innov. R/W & Park |
| L-West | 606R.3 | 0.00 | 0.00 | 0.85 | 4.10 | 4.10 | 31.90 | 0.94-sump | 1/2 Innov. R/W |
| M | 702.4 | 6.43 | 10.10 | 1.04 | 4.97 | 15.07 | 36.70 | 1.25 | Lot 4 & 1/2 Innov. R/W |
| N | 702.1 | 10.02 | 15.73 | 1.04 | 4.97 | 20.70 | 23.90 | 0.53 | Lot 8 & 1/2 Innov. R/W |
| O-North | 702.2, 702.5 | 3.37 | 16.11 | 1.33 | 6.36 | 22.47 | 41.90 | 1.63-sump | Lot 6 & 1/2 Innov. R/W |
| O-South | 702.3, 702.5 | 7.43 | 35.52 | 1.33 | 6.36 | 41.87 | 41.90 | 1.63-sump | 1/2 Innov. R/W |

* Road Capacity is measured at a depth of top of standard curb. See Appendix C for capacity calculations.

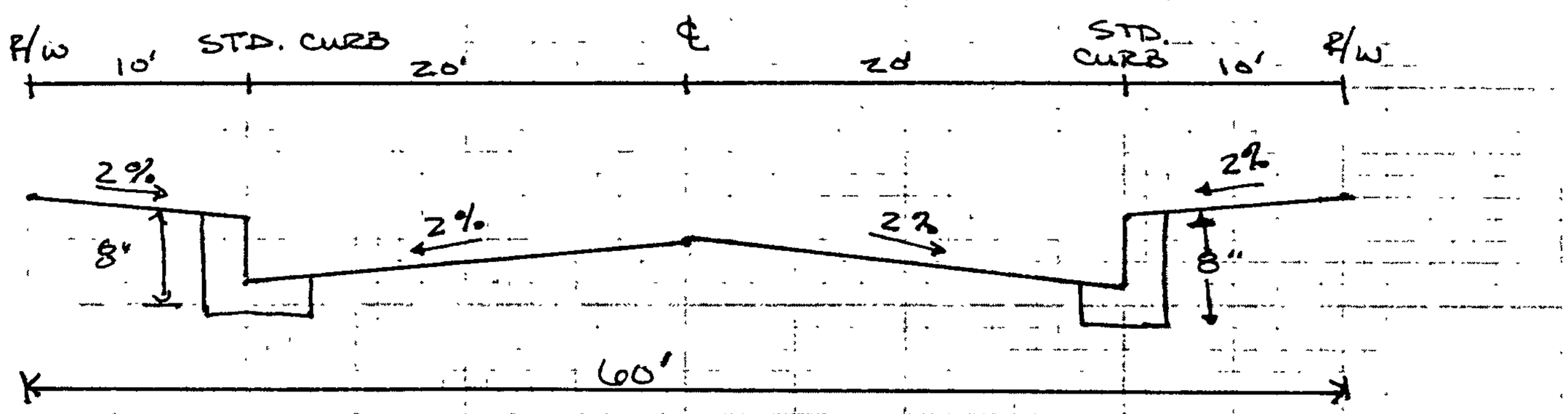
# APPENDIX C

## STREET CAPACITY CALCULATIONS




½ Innovation Parkway Cross-section

TYPICAL - NOT TO SCALE




TYPICAL STREET SECTION (ALL OTHER STREETS)

NOT TO SCALE

PROJECT NAME SSTP SHEET ____ OF ____

PROJECT NO. 01222 BY ____ DATE ____

SUBJECT STREET CAPACITY CH'D ____ DATE ____

X - SECTIONS

Bohannan ▲ Huston

ENGINEERS PLANNERS PHOTOGRAMMETRISTS
SURVEYORS SOFTWARE DEVELOPERS

C-1

Analysis Point A - Progress Place
60' R/W, 40' F-F
Street Capcity = 52.2 CFS
MANNING'S N= .017 SLOPE= .006

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.86 | 5 | 12.00 | 0.13 | 9 | 50.17 | 0.67 |
| 2 | 9.38 | 0.67 | 6 | 30.00 | 0.49 | 10 | 50.63 | 0.67 |
| 3 | 9.83 | 0.67 | 7 | 48.00 | 0.13 | 11 | 60.00 | 0.86 |
| 4 | 10.00 | 0.00 | 8 | 50.00 | 0.00 | | | |

| ☐ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.30 | 0.63 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.48 | 1.25 | 0.00 | 0.04 |
| 0.06 | 0.06 | 0.06 | 0.0 | 1.97 | 0.63 | 1.88 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 0.77 | 2.50 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.16 | 0.1 | 3.29 | 0.89 | 3.13 | 0.01 | 0.11 |
| 0.12 | 0.12 | 0.23 | 0.2 | 3.95 | 1.00 | 3.75 | 0.02 | 0.14 |
| 0.14 | 0.14 | 0.31 | 0.3 | 5.30 | 1.02 | 5.07 | 0.02 | 0.16 |
| 0.16 | 0.16 | 0.43 | 0.4 | 7.34 | 1.02 | 7.08 | 0.02 | 0.18 |
| 0.18 | 0.18 | 0.59 | 0.6 | 9.38 | 1.07 | 9.09 | 0.02 | 0.20 |
| 0.20 | 0.20 | 0.80 | 0.9 | 11.42 | 1.15 | 11.10 | 0.02 | 0.22 |
| 0.22 | 0.22 | 1.04 | 1.3 | 13.46 | 1.23 | 13.11 | 0.02 | 0.24 |
| 0.24 | 0.24 | 1.32 | 1.7 | 15.51 | 1.31 | 15.12 | 0.03 | 0.27 |
| 0.26 | 0.26 | 1.64 | 2.3 | 17.55 | 1.40 | 17.13 | 0.03 | 0.29 |
| 0.28 | 0.28 | 2.00 | 3.0 | 19.59 | 1.48 | 19.14 | 0.03 | 0.31 |
| 0.30 | 0.30 | 2.41 | 3.8 | 21.63 | 1.57 | 21.15 | 0.04 | 0.34 |
| 0.32 | 0.32 | 2.85 | 4.7 | 23.67 | 1.65 | 23.16 | 0.04 | 0.36 |
| 0.34 | 0.34 | 3.33 | 5.8 | 25.71 | 1.73 | 25.17 | 0.05 | 0.39 |
| 0.36 | 0.36 | 3.86 | 7.0 | 27.76 | 1.82 | 27.18 | 0.05 | 0.41 |
| 0.38 | 0.38 | 4.42 | 8.4 | 29.80 | 1.90 | 29.19 | 0.06 | 0.44 |
| 0.40 | 0.40 | 5.03 | 9.9 | 31.84 | 1.98 | 31.20 | 0.06 | 0.46 |
| 0.42 | 0.42 | 5.67 | 11.7 | 33.88 | 2.06 | 33.21 | 0.07 | 0.49 |
| 0.44 | 0.44 | 6.35 | 13.6 | 35.92 | 2.13 | 35.22 | 0.07 | 0.51 |
| 0.46 | 0.46 | 7.08 | 15.6 | 37.96 | 2.21 | 37.23 | 0.08 | 0.54 |
| 0.48 | 0.48 | 7.84 | 17.9 | 40.01 | 2.29 | 39.24 | 0.08 | 0.56 |
| 0.50 | 0.50 | 8.64 | 20.7 | 41.05 | 2.40 | 40.25 | 0.09 | 0.59 |
| 0.52 | 0.52 | 9.45 | 24.0 | 41.09 | 2.54 | 40.26 | 0.10 | 0.62 |
| 0.54 | 0.54 | 10.25 | 27.5 | 41.13 | 2.68 | 40.27 | 0.11 | 0.65 |
| 0.56 | 0.56 | 11.06 | 31.2 | 41.17 | 2.82 | 40.28 | 0.12 | 0.68 |
| 0.58 | 0.58 | 11.87 | 35.0 | 41.21 | 2.95 | 40.29 | 0.14 | 0.72 |
| 0.60 | 0.60 | 12.67 | 39.1 | 41.25 | 3.08 | 40.30 | 0.15 | 0.75 |
| 0.62 | 0.62 | 13.48 | 43.3 | 41.29 | 3.21 | 40.31 | 0.16 | 0.78 |
| 0.64 | 0.64 | 14.28 | 47.6 | 41.34 | 3.33 | 40.32 | 0.17 | 0.81 |
| **0.66** | **0.66** | **15.09** | **52.2** | **41.38** | **3.46** | **40.33** | **0.19** | **0.85** |
| 0.68 | 0.68 | 15.90 | 56.0 | 42.39 | 3.52 | 42.24 | 0.19 | 0.87 |
| 0.70 | 0.70 | 16.78 | 58.6 | 45.27 | 3.49 | 44.21 | 0.19 | 0.89 |
| 0.72 | 0.72 | 17.68 | 62.2 | 47.24 | 3.52 | 46.18 | 0.19 | 0.91 |
| 0.74 | 0.74 | 18.62 | 66.0 | 49.22 | 3.54 | 48.16 | 0.19 | 0.93 |
| 0.76 | 0.76 | 19.61 | 70.0 | 51.19 | 3.57 | 50.13 | 0.20 | 0.96 |
| 0.78 | 0.78 | 20.63 | 74.3 | 53.17 | 3.60 | 52.11 | 0.20 | 0.98 |
| 0.80 | 0.80 | 21.69 | 78.8 | 55.14 | 3.64 | 54.08 | 0.21 | 1.01 |
| 0.82 | 0.82 | 22.79 | 83.6 | 57.11 | 3.67 | 56.05 | 0.21 | 1.03 |
| 0.84 | 0.84 | 23.93 | 88.7 | 59.09 | 3.71 | 58.03 | 0.21 | 1.05 |
| 0.86 | 0.86 | 25.11 | 94.0 | 61.06 | 3.74 | 60.00 | 0.22 | 1.08 |

Analysis Point C - Innovations Parkway
Capcity of ½ street = 26.1 cfs
MANNING'S N= .017 SLOPE= .0063

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | 9 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.31 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.49 | 0.63 | 0.00 | 0.04 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 0.65 | 0.94 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.05 | 0.0 | 1.32 | 0.78 | 1.25 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 0.91 | 1.56 | 0.01 | 0.11 |
| 0.12 | 0.12 | 0.11 | 0.1 | 1.97 | 1.03 | 1.88 | 0.02 | 0.14 |
| 0.14 | 0.14 | 0.15 | 0.2 | 2.65 | 1.05 | 2.54 | 0.02 | 0.16 |
| 0.16 | 0.16 | 0.22 | 0.2 | 3.67 | 1.05 | 3.54 | 0.02 | 0.18 |
| 0.18 | 0.18 | 0.30 | 0.3 | 4.69 | 1.10 | 4.55 | 0.02 | 0.20 |
| 0.20 | 0.20 | 0.40 | 0.5 | 5.71 | 1.17 | 5.55 | 0.02 | 0.22 |
| 0.22 | 0.22 | 0.52 | 0.7 | 6.73 | 1.26 | 6.56 | 0.02 | 0.24 |
| 0.24 | 0.24 | 0.66 | 0.9 | 7.75 | 1.34 | 7.56 | 0.03 | 0.27 |
| 0.26 | 0.26 | 0.82 | 1.2 | 8.77 | 1.43 | 8.57 | 0.03 | 0.29 |
| 0.28 | 0.28 | 1.00 | 1.5 | 9.79 | 1.52 | 9.57 | 0.04 | 0.32 |
| 0.30 | 0.30 | 1.20 | 1.9 | 10.82 | 1.61 | 10.58 | 0.04 | 0.34 |
| 0.32 | 0.32 | 1.43 | 2.4 | 11.84 | 1.69 | 11.58 | 0.04 | 0.36 |
| 0.34 | 0.34 | 1.67 | 3.0 | 12.86 | 1.78 | 12.59 | 0.05 | 0.39 |
| 0.36 | 0.36 | 1.93 | 3.6 | 13.88 | 1.86 | 13.59 | 0.05 | 0.41 |
| 0.38 | 0.38 | 2.21 | 4.3 | 14.90 | 1.94 | 14.60 | 0.06 | 0.44 |
| 0.40 | 0.40 | 2.51 | 5.1 | 15.92 | 2.03 | 15.60 | 0.06 | 0.46 |
| 0.42 | 0.42 | 2.83 | 6.0 | 16.94 | 2.11 | 16.61 | 0.07 | 0.49 |
| 0.44 | 0.44 | 3.18 | 6.9 | 17.96 | 2.19 | 17.61 | 0.07 | 0.51 |
| 0.46 | 0.46 | 3.54 | 8.1 | 18.50 | 2.30 | 18.13 | 0.08 | 0.54 |
| 0.48 | 0.48 | 3.90 | 9.6 | 18.56 | 2.45 | 18.18 | 0.09 | 0.57 |
| 0.50 | 0.50 | 4.26 | 11.1 | 18.63 | 2.60 | 18.22 | 0.10 | 0.60 |
| 0.52 | 0.52 | 4.63 | 12.7 | 18.69 | 2.74 | 18.26 | 0.12 | 0.64 |
| 0.54 | 0.54 | 4.99 | 14.3 | 18.75 | 2.87 | 18.30 | 0.13 | 0.67 |
| 0.56 | 0.56 | 5.36 | 16.1 | 18.81 | 3.00 | 18.34 | 0.14 | 0.70 |
| 0.58 | 0.58 | 5.73 | 17.9 | 18.88 | 3.13 | 18.38 | 0.15 | 0.73 |
| 0.60 | 0.60 | 6.10 | 19.9 | 18.94 | 3.26 | 18.42 | 0.16 | 0.76 |
| 0.62 | 0.62 | 6.47 | 21.9 | 19.00 | 3.38 | 18.47 | 0.18 | 0.80 |
| 0.64 | 0.64 | 6.83 | 23.9 | 19.06 | 3.50 | 18.51 | 0.19 | 0.83 |
| **0.66** | **0.66** | **7.21** | **26.1** | **19.12** | **3.62** | **18.55** | **0.20** | **0.86** |
| 0.68 | 0.68 | 7.58 | 27.9 | 19.64 | 3.68 | 19.55 | 0.21 | 0.89 |
| 0.70 | 0.70 | 7.98 | 29.0 | 21.12 | 3.63 | 20.52 | 0.20 | 0.90 |
| 0.72 | 0.72 | 8.41 | 30.6 | 22.09 | 3.64 | 21.49 | 0.21 | 0.93 |
| 0.74 | 0.74 | 8.84 | 32.4 | 23.07 | 3.66 | 22.46 | 0.21 | 0.95 |
| 0.76 | 0.76 | 9.30 | 34.3 | 24.04 | 3.68 | 23.43 | 0.21 | 0.97 |
| 0.78 | 0.78 | 9.78 | 36.3 | 25.02 | 3.71 | 24.40 | 0.21 | 0.99 |
| 0.80 | 0.80 | 10.29 | 37.6 | 26.94 | 3.65 | 26.32 | 0.21 | 1.01 |
| 0.82 | 0.82 | 10.83 | 39.1 | 28.86 | 3.61 | 28.24 | 0.20 | 1.02 |
| 0.84 | 0.84 | 11.42 | 40.9 | 30.78 | 3.58 | 30.16 | 0.20 | 1.04 |
| 0.86 | 0.86 | 12.04 | 42.9 | 32.70 | 3.56 | 32.08 | 0.20 | 1.06 |
| 0.88 | 0.88 | 12.70 | 45.6 | 34.15 | 3.59 | 33.53 | 0.20 | 1.08 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.92 | 0.92 | 14.08 | 52.1 | 36.12 | 3.70 | 35.51 | 0.21 | 1.13 |
| 0.93 | 0.93 | 14.44 | 53.9 | 36.62 | 3.73 | 36.00 | 0.22 | 1.15 |

Analysis Point D - Progress Place
Capacity of Street = 48.1 cfs
MANNING'S N= .017 SLOPE= .0051

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.86 | 5 | 12.00 | 0.13 | 9 | 50.17 | 0.67 |
| 2 | 9.38 | 0.67 | 6 | 30.00 | 0.49 | 10 | 50.63 | 0.67 |
| 3 | 9.83 | 0.67 | 7 | 48.00 | 0.13 | 11 | 60.00 | 0.86 |
| 4 | 10.00 | 0.00 | 8 | 50.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.28 | 0.63 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.44 | 1.25 | 0.00 | 0.04 |
| 0.06 | 0.06 | 0.06 | 0.0 | 1.97 | 0.58 | 1.88 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 0.71 | 2.50 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.16 | 0.1 | 3.29 | 0.82 | 3.13 | 0.01 | 0.11 |
| 0.12 | 0.12 | 0.23 | 0.2 | 3.95 | 0.93 | 3.75 | 0.01 | 0.13 |
| 0.14 | 0.14 | 0.31 | 0.3 | 5.30 | 0.94 | 5.07 | 0.01 | 0.15 |
| 0.16 | 0.16 | 0.43 | 0.4 | 7.34 | 0.94 | 7.08 | 0.01 | 0.17 |
| 0.18 | 0.18 | 0.59 | 0.6 | 9.38 | 0.99 | 9.09 | 0.02 | 0.20 |
| 0.20 | 0.20 | 0.80 | 0.8 | 11.42 | 1.06 | 11.10 | 0.02 | 0.22 |
| 0.22 | 0.22 | 1.04 | 1.2 | 13.46 | 1.13 | 13.11 | 0.02 | 0.24 |
| 0.24 | 0.24 | 1.32 | 1.6 | 15.51 | 1.21 | 15.12 | 0.02 | 0.26 |
| 0.26 | 0.26 | 1.64 | 2.1 | 17.55 | 1.29 | 17.13 | 0.03 | 0.29 |
| 0.28 | 0.28 | 2.00 | 2.7 | 19.59 | 1.37 | 19.14 | 0.03 | 0.31 |
| 0.30 | 0.30 | 2.41 | 3.5 | 21.63 | 1.44 | 21.15 | 0.03 | 0.33 |
| 0.32 | 0.32 | 2.85 | 4.3 | 23.67 | 1.52 | 23.16 | 0.04 | 0.36 |
| 0.34 | 0.34 | 3.33 | 5.3 | 25.71 | 1.60 | 25.17 | 0.04 | 0.38 |
| 0.36 | 0.36 | 3.86 | 6.5 | 27.76 | 1.68 | 27.18 | 0.04 | 0.40 |
| 0.38 | 0.38 | 4.42 | 7.7 | 29.80 | 1.75 | 29.19 | 0.05 | 0.43 |
| 0.40 | 0.40 | 5.03 | 9.2 | 31.84 | 1.82 | 31.20 | 0.05 | 0.45 |
| 0.42 | 0.42 | 5.67 | 10.7 | 33.88 | 1.90 | 33.21 | 0.06 | 0.48 |
| 0.44 | 0.44 | 6.35 | 12.5 | 35.92 | 1.97 | 35.22 | 0.06 | 0.50 |
| 0.46 | 0.46 | 7.08 | 14.4 | 37.96 | 2.04 | 37.23 | 0.06 | 0.52 |
| 0.48 | 0.48 | 7.84 | 16.5 | 40.01 | 2.11 | 39.24 | 0.07 | 0.55 |
| 0.50 | 0.50 | 8.64 | 19.1 | 41.05 | 2.21 | 40.25 | 0.08 | 0.58 |
| 0.52 | 0.52 | 9.45 | 22.1 | 41.09 | 2.34 | 40.26 | 0.09 | 0.61 |
| 0.54 | 0.54 | 10.25 | 25.4 | 41.13 | 2.47 | 40.27 | 0.09 | 0.63 |
| 0.56 | 0.56 | 11.06 | 28.7 | 41.17 | 2.60 | 40.28 | 0.10 | 0.66 |
| 0.58 | 0.58 | 11.87 | 32.3 | 41.21 | 2.72 | 40.29 | 0.12 | 0.70 |
| 0.60 | 0.60 | 12.67 | 36.0 | 41.25 | 2.84 | 40.30 | 0.13 | 0.73 |
| 0.62 | 0.62 | 13.48 | 39.9 | 41.29 | 2.96 | 40.31 | 0.14 | 0.76 |
| 0.64 | 0.64 | 14.28 | 43.9 | 41.34 | 3.07 | 40.32 | 0.15 | 0.79 |
| **0.66** | **0.66** | **15.09** | **48.1** | **41.38** | **3.19** | **40.33** | **0.16** | **0.82** |
| 0.68 | 0.68 | 15.90 | 51.6 | 42.39 | 3.25 | 42.24 | 0.16 | 0.84 |
| 0.70 | 0.70 | 16.78 | 54.0 | 45.27 | 3.22 | 44.21 | 0.16 | 0.86 |
| 0.72 | 0.72 | 17.68 | 57.3 | 47.24 | 3.24 | 46.18 | 0.16 | 0.88 |
| 0.74 | 0.74 | 18.62 | 60.8 | 49.22 | 3.27 | 48.16 | 0.17 | 0.91 |
| 0.76 | 0.76 | 19.61 | 64.5 | 51.19 | 3.29 | 50.13 | 0.17 | 0.93 |
| 0.78 | 0.78 | 20.63 | 68.5 | 53.17 | 3.32 | 52.11 | 0.17 | 0.95 |
| 0.80 | 0.80 | 21.69 | 72.7 | 55.14 | 3.35 | 54.08 | 0.17 | 0.97 |
| 0.82 | 0.82 | 22.79 | 77.1 | 57.11 | 3.38 | 56.05 | 0.18 | 1.00 |
| 0.84 | 0.84 | 23.93 | 81.8 | 59.09 | 3.42 | 58.03 | 0.18 | 1.02 |
| 0.86 | 0.86 | 25.11 | 86.7 | 61.06 | 3.45 | 60.00 | 0.19 | 1.05 |

Analysis Point E - Ventura Rd.
Capcity of Street = 57.9 cfs
MANNING'S N= .017 SLOPE= .0074

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.86 | 5 | 12.00 | 0.13 | 9 | 50.17 | 0.67 |
| 2 | 9.38 | 0.67 | 6 | 30.00 | 0.49 | 10 | 50.63 | 0.67 |
| 3 | 9.83 | 0.67 | 7 | 48.00 | 0.13 | 11 | 60.00 | 0.86 |
| 4 | 10.00 | 0.00 | 8 | 50.00 | 0.00 | 12 | 0.00 | 0.00 |

| ☐ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.34 | 0.63 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.54 | 1.25 | 0.00 | 0.04 |
| 0.06 | 0.06 | 0.06 | 0.0 | 1.97 | 0.70 | 1.88 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 0.85 | 2.50 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.16 | 0.2 | 3.29 | 0.99 | 3.13 | 0.02 | 0.12 |
| 0.12 | 0.12 | 0.23 | 0.3 | 3.95 | 1.11 | 3.75 | 0.02 | 0.14 |
| 0.14 | 0.14 | 0.31 | 0.4 | 5.30 | 1.13 | 5.07 | 0.02 | 0.16 |
| 0.16 | 0.16 | 0.43 | 0.5 | 7.34 | 1.14 | 7.08 | 0.02 | 0.18 |
| 0.18 | 0.18 | 0.59 | 0.7 | 9.38 | 1.19 | 9.09 | 0.02 | 0.20 |
| 0.20 | 0.20 | 0.80 | 1.0 | 11.42 | 1.27 | 11.10 | 0.03 | 0.23 |
| 0.22 | 0.22 | 1.04 | 1.4 | 13.46 | 1.36 | 13.11 | 0.03 | 0.25 |
| 0.24 | 0.24 | 1.32 | 1.9 | 15.51 | 1.45 | 15.12 | 0.03 | 0.27 |
| 0.26 | 0.26 | 1.64 | 2.5 | 17.55 | 1.55 | 17.13 | 0.04 | 0.30 |
| 0.28 | 0.28 | 2.00 | 3.3 | 19.59 | 1.65 | 19.14 | 0.04 | 0.32 |
| 0.30 | 0.30 | 2.41 | 4.2 | 21.63 | 1.74 | 21.15 | 0.05 | 0.35 |
| 0.32 | 0.32 | 2.85 | 5.2 | 23.67 | 1.83 | 23.16 | 0.05 | 0.37 |
| 0.34 | 0.34 | 3.33 | 6.4 | 25.71 | 1.93 | 25.17 | 0.06 | 0.40 |
| 0.36 | 0.36 | 3.86 | 7.8 | 27.76 | 2.02 | 27.18 | 0.06 | 0.42 |
| 0.38 | 0.38 | 4.42 | 9.3 | 29.80 | 2.11 | 29.19 | 0.07 | 0.45 |
| 0.40 | 0.40 | 5.03 | 11.0 | 31.84 | 2.20 | 31.20 | 0.07 | 0.47 |
| 0.42 | 0.42 | 5.67 | 12.9 | 33.88 | 2.28 | 33.21 | 0.08 | 0.50 |
| 0.44 | 0.44 | 6.35 | 15.1 | 35.92 | 2.37 | 35.22 | 0.09 | 0.53 |
| 0.46 | 0.46 | 7.08 | 17.4 | 37.96 | 2.45 | 37.23 | 0.09 | 0.55 |
| 0.48 | 0.48 | 7.84 | 19.9 | 40.01 | 2.54 | 39.24 | 0.10 | 0.58 |
| 0.50 | 0.50 | 8.64 | 23.0 | 41.05 | 2.66 | 40.25 | 0.11 | 0.61 |
| 0.52 | 0.52 | 9.45 | 26.7 | 41.09 | 2.82 | 40.26 | 0.12 | 0.64 |
| 0.54 | 0.54 | 10.25 | 30.5 | 41.13 | 2.98 | 40.27 | 0.14 | 0.68 |
| 0.56 | 0.56 | 11.06 | 34.6 | 41.17 | 3.13 | 40.28 | 0.15 | 0.71 |
| 0.58 | 0.58 | 11.87 | 38.9 | 41.21 | 3.28 | 40.29 | 0.17 | 0.75 |
| 0.60 | 0.60 | 12.67 | 43.4 | 41.25 | 3.42 | 40.30 | 0.18 | 0.78 |
| 0.62 | 0.62 | 13.48 | 48.0 | 41.29 | 3.56 | 40.31 | 0.20 | 0.82 |
| 0.64 | 0.64 | 14.28 | 52.9 | 41.34 | 3.70 | 40.32 | 0.21 | 0.85 |
| **0.66** | **0.66** | **15.09** | **57.9** | **41.38** | **3.84** | **40.33** | **0.23** | **0.89** |
| 0.68 | 0.68 | 15.90 | 62.2 | 42.39 | 3.91 | 42.24 | 0.24 | 0.92 |
| 0.70 | 0.70 | 16.78 | 65.1 | 45.27 | 3.88 | 44.21 | 0.23 | 0.93 |
| 0.72 | 0.72 | 17.68 | 69.0 | 47.24 | 3.90 | 46.18 | 0.24 | 0.96 |
| 0.74 | 0.74 | 18.62 | 73.3 | 49.22 | 3.93 | 48.16 | 0.24 | 0.98 |
| 0.76 | 0.76 | 19.61 | 77.8 | 51.19 | 3.97 | 50.13 | 0.24 | 1.00 |
| 0.78 | 0.78 | 20.63 | 82.5 | 53.17 | 4.00 | 52.11 | 0.25 | 1.03 |
| 0.80 | 0.80 | 21.69 | 87.6 | 55.14 | 4.04 | 54.08 | 0.25 | 1.05 |
| 0.82 | 0.82 | 22.79 | 92.9 | 57.11 | 4.08 | 56.05 | 0.26 | 1.08 |
| 0.84 | 0.84 | 23.93 | 98.5 | 59.09 | 4.12 | 58.03 | 0.26 | 1.10 |
| 0.86 | 0.86 | 25.11 | 104.4 | 61.06 | 4.16 | 60.00 | 0.27 | 1.13 |

Analysis Point F - Ventura Road
Capacity of Street = 75.3 cfs
MANNING'S N= .017 SLOPE= .0125

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.86 | 5 | 12.00 | 0.13 | 9 | 50.17 | 0.67 |
| 2 | 9.38 | 0.67 | 6 | 30.00 | 0.49 | 10 | 50.63 | 0.67 |
| 3 | 9.83 | 0.67 | 7 | 48.00 | 0.13 | 11 | 60.00 | 0.86 |
| 4 | 10.00 | 0.00 | 8 | 50.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.44 | 0.63 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.70 | 1.25 | 0.01 | 0.05 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 0.91 | 1.88 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.10 | 0.1 | 2.63 | 1.11 | 2.50 | 0.02 | 0.10 |
| 0.10 | 0.10 | 0.16 | 0.2 | 3.29 | 1.28 | 3.13 | 0.03 | 0.13 |
| 0.12 | 0.12 | 0.23 | 0.3 | 3.95 | 1.45 | 3.75 | 0.03 | 0.15 |
| 0.14 | 0.14 | 0.31 | 0.5 | 5.30 | 1.47 | 5.07 | 0.03 | 0.17 |
| 0.16 | 0.16 | 0.43 | 0.6 | 7.34 | 1.48 | 7.08 | 0.03 | 0.19 |
| 0.18 | 0.18 | 0.59 | 0.9 | 9.38 | 1.55 | 9.09 | 0.04 | 0.22 |
| 0.20 | 0.20 | 0.80 | 1.3 | 11.42 | 1.65 | 11.10 | 0.04 | 0.24 |
| 0.22 | 0.22 | 1.04 | 1.8 | 13.46 | 1.77 | 13.11 | 0.05 | 0.27 |
| 0.24 | 0.24 | 1.32 | 2.5 | 15.51 | 1.89 | 15.12 | 0.06 | 0.30 |
| 0.26 | 0.26 | 1.64 | 3.3 | 17.55 | 2.01 | 17.13 | 0.06 | 0.32 |
| 0.28 | 0.28 | 2.00 | 4.3 | 19.59 | 2.14 | 19.14 | 0.07 | 0.35 |
| 0.30 | 0.30 | 2.41 | 5.4 | 21.63 | 2.26 | 21.15 | 0.08 | 0.38 |
| 0.32 | 0.32 | 2.85 | 6.8 | 23.67 | 2.38 | 23.16 | 0.09 | 0.41 |
| 0.34 | 0.34 | 3.33 | 8.3 | 25.71 | 2.50 | 25.17 | 0.10 | 0.44 |
| 0.36 | 0.36 | 3.86 | 10.1 | 27.76 | 2.62 | 27.18 | 0.11 | 0.47 |
| 0.38 | 0.38 | 4.42 | 12.1 | 29.80 | 2.74 | 29.19 | 0.12 | 0.50 |
| 0.40 | 0.40 | 5.03 | 14.3 | 31.84 | 2.85 | 31.20 | 0.13 | 0.53 |
| 0.42 | 0.42 | 5.67 | 16.8 | 33.88 | 2.97 | 33.21 | 0.14 | 0.56 |
| 0.44 | 0.44 | 6.35 | 19.6 | 35.92 | 3.08 | 35.22 | 0.15 | 0.59 |
| 0.46 | 0.46 | 7.08 | 22.6 | 37.96 | 3.19 | 37.23 | 0.16 | 0.62 |
| 0.48 | 0.48 | 7.84 | 25.9 | 40.01 | 3.30 | 39.24 | 0.17 | 0.65 |
| 0.50 | 0.50 | 8.64 | 29.9 | 41.05 | 3.46 | 40.25 | 0.19 | 0.69 |
| 0.52 | 0.52 | 9.45 | 34.7 | 41.09 | 3.67 | 40.26 | 0.21 | 0.73 |
| 0.54 | 0.54 | 10.25 | 39.7 | 41.13 | 3.87 | 40.27 | 0.23 | 0.77 |
| 0.56 | 0.56 | 11.06 | 45.0 | 41.17 | 4.07 | 40.28 | 0.26 | 0.82 |
| 0.58 | 0.58 | 11.87 | 50.6 | 41.21 | 4.26 | 40.29 | 0.28 | 0.86 |
| 0.60 | 0.60 | 12.67 | 56.4 | 41.25 | 4.45 | 40.30 | 0.31 | 0.91 |
| 0.62 | 0.62 | 13.48 | 62.4 | 41.29 | 4.63 | 40.31 | 0.33 | 0.95 |
| 0.64 | 0.64 | 14.28 | 68.7 | 41.34 | 4.81 | 40.32 | 0.36 | 1.00 |
| **0.66** | **0.66** | **15.09** | **75.3** | **41.38** | **4.99** | **40.33** | **0.39** | **1.05** |
| 0.68 | 0.68 | 15.90 | 80.8 | 42.39 | 5.08 | 42.24 | 0.40 | 1.08 |
| 0.70 | 0.70 | 16.78 | 84.6 | 45.27 | 5.04 | 44.21 | 0.39 | 1.09 |
| 0.72 | 0.72 | 17.68 | 89.7 | 47.24 | 5.08 | 46.18 | 0.40 | 1.12 |
| 0.74 | 0.74 | 18.62 | 95.2 | 49.22 | 5.11 | 48.16 | 0.41 | 1.15 |
| 0.76 | 0.76 | 19.61 | 101.1 | 51.19 | 5.15 | 50.13 | 0.41 | 1.17 |
| 0.78 | 0.78 | 20.63 | 107.2 | 53.17 | 5.20 | 52.11 | 0.42 | 1.20 |
| 0.80 | 0.80 | 21.69 | 113.8 | 55.14 | 5.25 | 54.08 | 0.43 | 1.23 |
| 0.82 | 0.82 | 22.79 | 120.7 | 57.11 | 5.30 | 56.05 | 0.44 | 1.26 |
| 0.84 | 0.84 | 23.93 | 128.0 | 59.09 | 5.35 | 58.03 | 0.44 | 1.28 |
| 0.86 | 0.86 | 25.11 | 135.7 | 61.06 | 5.40 | 60.00 | 0.45 | 1.31 |

Analysis Point G - Innovation Parkway
Street Capcity = 46.0 cfs
MANNING'S N= .017 SLOPE= .0196

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | 9 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.55 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.87 | 0.63 | 0.01 | 0.05 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 1.14 | 0.94 | 0.02 | 0.08 |
| 0.08 | 0.08 | 0.05 | 0.1 | 1.32 | 1.38 | 1.25 | 0.03 | 0.11 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 1.61 | 1.56 | 0.04 | 0.14 |
| 0.12 | 0.12 | 0.11 | 0.2 | 1.97 | 1.81 | 1.88 | 0.05 | 0.17 |
| 0.14 | 0.14 | 0.15 | 0.3 | 2.65 | 1.84 | 2.54 | 0.05 | 0.19 |
| 0.16 | 0.16 | 0.22 | 0.4 | 3.67 | 1.85 | 3.54 | 0.05 | 0.21 |
| 0.18 | 0.18 | 0.30 | 0.6 | 4.69 | 1.94 | 4.55 | 0.06 | 0.24 |
| 0.20 | 0.20 | 0.40 | 0.8 | 5.71 | 2.07 | 5.55 | 0.07 | 0.27 |
| 0.22 | 0.22 | 0.52 | 1.1 | 6.73 | 2.22 | 6.56 | 0.08 | 0.30 |
| 0.24 | 0.24 | 0.66 | 1.6 | 7.75 | 2.37 | 7.56 | 0.09 | 0.33 |
| 0.26 | 0.26 | 0.82 | 2.1 | 8.77 | 2.52 | 8.57 | 0.10 | 0.36 |
| 0.28 | 0.28 | 1.00 | 2.7 | 9.79 | 2.68 | 9.57 | 0.11 | 0.39 |
| 0.30 | 0.30 | 1.20 | 3.4 | 10.82 | 2.83 | 10.58 | 0.12 | 0.42 |
| 0.32 | 0.32 | 1.43 | 4.3 | 11.84 | 2.98 | 11.58 | 0.14 | 0.46 |
| 0.34 | 0.34 | 1.67 | 5.2 | 12.86 | 3.14 | 12.59 | 0.15 | 0.49 |
| 0.36 | 0.36 | 1.93 | 6.3 | 13.88 | 3.28 | 13.59 | 0.17 | 0.53 |
| 0.38 | 0.38 | 2.21 | 7.6 | 14.90 | 3.43 | 14.60 | 0.18 | 0.56 |
| 0.40 | 0.40 | 2.51 | 9.0 | 15.92 | 3.57 | 15.60 | 0.20 | 0.60 |
| 0.42 | 0.42 | 2.83 | 10.5 | 16.94 | 3.72 | 16.61 | 0.21 | 0.63 |
| 0.44 | 0.44 | 3.18 | 12.3 | 17.96 | 3.86 | 17.61 | 0.23 | 0.67 |
| 0.46 | 0.46 | 3.54 | 14.4 | 18.50 | 4.06 | 18.13 | 0.26 | 0.72 |
| 0.48 | 0.48 | 3.90 | 16.9 | 18.56 | 4.32 | 18.18 | 0.29 | 0.77 |
| 0.50 | 0.50 | 4.26 | 19.5 | 18.63 | 4.58 | 18.22 | 0.33 | 0.83 |
| 0.52 | 0.52 | 4.63 | 22.3 | 18.69 | 4.83 | 18.26 | 0.36 | 0.88 |
| 0.54 | 0.54 | 4.99 | 25.3 | 18.75 | 5.07 | 18.30 | 0.40 | 0.94 |
| 0.56 | 0.56 | 5.36 | 28.4 | 18.81 | 5.30 | 18.34 | 0.44 | 1.00 |
| 0.58 | 0.58 | 5.73 | 31.7 | 18.88 | 5.53 | 18.38 | 0.47 | 1.05 |
| 0.60 | 0.60 | 6.10 | 35.0 | 18.94 | 5.75 | 18.42 | 0.51 | 1.11 |
| 0.62 | 0.62 | 6.47 | 38.6 | 19.00 | 5.96 | 18.47 | 0.55 | 1.17 |
| 0.64 | 0.64 | 6.83 | 42.2 | 19.06 | 6.18 | 18.51 | 0.59 | 1.23 |
| **0.66** | **0.66** | **7.21** | **46.0** | **19.12** | **6.38** | **18.55** | **0.63** | **1.29** |
| 0.68 | 0.68 | 7.58 | 49.2 | 19.64 | 6.49 | 19.55 | 0.65 | 1.33 |
| 0.70 | 0.70 | 7.98 | 51.1 | 21.12 | 6.40 | 20.52 | 0.64 | 1.34 |
| 0.72 | 0.72 | 8.41 | 54.0 | 22.09 | 6.43 | 21.49 | 0.64 | 1.36 |
| 0.74 | 0.74 | 8.84 | 57.1 | 23.07 | 6.46 | 22.46 | 0.65 | 1.39 |
| 0.76 | 0.76 | 9.30 | 60.5 | 24.04 | 6.50 | 23.43 | 0.66 | 1.42 |
| 0.78 | 0.78 | 9.78 | 64.0 | 25.02 | 6.54 | 24.40 | 0.66 | 1.44 |
| 0.80 | 0.80 | 10.29 | 66.3 | 26.94 | 6.44 | 26.32 | 0.64 | 1.44 |
| 0.82 | 0.82 | 10.83 | 69.0 | 28.86 | 6.37 | 28.24 | 0.63 | 1.45 |
| 0.84 | 0.84 | 11.42 | 72.2 | 30.78 | 6.32 | 30.16 | 0.62 | 1.46 |
| 0.86 | 0.86 | 12.04 | 75.7 | 32.70 | 6.29 | 32.08 | 0.61 | 1.47 |
| 0.88 | 0.88 | 12.70 | 80.4 | 34.15 | 6.33 | 33.53 | 0.62 | 1.50 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.92 | 0.92 | 14.08 | 91.9 | 36.12 | 6.53 | 35.51 | 0.66 | 1.58 |

Analysis Point I - Innovation Rd.
½ Street Capacity = 31.9 cfs
MANNING'S N= .017 SLOPE= .0094

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | 9 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.38 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.60 | 0.63 | 0.01 | 0.05 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 0.79 | 0.94 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.05 | 0.0 | 1.32 | 0.96 | 1.25 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 1.11 | 1.56 | 0.02 | 0.12 |
| 0.12 | 0.12 | 0.11 | 0.1 | 1.97 | 1.26 | 1.88 | 0.02 | 0.14 |
| 0.14 | 0.14 | 0.15 | 0.2 | 2.65 | 1.28 | 2.54 | 0.03 | 0.17 |
| 0.16 | 0.16 | 0.22 | 0.3 | 3.67 | 1.28 | 3.54 | 0.03 | 0.19 |
| 0.18 | 0.18 | 0.30 | 0.4 | 4.69 | 1.35 | 4.55 | 0.03 | 0.21 |
| 0.20 | 0.20 | 0.40 | 0.6 | 5.71 | 1.43 | 5.55 | 0.03 | 0.23 |
| 0.22 | 0.22 | 0.52 | 0.8 | 6.73 | 1.53 | 6.56 | 0.04 | 0.26 |
| 0.24 | 0.24 | 0.66 | 1.1 | 7.75 | 1.64 | 7.56 | 0.04 | 0.28 |
| 0.26 | 0.26 | 0.82 | 1.4 | 8.77 | 1.75 | 8.57 | 0.05 | 0.31 |
| 0.28 | 0.28 | 1.00 | 1.9 | 9.79 | 1.85 | 9.57 | 0.05 | 0.33 |
| 0.30 | 0.30 | 1.20 | 2.4 | 10.82 | 1.96 | 10.58 | 0.06 | 0.36 |
| 0.32 | 0.32 | 1.43 | 2.9 | 11.84 | 2.07 | 11.58 | 0.07 | 0.39 |
| 0.34 | 0.34 | 1.67 | 3.6 | 12.86 | 2.17 | 12.59 | 0.07 | 0.41 |
| 0.36 | 0.36 | 1.93 | 4.4 | 13.88 | 2.27 | 13.59 | 0.08 | 0.44 |
| 0.38 | 0.38 | 2.21 | 5.3 | 14.90 | 2.38 | 14.60 | 0.09 | 0.47 |
| 0.40 | 0.40 | 2.51 | 6.2 | 15.92 | 2.48 | 15.60 | 0.10 | 0.50 |
| 0.42 | 0.42 | 2.83 | 7.3 | 16.94 | 2.57 | 16.61 | 0.10 | 0.52 |
| 0.44 | 0.44 | 3.18 | 8.5 | 17.96 | 2.67 | 17.61 | 0.11 | 0.55 |
| 0.46 | 0.46 | 3.54 | 9.9 | 18.50 | 2.81 | 18.13 | 0.12 | 0.58 |
| 0.48 | 0.48 | 3.90 | 11.7 | 18.56 | 2.99 | 18.18 | 0.14 | 0.62 |
| 0.50 | 0.50 | 4.26 | 13.5 | 18.63 | 3.17 | 18.22 | 0.16 | 0.66 |
| 0.52 | 0.52 | 4.63 | 15.5 | 18.69 | 3.34 | 18.26 | 0.17 | 0.69 |
| 0.54 | 0.54 | 4.99 | 17.5 | 18.75 | 3.51 | 18.30 | 0.19 | 0.73 |
| 0.56 | 0.56 | 5.36 | 19.7 | 18.81 | 3.67 | 18.34 | 0.21 | 0.77 |
| 0.58 | 0.58 | 5.73 | 21.9 | 18.88 | 3.83 | 18.38 | 0.23 | 0.81 |
| 0.60 | 0.60 | 6.10 | 24.3 | 18.94 | 3.98 | 18.42 | 0.25 | 0.85 |
| 0.62 | 0.62 | 6.47 | 26.7 | 19.00 | 4.13 | 18.47 | 0.26 | 0.88 |
| 0.64 | 0.64 | 6.83 | 29.2 | 19.06 | 4.28 | 18.51 | 0.28 | 0.92 |
| **0.66** | **0.66** | **7.21** | **31.9** | **19.12** | **4.42** | **18.55** | **0.30** | **0.96** |
| 0.68 | 0.68 | 7.58 | 34.0 | 19.64 | 4.49 | 19.55 | 0.31 | 0.99 |
| 0.70 | 0.70 | 7.98 | 35.4 | 21.12 | 4.43 | 20.52 | 0.30 | 1.00 |
| 0.72 | 0.72 | 8.41 | 37.4 | 22.09 | 4.45 | 21.49 | 0.31 | 1.03 |
| 0.74 | 0.74 | 8.84 | 39.6 | 23.07 | 4.47 | 22.46 | 0.31 | 1.05 |
| 0.76 | 0.76 | 9.30 | 41.9 | 24.04 | 4.50 | 23.43 | 0.31 | 1.07 |
| 0.78 | 0.78 | 9.78 | 44.3 | 25.02 | 4.53 | 24.40 | 0.32 | 1.10 |
| 0.80 | 0.80 | 10.29 | 45.9 | 26.94 | 4.46 | 26.32 | 0.31 | 1.11 |
| 0.82 | 0.82 | 10.83 | 47.8 | 28.86 | 4.41 | 28.24 | 0.30 | 1.12 |

Analysis Point J - Research Rd.
Street Capicty = 106.7 cfs
MANNING'S N= .017 SLOPE= .0251

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.86 | 5 | 12.00 | 0.13 | 9 | 50.17 | 0.67 |
| 2 | 9.38 | 0.67 | 6 | 30.00 | 0.49 | 10 | 50.63 | 0.67 |
| 3 | 9.83 | 0.67 | 7 | 48.00 | 0.13 | 11 | 60.00 | 0.86 |
| 4 | 10.00 | 0.00 | 8 | 50.00 | 0.00 | 12 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.01 | 0.0 | 0.66 | 0.62 | 0.63 | 0.01 | 0.03 |
| 0.04 | 0.04 | 0.03 | 0.0 | 1.32 | 0.99 | 1.25 | 0.02 | 0.06 |
| 0.06 | 0.06 | 0.06 | 0.1 | 1.97 | 1.29 | 1.88 | 0.03 | 0.09 |
| 0.08 | 0.08 | 0.10 | 0.2 | 2.63 | 1.57 | 2.50 | 0.04 | 0.12 |
| 0.10 | 0.10 | 0.16 | 0.3 | 3.29 | 1.82 | 3.13 | 0.05 | 0.15 |
| 0.12 | 0.12 | 0.23 | 0.5 | 3.95 | 2.05 | 3.75 | 0.07 | 0.19 |
| 0.14 | 0.14 | 0.31 | 0.6 | 5.30 | 2.09 | 5.07 | 0.07 | 0.21 |
| 0.16 | 0.16 | 0.43 | 0.9 | 7.34 | 2.09 | 7.08 | 0.07 | 0.23 |
| 0.18 | 0.18 | 0.59 | 1.3 | 9.38 | 2.20 | 9.09 | 0.08 | 0.26 |
| 0.20 | 0.20 | 0.80 | 1.9 | 11.42 | 2.34 | 11.10 | 0.09 | 0.29 |
| 0.22 | 0.22 | 1.04 | 2.6 | 13.46 | 2.51 | 13.11 | 0.10 | 0.32 |
| 0.24 | 0.24 | 1.32 | 3.5 | 15.51 | 2.68 | 15.12 | 0.11 | 0.35 |
| 0.26 | 0.26 | 1.64 | 4.7 | 17.55 | 2.85 | 17.13 | 0.13 | 0.39 |
| 0.28 | 0.28 | 2.00 | 6.1 | 19.59 | 3.03 | 19.14 | 0.14 | 0.42 |
| 0.30 | 0.30 | 2.41 | 7.7 | 21.63 | 3.20 | 21.15 | 0.16 | 0.46 |
| 0.32 | 0.32 | 2.85 | 9.6 | 23.67 | 3.38 | 23.16 | 0.18 | 0.50 |
| 0.34 | 0.34 | 3.33 | 11.8 | 25.71 | 3.55 | 25.17 | 0.20 | 0.54 |
| 0.36 | 0.36 | 3.86 | 14.3 | 27.76 | 3.72 | 27.18 | 0.21 | 0.57 |
| 0.38 | 0.38 | 4.42 | 17.2 | 29.80 | 3.88 | 29.19 | 0.23 | 0.61 |
| 0.40 | 0.40 | 5.03 | 20.3 | 31.84 | 4.04 | 31.20 | 0.25 | 0.65 |
| 0.42 | 0.42 | 5.67 | 23.8 | 33.88 | 4.21 | 33.21 | 0.27 | 0.69 |
| 0.44 | 0.44 | 6.35 | 27.7 | 35.92 | 4.36 | 35.22 | 0.30 | 0.74 |
| 0.46 | 0.46 | 7.08 | 32.0 | 37.96 | 4.52 | 37.23 | 0.32 | 0.78 |
| 0.48 | 0.48 | 7.84 | 36.7 | 40.01 | 4.67 | 39.24 | 0.34 | 0.82 |
| 0.50 | 0.50 | 8.64 | 42.4 | 41.05 | 4.90 | 40.25 | 0.37 | 0.87 |
| 0.52 | 0.52 | 9.45 | 49.1 | 41.09 | 5.20 | 40.26 | 0.42 | 0.94 |
| 0.54 | 0.54 | 10.25 | 56.3 | 41.13 | 5.49 | 40.27 | 0.47 | 1.01 |
| 0.56 | 0.56 | 11.06 | 63.8 | 41.17 | 5.77 | 40.28 | 0.52 | 1.08 |
| 0.58 | 0.58 | 11.87 | 71.6 | 41.21 | 6.04 | 40.29 | 0.57 | 1.15 |
| 0.60 | 0.60 | 12.67 | 79.9 | 41.25 | 6.30 | 40.30 | 0.62 | 1.22 |
| 0.62 | 0.62 | 13.48 | 88.5 | 41.29 | 6.56 | 40.31 | 0.67 | 1.29 |
| 0.64 | 0.64 | 14.28 | 97.4 | 41.34 | 6.82 | 40.32 | 0.72 | 1.36 |
| **0.66** | **0.66** | **15.09** | **106.7** | **41.38** | **7.07** | **40.33** | **0.78** | **1.44** |
| 0.68 | 0.68 | 15.90 | 114.6 | 42.39 | 7.20 | 42.24 | 0.81 | 1.49 |
| 0.70 | 0.70 | 16.78 | 119.9 | 45.27 | 7.14 | 44.21 | 0.79 | 1.49 |
| 0.72 | 0.72 | 17.68 | 127.1 | 47.24 | 7.19 | 46.18 | 0.80 | 1.52 |
| 0.74 | 0.74 | 18.62 | 134.9 | 49.22 | 7.24 | 48.16 | 0.82 | 1.56 |
| 0.76 | 0.76 | 19.61 | 143.2 | 51.19 | 7.30 | 50.13 | 0.83 | 1.59 |
| 0.78 | 0.78 | 20.63 | 152.0 | 53.17 | 7.37 | 52.11 | 0.84 | 1.62 |
| 0.80 | 0.80 | 21.69 | 161.3 | 55.14 | 7.43 | 54.08 | 0.86 | 1.66 |
| 0.82 | 0.82 | 22.79 | 171.1 | 57.11 | 7.51 | 56.05 | 0.87 | 1.69 |
| 0.84 | 0.84 | 23.93 | 181.4 | 59.09 | 7.58 | 58.03 | 0.89 | 1.73 |
| 0.86 | 0.86 | 25.11 | 192.3 | 61.06 | 7.66 | 60.00 | 0.91 | 1.77 |

Analysis Point K - Innovation Parkway
Capacity of ½ street = 31.9 cfs
MANNING'S N= .017 SLOPE= .0094

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | | | |

| □ WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.38 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.60 | 0.63 | 0.01 | 0.05 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 0.79 | 0.94 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.05 | 0.0 | 1.32 | 0.96 | 1.25 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 1.11 | 1.56 | 0.02 | 0.12 |
| 0.12 | 0.12 | 0.11 | 0.1 | 1.97 | 1.26 | 1.88 | 0.02 | 0.14 |
| 0.14 | 0.14 | 0.15 | 0.2 | 2.65 | 1.28 | 2.54 | 0.03 | 0.17 |
| 0.16 | 0.16 | 0.22 | 0.3 | 3.67 | 1.28 | 3.54 | 0.03 | 0.19 |
| 0.18 | 0.18 | 0.30 | 0.4 | 4.69 | 1.35 | 4.55 | 0.03 | 0.21 |
| 0.20 | 0.20 | 0.40 | 0.6 | 5.71 | 1.43 | 5.55 | 0.03 | 0.23 |
| 0.22 | 0.22 | 0.52 | 0.8 | 6.73 | 1.53 | 6.56 | 0.04 | 0.26 |
| 0.24 | 0.24 | 0.66 | 1.1 | 7.75 | 1.64 | 7.56 | 0.04 | 0.28 |
| 0.26 | 0.26 | 0.82 | 1.4 | 8.77 | 1.75 | 8.57 | 0.05 | 0.31 |
| 0.28 | 0.28 | 1.00 | 1.9 | 9.79 | 1.85 | 9.57 | 0.05 | 0.33 |
| 0.30 | 0.30 | 1.20 | 2.4 | 10.82 | 1.96 | 10.58 | 0.06 | 0.36 |
| 0.32 | 0.32 | 1.43 | 2.9 | 11.84 | 2.07 | 11.58 | 0.07 | 0.39 |
| 0.34 | 0.34 | 1.67 | 3.6 | 12.86 | 2.17 | 12.59 | 0.07 | 0.41 |
| 0.36 | 0.36 | 1.93 | 4.4 | 13.88 | 2.27 | 13.59 | 0.08 | 0.44 |
| 0.38 | 0.38 | 2.21 | 5.3 | 14.90 | 2.38 | 14.60 | 0.09 | 0.47 |
| 0.40 | 0.40 | 2.51 | 6.2 | 15.92 | 2.48 | 15.60 | 0.10 | 0.50 |
| 0.42 | 0.42 | 2.83 | 7.3 | 16.94 | 2.57 | 16.61 | 0.10 | 0.52 |
| 0.44 | 0.44 | 3.18 | 8.5 | 17.96 | 2.67 | 17.61 | 0.11 | 0.55 |
| 0.46 | 0.46 | 3.54 | 9.9 | 18.50 | 2.81 | 18.13 | 0.12 | 0.58 |
| 0.48 | 0.48 | 3.90 | 11.7 | 18.56 | 2.99 | 18.18 | 0.14 | 0.62 |
| 0.50 | 0.50 | 4.26 | 13.5 | 18.63 | 3.17 | 18.22 | 0.16 | 0.66 |
| 0.52 | 0.52 | 4.63 | 15.5 | 18.69 | 3.34 | 18.26 | 0.17 | 0.69 |
| 0.54 | 0.54 | 4.99 | 17.5 | 18.75 | 3.51 | 18.30 | 0.19 | 0.73 |
| 0.56 | 0.56 | 5.36 | 19.7 | 18.81 | 3.67 | 18.34 | 0.21 | 0.77 |
| 0.58 | 0.58 | 5.73 | 21.9 | 18.88 | 3.83 | 18.38 | 0.23 | 0.81 |
| 0.60 | 0.60 | 6.10 | 24.3 | 18.94 | 3.98 | 18.42 | 0.25 | 0.85 |
| 0.62 | 0.62 | 6.47 | 26.7 | 19.00 | 4.13 | 18.47 | 0.26 | 0.88 |
| 0.64 | 0.64 | 6.83 | 29.2 | 19.06 | 4.28 | 18.51 | 0.28 | 0.92 |
| **0.66** | **0.66** | **7.21** | **31.9** | **19.12** | **4.42** | **18.55** | **0.30** | **0.96** |
| 0.68 | 0.68 | 7.58 | 34.0 | 19.64 | 4.49 | 19.55 | 0.31 | 0.99 |
| 0.70 | 0.70 | 7.98 | 35.4 | 21.12 | 4.43 | 20.52 | 0.30 | 1.00 |
| 0.72 | 0.72 | 8.41 | 37.4 | 22.09 | 4.45 | 21.49 | 0.31 | 1.03 |
| 0.74 | 0.74 | 8.84 | 39.6 | 23.07 | 4.47 | 22.46 | 0.31 | 1.05 |
| 0.76 | 0.76 | 9.30 | 41.9 | 24.04 | 4.50 | 23.43 | 0.31 | 1.07 |
| 0.78 | 0.78 | 9.78 | 44.3 | 25.02 | 4.53 | 24.40 | 0.32 | 1.10 |
| 0.80 | 0.80 | 10.29 | 45.9 | 26.94 | 4.46 | 26.32 | 0.31 | 1.11 |
| 0.82 | 0.82 | 10.83 | 47.8 | 28.86 | 4.41 | 28.24 | 0.30 | 1.12 |
| 0.84 | 0.84 | 11.42 | 50.0 | 30.78 | 4.38 | 30.16 | 0.30 | 1.14 |
| 0.86 | 0.86 | 12.04 | 52.4 | 32.70 | 4.35 | 32.08 | 0.29 | 1.15 |
| 0.88 | 0.88 | 12.70 | 55.7 | 34.15 | 4.38 | 33.53 | 0.30 | 1.18 |

Analysis Point L - Innovation Parkway
Capacity of ½ street =
MANNING'S N= .017 SLOPE= .0094

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | 9 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.38 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.60 | 0.63 | 0.01 | 0.05 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 0.79 | 0.94 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.05 | 0.0 | 1.32 | 0.96 | 1.25 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 1.11 | 1.56 | 0.02 | 0.12 |
| 0.12 | 0.12 | 0.11 | 0.1 | 1.97 | 1.26 | 1.88 | 0.02 | 0.14 |
| 0.14 | 0.14 | 0.15 | 0.2 | 2.65 | 1.28 | 2.54 | 0.03 | 0.17 |
| 0.16 | 0.16 | 0.22 | 0.3 | 3.67 | 1.28 | 3.54 | 0.03 | 0.19 |
| 0.18 | 0.18 | 0.30 | 0.4 | 4.69 | 1.35 | 4.55 | 0.03 | 0.21 |
| 0.20 | 0.20 | 0.40 | 0.6 | 5.71 | 1.43 | 5.55 | 0.03 | 0.23 |
| 0.22 | 0.22 | 0.52 | 0.8 | 6.73 | 1.53 | 6.56 | 0.04 | 0.26 |
| 0.24 | 0.24 | 0.66 | 1.1 | 7.75 | 1.64 | 7.56 | 0.04 | 0.28 |
| 0.26 | 0.26 | 0.82 | 1.4 | 8.77 | 1.75 | 8.57 | 0.05 | 0.31 |
| 0.28 | 0.28 | 1.00 | 1.9 | 9.79 | 1.85 | 9.57 | 0.05 | 0.33 |
| 0.30 | 0.30 | 1.20 | 2.4 | 10.82 | 1.96 | 10.58 | 0.06 | 0.36 |
| 0.32 | 0.32 | 1.43 | 2.9 | 11.84 | 2.07 | 11.58 | 0.07 | 0.39 |
| 0.34 | 0.34 | 1.67 | 3.6 | 12.86 | 2.17 | 12.59 | 0.07 | 0.41 |
| 0.36 | 0.36 | 1.93 | 4.4 | 13.88 | 2.27 | 13.59 | 0.08 | 0.44 |
| 0.38 | 0.38 | 2.21 | 5.3 | 14.90 | 2.38 | 14.60 | 0.09 | 0.47 |
| 0.40 | 0.40 | 2.51 | 6.2 | 15.92 | 2.48 | 15.60 | 0.10 | 0.50 |
| 0.42 | 0.42 | 2.83 | 7.3 | 16.94 | 2.57 | 16.61 | 0.10 | 0.52 |
| 0.44 | 0.44 | 3.18 | 8.5 | 17.96 | 2.67 | 17.61 | 0.11 | 0.55 |
| 0.46 | 0.46 | 3.54 | 9.9 | 18.50 | 2.81 | 18.13 | 0.12 | 0.58 |
| 0.48 | 0.48 | 3.90 | 11.7 | 18.56 | 2.99 | 18.18 | 0.14 | 0.62 |
| 0.50 | 0.50 | 4.26 | 13.5 | 18.63 | 3.17 | 18.22 | 0.16 | 0.66 |
| 0.52 | 0.52 | 4.63 | 15.5 | 18.69 | 3.34 | 18.26 | 0.17 | 0.69 |
| 0.54 | 0.54 | 4.99 | 17.5 | 18.75 | 3.51 | 18.30 | 0.19 | 0.73 |
| 0.56 | 0.56 | 5.36 | 19.7 | 18.81 | 3.67 | 18.34 | 0.21 | 0.77 |
| 0.58 | 0.58 | 5.73 | 21.9 | 18.88 | 3.83 | 18.38 | 0.23 | 0.81 |
| 0.60 | 0.60 | 6.10 | 24.3 | 18.94 | 3.98 | 18.42 | 0.25 | 0.85 |
| 0.62 | 0.62 | 6.47 | 26.7 | 19.00 | 4.13 | 18.47 | 0.26 | 0.88 |
| 0.64 | 0.64 | 6.83 | 29.2 | 19.06 | 4.28 | 18.51 | 0.28 | 0.92 |
| **0.66** | **0.66** | **7.21** | **31.9** | **19.12** | **4.42** | **18.55** | **0.30** | **0.96** |
| 0.68 | 0.68 | 7.58 | 34.0 | 19.64 | 4.49 | 19.55 | 0.31 | 0.99 |
| 0.70 | 0.70 | 7.98 | 35.4 | 21.12 | 4.43 | 20.52 | 0.30 | 1.00 |
| 0.72 | 0.72 | 8.41 | 37.4 | 22.09 | 4.45 | 21.49 | 0.31 | 1.03 |
| 0.74 | 0.74 | 8.84 | 39.6 | 23.07 | 4.47 | 22.46 | 0.31 | 1.05 |
| 0.76 | 0.76 | 9.30 | 41.9 | 24.04 | 4.50 | 23.43 | 0.31 | 1.07 |
| 0.78 | 0.78 | 9.78 | 44.3 | 25.02 | 4.53 | 24.40 | 0.32 | 1.10 |
| 0.80 | 0.80 | 10.29 | 45.9 | 26.94 | 4.46 | 26.32 | 0.31 | 1.11 |
| 0.82 | 0.82 | 10.83 | 47.8 | 28.86 | 4.41 | 28.24 | 0.30 | 1.12 |
| 0.84 | 0.84 | 11.42 | 50.0 | 30.78 | 4.38 | 30.16 | 0.30 | 1.14 |
| 0.86 | 0.86 | 12.04 | 52.4 | 32.70 | 4.35 | 32.08 | 0.29 | 1.15 |
| 0.88 | 0.88 | 12.70 | 55.7 | 34.15 | 4.38 | 33.53 | 0.30 | 1.18 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.92 | 0.92 | 14.08 | 63.7 | 36.12 | 4.52 | 35.51 | 0.32 | 1.24 |

Analysis Point M - Innovation Parkway
Capacity of ½ street = 36.7 cfs
MANNING'S N= .017 SLOPE= .0125

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | 9 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.44 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.70 | 0.63 | 0.01 | 0.05 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 0.91 | 0.94 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.05 | 0.1 | 1.32 | 1.11 | 1.25 | 0.02 | 0.10 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 1.28 | 1.56 | 0.03 | 0.13 |
| 0.12 | 0.12 | 0.11 | 0.2 | 1.97 | 1.45 | 1.88 | 0.03 | 0.15 |
| 0.14 | 0.14 | 0.15 | 0.2 | 2.65 | 1.47 | 2.54 | 0.03 | 0.17 |
| 0.16 | 0.16 | 0.22 | 0.3 | 3.67 | 1.48 | 3.54 | 0.03 | 0.19 |
| 0.18 | 0.18 | 0.30 | 0.5 | 4.69 | 1.55 | 4.55 | 0.04 | 0.22 |
| 0.20 | 0.20 | 0.40 | 0.7 | 5.71 | 1.65 | 5.55 | 0.04 | 0.24 |
| 0.22 | 0.22 | 0.52 | 0.9 | 6.73 | 1.77 | 6.56 | 0.05 | 0.27 |
| 0.24 | 0.24 | 0.66 | 1.2 | 7.75 | 1.89 | 7.56 | 0.06 | 0.30 |
| 0.26 | 0.26 | 0.82 | 1.7 | 8.77 | 2.01 | 8.57 | 0.06 | 0.32 |
| 0.28 | 0.28 | 1.00 | 2.1 | 9.79 | 2.14 | 9.57 | 0.07 | 0.35 |
| 0.30 | 0.30 | 1.20 | 2.7 | 10.82 | 2.26 | 10.58 | 0.08 | 0.38 |
| 0.32 | 0.32 | 1.43 | 3.4 | 11.84 | 2.38 | 11.58 | 0.09 | 0.41 |
| 0.34 | 0.34 | 1.67 | 4.2 | 12.86 | 2.50 | 12.59 | 0.10 | 0.44 |
| 0.36 | 0.36 | 1.93 | 5.1 | 13.88 | 2.62 | 13.59 | 0.11 | 0.47 |
| 0.38 | 0.38 | 2.21 | 6.1 | 14.90 | 2.74 | 14.60 | 0.12 | 0.50 |
| 0.40 | 0.40 | 2.51 | 7.2 | 15.92 | 2.85 | 15.60 | 0.13 | 0.53 |
| 0.42 | 0.42 | 2.83 | 8.4 | 16.94 | 2.97 | 16.61 | 0.14 | 0.56 |
| 0.44 | 0.44 | 3.18 | 9.8 | 17.96 | 3.08 | 17.61 | 0.15 | 0.59 |
| 0.46 | 0.46 | 3.54 | 11.5 | 18.50 | 3.24 | 18.13 | 0.16 | 0.62 |
| 0.48 | 0.48 | 3.90 | 13.5 | 18.56 | 3.45 | 18.18 | 0.19 | 0.67 |
| 0.50 | 0.50 | 4.26 | 15.6 | 18.63 | 3.66 | 18.22 | 0.21 | 0.71 |
| 0.52 | 0.52 | 4.63 | 17.8 | 18.69 | 3.85 | 18.26 | 0.23 | 0.75 |
| 0.54 | 0.54 | 4.99 | 20.2 | 18.75 | 4.05 | 18.30 | 0.25 | 0.79 |
| 0.56 | 0.56 | 5.36 | 22.7 | 18.81 | 4.23 | 18.34 | 0.28 | 0.84 |
| 0.58 | 0.58 | 5.73 | 25.3 | 18.88 | 4.41 | 18.38 | 0.30 | 0.88 |
| 0.60 | 0.60 | 6.10 | 28.0 | 18.94 | 4.59 | 18.42 | 0.33 | 0.93 |
| 0.62 | 0.62 | 6.47 | 30.8 | 19.00 | 4.76 | 18.47 | 0.35 | 0.97 |
| 0.64 | 0.64 | 6.83 | 33.7 | 19.06 | 4.93 | 18.51 | 0.38 | 1.02 |
| **0.66** | **0.66** | **7.21** | **36.7** | **19.12** | **5.10** | **18.55** | **0.40** | **1.06** |
| 0.68 | 0.68 | 7.58 | 39.3 | 19.64 | 5.18 | 19.55 | 0.42 | 1.10 |
| 0.70 | 0.70 | 7.98 | 40.8 | 21.12 | 5.11 | 20.52 | 0.41 | 1.11 |
| 0.72 | 0.72 | 8.41 | 43.1 | 22.09 | 5.13 | 21.49 | 0.41 | 1.13 |
| 0.74 | 0.74 | 8.84 | 45.6 | 23.07 | 5.16 | 22.46 | 0.41 | 1.15 |
| 0.76 | 0.76 | 9.30 | 48.3 | 24.04 | 5.19 | 23.43 | 0.42 | 1.18 |
| 0.78 | 0.78 | 9.78 | 51.1 | 25.02 | 5.23 | 24.40 | 0.42 | 1.20 |
| 0.80 | 0.80 | 10.29 | 52.9 | 26.94 | 5.15 | 26.32 | 0.41 | 1.21 |
| 0.82 | 0.82 | 10.83 | 55.1 | 28.86 | 5.09 | 28.24 | 0.40 | 1.22 |
| 0.84 | 0.84 | 11.42 | 57.6 | 30.78 | 5.05 | 30.16 | 0.40 | 1.24 |
| 0.86 | 0.86 | 12.04 | 60.5 | 32.70 | 5.02 | 32.08 | 0.39 | 1.25 |
| 0.88 | 0.88 | 12.70 | 64.2 | 34.15 | 5.05 | 33.53 | 0.40 | 1.28 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.92 | 0.92 | 14.08 | 73.4 | 36.12 | 5.21 | 35.51 | 0.42 | 1.34 |

Analysis Point N - Innovation Parkway
Capcity of ½ Street = 23.9 cfs
MANNING'S N= .017 SLOPE= .0053

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | 9 | 0.00 | 0.00 |

| WSEL | DEPTH INC | FLOW AREA | FLOW RATE | WETTED PER | FLOW VEL | TOPWID | VEL HEAD | ENERGY HEAD |
|---|---|---|---|---|---|---|---|---|
| (FT) | (FT) | SQ.FT. | (CFS) | (FT) | (FPS) | (FT) | (FT) | (FT) |
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.29 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.45 | 0.63 | 0.00 | 0.04 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 0.59 | 0.94 | 0.01 | 0.07 |
| 0.08 | 0.08 | 0.05 | 0.0 | 1.32 | 0.72 | 1.25 | 0.01 | 0.09 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 0.84 | 1.56 | 0.01 | 0.11 |
| 0.12 | 0.12 | 0.11 | 0.1 | 1.97 | 0.94 | 1.88 | 0.01 | 0.13 |
| 0.14 | 0.14 | 0.15 | 0.1 | 2.65 | 0.96 | 2.54 | 0.01 | 0.15 |
| 0.16 | 0.16 | 0.22 | 0.2 | 3.67 | 0.96 | 3.54 | 0.01 | 0.17 |
| 0.18 | 0.18 | 0.30 | 0.3 | 4.69 | 1.01 | 4.55 | 0.02 | 0.20 |
| 0.20 | 0.20 | 0.40 | 0.4 | 5.71 | 1.08 | 5.55 | 0.02 | 0.22 |
| 0.22 | 0.22 | 0.52 | 0.6 | 6.73 | 1.15 | 6.56 | 0.02 | 0.24 |
| 0.24 | 0.24 | 0.66 | 0.8 | 7.75 | 1.23 | 7.56 | 0.02 | 0.26 |
| 0.26 | 0.26 | 0.82 | 1.1 | 8.77 | 1.31 | 8.57 | 0.03 | 0.29 |
| 0.28 | 0.28 | 1.00 | 1.4 | 9.79 | 1.39 | 9.57 | 0.03 | 0.31 |
| 0.30 | 0.30 | 1.20 | 1.8 | 10.82 | 1.47 | 10.58 | 0.03 | 0.33 |
| 0.32 | 0.32 | 1.43 | 2.2 | 11.84 | 1.55 | 11.58 | 0.04 | 0.36 |
| 0.34 | 0.34 | 1.67 | 2.7 | 12.86 | 1.63 | 12.59 | 0.04 | 0.38 |
| 0.36 | 0.36 | 1.93 | 3.3 | 13.88 | 1.71 | 13.59 | 0.05 | 0.41 |
| 0.38 | 0.38 | 2.21 | 3.9 | 14.90 | 1.78 | 14.60 | 0.05 | 0.43 |
| 0.40 | 0.40 | 2.51 | 4.7 | 15.92 | 1.86 | 15.60 | 0.05 | 0.45 |
| 0.42 | 0.42 | 2.83 | 5.5 | 16.94 | 1.93 | 16.61 | 0.06 | 0.48 |
| 0.44 | 0.44 | 3.18 | 6.4 | 17.96 | 2.01 | 17.61 | 0.06 | 0.50 |
| 0.46 | 0.46 | 3.54 | 7.5 | 18.50 | 2.11 | 18.13 | 0.07 | 0.53 |
| 0.48 | 0.48 | 3.90 | 8.8 | 18.56 | 2.25 | 18.18 | 0.08 | 0.56 |
| 0.50 | 0.50 | 4.26 | 10.2 | 18.63 | 2.38 | 18.22 | 0.09 | 0.59 |
| 0.52 | 0.52 | 4.63 | 11.6 | 18.69 | 2.51 | 18.26 | 0.10 | 0.62 |
| 0.54 | 0.54 | 4.99 | 13.2 | 18.75 | 2.63 | 18.30 | 0.11 | 0.65 |
| 0.56 | 0.56 | 5.36 | 14.8 | 18.81 | 2.76 | 18.34 | 0.12 | 0.68 |
| 0.58 | 0.58 | 5.73 | 16.5 | 18.88 | 2.87 | 18.38 | 0.13 | 0.71 |
| 0.60 | 0.60 | 6.10 | 18.2 | 18.94 | 2.99 | 18.42 | 0.14 | 0.74 |
| 0.62 | 0.62 | 6.47 | 20.1 | 19.00 | 3.10 | 18.47 | 0.15 | 0.77 |
| 0.64 | 0.64 | 6.83 | 22.0 | 19.06 | 3.21 | 18.51 | 0.16 | 0.80 |
| **0.66** | **0.66** | **7.21** | **23.9** | **19.12** | **3.32** | **18.55** | **0.17** | **0.83** |
| 0.68 | 0.68 | 7.58 | 25.6 | 19.64 | 3.37 | 19.55 | 0.18 | 0.86 |
| 0.70 | 0.70 | 7.98 | 26.6 | 21.12 | 3.33 | 20.52 | 0.17 | 0.87 |
| 0.72 | 0.72 | 8.41 | 28.1 | 22.09 | 3.34 | 21.49 | 0.17 | 0.89 |
| 0.74 | 0.74 | 8.84 | 29.7 | 23.07 | 3.36 | 22.46 | 0.18 | 0.92 |
| 0.76 | 0.76 | 9.30 | 31.4 | 24.04 | 3.38 | 23.43 | 0.18 | 0.94 |
| 0.78 | 0.78 | 9.78 | 33.3 | 25.02 | 3.40 | 24.40 | 0.18 | 0.96 |
| 0.80 | 0.80 | 10.29 | 34.5 | 26.94 | 3.35 | 26.32 | 0.17 | 0.97 |
| 0.82 | 0.82 | 10.83 | 35.9 | 28.86 | 3.31 | 28.24 | 0.17 | 0.99 |
| 0.84 | 0.84 | 11.42 | 37.5 | 30.78 | 3.29 | 30.16 | 0.17 | 1.01 |
| 0.86 | 0.86 | 12.04 | 39.4 | 32.70 | 3.27 | 32.08 | 0.17 | 1.03 |
| 0.88 | 0.88 | 12.70 | 41.8 | 34.15 | 3.29 | 33.53 | 0.17 | 1.05 |

Analysis Point O - Innovation Parkway
Capcity of ½ street = 41.9 cfs

MANNING'S N= .017 SLOPE= .0163

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.87 | 4 | 10.00 | 0.00 | 7 | 28.60 | 0.78 |
| 2 | 9.33 | 0.67 | 5 | 12.00 | 0.13 | 8 | 36.00 | 0.93 |
| 3 | 9.83 | 0.67 | 6 | 28.00 | 0.45 | 9 | 0.00 | 0.00 |

| WSEL (FT) | DEPTH INC (FT) | FLOW AREA SQ.FT. | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOPWID (FT) | VEL HEAD (FT) | ENERGY HEAD (FT) |
|---|---|---|---|---|---|---|---|---|
| 0.02 | 0.02 | 0.00 | 0.0 | 0.33 | 0.50 | 0.31 | 0.00 | 0.02 |
| 0.04 | 0.04 | 0.01 | 0.0 | 0.66 | 0.80 | 0.63 | 0.01 | 0.05 |
| 0.06 | 0.06 | 0.03 | 0.0 | 0.99 | 1.04 | 0.94 | 0.02 | 0.08 |
| 0.08 | 0.08 | 0.05 | 0.1 | 1.32 | 1.26 | 1.25 | 0.02 | 0.10 |
| 0.10 | 0.10 | 0.08 | 0.1 | 1.64 | 1.46 | 1.56 | 0.03 | 0.13 |
| 0.12 | 0.12 | 0.11 | 0.2 | 1.97 | 1.65 | 1.88 | 0.04 | 0.16 |
| 0.14 | 0.14 | 0.15 | 0.3 | 2.65 | 1.68 | 2.54 | 0.04 | 0.18 |
| 0.16 | 0.16 | 0.22 | 0.4 | 3.67 | 1.69 | 3.54 | 0.04 | 0.20 |
| 0.18 | 0.18 | 0.30 | 0.5 | 4.69 | 1.77 | 4.55 | 0.05 | 0.23 |
| 0.20 | 0.20 | 0.40 | 0.8 | 5.71 | 1.89 | 5.55 | 0.06 | 0.26 |
| 0.22 | 0.22 | 0.52 | 1.0 | 6.73 | 2.02 | 6.56 | 0.06 | 0.28 |
| 0.24 | 0.24 | 0.66 | 1.4 | 7.75 | 2.16 | 7.56 | 0.07 | 0.31 |
| 0.26 | 0.26 | 0.82 | 1.9 | 8.77 | 2.30 | 8.57 | 0.08 | 0.34 |
| 0.28 | 0.28 | 1.00 | 2.4 | 9.79 | 2.44 | 9.57 | 0.09 | 0.37 |
| 0.30 | 0.30 | 1.20 | 3.1 | 10.82 | 2.58 | 10.58 | 0.10 | 0.40 |
| 0.32 | 0.32 | 1.43 | 3.9 | 11.84 | 2.72 | 11.58 | 0.12 | 0.44 |
| 0.34 | 0.34 | 1.67 | 4.8 | 12.86 | 2.86 | 12.59 | 0.13 | 0.47 |
| 0.36 | 0.36 | 1.93 | 5.8 | 13.88 | 2.99 | 13.59 | 0.14 | 0.50 |
| 0.38 | 0.38 | 2.21 | 6.9 | 14.90 | 3.13 | 14.60 | 0.15 | 0.53 |
| 0.40 | 0.40 | 2.51 | 8.2 | 15.92 | 3.26 | 15.60 | 0.16 | 0.56 |
| 0.42 | 0.42 | 2.83 | 9.6 | 16.94 | 3.39 | 16.61 | 0.18 | 0.60 |
| 0.44 | 0.44 | 3.18 | 11.2 | 17.96 | 3.52 | 17.61 | 0.19 | 0.63 |
| 0.46 | 0.46 | 3.54 | 13.1 | 18.50 | 3.70 | 18.13 | 0.21 | 0.67 |
| 0.48 | 0.48 | 3.90 | 15.4 | 18.56 | 3.94 | 18.18 | 0.24 | 0.72 |
| 0.50 | 0.50 | 4.26 | 17.8 | 18.63 | 4.18 | 18.22 | 0.27 | 0.77 |
| 0.52 | 0.52 | 4.63 | 20.4 | 18.69 | 4.40 | 18.26 | 0.30 | 0.82 |
| 0.54 | 0.54 | 4.99 | 23.1 | 18.75 | 4.62 | 18.30 | 0.33 | 0.87 |
| 0.56 | 0.56 | 5.36 | 25.9 | 18.81 | 4.83 | 18.34 | 0.36 | 0.92 |
| 0.58 | 0.58 | 5.73 | 28.9 | 18.88 | 5.04 | 18.38 | 0.39 | 0.97 |
| 0.60 | 0.60 | 6.10 | 32.0 | 18.94 | 5.24 | 18.42 | 0.43 | 1.03 |
| 0.62 | 0.62 | 6.47 | 35.2 | 19.00 | 5.44 | 18.47 | 0.46 | 1.08 |
| 0.64 | 0.64 | 6.83 | 38.5 | 19.06 | 5.63 | 18.51 | 0.49 | 1.13 |
| **0.66** | **0.66** | **7.21** | **41.9** | **19.12** | **5.82** | **18.55** | **0.53** | **1.19** |
| 0.68 | 0.68 | 7.58 | 44.8 | 19.64 | 5.91 | 19.55 | 0.54 | 1.22 |
| 0.70 | 0.70 | 7.98 | 46.6 | 21.12 | 5.84 | 20.52 | 0.53 | 1.23 |
| 0.72 | 0.72 | 8.41 | 49.3 | 22.09 | 5.86 | 21.49 | 0.53 | 1.25 |
| 0.74 | 0.74 | 8.84 | 52.1 | 23.07 | 5.89 | 22.46 | 0.54 | 1.28 |
| 0.76 | 0.76 | 9.30 | 55.1 | 24.04 | 5.93 | 23.43 | 0.55 | 1.31 |
| 0.78 | 0.78 | 9.78 | 58.4 | 25.02 | 5.97 | 24.40 | 0.55 | 1.33 |
| 0.80 | 0.80 | 10.29 | 60.5 | 26.94 | 5.88 | 26.32 | 0.54 | 1.34 |
| 0.82 | 0.82 | 10.83 | 62.9 | 28.86 | 5.81 | 28.24 | 0.52 | 1.34 |
| 0.84 | 0.84 | 11.42 | 65.8 | 30.78 | 5.76 | 30.16 | 0.52 | 1.36 |
| 0.86 | 0.86 | 12.04 | 69.0 | 32.70 | 5.73 | 32.08 | 0.51 | 1.37 |
| 0.88 | 0.88 | 12.70 | 73.3 | 34.15 | 5.77 | 33.53 | 0.52 | 1.40 |

| WSEL | DEPTH INC | FLOW AREA | FLOW RATE | WETTED PER | FLOW VEL | TOPWID | VEL HEAD | ENERGY HEAD |
|---|---|---|---|---|---|---|---|---|

# APPENDIX D

## STORM DRAIN CAPACITY CALCULATIONS

# SD PIPES

| PIPE # | Size in. * | Slope * | Capacity * | ACTUAL FLOW | |
|---|---|---|---|---|---|
| | | | cfs | cfs | |
| **NORTH SYSTEM** | | | | | |
| NP1 | 48 | 0.00600 | 111.27 | 101.87 | |
| NP2 | 48 | 0.00600 | 111.27 | 101.87 | |
| NP3 | 48 | 0.00600 | 111.27 | 101.87 | |
| NP4 | 36 | 0.00900 | 63.28 | 61.87 | |
| NP5 | 36 | 0.01000 | 66.70 | 39.87 | |
| NP6 | 36 | 0.01000 | 66.70 | 39.87 | |
| NP7 | 36 | 0.01200 | 73.06 | 39.87 | |
| **SOUTH SYSTEM** | | | | | |
| SP1 | 36 | 0.10000 | 210.92 | 44.99 | |
| SP2 | 36 | 0.10000 | 210.92 | 44.99 | |
| **MAIN SYSTEM - (some pipes operate under pressure - see note below)** | | | | | |
| P1 | 48 | 0.01000 | 143.64 | 153.06 | |
| P2 | 48 | 0.01000 | 66.70 | 110.07 | |
| P3 | 36 | 0.00700 | 55.80 | 64.94 | |
| P4 | 36 | 0.00700 | 55.80 | 64.94 | |
| P5 | 36 | 0.00700 | 55.80 | 64.94 | |
| P6 | 36 | 0.00700 | 55.80 | 64.94 | |
| P7 | 24 | 0.00500 | 16.00 | 6.47 | |
| P8 | 36 | 0.00700 | 55.80 | 58.47 | |
| P9 | 36 | 0.00700 | 55.80 | 38.90 | |
| P10 | 36 | 0.00700 | 55.80 | 38.90 | |
| P11 | 18 | 0.03000 | 18.19 | 6.72 | |
| P12a | 36 | 0.01200 | 73.06 | 32.18 | |
| P12b | 36 | 0.01000 | 66.70 | 32.18 | |
| P13 | 24 | 0.01000 | 22.62 | 13.55 | |
| P14 | 24 | 0.03000 | 39.18 | 19.57 | |
| P15 | 24 | 0.00500 | 16.00 | 5.84 | future |
| P16 | 18 | 0.01000 | 10.50 | 5.84 | temp |
| P17 | 24 | 0.00500 | 16.00 | 5.84 | |
| P18 | 24 | 0.01310 | 25.89 | 39.29 | |
| P19 | 18 | 0.02000 | 14.86 | 6.00 | |
| P20 | 18 | 0.02000 | 14.86 | 6.00 | |
| P21 | 24 | 0.01000 | 22.62 | 27.29 | |
| P22 | 24 | 0.01000 | 22.62 | 27.29 | |
| **EAST SYSTEM** | | | | | |
| EP1 | 48 | 0.01000 | 143.64 | 125.00 | |
| EP2 | 48 | 0.01700 | 187.29 | 186.02 | |
| EP3 | 60 | 0.01050 | 266.87 | 260.87 | |

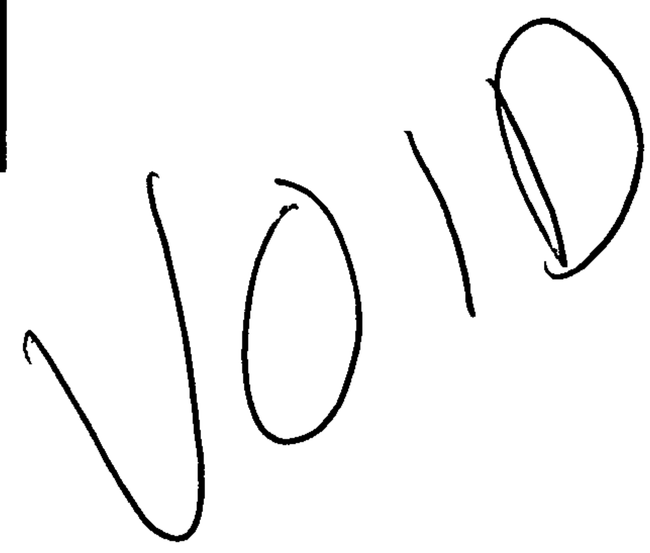
*** SUBJECT TO MINOR ADJUSTMENT WITH FINAL DESIGN**

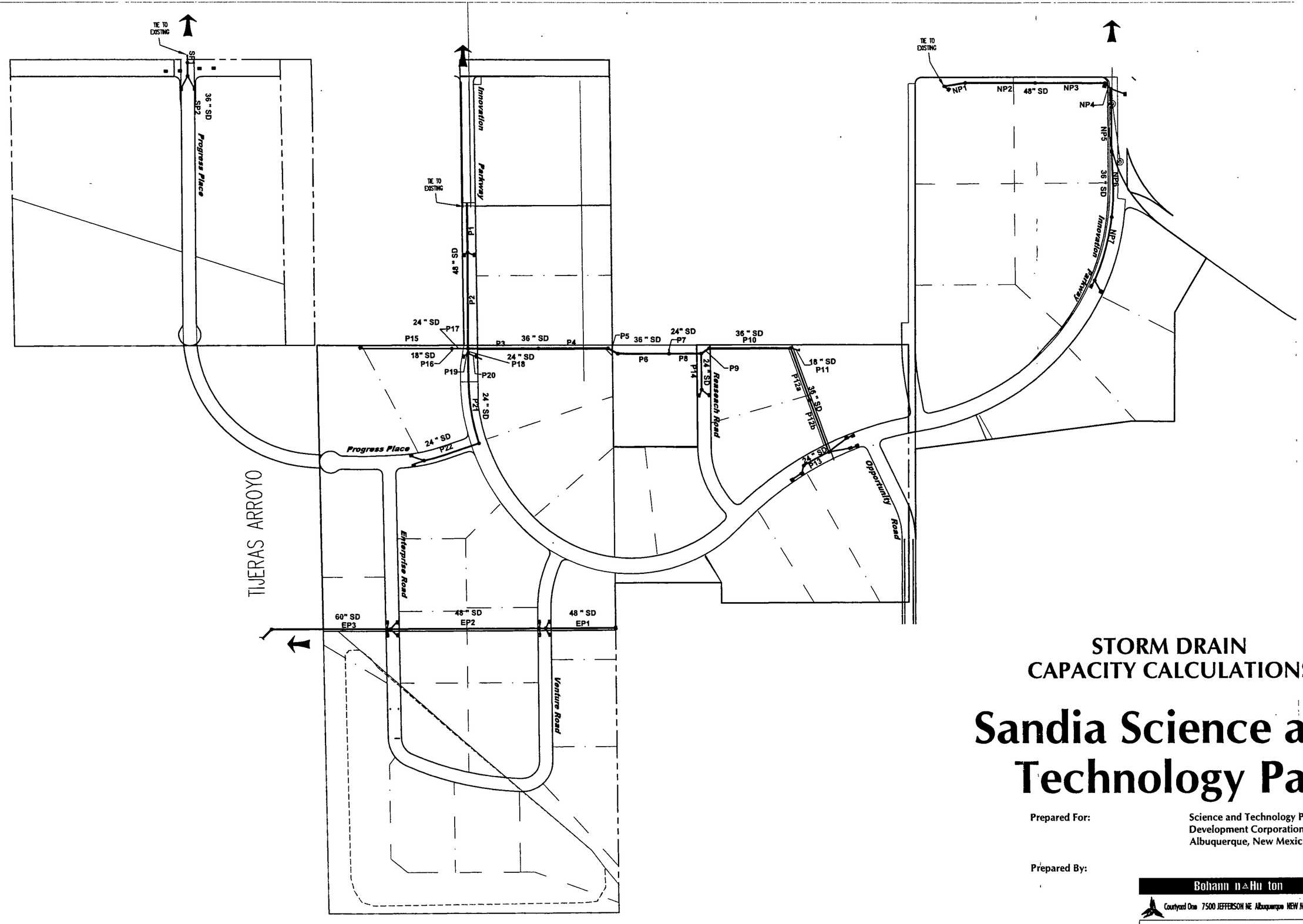
**CAPACITY IS BASED ON GRAVITY FLOW, USING MANNING'S EQUATION WITH n=0.013**

NOTE: SEE THE DESIGN ANALYSIS REPORT (BY BHI DATED AUGUST 2001)
FOR HGL ANALYSIS OF THE PIPES IN THE MAIN SYSTEM.

APPENDIX D: STORM DRAIN CAPACITY CALCULATIONS

| PIPE | SIZE | FLOW | CAPACITY | |
|---|---|---|---|---|
| | IN. | CFS | CFS | |
| | | | | |
| P1 | 36 | 32.90 | 66.70 | |
| P2 | 24 | 12.66 | 22.62 | |
| P3 | 36 | 34.01 | 67.10 | |
| P4 | 18 | 8.22 | 10.50 | |
| P5 | 36 | 55.16 | 66.70 | |
| P6 | 24 | 15.95 | 22.62 | |
| P7 | 24 | 8.22 | 22.62 | |
| P8 | 48 | 71.11 | 120.18 | |
| P9 | 36 | 32.57 | 55.80 | |
| P10 | 36 | 52.04 | 66.69 | |
| P11 | 24 | 14.80 | 22.62 | |
| P12 | 48 | 158.52 | 143.64 | UNDER PRESSURE |
| P13 | 48 | 124.75 | 143.64 | |
| P14 | 48 | 197.06 | 143.64 | UNDER PRESSURE |
| P15 | 24 | 16.00 | 22.62 | |
| P16 | 60 | 262.14 | 451.10 | |
| P17 | 36 | 45.02 | 66.70 | |
| P18 | 36 | 27.77 | 66.70 | |
| P19 | 18 | 9.64 | 14.86 | |
| P20 | 24 | 18.13 | 22.62 | |
| P21 | 18 | 9.00 | 10.50 | |
| P22 | 18 | 9.13 | 14.86 | |






# STORM DRAIN CAPACITY CALCULATIONS

# Sandia Science and Technology Park

**Prepared For:**

Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

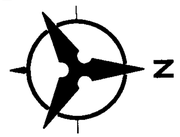
**Prepared By:**

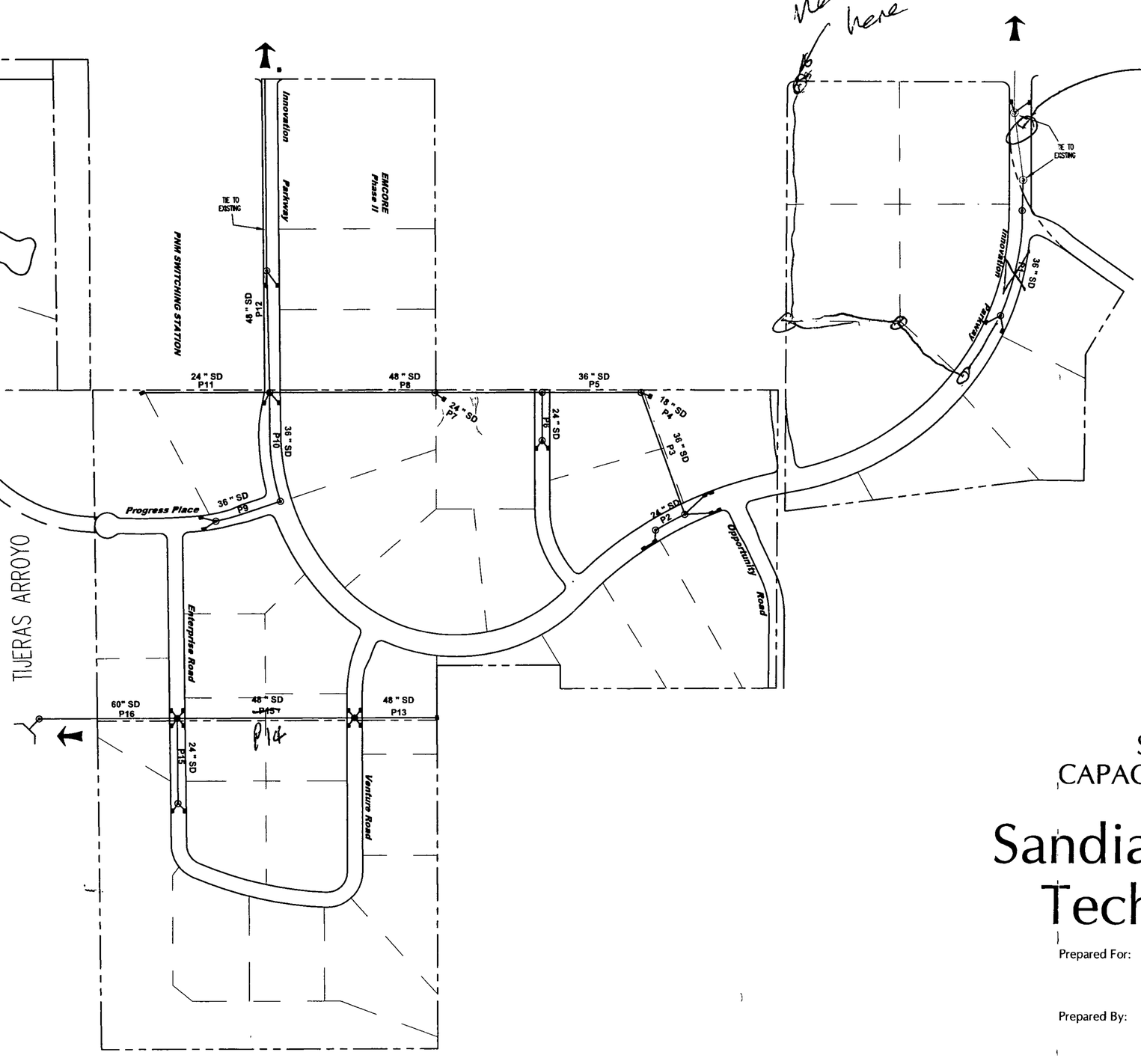
Bohannan Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

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# STORM DRAIN CAPACITY CALCULATIONS

# Sandia Science and Technology Park

Prepared For:

Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

Prepared By:


Bohannan Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS


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# EXHIBITS

EXHIBIT 1 - EXISTING CONDITIONS MAP

EXHIBIT 2 - PROPOSED CONDITIONS BASIN MAP

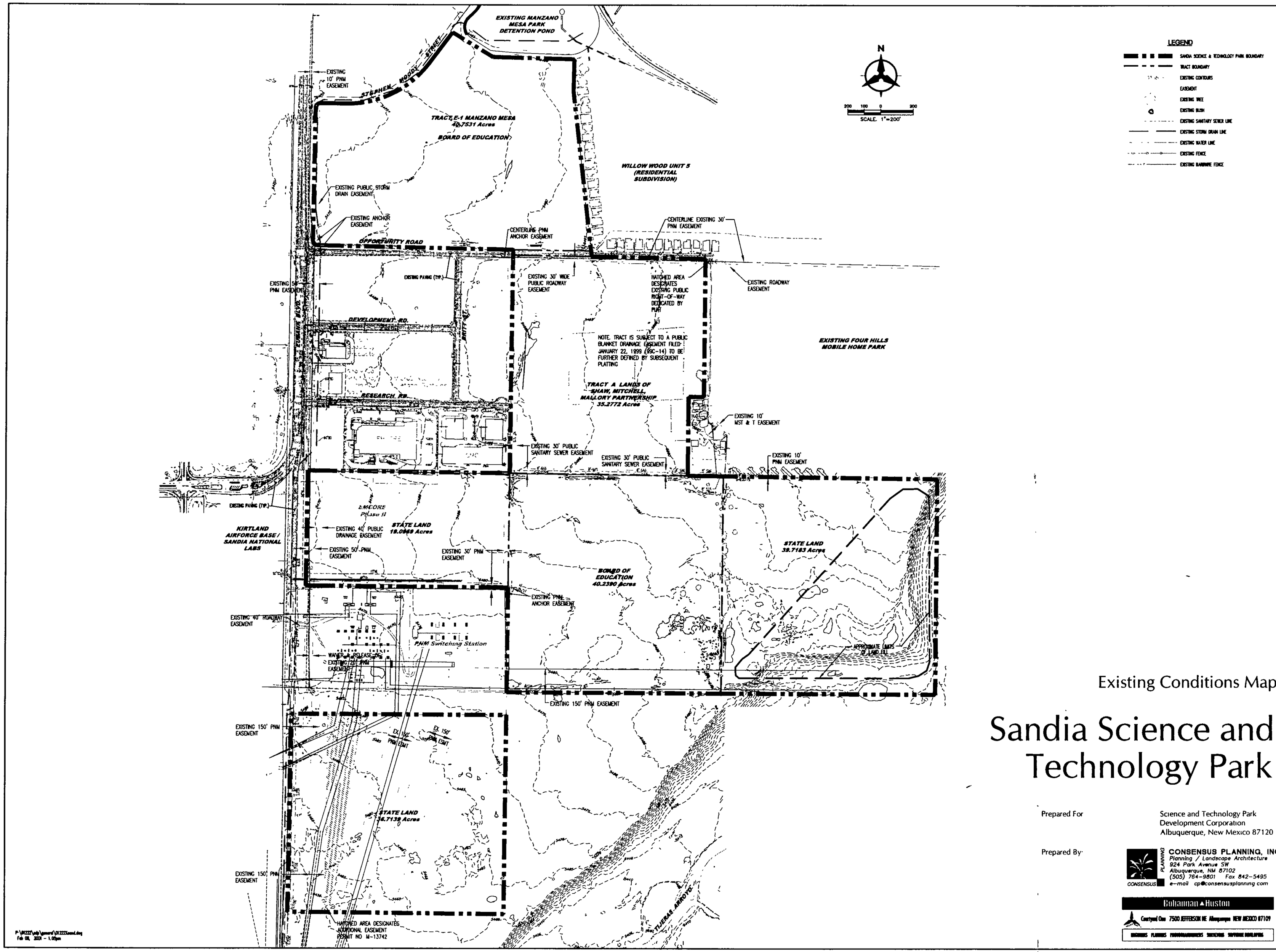
EXHIBIT 3 - CONCEPTUAL PAVING AND STORM DRAIN PLAN & PROFILES

EXHIBIT 4 - SOUTH EUBANK STORM DRAINAGE ANALYSIS AMENDMENT #2, NOVEMBER 1998 - EXCERPTS

EXHIBIT 5 - MANZANO MESA MASTER DRAINAGE STUDY, AUGUST 1996 - EXCERPTS

# EXHIBIT 1

## EXISTING CONDITIONS BASIN MAP




Existing Conditions Map

# Sandia Science and Technology Park

Prepared For

Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

Prepared By

CONSENSUS PLANNING, INC
Planning / Landscape Architecture
924 Park Avenue SW
Albuquerque, NM 87102
(505) 764-9801 Fax 842-5495
e-mail cp@consensusplanning.com

Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

# EXHIBIT 2

## PROPOSED CONDITIONS BASIN MAP

June 19, 2001

BOHANNAN-HUSTON, INC

Courtyard One

7500 JEFFERSON NE

Albuquerque

NM 87109-4335

voice 505.823.1000

fax 505 821 0892

Mr. Loren Meinz, P.E.
Hydrology Project Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Response to Hydrology Comments regarding the Sandia Science and Technology Master Drainage Report.

Dear Loren:

The following is in response to your comments in a letter dated April 6, 2001, addressed to James Topmiller.

1. The existing 40' public drainage easement is shown on an existing recorded plat filed: August 24, 1982 (C20-24) and signed by SLO commissioner. Note that the plat does not say that this easement is "dedicated with this plat." A copy of the plat is attached. As we have discussed, this issue will be cleared up because the current plat is vacating that easement.

2. The point of discharge shown on the Manzano Mesa Master Drainage Study is at the NW corner of Tract E. The low point of Tract E is also at the NW corner. However, the stubout from the Eubank storm drain is located just north of the intersection of Opportunity and Eubank. We have revised the Master Drainage plan to show the Lots 1-8 draining to the stubout provided.

3. The storm drain outfall from the mobile home park to the Tijeras Arroyo is a Phase Two improvement. The process to obtain the required easements has begun, but is not yet complete. Should the required easements not be in place prior to the development of Phase 2, other options are available. Figure One in the Master Drainage Report identifies four other feasible options for discharge of the MHP flows.

4. The text referring to city participation in the storm drain has been deleted from the SS&TP Master Plan.

5. The storm drainpipes shown on the Master Drainage Plan are for free discharge from the MHP. If the MHP and SS&TP negotiate an agreement for construction of ponding on the MHP site, the pipe sizes may be reduced. The SS&TP Master Plan text has been revised to eliminate the text requiring construction of the pond by the MHP.

6. A LOMR to remove the floodplain will be prepared with the actual development and/or platting of the area comprising Lots 1-5. These lots are not being created with the initial bulk land plat.

7. The SS&TP planning and design team recognizes existing landfill uses in the immediate vicinity of the park. Appropriate mitigation measures will be taken as required by the City's Environmental Department.

8. Appendix A has been revised to correct minor errors. However, please see note #1 under Appendix A for an explanation of the method of calculating the allowable discharge rates for Lots 1-8.

9. Appendix B has been modified to clearly indicate that it relates to overland flow for the analysis points, not pipe flow.

10. We propose that detailed design analysis reports be required to support approval of DRC plans. These design analysis reports would calculate the required number of inlets, design the connector pipes, etc. If detailed calculations for the number and type of inlets were performed now, they would undoubtedly have to be re-done with the final design of the streets (due to revisions to the slopes of streets, changes to the lot layout, etc.).

In addition to the items above, we have made other minor revisions and corrections to the report in order to improve its clarity and accuracy.

Sincerely,
Bohannan Huston, Inc.

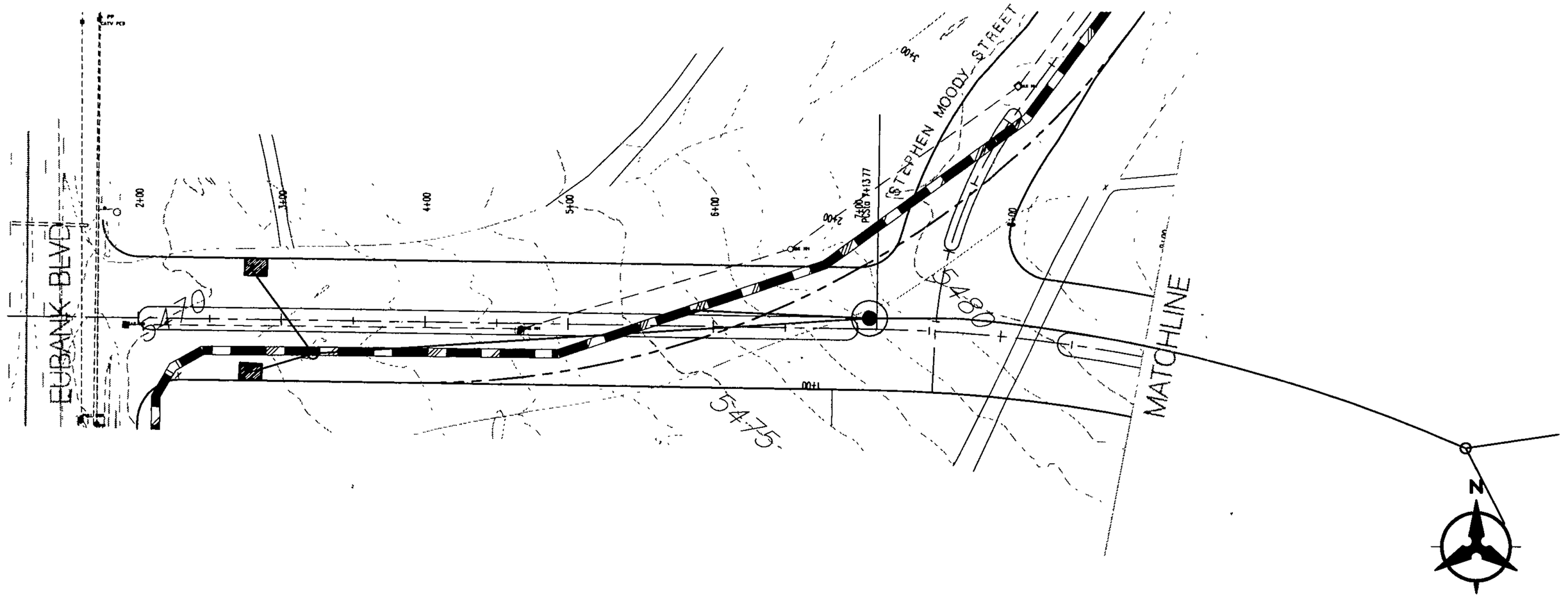
Bruce Stidworthy, P.E.
Community Development
and Planning Group

BS/ca
Enclosure

cc: James Topmiller, BHI

# EXHIBIT 3

## CONCEPTUAL PAVING AND STORM DRAIN PLAN & PROFILES




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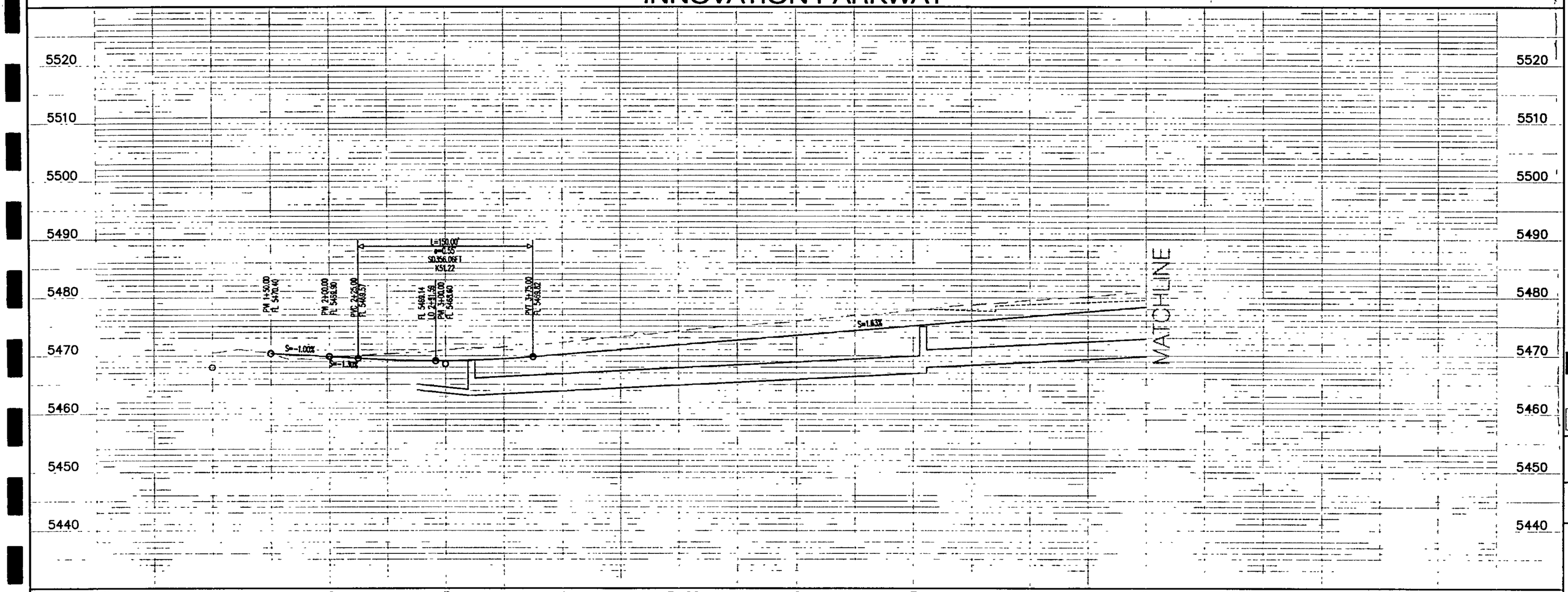
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6. BUILD 4' SIDEWALK

# INNOVATION PARKWAY




SCALE 1" =50' (HORIZ.)
1" =10' (VERT.)

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
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BENCH MARKS

AS-BUILT INFORMATION

CONTRACTOR DATE
WORK STAKED BY DATE
CONSTRUCTION WORK ACCEPTANCE BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO

ENGINEER'S SEAL

| No. | Date | REMARKS | By |
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| | | REVISIONS | |
| | | DESIGN | |

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Designed By: X
DATE: XX/XX/XX
Drawn By: X
DATE: XX/XX/XX
Checked By: X


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**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
INNOVATION PARKWAY - STA + TO STA +

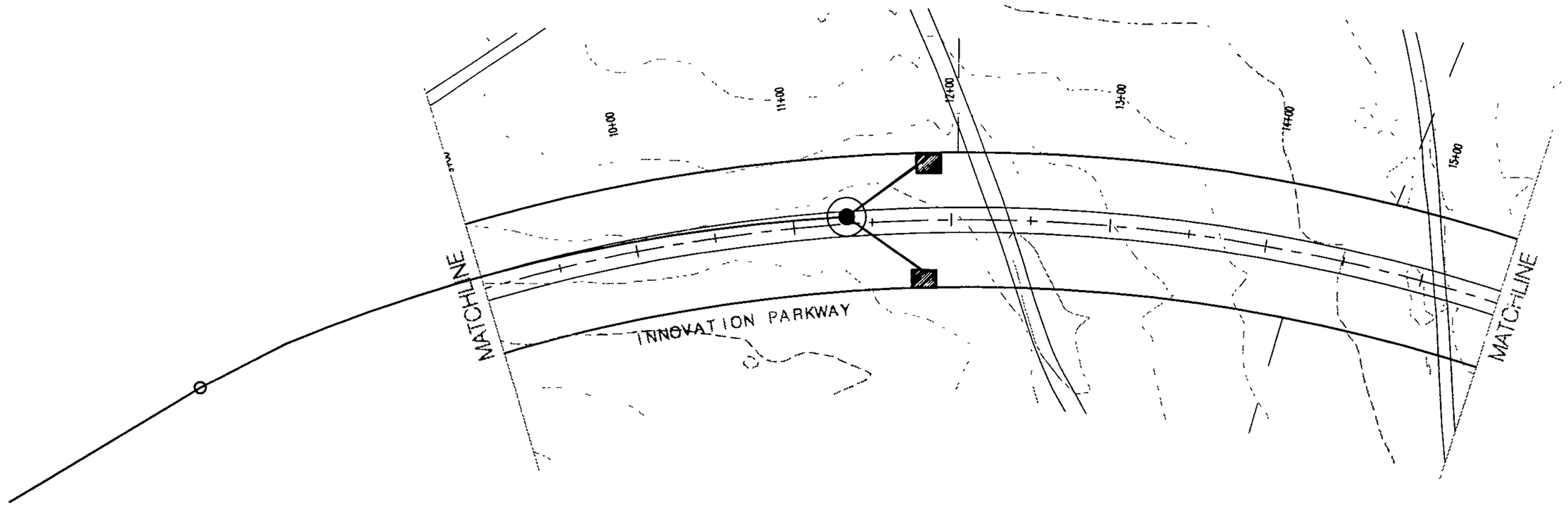
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

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Date: FEBUARY 2001





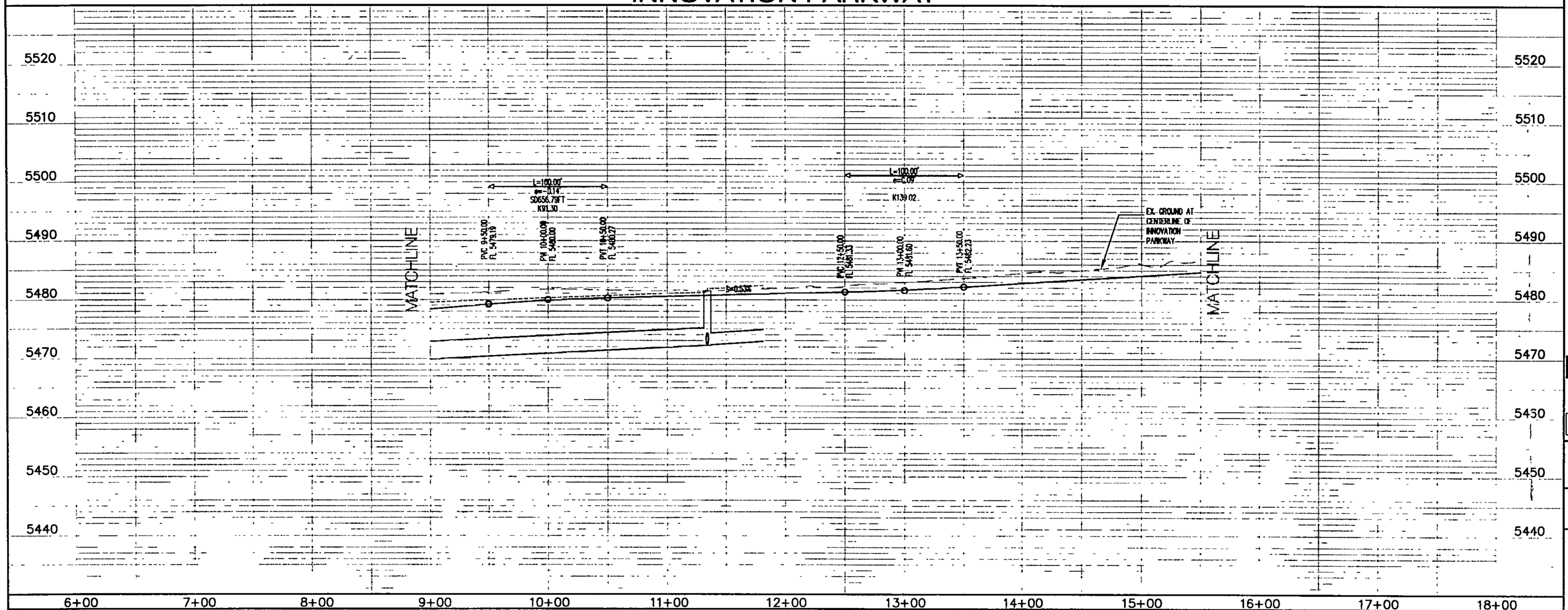


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AS-BUILT INFORMATION
CONTRACTOR DATE
STAKED BY DATE
INSPECTOR'S SOFTWARE BY DATE
FIELD VERIFICATION BY DATE
MARKED BY DATE
CONNECTED BY
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES BY DATE
NO.

ENGINEER'S SEAL

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**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

# SANDIA SCIENCE AND TECHNOLOGY PARK
## PAVING PLAN AND PROFILE
## INNOVATION PARKWAY STA + TO STA +

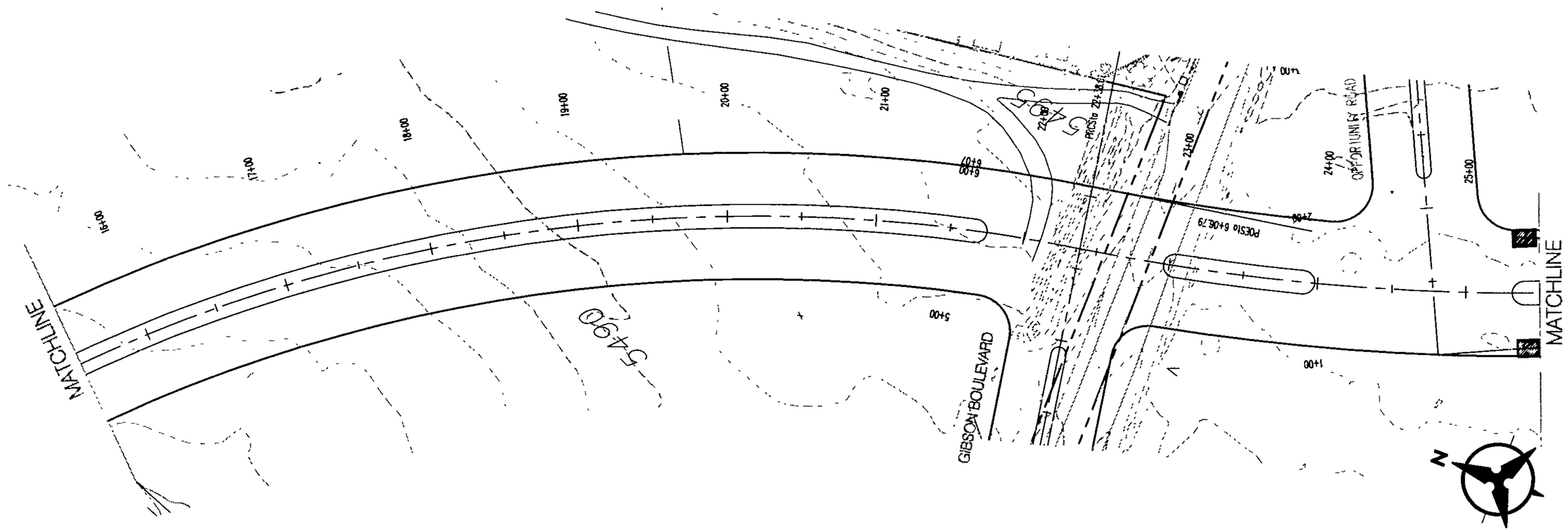
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

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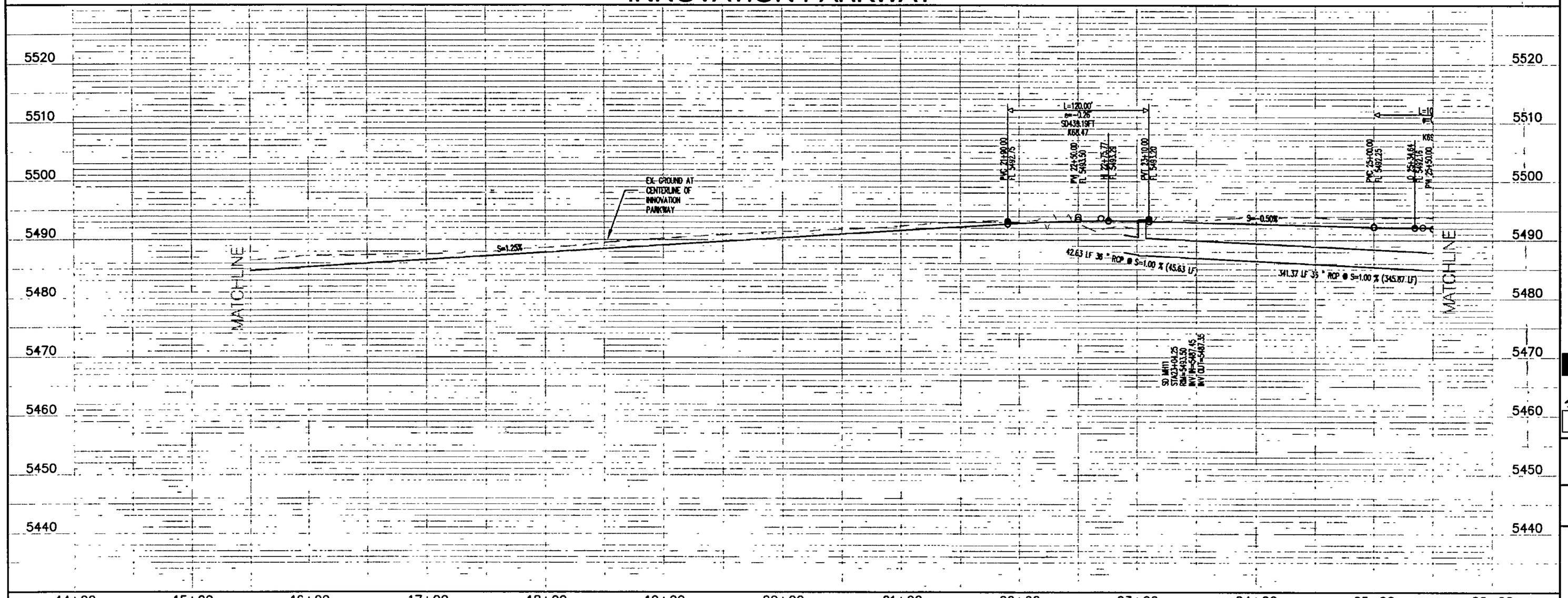



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CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTION BY — DATE
ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
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ENGINEER'S SEAL

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CITY OF ALBUQUERQUE
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SANDIA SCIENCE AND TECHNOLOGY PARK
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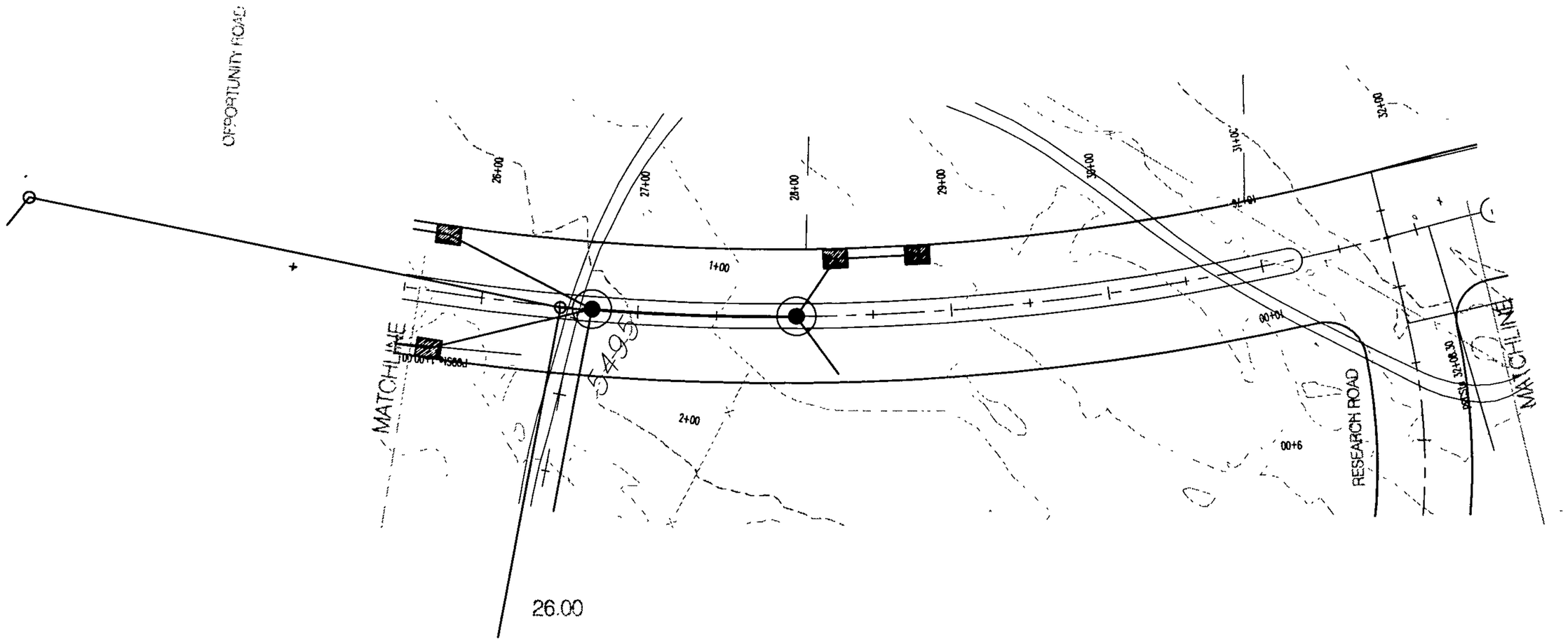
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City Project No: Coa #
Zone Map No: L-21-Z, M-21-Z
Sheet: X Of #

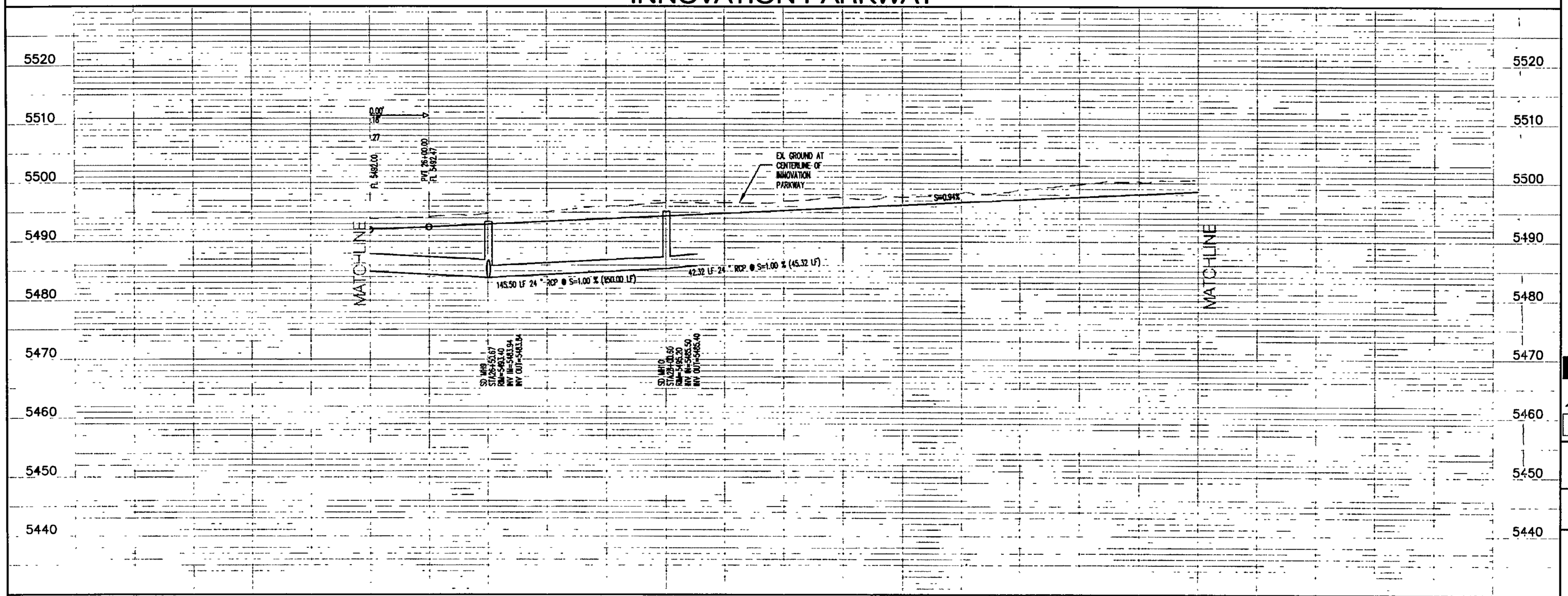
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BHI JOB NO 01222

Date: FEBUARY 2001




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CONTRACTOR DATE
WORK STAKED BY DATE
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MICRO-FILM INFORMATION
RECORDED BY DATE
M.C.

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

BENCH MARKS

ENGINEER'S SEAL

| No. | Date | REMARKS |
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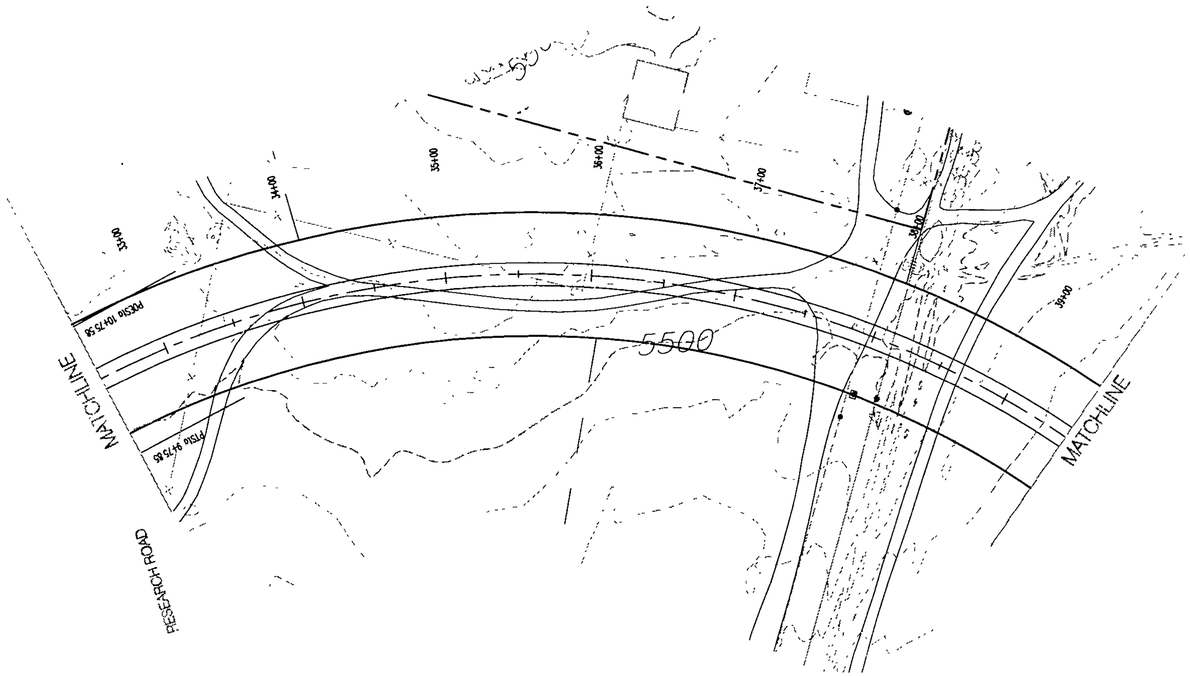
SANDIA SCIENCE AND TECHNOLOGY PARK
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

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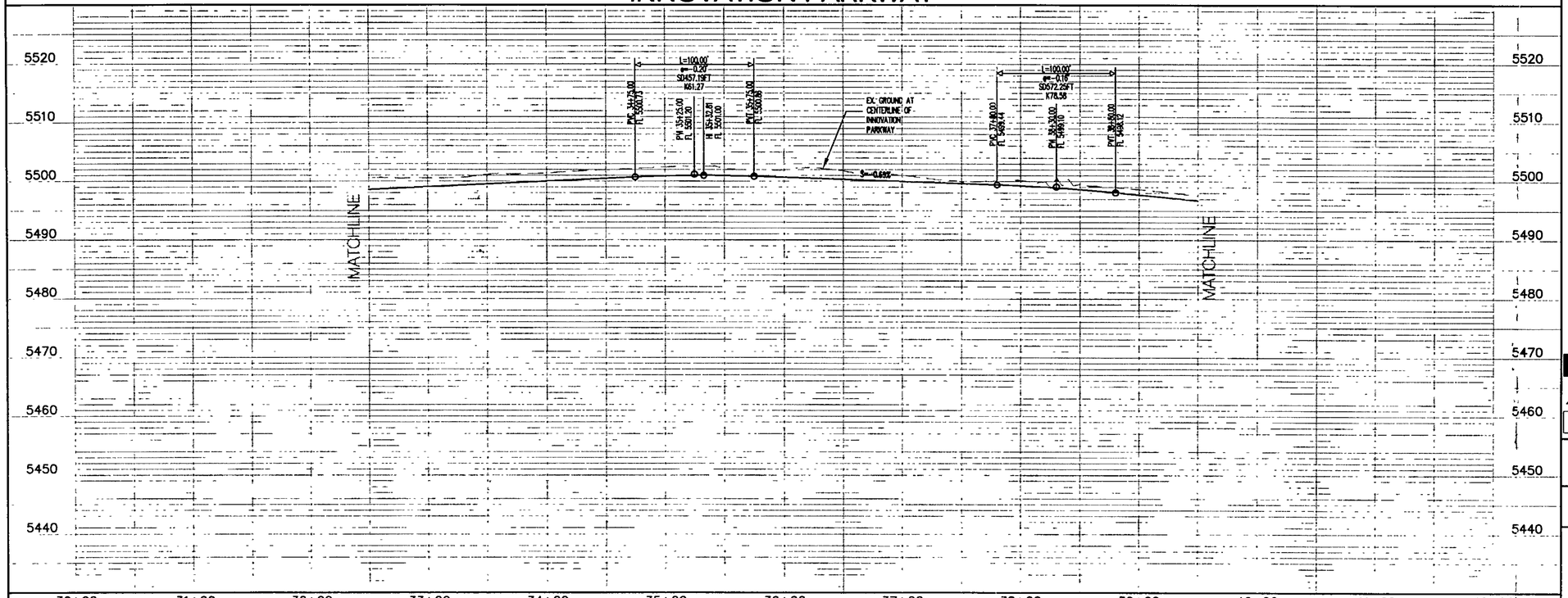



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5. FUTURE 4' SIDEWALK
6. BUILD 4' SIDEWALK

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| | | |

BENCH MARKS

AS-BUILT INFORMATION

| | DATE |
|---|---|
| CONTRACTOR WORK STAKED BY | |
| INSPECTOR'S NOTES BY | |
| FIELD VERIFICATION BY | |
| DRAWINGS CORRECTED BY | |
| MICRO-FILM INFORMATION RECORDED BY | |
| NO | |

ENGINEER'S SEAL

| No. | Date | REMARKS |
|---|---|---|
| | | REVISIONS |
| | | DESIGN |
| | | Designed By X DATE: XX/XX/XX |
| | | Drawn By X DATE: XX/XX/XX |
| | | Checked By X DATE: XX/XX/XX |

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ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

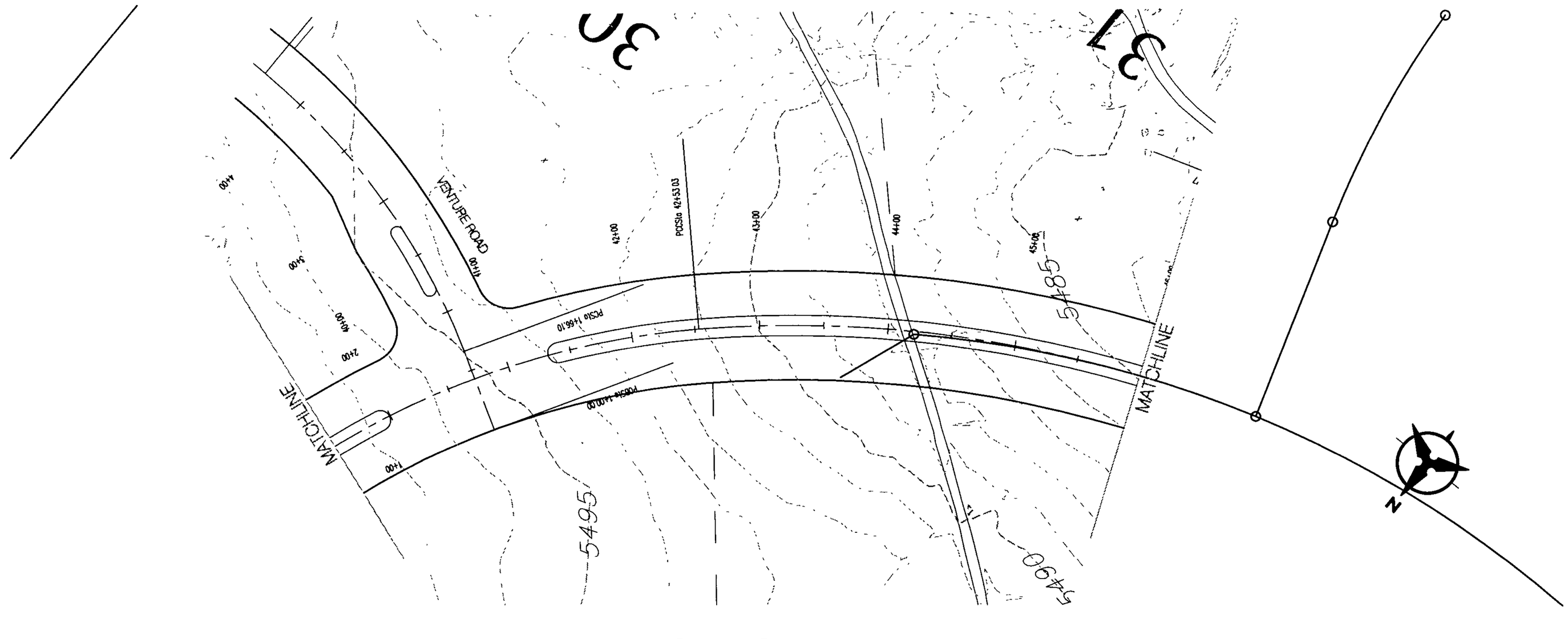
SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
INNOVATION PARKWAY-STA + TO STA +

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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City Project No: Coa #
Zone Map No: L-21-Z, M-21-Z
Sheet: X Of #

BHI JOB NO. 01222
Date FEBUARY 2001

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Feb 08, 2001 - 2:28pm




PLOTTED NOT TO SCALE

## NOTES

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SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
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BENCH MARKS

AS-BUILT INFORMATION

| | DATE |
|---|---|
| CONTRACTOR | |
| WERE STAKES SET | DATE |
| INSPECTOR'S NOTES | DATE |
| FIELD INFORMATION BY | DATE |
| DRAWING CORRECTED BY | DATE |

MICRO-FILM INFORMATION

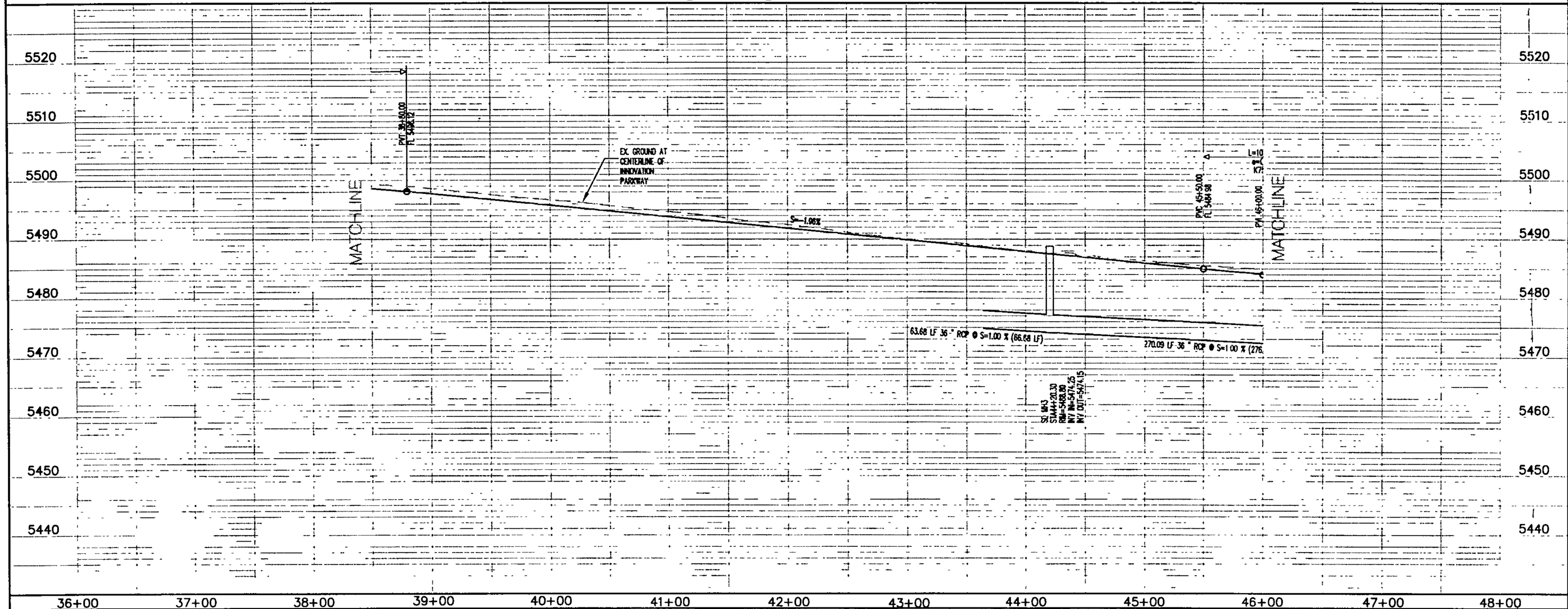
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ENGINEER'S SEAL

| No. | Date | By | REMARKS |
|---|---|---|---|
| | | | REVISIONS |
| | | | DESIGN |

Designed By X DATE: XX/XX/XX
Drawn By: X DATE: XX/XX/XX
Checked By: X DATE: XX/XX/XX

## INNOVATION PARKWAY




SCALE: 1" =50' (HORIZ.)
1" =10' (VERT)

## KEYED NOTES

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[2] INSTALL WHEELCHAIR RAMP AS PER STD. DWG. 2441, CASE II WITH ALTERNATE SECTION AA
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PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
INNOVATION PARKWAY STA + TO STA +

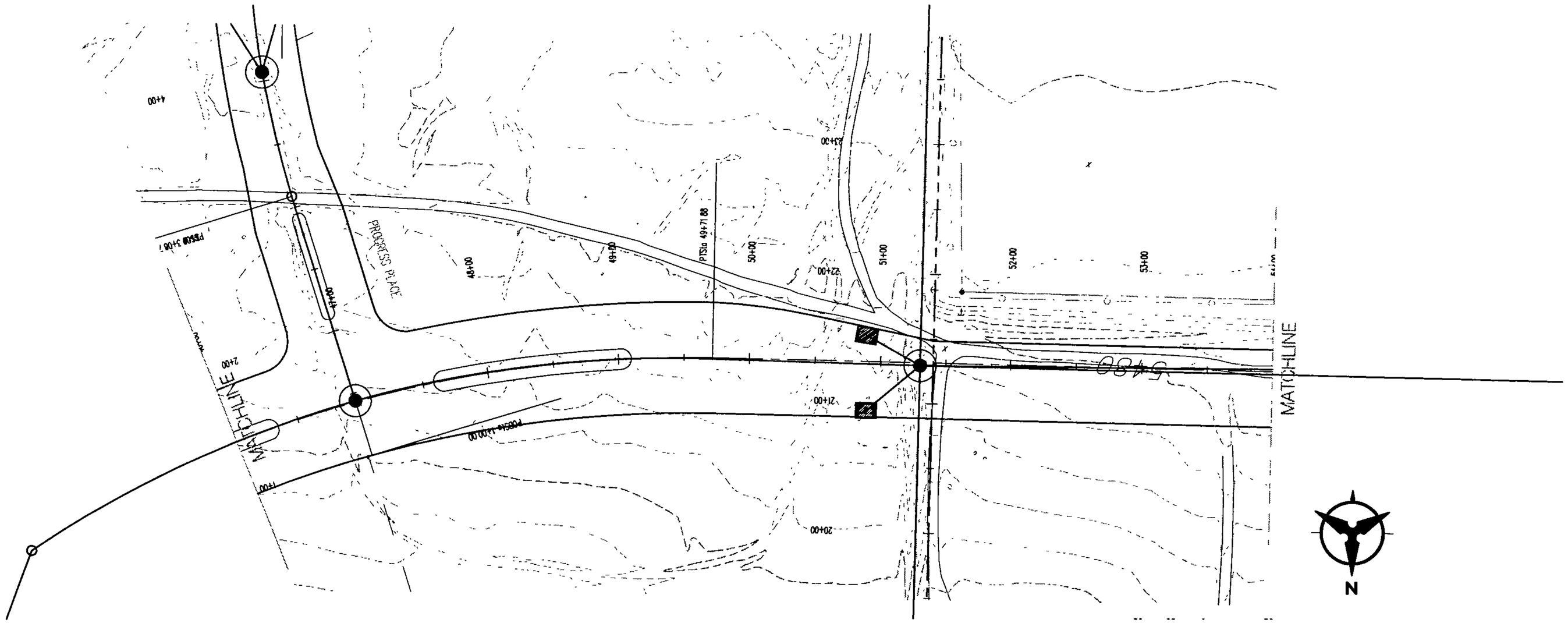
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr | Mo./Day/Yr |
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City Project No. Coa #
Zone Map No L-21-Z, M-21-Z
Sheet X Of #

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BHI JOB NO. 01222

Date: FEBUARY 2001

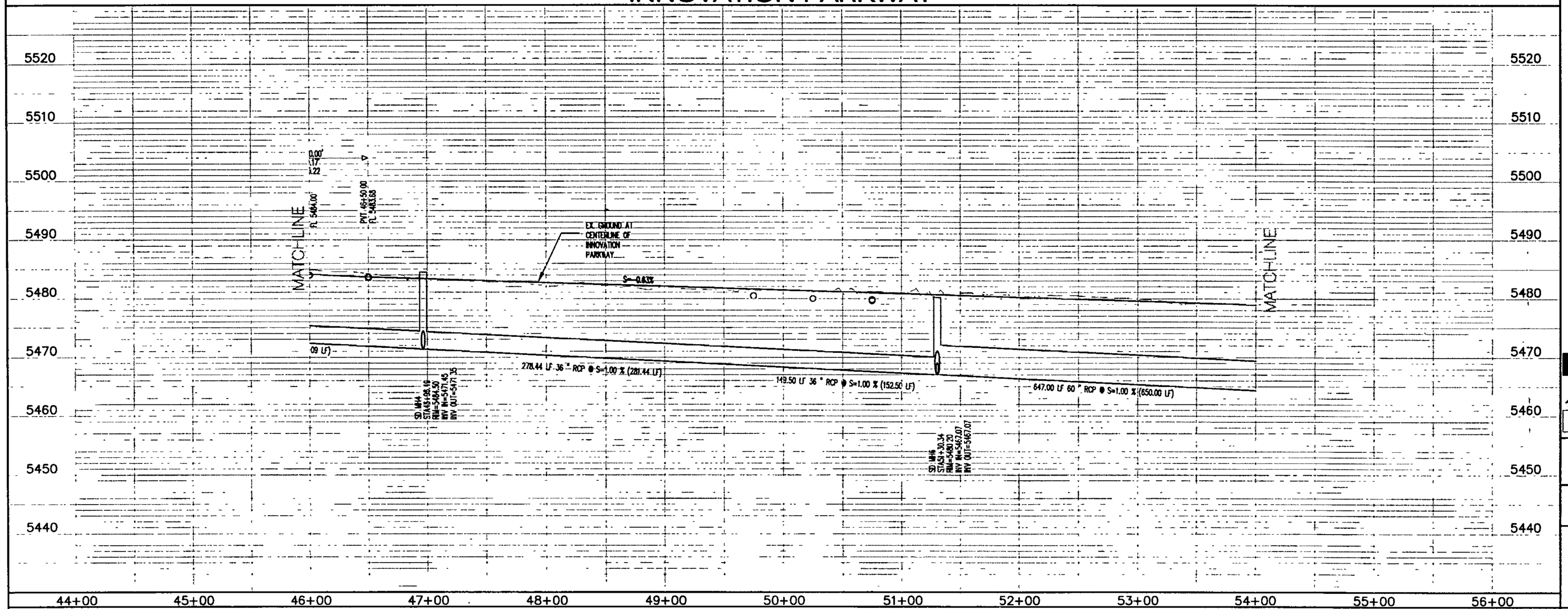



PLOTTED NOT TO SCALE

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## INNOVATION PARKWAY




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AS-BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTOR'S ACCEPTANCE BY — DATE
FIELD INFORMATION BY — DATE
DRAWINGS CONNECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|

ENGINEER'S SEAL

| No. | Date | By | REMARKS |
|---|---|---|---|
| | | | REVISIONS |
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| | | | DATE: XX/XX/XX |
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Designed By: X
Drawn By: X
Checked By: X

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**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
INNOVATION PARKWAY STA + TO STA +

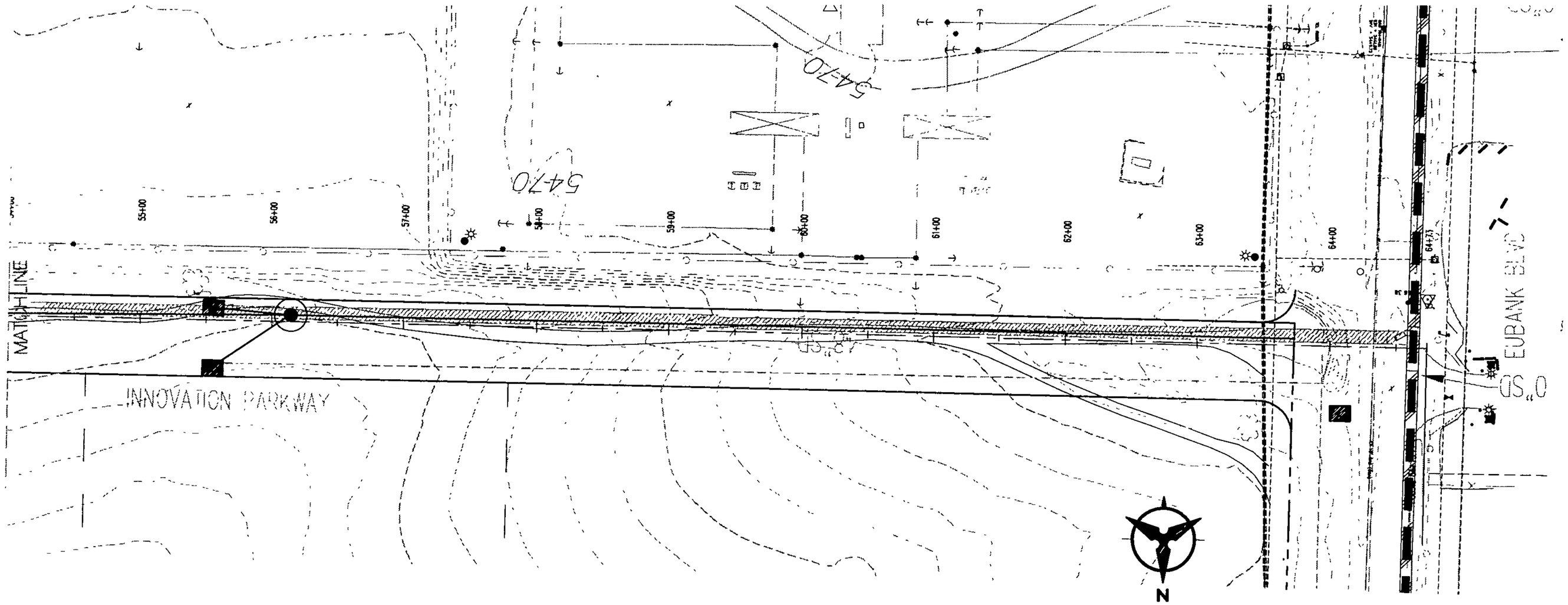
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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City Project No: Coa #
Zone Map No.: L-21-Z, M-21-Z
Sheet: X Of #

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BHI JOB NO. 01222

Date: FEBUARY 2001

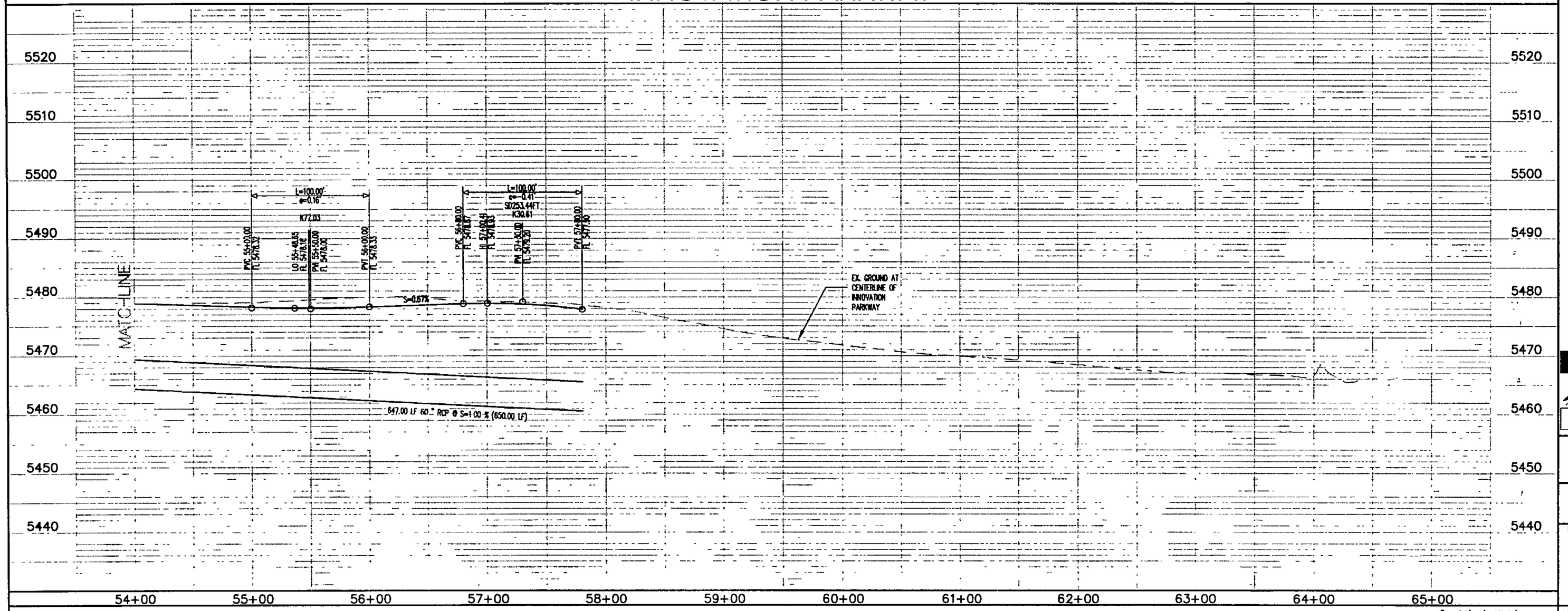



PLOTTED NOT TO SCALE

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# INNOVATION PARKWAY




SCALE. 1" =50' (HORIZ.)
1" =10' (VERT.)

## KEYED NOTES

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4. MEDIAN CURB & GUTTER AS PER STD. DWG. 2415
5. FUTURE 4' SIDEWALK
6. BUILD 4' SIDEWALK

AS-BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
AS-BUILTS BY — DATE
FIELD REVISION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
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ENGINEER'S SEAL

| No. | Date | By | REMARKS |
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| | | | REVISIONS |
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Designed By: X
Drawn By: X
Checked By: X


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**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
INNOVATION PARKWAY STA + TO STA +

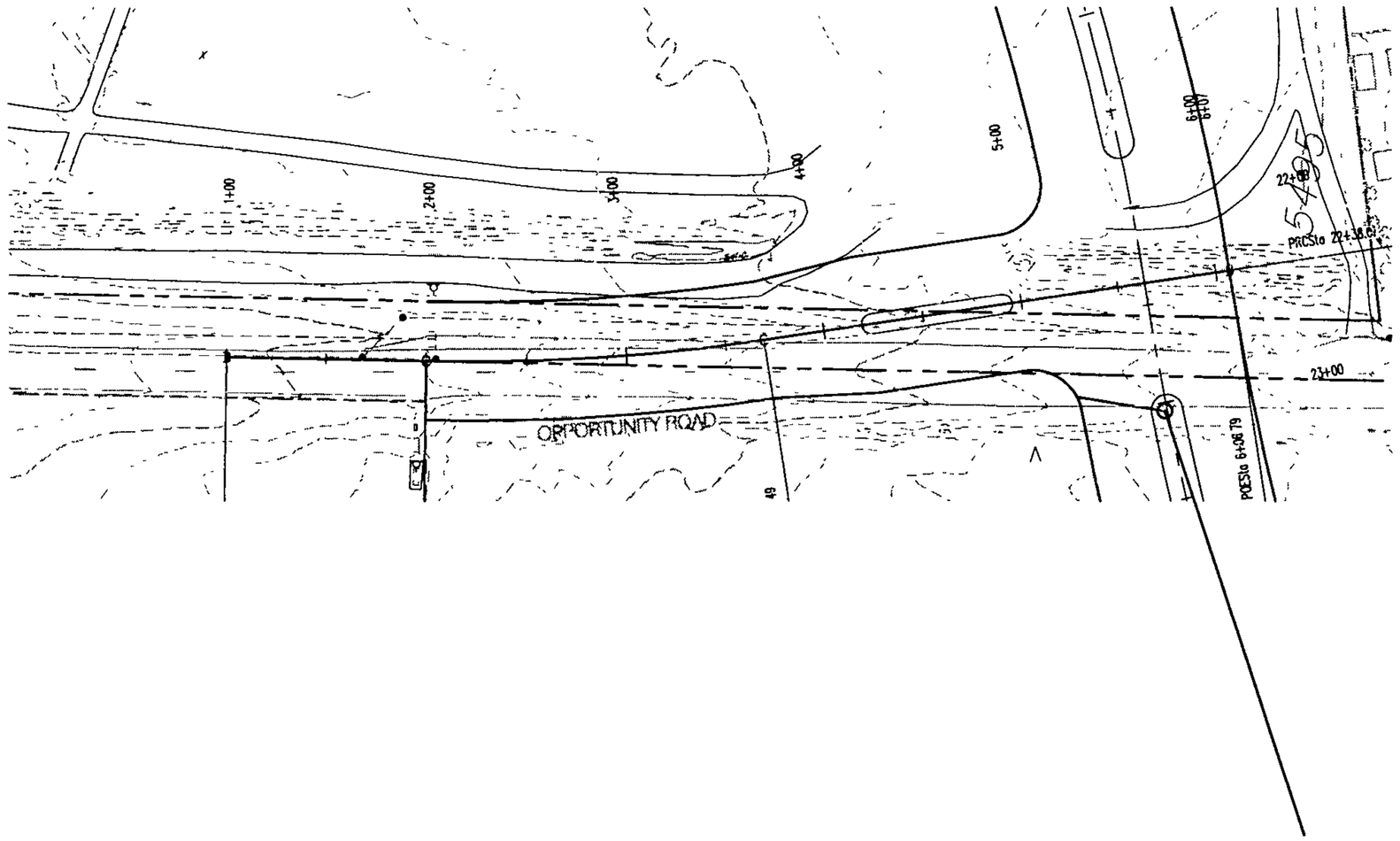
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

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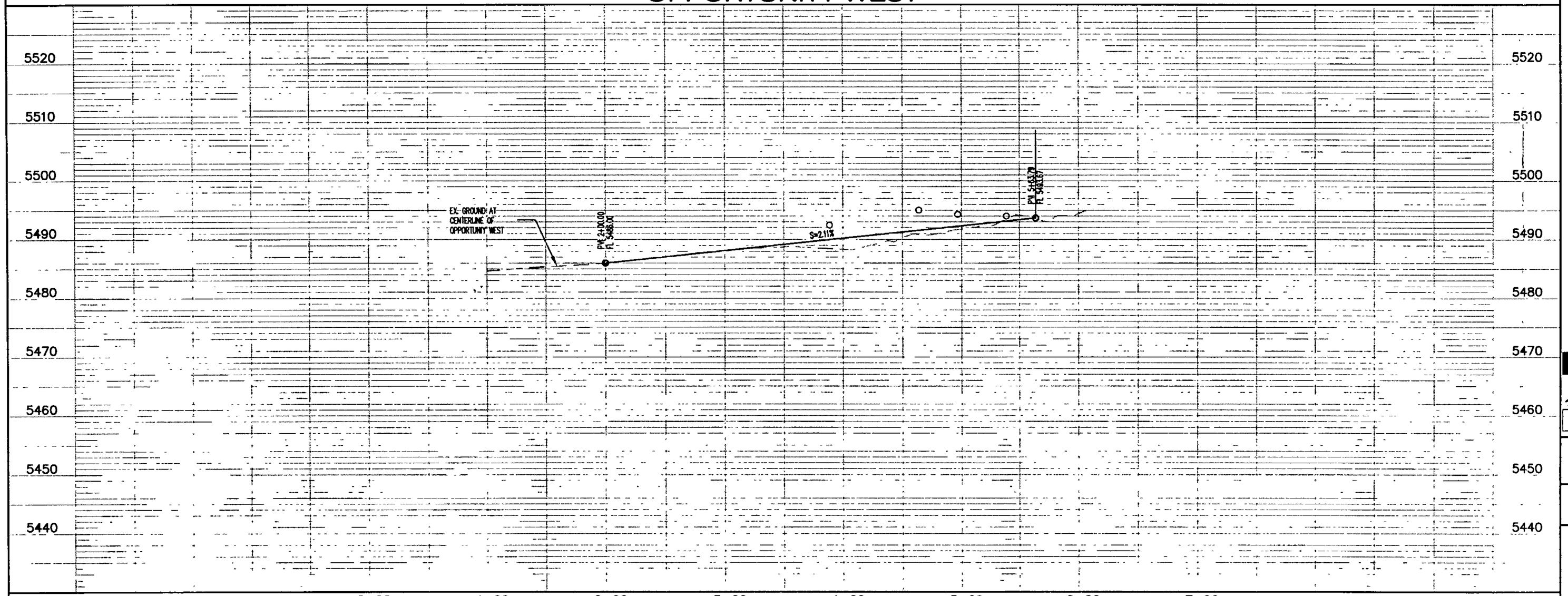
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# OPPORTUNITY WEST




SCALE 1" =50' (HORIZ)
1" =10' (VERT)

PLOTTED NOT TO SCALE

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AS-BUILT INFORMATION

| | DATE |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | |
| INSPECTION BY | |
| FIELD VERIFICATION BY | |
| SUBMITTED BY | |
| CORRECTED BY | |

MICRO-FILM INFORMATION

RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
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ENGINEER'S SEAL

| No. | Date | By | REMARKS |
|---|---|---|---|
| | | | REVISIONS |
| | | | DESIGN |

Designed By: X DATE: XX/XX/XX
Drawn By: X DATE: XX/XX/XX
Checked By: X DATE: XX/XX/XX

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**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
OPPORTUNITY WEST STA + TO STA +

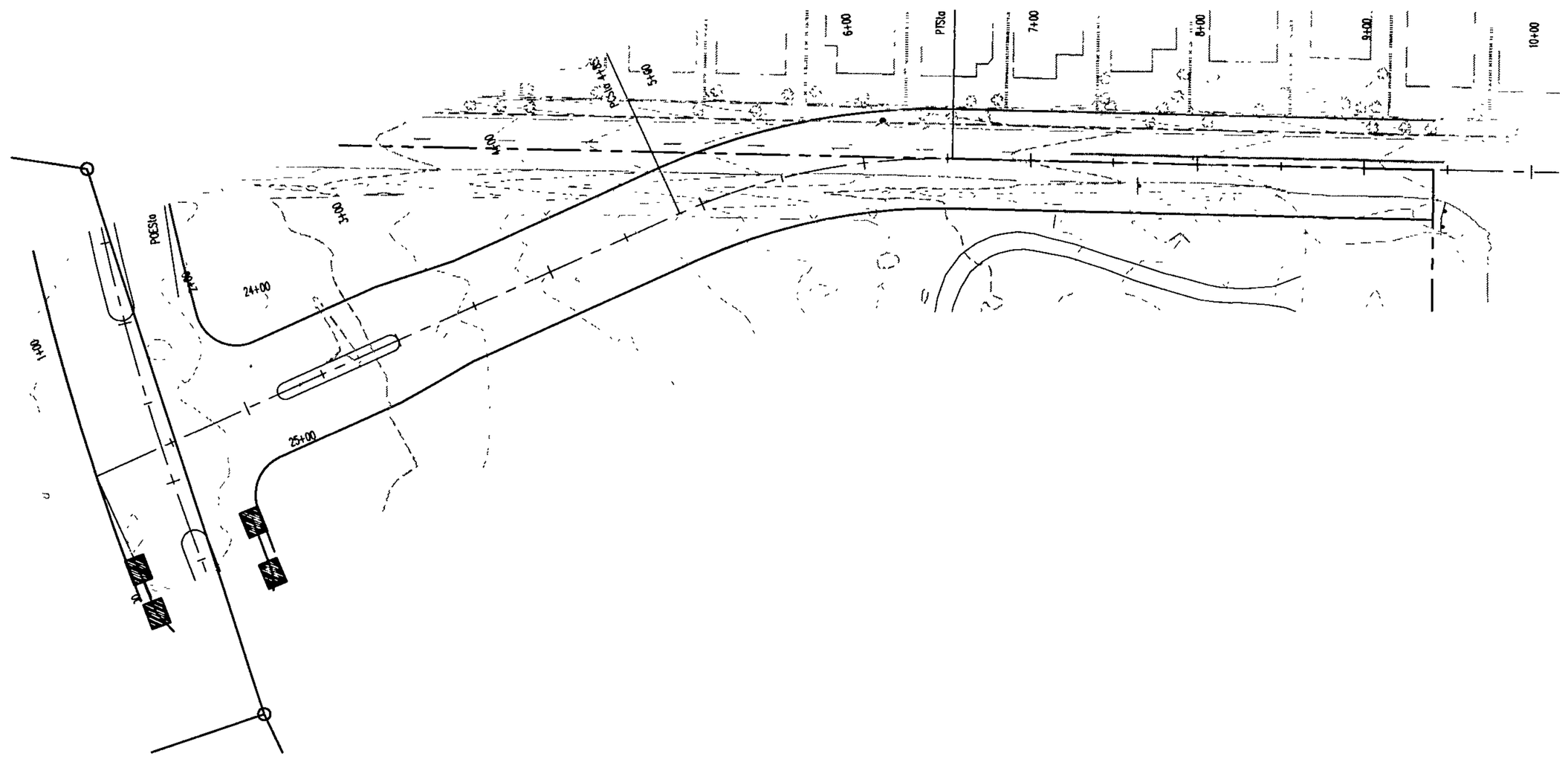
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

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Feb 08, 2001 - 2:33pm

BHI JOB NO. 01222

Date: FEBUARY 2001







PLOTTED NOT TO SCALE

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CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTED BY — DATE
ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION

RECORDED BY — DATE
NO

BENCH MARKS

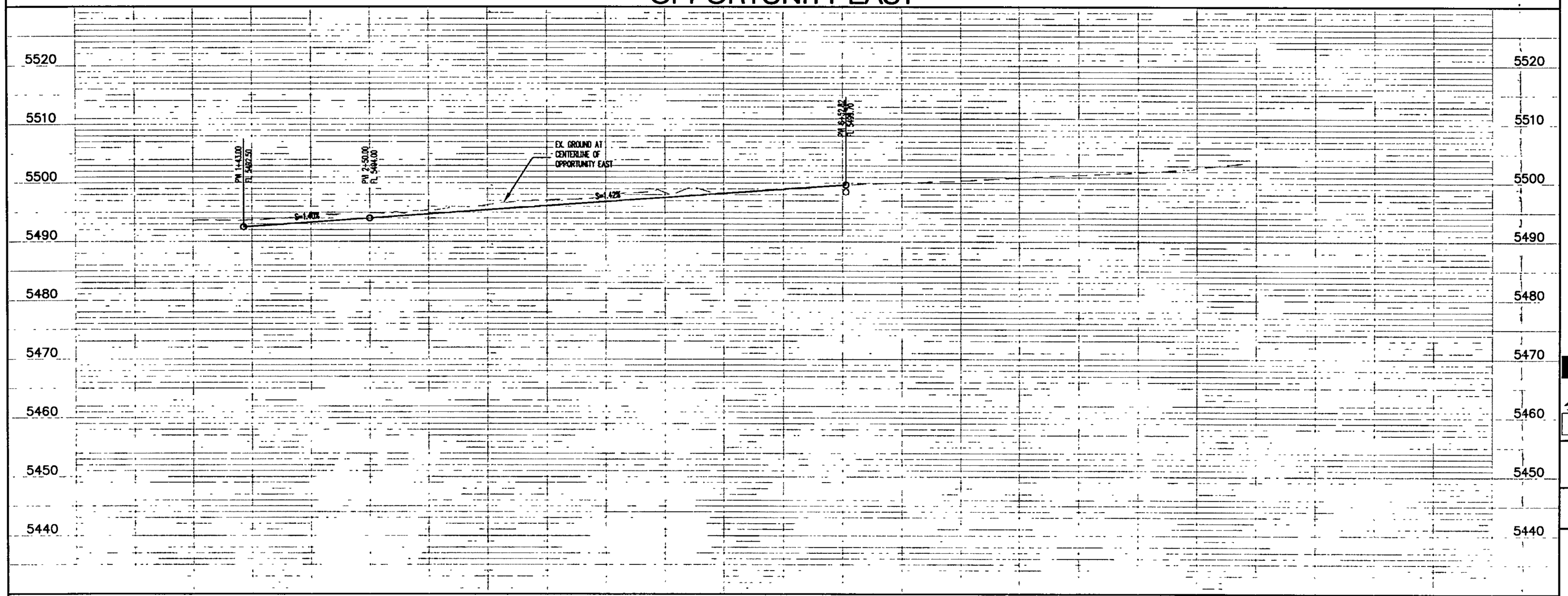
SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
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ENGINEER'S SEAL

## OPPORTUNITY EAST




SCALE: 1" =50' (HORIZ.)
1" =10' (VERT)

## KEYED NOTES

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REMARKS
REVISIONS
DESIGN

| No. | Date | By |
|---|---|---|

DATE: XX/XX/XX — Designed By: X
DATE: XX/XX/XX — Drawn By: X
DATE: XX/XX/XX — Checked By: X

Bohannan▲Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

# SANDIA SCIENCE AND TECHNOLOGY PARK

PAVING PLAN AND PROFILE
OPPORTUNITY EAST - STA + TO STA +

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

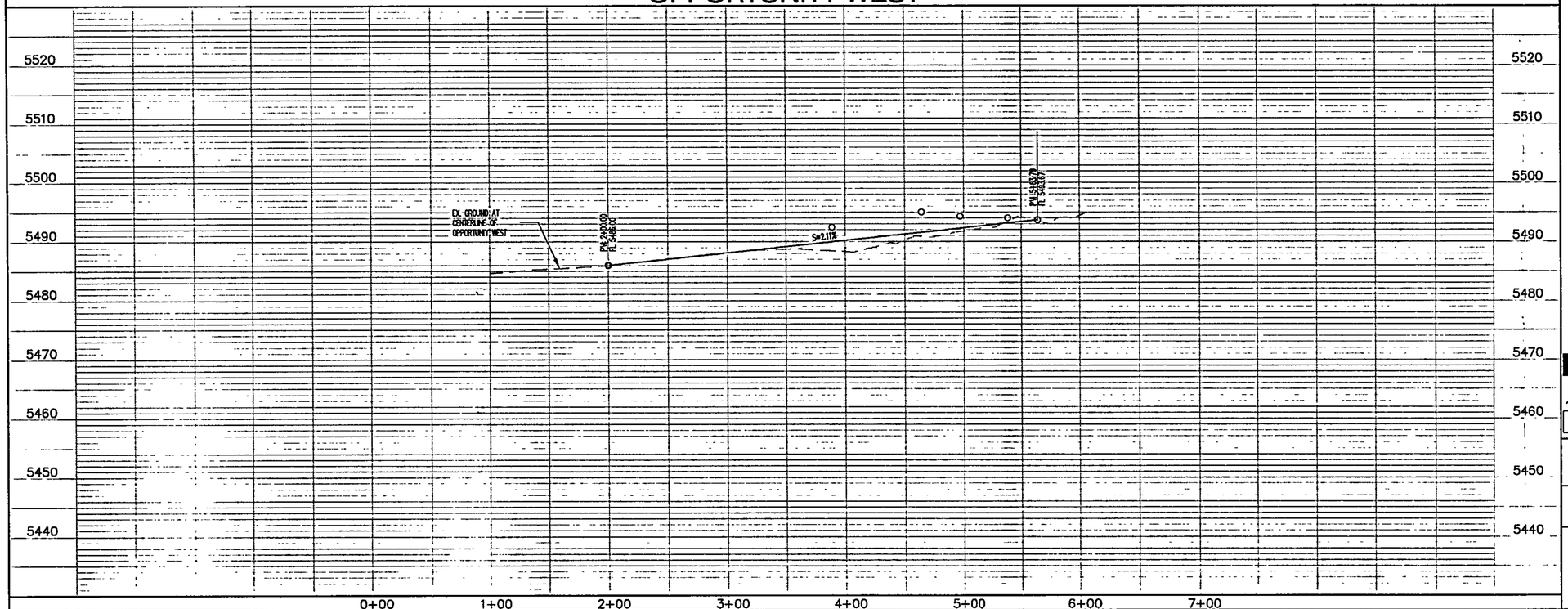
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Feb 08, 2001 - 2:34pm

BHI JOB NO. 01222

Date: FEBUARY 2001




# OPPORTUNITY WEST




SCALE: 1" =50' (HORIZ.)
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PLOTTED NOT TO SCALE

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## KEYED NOTES

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[2] INSTALL WHEELCHAIR RAMP AS PER STD. DWG. 2441, CASE II WITH ALTERNATE SECTION AA
[3] STD. CURB & GUTTER AS PER STD. DWG. 2415
[4] MEDIAN CURB & GUTTER AS PER STD. DWG. 2415
[5] FUTURE 4' SIDEWALK
[6] BUILD 4' SIDEWALK

AS-BUILT INFORMATION
CONTRACTOR DATE
WORK STAKED BY DATE
CONSTRUCTION ACCEPTANCE BY DATE
FIELD INSPECTION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
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ENGINEER'S SEAL

| No. | Date | By | REMARKS |
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| | | | REVISIONS |
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| | | | DATE: XX/XX/XX |
| | | | DATE: XX/XX/XX |
| | | | DATE: XX/XX/XX |

Designed By: X
Drawn By: X
Checked By: X

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PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

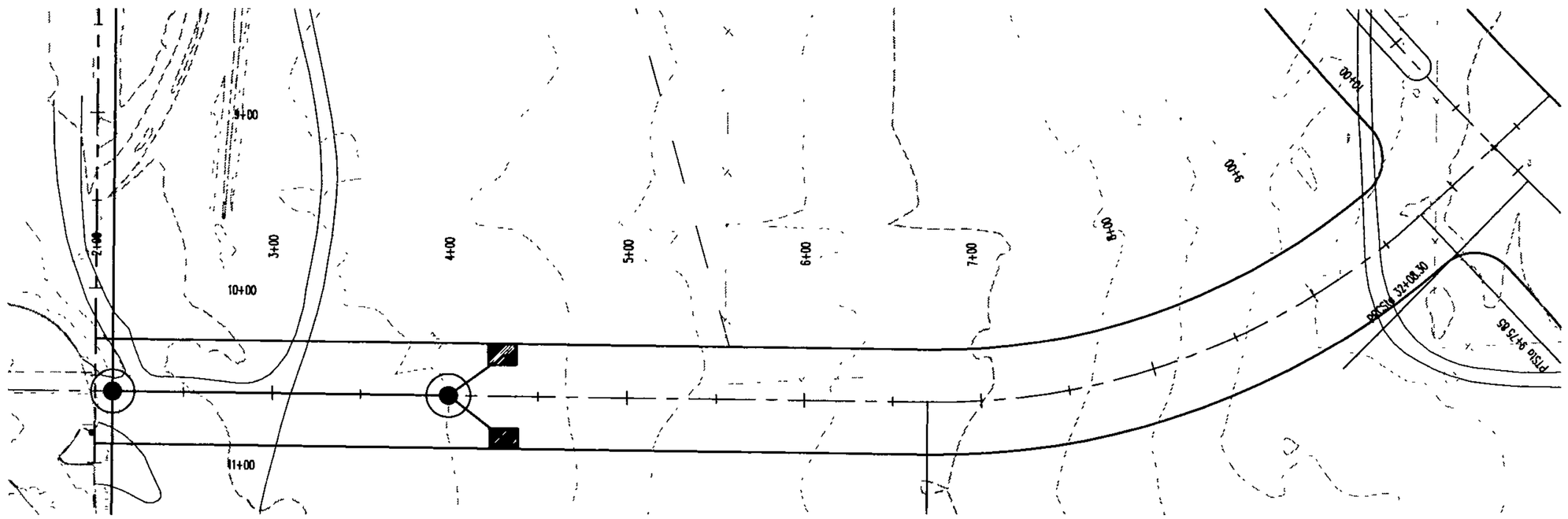
SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
OPPORTUNITY WEST STA + TO STA +

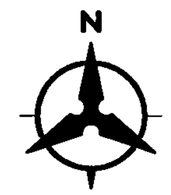
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

BHI JOB NO. 01222
Date: FEBUARY 2001

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Feb 08, 2001 - 2:33pm




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AS-BUILT INFORMATION

| | DATE |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | DATE |
| INSPECTION BY | DATE |
| FIELD VERIFICATION BY | DATE |
| DRAWINGS BY | DATE |

MICRO-FILM INFORMATION

| | DATE |
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| RECORDED BY | |
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BENCH MARKS

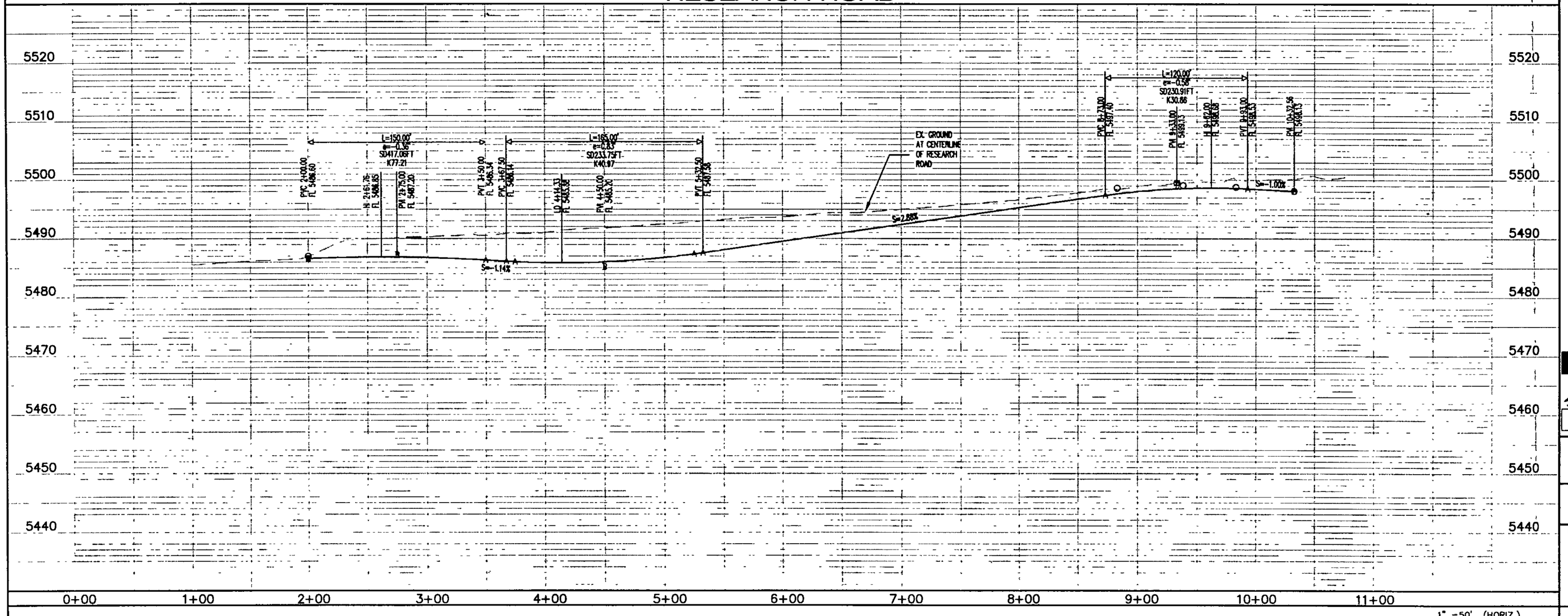
SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
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ENGINEER'S SEAL

## RESEARCH ROAD




SCALE 1" =50' (HORIZ.)
1" =10' (VERT)

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4. MEDIAN CURB & GUTTER AS PER STD DWG. 2415
5. FUTURE 4' SIDEWALK
6. BUILD 4' SIDEWALK

| No. | Date | By | REMARKS |
|---|---|---|---|
| | | | REVISIONS |
| | | | DESIGN |
| | | | Designed By: X — DATE: XX/XX/XX |
| | | | Drawn By: X — DATE: XX/XX/XX |
| | | | Checked By: X — DATE: XX/XX/XX |


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**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

# SANDIA SCIENCE AND TECHNOLOGY PARK

PAVING PLAN AND PROFILE

RESEARCH ROAD - -STA + TO STA +

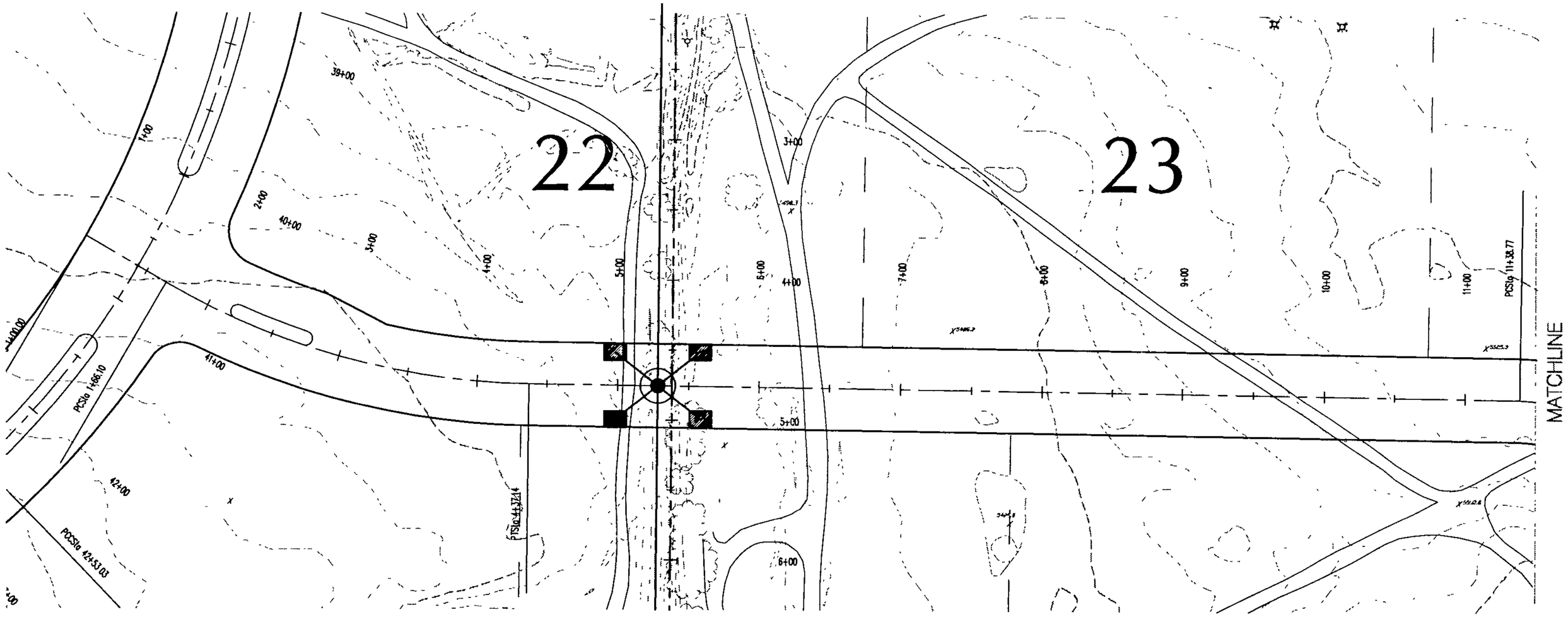
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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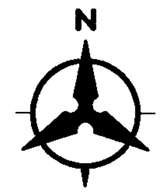
| City Project No. | Zone Map No | Sheet | Of |
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| Coa # | L-21-Z, M-21-Z | X | # |

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Feb 08, 2001 - 2:35pm

BHI JOB NO. 01222

Date: FEBUARY 2001




PLOTTED NOT TO SCALE

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AS-BUILT INFORMATION

| | DATE |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | DATE |
| ACCEPTANCE BY | DATE |
| FIELD VERIFICATION BY | DATE |
| DRAWINGS CORRECTED BY | DATE |

MICRO-FILM INFORMATION

RECORDED BY DATE

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BENCH MARKS

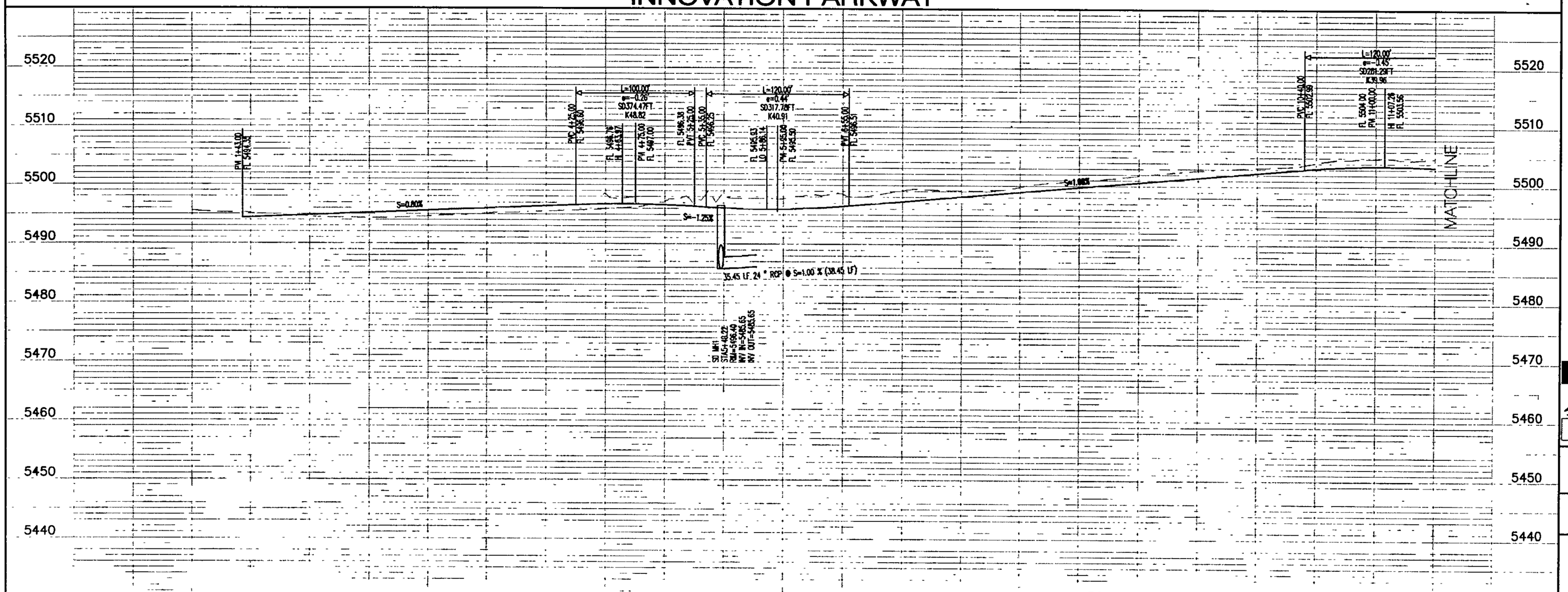
SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
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ENGINEER'S SEAL

## INNOVATION PARKWAY




SCALE- 1" =50' (HORIZ.)
1" =10' (VERT)

## KEYED NOTES

1. INSTALL CONCRETE VALLEY GUTTER AS PER STD. DWG. 2420
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6. BUILD 4' SIDEWALK

| No. | Date | By | REMARKS |
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| | | | REVISIONS |
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| | | | Designed By: X — DATE: XX/XX/XX |
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| | | | Checked By: X — DATE: XX/XX/XX |


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**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

# SANDIA SCIENCE AND TECHNOLOGY PARK
## PAVING PLAN AND PROFILE
## INNOVATION PARKWAY - STA + TO STA +

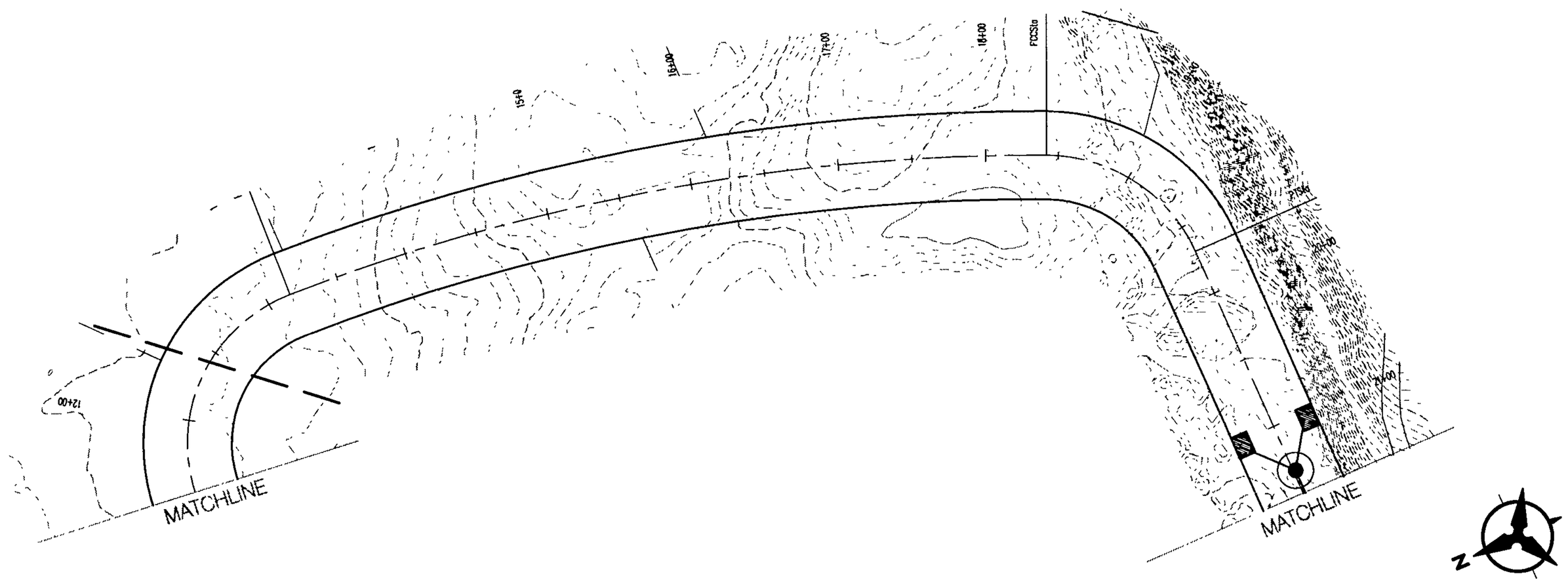
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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| City Project No. | Zone Map No. | Sheet | Of |
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| Coa # | L-21-Z, M-21-Z | X | # |

BHI JOB NO. 01222

Date FEBUARY 2001

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## NOTES

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AS-BUILT INFORMATION

| | DATE |
|---|---|
| CONTRACTOR | |
| WORK ALTERED BY | DATE |
| ACCEPTANCE BY | DATE |
| FIELD LOCATION BY | DATE |
| DRAWINGS CORRECTED BY | DATE |

MICRO-FILM INFORMATION

| | DATE |
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| RECORDED BY | |
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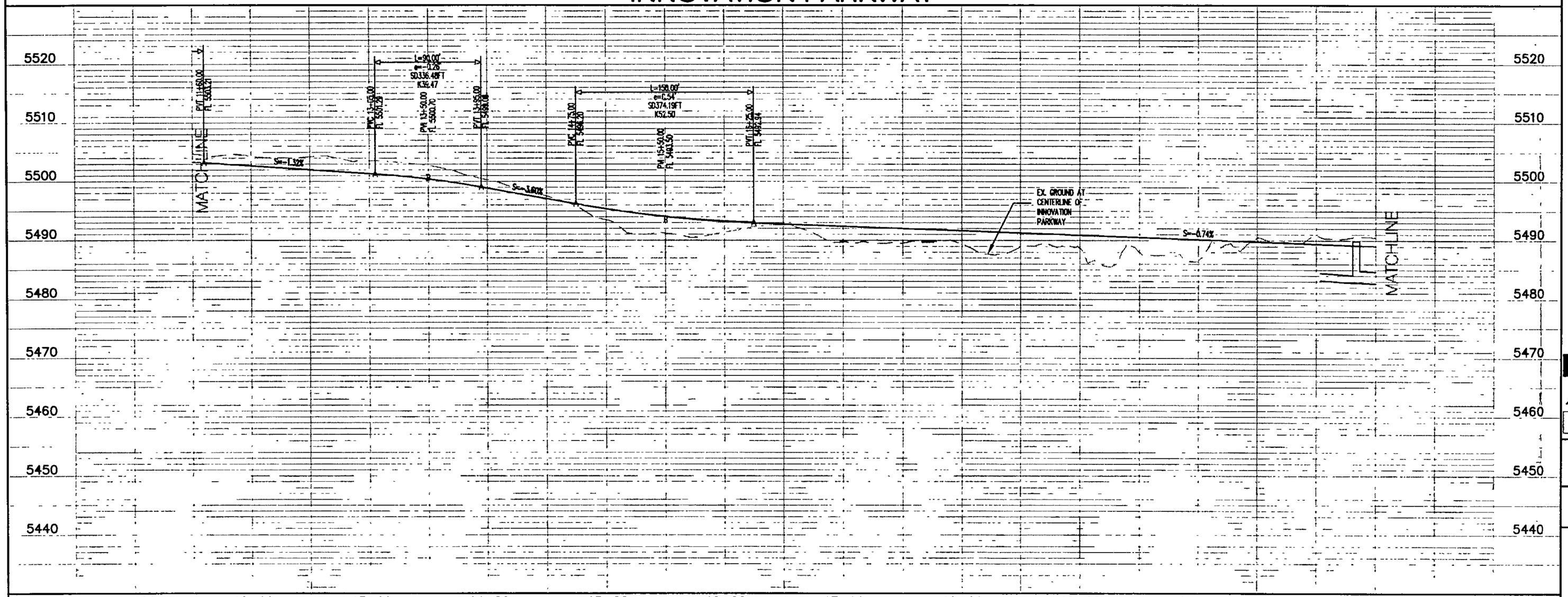
BENCH MARKS

SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
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# INNOVATION PARKWAY




SCALE 1" =50' (HORIZ)
1" =10' (VERT)

## KEYED NOTES

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5. FUTURE 4' SIDEWALK
6. BUILD 4' SIDEWALK

ENGINEER'S SEAL

| No. | Date | By | REMARKS |
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| | | | DATE: XX/XX/XX |
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Designed By: X
Drawn By: X
Checked By: X


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**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
INNOVATION PARKWAY - STA + TO STA +

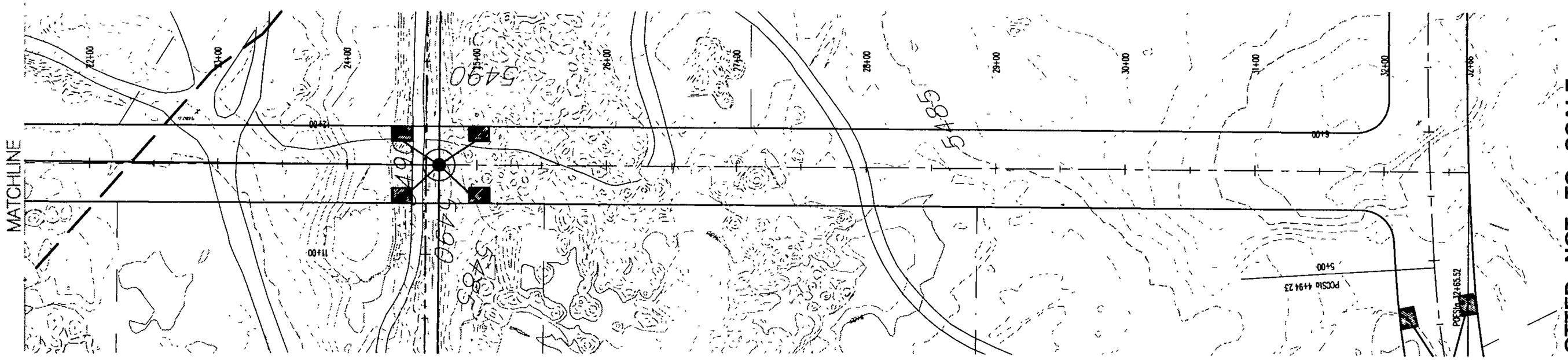
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| City Project No | Zone Map No. | Sheet | Of |
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| Coa # | L-21-Z, M-21-Z | X | # |

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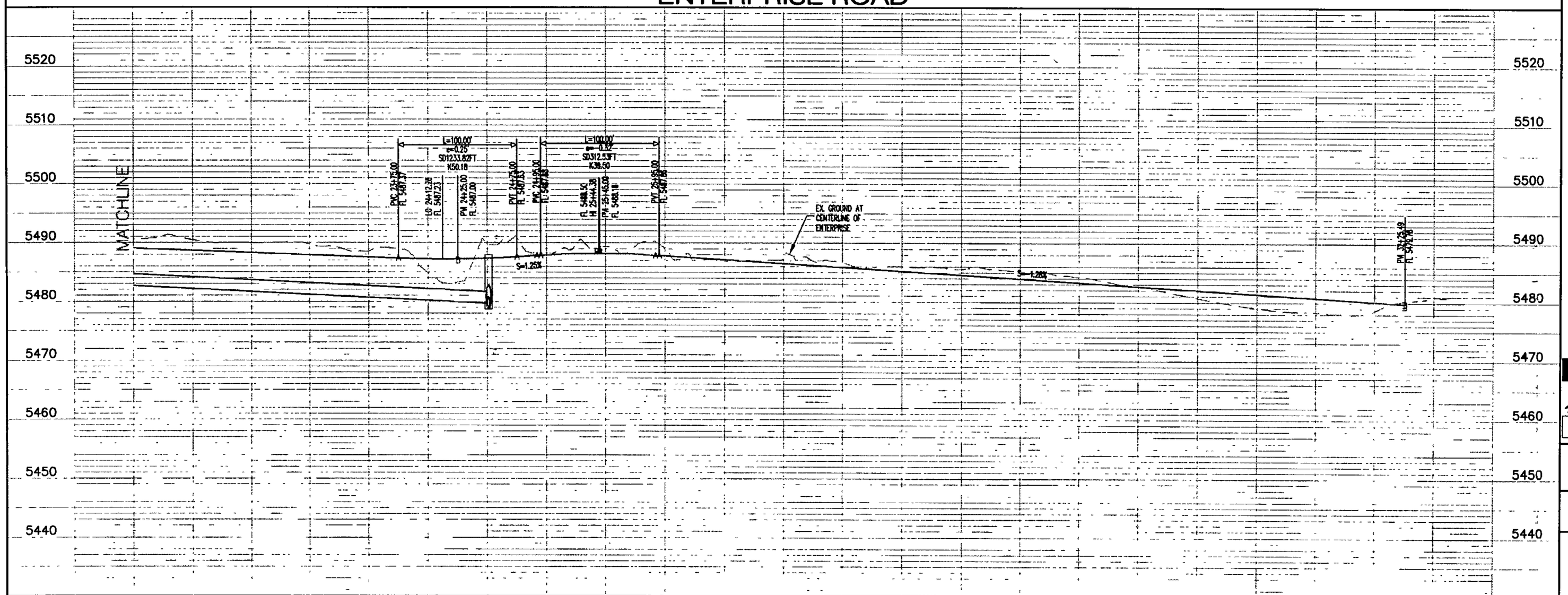

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## ENTERPRISE ROAD




SCALE: 1" =50' (HORIZ.)
1" =10' (VERT)

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AS-BUILT INFORMATION
CONTRACTOR — DATE
STAKED BY — DATE
INSPECTOR'S CERTIFICATE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWING CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES BY — DATE
NO.

ENGINEER'S SEAL

| No. | Date | By | REMARKS |
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| | | | REVISIONS |
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Designed By: X
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Checked By: X


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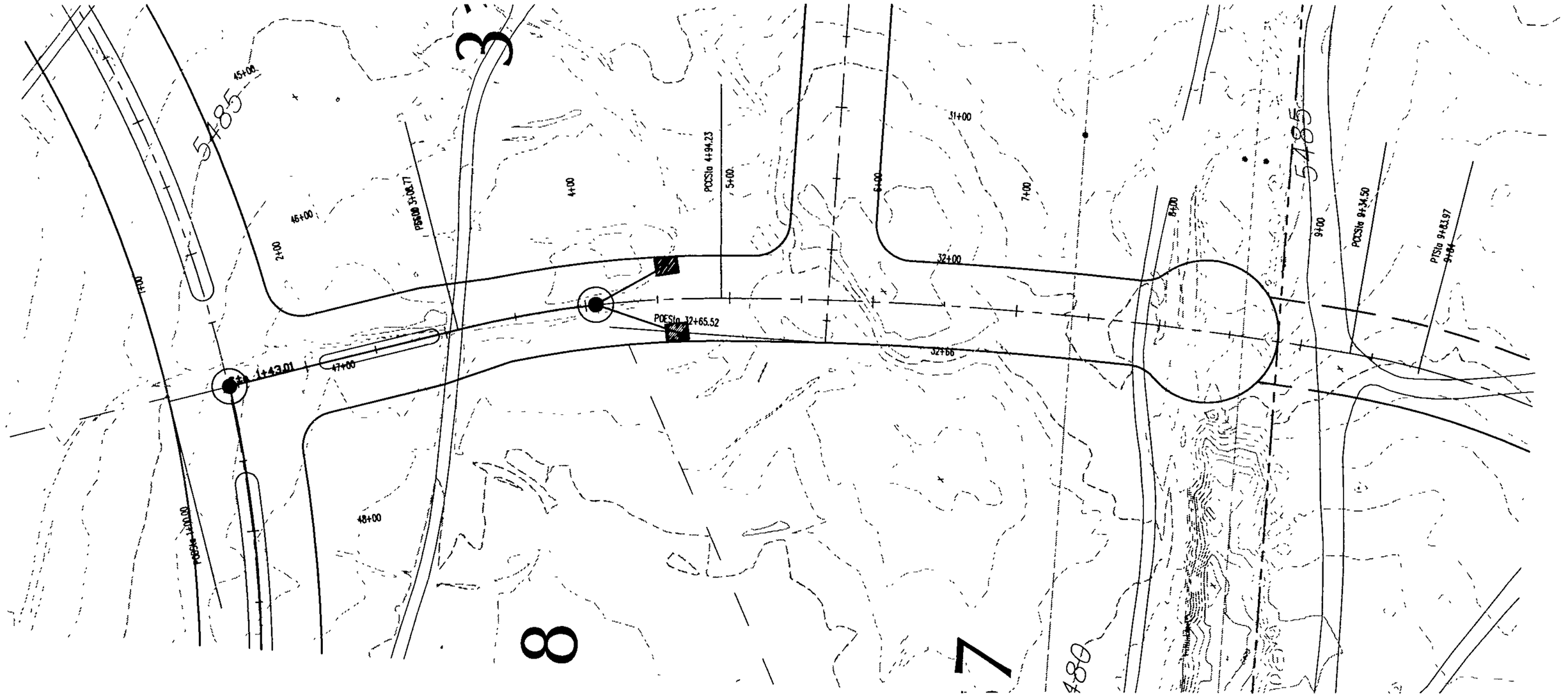
# SANDIA SCIENCE AND TECHNOLOGY PARK
## PAVING PLAN AND PROFILE
## ENTERPRISE ROAD - STA + TO STA +

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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City Project No: Coa #
Zone Map No: L-21-Z, M-21-Z
Sheet: X Of #

BHI JOB NO 01222
Date: FEBUARY 2001

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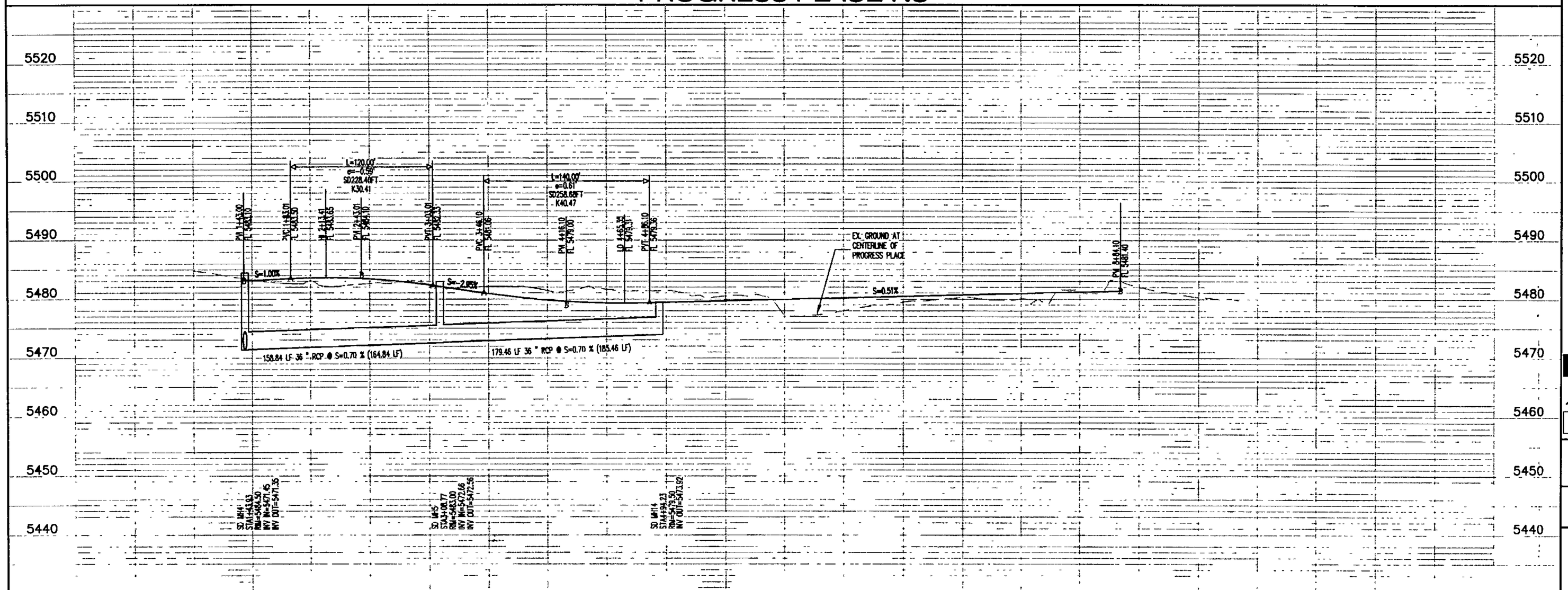

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## PROGRESS PLACE NS




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SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
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BENCH MARKS

AS-BUILT INFORMATION

CONTRACTOR DATE
STAKED BY DATE
INSPECTION BY DATE
FIELD INFORMATION BY DATE
DRAWING CORRECTED BY DATE

MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

ENGINEER'S SEAL

| No. | Date | By | REMARKS / REVISIONS / DESIGN |
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Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS


**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

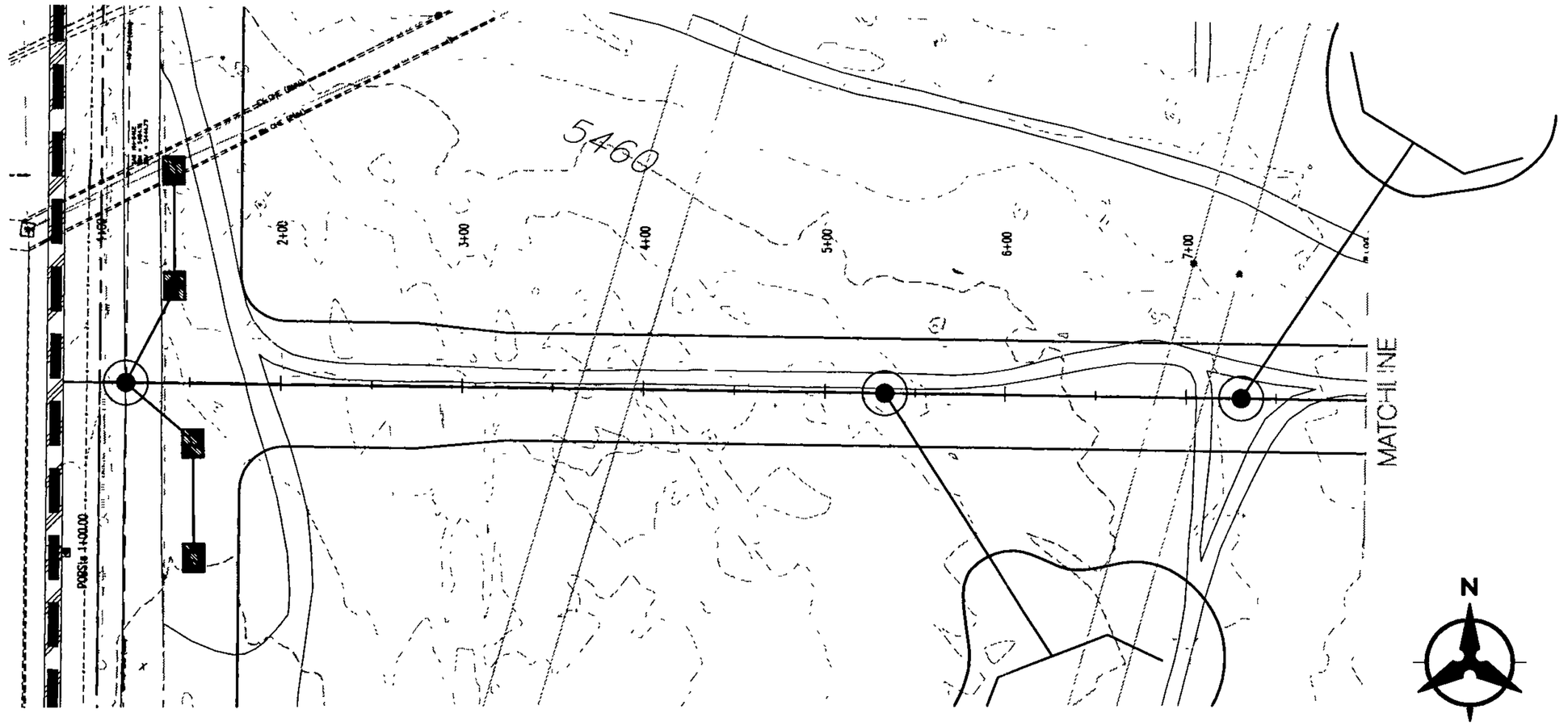
# SANDIA SCIENCE AND TECHNOLOGY PARK
## PAVING PLAN AND PROFILE
## PROGRESS PLACE - STA + TO STA +

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr | Mo./Day/Yr |
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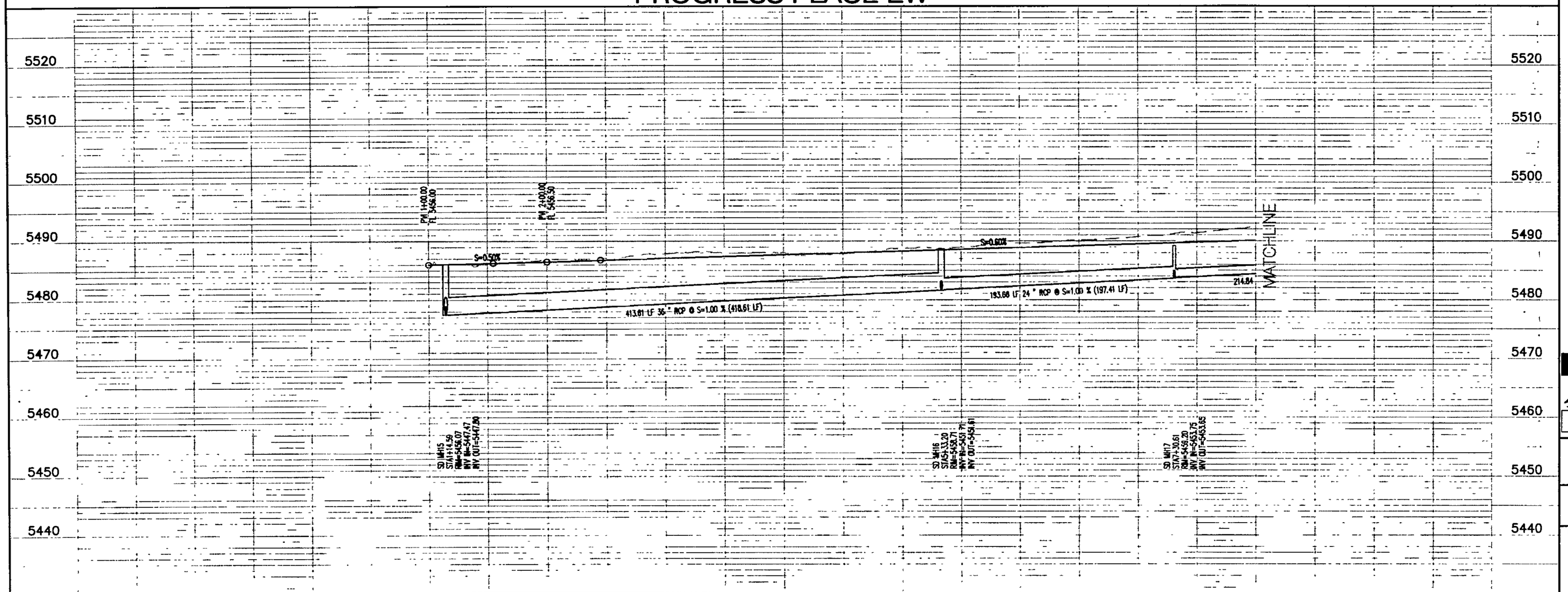
City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

BHI JOB NO. 01222
Date: FEBUARY 2001

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## PROGRESS PLACE EW




SCALE: 1" =50' (HORIZ)
1" =10' (VERT.)

PLOTTED NOT TO SCALE

### NOTES

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[2] INSTALL WHEELCHAIR RAMP AS PER STD. DWG. 2441, CASE II WITH ALTERNATE SECTION AA
[3] STD. CURB & GUTTER AS PER STD. DWG. 2415
[4] MEDIAN CURB & GUTTER AS PER STD. DWG. 2415
[5] FUTURE 4' SIDEWALK
[6] BUILD 4' SIDEWALK

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
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BENCH MARKS

AS-BUILT INFORMATION
DATE
CONTRACTOR
WORK STARTED ON — DATE
WORK COMPLETED — DATE
ACCEPTANCE BY — DATE
FIELD INSPECTION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION
DATE
RECORDED BY
NO.

ENGINEER'S SEAL

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| | | | DATE: XX/XX/XX |

Designed By: X
Drawn By: X
Checked By: X


Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS


**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

# SANDIA SCIENCE AND TECHNOLOGY PARK

PAVING PLAN AND PROFILE
PROGRESS PLACE - STA + TO STA +

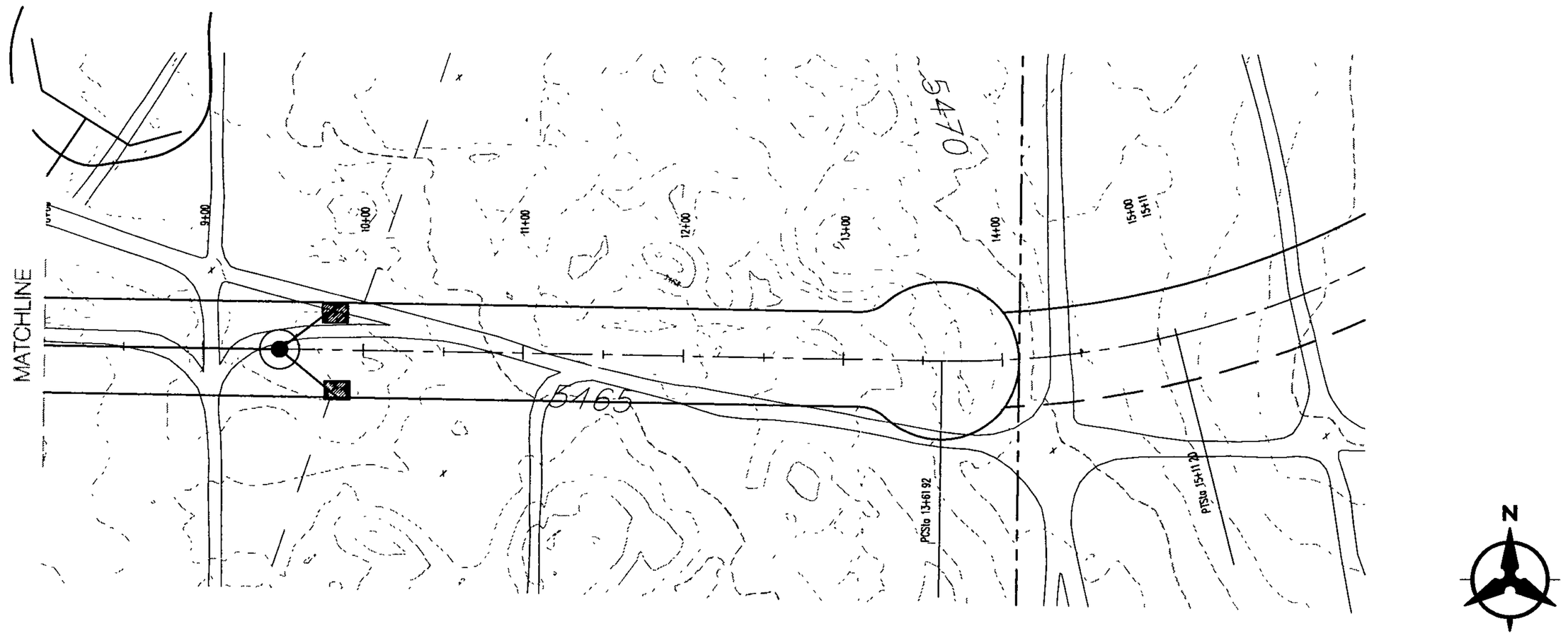
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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City Project No. Coa #
Zone Map No. L-21-Z, M-21-Z
Sheet X Of #

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BHI JOB NO. 01222

Date: FEBUARY 2001







PLOTTED NOT TO SCALE

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SURVEY INFORMATION
FIELD NOTES

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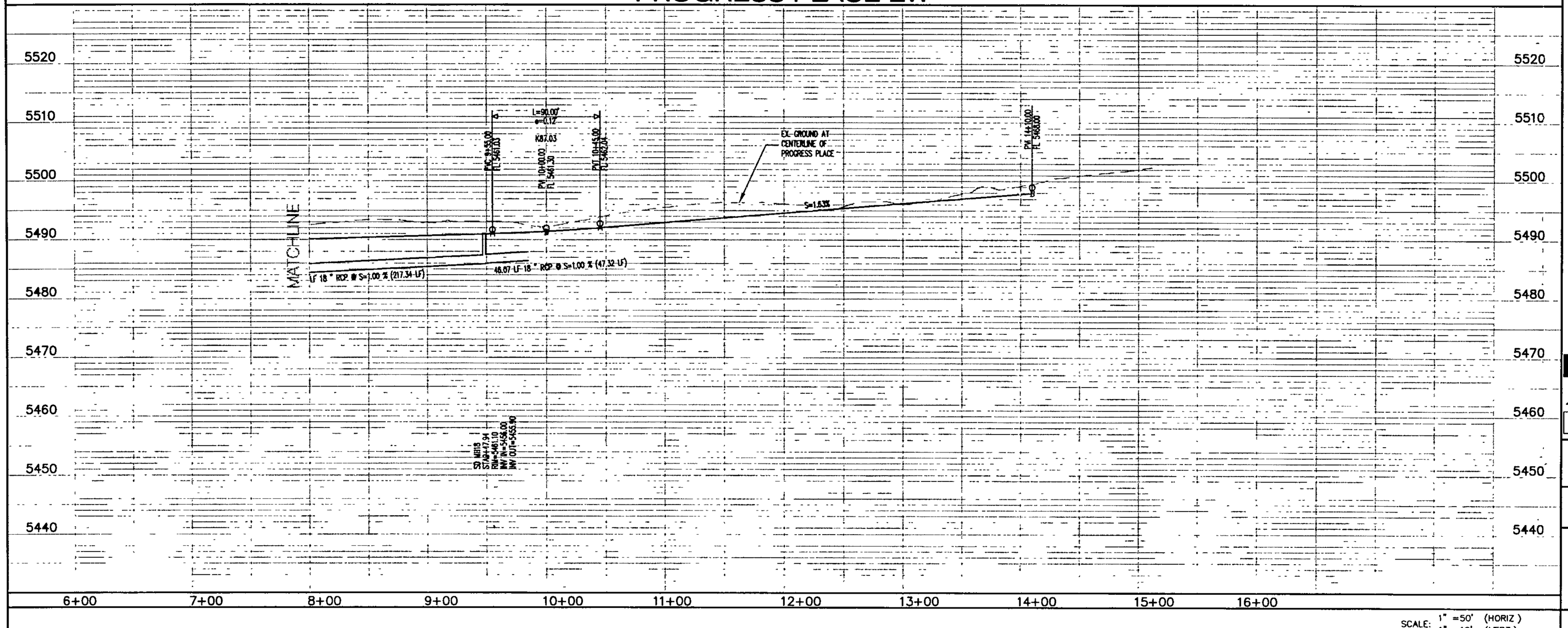
BENCH MARKS

AS-BUILT INFORMATION

CONTRACTOR — DATE
WORK STAKED BY — DATE
ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO

ENGINEER'S SEAL

# PROGRESS PLACE EW




## KEYED NOTES

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6. BUILD 4' SIDEWALK

| No. | Date | REMARKS | By |
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| | | DESIGN | |

Designed By: X — DATE: XX/XX/XX
Drawn By: X — DATE: XX/XX/XX
Checked By: X — DATE: XX/XX/XX

Bohannan▲Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETISTS SURVEYORS SOFTWARE DEVELOPERS

**CITY OF ALBUQUERQUE**
**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
PAVING PLAN AND PROFILE
PROGRESS PLACE - STA + TO STA +

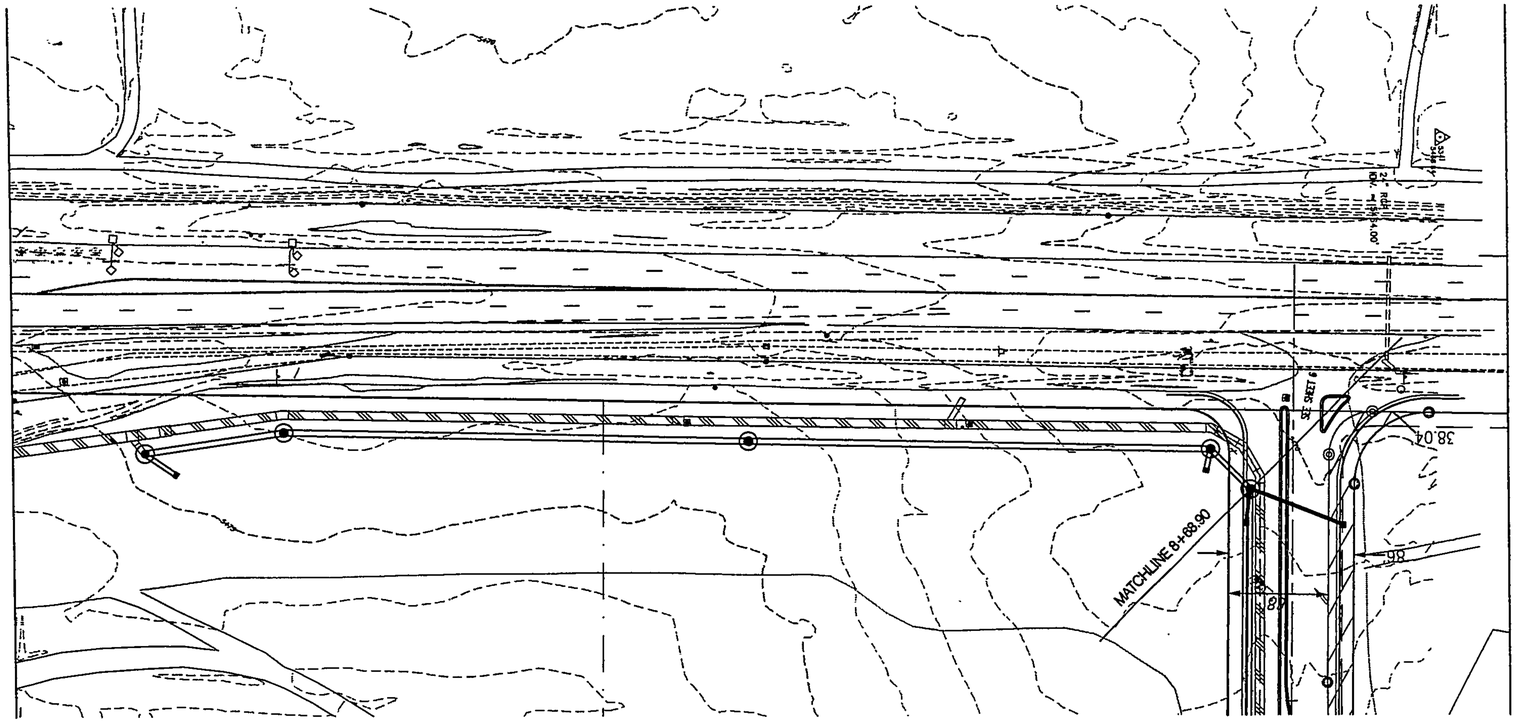
| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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SCALE: 1" =50' (HORIZ.)
1" =10' (VERT.)

City Project No: Coa #
Zone Map No.: L-21-Z, M-21-Z
Sheet: X Of #

BHI JOB NO. 01222
Date: FEBUARY 2001

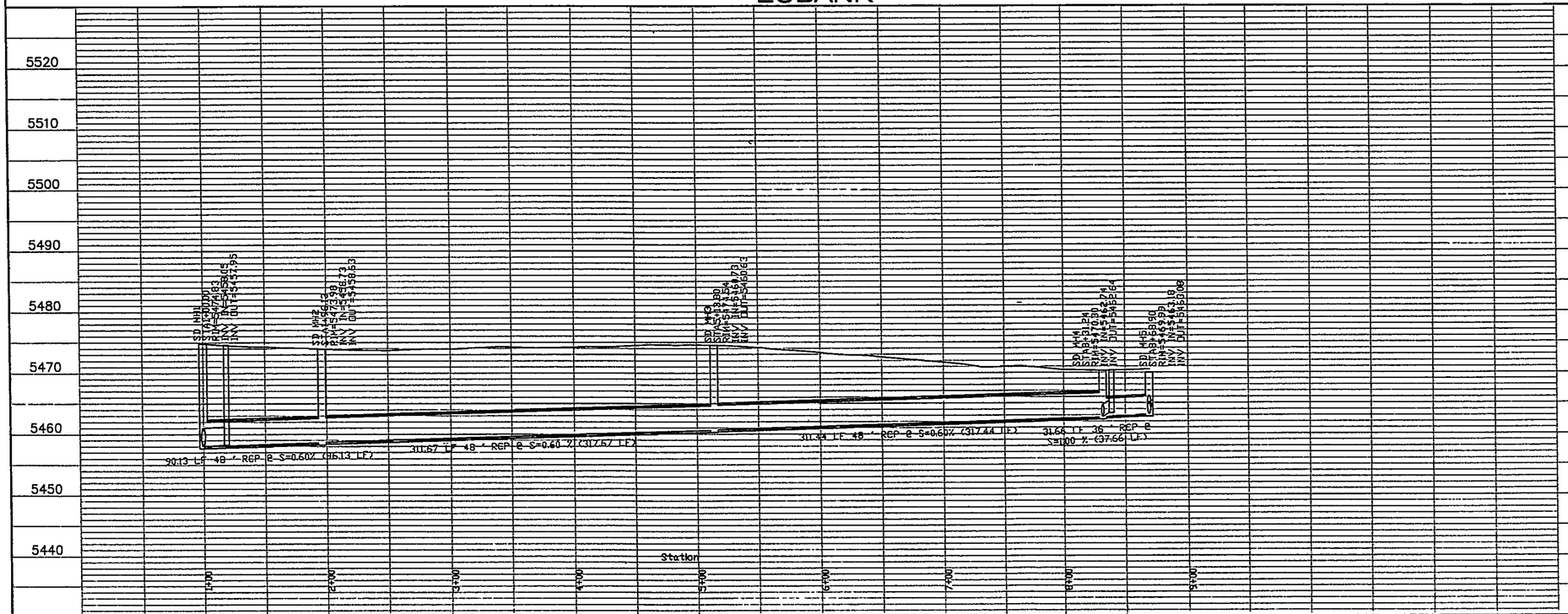
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## EUBANK




SCALE: 1" =50' (HORIZ.)
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AS-BUILT INFORMATION

| | DATE |
|---|---|
| CONTRACTOR | |
| STORM DRAIN BUILT BY | |
| INSPECTOR'S ACCEPTANCE BY | |
| CERTIFICATION BY | |
| DRAWINGS CORRECTED BY | |

MICRO-FILM INFORMATION

| | DATE |
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| NO. | |

BENCH MARKS

SURVEY INFORMATION

FIELD NOTES

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ENGINEER'S SEAL

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Designed By: X
Drawn By: X
Checked By: X

Bohannan Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

**CITY OF ALBUQUERQUE**
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**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
STORM DRAIN PLAN AND PROFILE
EUBANK

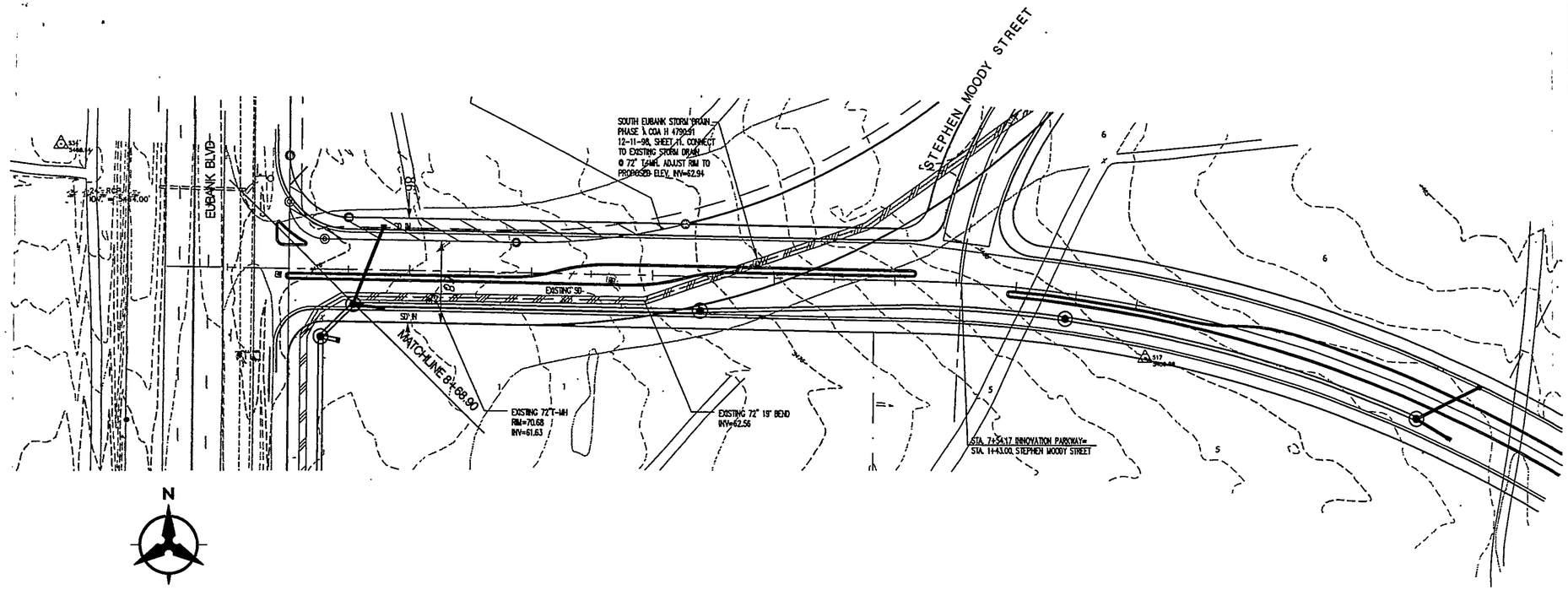
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| City Project No. | Zone Map No. | Sheet | Of |
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| Coa # | L-21-Z, M-21-Z | | # |

BHI JOB NO. 01222

Date: FEBUARY 2001

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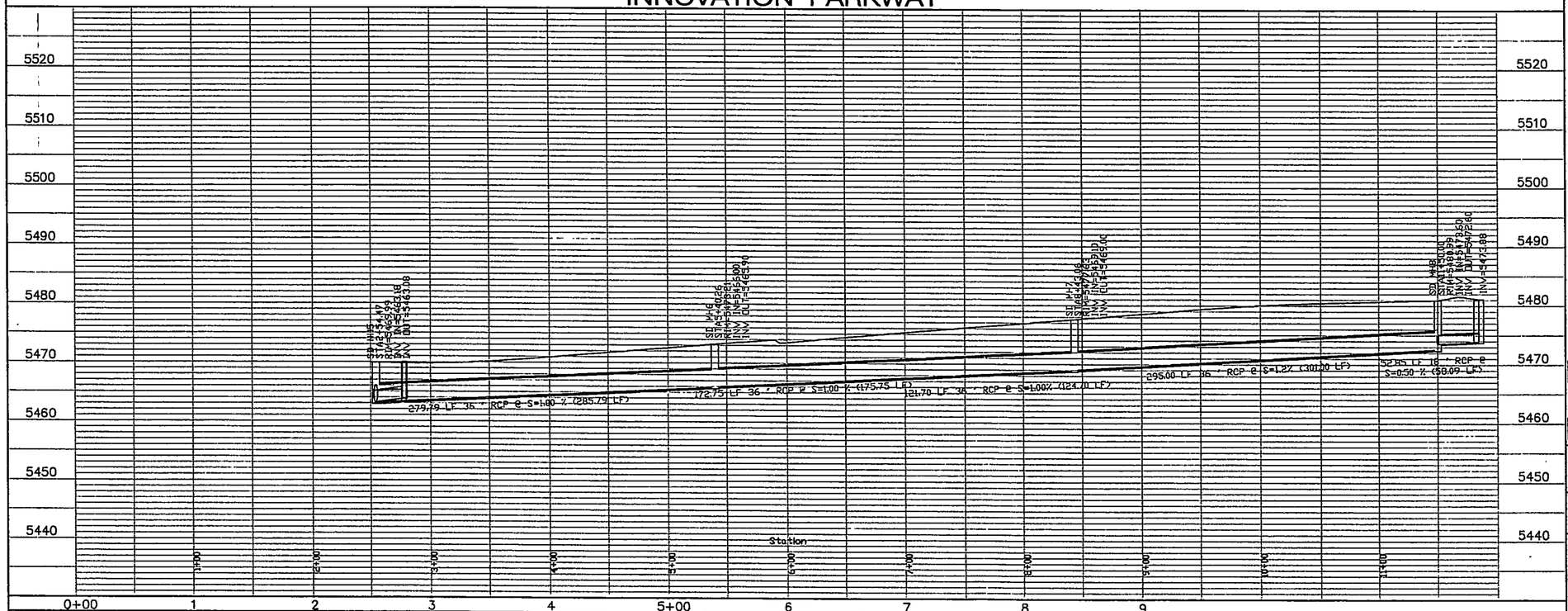

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# INNOVATION PARKWAY




SCALE: 1" =50' (HORIZ.)
1" =10' (VERT.)

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Sep 07, 2001 - 8:34am

BHI JOB NO. 01222

Date: FEBUARY 2001

AS-BUILT INFORMATION
CONTRACTOR — DATE
STAKED BY — DATE
INSPECTOR'S CONSTRUCTION BY — DATE
FIELD VERIFICATION BY — DATE
DRAWING CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES BY — DATE
NO.

ENGINEER'S SEAL

| No. | Date | REMARKS | By |
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| | | REVISIONS | |
| | | DESIGN | |

Designed By: X — DATE: XX/XX/XX
Drawn By: X — DATE: XX/XX/XX
Checked By: X — DATE: XX/XX/XX

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**PUBLIC WORKS DEPARTMENT**
**ENGINEERING DEVELOPMENT GROUP**

SANDIA SCIENCE AND TECHNOLOGY PARK
STORM DRAIN PLAN AND PROFILE
INNOVATION PARKWAY -

| Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr. |
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| City Project No. | Zone Map No. | Sheet | Of |
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| Coa # | L-21-Z, M-21-Z | # | |

# EXHIBIT 4

## SOUTH EUBANK STORM DRAINAGE ANALYSIS

## AMENDMENT #2, NOVEMBER 1998 - EXCERPTS

City of Albuquerque – Public Works Department/Hydrology Division

# SO. EUBANK STORM DRAINAGE ANALYSIS

## AMMENDMENT #2

NOVEMBER 2, 1998

SMITH ENGINEERING, INC.

EX. 4 1/3

Smith Engineering Company

A Full Service Engineering Company

November 2, 1998

Loren D. Meinz
Civil Engineer
City of Albuquerque Public Works Dept
Hydrology Division
P.O. Box 1293
Albuquerque, NM 87103

Re: Amendment #2 for the South Eubank Area Storm Drainage Analysis (November 1995)

Dear Mr. Meinz:

Smith Engineering Company (SEC) is pleased to submit to your office an amendment to the hydrology for the South Eubank Area Storm Drainage Analysis (November 1995). This Amendment #2 updates the hydrology that contributes to the proposed Eubank Storm Drain between Opportunity Boulevard (Gibson) and the Tijeras Arroyo. A total drainage area of about 235 acres has been analyzed to determine the allowable discharge rates for the 100-year 24-hour storm from undeveloped properties. A map of the study area is found on Plate 1E.

Hydrologic Assumptions

SEC has delineated eight sub-basins that may contribute runoff to the proposed South Eubank Storm Drain (to be located adjacent to Eubank Boulevard). Three of the eight sub-basins (605R, 606AR, and 608R) are fully developed and currently discharge to Eubank Boulevard. These sub-basins are designed to free discharge directly to the new South Eubank Storm Drain at stations 66+23, 61+59, and 42+23, respectively.

The remaining five sub-basins are either undeveloped (606R, 607AR, 607R, and 609R) or developed and not currently draining to Eubank Boulevard (604R). Sub-basins 604R is assumed to enter and join flows from sub-basin 606R. The combined flow is attenuated through some form of detention storage and then flows south in storm drain pipe "A" to sub-basin 607R. Peak flows from sub-basin 607R are attenuated through some sort of detention storage and then this flow joins flow from 606R and is conveyed west to Eubank Boulevard through storm drain pipe "B". Flow from sub-basin 607AR is attenuated through some form of detention storage and then it combines with flow from pipe "B" . This total flow then discharges to the South Eubank Storm Drain at Station 50+68. Flow from sub-basin 609R is attenuated through some form of detention storage and the reduced peak flow is discharged to the South Eubank Storm Drain at Station 33+00.

Changes to Option B

All hydrologic analysis was performed for future developed conditions with Option B in place. The following changes were made to AHYMO Option B model used in the "South Eubank Area Storm Drainage Analysis Report":

- Sub-basins 605R, 606AR, 606R, 604R, 607AR, 607R, 608R, and 609R have been newly delineated and the drainage areas have been recalculated based on more accurate property boundary maps.
- Detention storage has been added to sub-basins 606R, 604R, 607R, 607AR, and 609R in order to limit the allowable discharge to 1.3 cfs/acre.
- Storm drain pipes "A" and "B" have been added to the AHYMO model.
- Sub-basins 401, 601, and 603, located upstream of study area, have also been added to the model.

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

- The land treatment percentages for sub-basin 608R have been adjusted to 70% "A" and 30% "C" for this fully developed PNM site.
- The Manzano Mesa Detention Basin's stage-storage-outflow table has been updated.

Hydrologic Analysis

The AHYMO rainfall-runoff model, SEHYDAM2.DAT, was used to compute the 100-year 24-hour peak flows at stations along the proposed South Eubank Storm Drain. A summary of the basin parameters is shown in Table 1. A summary of the peak flows at the analysis points is shown in Table 2. A summary table from the AHYMO model is also attached as Appendix A.

The allowable discharge from sub-basins 606R, 604R, 607AR, 607R, and 609R is limited to 1.3 cfs/acre in order to prevent the overtaxing of the proposed South Eubank Storm Drain design. Developed properties 605R, 606AR, and 608R are permitted to free discharge to the new South Eubank Storm Drain.

The storm drain pipes "A" and "B" are estimated to be 42" and 48" in diameter based on Manning's equation for full pipe flow. These pipe sizes are estimates only. We have executed the routing of flows from sub-basins 604R, 606R, and 607R as discussed in previous paragraphs. Alternative routings are possible, but the hydraulic grade line in the proposed South Eubank Storm Drain must be reanalyzed.

Hydraulic Analysis

The computed peak flows from the AHYMO model were input into the program, StormCAD (v 1.5), to compute the hydraulic grade line for the proposed South Eubank Storm Drain. The results are shown in Appendix B.

Recommendations

- Allow sub-basins 605R, 606AR, and 608R to free discharge to the new South Eubank Storm Drain.
- Restrict the allowable discharge from sub-basins 604R, 606R, 607R, 607AR, and 609R to 1.3 cfs/acre.
- If alternative routings are proposed, other than used in this amendment, then a new hydraulic analysis should be performed to ensure that the hydraulic grade line in the South Eubank Storm Drain is not adversely impacted.

Should you have any questions or comments about this analysis please call Steve Kemna at (505) 884-0700.

Sincerely,

Smith Engineering Company

Stephen Paul Kemna

Stephen P. Kemna, P.E.

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

EX 4 3/3

# EXHIBIT 5

## MANZANO MESA MASTER DRAINAGE STUDY,

## AUGUST 1996 - EXCERPTS

RETURN TO L. MEINZ

CITY OF ALBUQUERQUE, NEW MEXICO

# MANZANO MESA
# MASTER DRAINAGE STUDY


**Loren D. Meinz, P.E.**
*City Hydrologist*

(505) 924-3980
(505) 924-3864 FAX
E-mail: lmeinz@cabq.gov

Development & Building Services Division
Public Works Department
600 2nd Street NW
Albuquerque, New Mexico 87102


**Prepared by**

**Smith Engineering Company**

**A Full Service Engineering Company**

**AUGUST 1996**

EX. 5 1/4

FILE = AHYMO.SUM



| COMMAND | HYDROGRAPH IDENTIFICATION | FROM ID NO. | TO ID NO. | AREA (SQ MI) | PEAK DISCHARGE (CFS) | RUNOFF VOLUME (AC-FT) | RUNOFF (INCHES) | TIME TO PEAK (HOURS) | CFS PER ACRE | NOTATION |
|---|---|---|---|---|---|---|---|---|---|---|
| ROUTE | P401.02 | 1 | 2 | .01945 | 43.41 | 1.952 | 1.88134 | 1.533 | 3.487 | |
| COMPUTE NM HYD | 402.00 | - | 1 | .06011 | 69.29 | 3.796 | 1.18416 | 1.667 | 1.801 | PER IMP= 21.00 |
| ADD HYD | P402.1 | 1& 5 | 3 | .79700 | 1169.94 | 76.786 | 1.80644 | 1.633 | 2.294 | |
| COMPUTE NM HYD | 601.00 | - | 1 | .01639 | 37.11 | 1.645 | 1.88133 | 1.567 | 3.538 | PER IMP= 70.00 |
| *S**** P601.1 IS AP # 10 ***** | | | | | | | | | | |
| ADD HYD | P601.1 | 1& 2 | 4 | .03584 | 80.33 | 3.596 | 1.88131 | 1.533 | 3.502 | |
| *S TOTAL FLOW TO PROPOSED DETENTION BASIN | | | | | | | | | | |
| ADD HYD | P601.2 | 3& 4 | 5 | .83284 | 1237.97 | 80.382 | 1.80966 | 1.633 | 2.323 | |
| *S**** 601.RES IS AP # 8 ***** | | | | | | | | | | |
| *S**** AP # 7 = P303.22 - 601.RES ***** | | | | | | | | | | |
| *S ELEV 5467 IS INVERT OF 48" RCP | | | | | | | | | | |
| *S ELEV 5472.5 IS ELEV OF DET POND | | | | | | | | | | |
| ROUTE RESERVOIR | 601.RES | 5 | 2 | .83284 | 232.25 | 80.447 | 1.81113 | 2.467 | .436 | AC-FT= 46.796 |
| *S | | | | | | | | | | |

| *S OUTFLOW(CFS) | STORAGE(AC-FT) | ELEV(FT) |
|---|---|---|
| *S 0 | 0 | 5467 |
| *S 10 | 0.001 | 5468 |
| *S 24 | 0.005 | 5469 |
| *S 48 | 0.01 | 5470 |
| *S 72 | 0.015 | 5471 |
| *S 94 | 0.02 | 5472 |
| *S 112 | 0.029 | 5473 |
| *S 130 | 0.448 | 5474 |
| *S 146 | 1.450 | 5475 |
| *S 161 | 3.059 | 5476 |
| *S 174 | 5.744 | 5477 |
| *S 186 | 10.033 | 5478 |
| *S 197 | 16.126 | 5479 |
| *S 207 | 23.647 | 5480 |
| *S 216 | 31.703 | 5481 |
| *S 225 | 39.976 | 5482 |
| *S 234 | 48.442 | 5483 |
| *S 242 | 57.121 | 5484 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *S | | | | | | | | | | |
| *S**** P601.22 IS AP # 11 ***** | | | | | | | | | | |
| *S 66" DIAM; 1200 FT; S=0.01; Q(CAP)=336 CFS | | | | | | | | | | |
| ROUTE | P601.22 | 2 | 3 | .83284 | 232.23 | 80.447 | 1.81113 | 2.500 | .436 | |
| COMPUTE NM HYD | 602.00 | - | 6 | .02072 | 55.41 | 2.396 | 2.16835 | 1.533 | 4.179 | PER IMP= 90.00 |
| *S**** 603 IS AP # 12 ***** | | | | | | | | | | |
| COMPUTE NM HYD | 603.00 | - | 1 | .01761 | 42.05 | 2.037 | 2.16835 | 1.567 | 3.731 | PER IMP= 90.00 |
| *S 36" DIAM; 950 FT; S=0.005; Q(CAP)=47 CFS | | | | | | | | | | |
| ROUTE | P603.02 | 1 | 2 | .01761 | 40.91 | 2.037 | 2.16835 | 1.600 | 3.630 | |
| COMPUTE NM HYD | 701.00 | - | 1 | .02164 | 57.50 | 2.171 | 1.88133 | 1.500 | 4.152 | PER IMP= 70.00 |
| *S**** P701.1 IS AP # 13 ***** | | | | | | | | | | |
| ADD HYD | P701.1 | 1& 2 | 4 | .03925 | 89.77 | 4.208 | 2.01009 | 1.533 | 3.574 | |
| ADD HYD | P701.2 | 4& 3 | 2 | .87209 | 268.45 | 84.655 | 1.82009 | 1.600 | .481 | |
| COMPUTE NM HYD | 702.00 | - | 1 | .06609 | 167.33 | 7.643 | 2.16835 | 1.567 | 3.956 | PER IMP= 90.00 |
| *S**** P702.1 IS AP # 14 ***** | | | | | | | | | | |
| *S TOTAL PIPE FLOW AT EUBANK AND ELIZABETH | | | | | | | | | | |
| ADD HYD | P702.1 | 1& 2 | 3 | .93818 | 435.00 | 92.298 | 1.84462 | 1.567 | .724 | |
| *S 84" DIAM; 1400 FT; S=0.005; Q(CAP)=452 CFS | | | | | | | | | | |
| ROUTE | P702.12 | 3 | 10 | .93818 | 426.20 | 92.298 | 1.84462 | 1.600 | .710 | |
| *S | | | | | | | | | | |
| *S | | | | | | | | | | |
| *S END MANZANO MESA MASTER DRAINAGE STUDY | | | | | | | | | | |
| *S | | | | | | | | | | |
| *S | | | | | | | | | | |
| *S SEE APPENDIX " E " FOR DRAINAGE BASINS DOWN STREAM OF MANZANO MESA | | | | | | | | | | |
| *S | | | | | | | | | | |
| COMPUTE NM HYD | SEA605 | - | 65 | .04536 | 80.92 | 5.286 | 2.18484 | 1.733 | 2.787 | PER IMP= 90.00 |
| ADD HYD | 605.10 | 65&10 | 67 | .98354 | 487.10 | 97.583 | 1.86031 | 1.600 | .774 | |
| *S ROUTING 606.2 IN PROPOSED 96" THRU SUB-BASIN 607 | | | | | | | | | | |
| *S Q(CAP) = 600 CFS AT SLOPE=0.005 | | | | | | | | | | |
| ROUTE | 605.12 | 67 | 71 | .98354 | 486.26 | 97.583 | 1.86031 | 1.633 | .772 | |
| COMPUTE NM HYD | SEA606 | - | 66 | .06633 | 154.13 | 7.729 | 2.18484 | 1.600 | 3.631 | PER IMP= 90.00 |
| ADD HYD | 606.10 | 71&66 | 73 | 1.04987 | 639.03 | 105.312 | 1.88081 | 1.600 | .951 | |
| *S ROUTING 606.2 IN PROPOSED 96" THRU SUB-BASIN 607 | | | | | | | | | | |
| *S Q(CAP) = 600 CFS AT SLOPE=0.005 | | | | | | | | | | |
| ROUTE | 606.12 | 73 | 71 | 1.04987 | 619.73 | 105.312 | 1.88081 | 1.633 | .922 | |
| COMPUTE NM HYD | SEA607 | - | 65 | .12156 | 223.96 | 12.545 | 1.93495 | 1.667 | 2.879 | PER IMP= 68.00 |
| ADD HYD | 607.10 | 65&71 | 72 | 1.17143 | 841.69 | 117.857 | 1.88643 | 1.633 | 1.123 | |
| *S ROUTING 607.1 IN PROPOSED 96" ; S=0.0082 FT/FT | | | | | | | | | | |

PROJECT Albuquerque Hills SHEET NO. 2 OF 2

SUBJECT TYP LAND TREATMENTS PROJECT NO.

BY TVD DATE 3/4/96 CHECKED BY DATE 1/1

# TYPICAL APARTMENT PROPERTY

## LAND TREATMENTS

TABLE A-5 DPM PAGE A-5

— ASSUME ATTACHED MULTIPLE UNIT RESIDENTIAL

∴ D = 70%

| | |
|---|---|
| 70% | D |
| 30% | B |

# TYPICAL COMMERCIAL PROPERTY

## LAND TREATMENTS

| | |
|---|---|
| 90% | D |
| 10% | B |

10% B FOR LANDSCAPING REQUIREMENTS

24.22 ACRES
(BASIN 601 AND 701)

601
R-2

701
R-2

100 YEAR FLOOD PLAIN
EASEMENTS

MANZANO
MESA
DETENTION
BASIN

SYSTEM "A"

SYSTEM "A"

SYSTEM "A"

25' DRAINAGE
EASEMENT

R/W

EUBANK

BOULEVARD

STEVEN

MOODY

**TRACT E**
40.76 Acres

702
SU-1 FOR EMPLOYMENT

EX. 5 4/4

RECEIVED BHI JUL 10 '01

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 9, 2001

James Topmiller, P.E.
Bruce Stidworthy, P.E.
Bohannan-Huston
7500 Jefferson St. NE
Albuquerque, NM 87109

**Re: Drainage Master Plan for Sandia Science and Technology Park, (M21/D007a), Engineer stamp dated 6/19/01 (original DMP dated 2/09/01).**

Dear James,

The referenced drainage master plan is approved as a Conceptual Drainage Master Plan for DRB action for bulk land subdivision. Prior to issuance of building permits or subsiquent plat approvals, add the following corrections to the DMP.

1. Correct the footnotes in Appendix A to eliminate all cfs/acre reference. Use only the anticipated land treatments. This apprndix must agree with the plan sheet and the report text.
2. The Options 2 & 5 for the drainage diversion to the Tijeras Arroyo cross the landfill and may not be feasible or desireable. Add text to identify these options as "may require landfill mitigation construction", or eliminate these two options from the report.
3. Apprndix D map needs changed to agree with the final plan design. Also pipe 14 is not shown on the map.
4. Add plan and profile sheets for the pipes along Eubank, north of Opportunity Rd.

Please submit a corrected version of the document for our files.

If you have any questions, contact me at 924-3980.

Sincerely,

Loren D. Meinz, P.E.
Hydrology Development

C: Terri Martin
file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

9658

Jim Baca, Mayor

# City of Albuquerque

P.O. Box 1293 ALBUQUERQUE, NEW MEXICO 87103

Department of Public Works
Larry Blair, Director

May 17, 2001

M21/D7A
Sandia Science & Technology Park

Carl Becker,
Project Engineer
Sandia Science & Technology Park
10520 Research Road SE
Albuquerque, NM 87123

Dear Mr. Becker,

This letter is to confirm our April 13, 2001 discussion on the process and timeframe for construction of a storm drain system at the Sandia Science & Technology Park. The project was initiated by a joint application of the City of Albuquerque and the Science and Technology Park Development Corporation for a federal grant from the United States Department of Commerce, Economic Development Administration. In the grant application the construction of the storm drain is proposed as part of the City's contribution of its matching funds requirement. This proposed public-private partnership and the role the City will take is defined in an internal City memo from Lawrence Rael, CAO, to Larry Blair, Public Works Director, dated February 25, 1999 and is attached hereto. It is the City's intention to follow the guidance set in that memo in development of this partnership with the understanding that there may be minor technical changes required based on the specific development scenario(s) now proposed.

Contingent upon the Master Developer and/or Sandia Science & Technology Park providing an approved master drainage plan, approved engineering design, specifications, bidding documents, financial guarantees and all required easements/right-of-ways by July 1, 2001, the City of Albuquerque Public Works Department will initiate bidding contracting and construction activity on the storm drain and complete construction as soon as practical thereafter. The City will pay for the storm drain construction and associated costs up to $366,620, the amount stipulated in the EDA Grant, and all costs above that amount will be the responsibility of the Master Developer and/or Sandia Science & Technology Park and will be provided to the City prior to final approvals

through the appropriate City Subdivision Improvements Agreement or other similar agreement. The construction inspection, surveying and testing costs will be the responsibility of the Master Developer/SS&TP, and in no case shall the City's overall contribution to the storm drain construction exceed the stipulated $366,620 amount.

I hope this letter reflects a fair and clear interpretation of our discussions. I believe this project will definitely enhance the drainage in this area and take significant steps toward solving the long-term erosion problems being generated by the South Point Village. I look forward to working with you and a successful project. Should you have any questions or need additional information please feel free to call me at 768-2778

Sincerely,

Daniel W. Hogan P.E., P.S.
Hydrology Division Manager

Attachment

c: Larry Blair
Fred Aguirre
Loren Meinz

# CITY OF ALBUQUERQUE

## Office of Economic Development

Inter-Office Memo

February 25, 1999

TO: Larry Blair, Director, Public Works Department

FROM: Lawrence Rael, CAO

RE: Sandia Science and Technology Park/ South Eubank Interceptor Storm Drainage Project

I am directing CIP to release $375,000 from the Economic Development Fund to be added to the existing South Eubank Interceptor Storm Drainage Program. These funds will be used to enhance the drainage capabilities of the proposed Sandia Science and Technology Park, as well as the properties of South Pointe Village, Sandia Technology Center, APS, and the State of NM within this drainage basin. Solving current drainage problems will encourage development in this area, including construction of a 60,000 square foot facility to house an expansion of Sandia National Laboratories' Center for Cooperative Monitoring.

As part of a proposed public-private partnership to address drainage issues in the area, we understand that:

1) Land for on-site detention facilities, permanent or temporary, shall be provided by the developer, who shall construct and maintain them as necessary, unless otherwise determined by the Development Review Board (DRB) action, as follows (see attached map):

A. A permanent detention pond in the southwest corner of South Point Village to capture all generated runoff.

B. A temporary detention pond within a drainage easement dedicated by the developer in the southwest corner of the Sandia Technology Center site to capture the runoff generated by both Sandia Technology Center and South Pointe Village (This pond will be a temporary facility until an outfall is constructed to the South Eubank Interceptor).

2) The developer will secure the easements and the city will construct the storm sewer lines necessary to connect the ponds to the South Eubank Interceptor Storm Drain as part of the interceptor project in the following manner: approximately along the common lot line between the State Lands and the PNM land from the Eubank Interceptor to the APS lands; then North along the common lot line of APS and the State lands to the Sandia Technology Center detention Pond; then East along the common lot lines of APS and Sandia Technology Center to

(Continued)

the South Pointe Village pond.

3) The lines should be sized and designed to serve the other currently undeveloped properties of APS and the State in the area in accordance with the South Eubank Drainage Analysis, Amendment No. 2 (Nov. 2, 1998).

4) All easements will be at least the minimum width required by the City, and will be dedicated to the City at no cost.

5) All work will be designed to city standards, and all plans will be provided to the City. All normal development processes will be followed and all city standards met.

If there are any further questions about this proposal, please call Erik Pfeiffer at 768-3270 or Victoria Prinz at 768-3283.

CC:
Pat Montoya
Fred Aguirre
Loren Meinz
Dan Hogan
Erik Pfeiffer

CAU
Bruce Smith

May 16, 2001

Mr. Loren Meinz, P.E.
Hydrology Project Engineer
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

BOHANNAN-HUSTON, INC.

Courtyard One

7500 JEFFERSON NE

Albuquerque

NM 87109-4335

voice 505.823.1000

fax 505.821.0892

Re: Response to Hydrology Comments regarding the Sandia Science and Technology Master Drainage Report.

Dear Loren:

The following is in response to your comments in a letter dated April 6, 2001, addressed to James Topmiller.

1. The existing 40' public drainage easement is shown on an existing recorded plat filed: August 24, 1982 (C20-24) and signed by SLO commissioner. Note that the plat does not say that this easement is "dedicated with this plat." A copy of the plat is attached.

Check As-builts

2. The point of discharge shown on the Manzano Mesa Master Drainage Study is at the NW corner of Tract E. The low point of Tract E is also at the NW corner. However, the stubout from the Eubank storm drain is located just north of the intersection of Opportunity and Eubank. We have revised the Master Drainage plan to show the large majority of Lots 1-8 draining directly to the stubout provided. A small portion will still drain down Innovation to the intersection of Innovation and Eubank.

3. The storm drain outfall from the mobile home park to the Tijeras Arroyo is a Phase Two improvement. The process to obtain the required easements has begun, but is not yet complete. Should the required easements not be in place prior to the development of Phase 2, other options are available. Figure One in the Master Drainage Report identifies 4 other feasible options for discharge of the MHP flows.

4. The text referring to city participation in the storm drain has been deleted from the SS&TP Master Plan.

5. The storm drainpipes shown on the Master Drainage Plan are for free discharge from the MHP. If the MHP and SS&TP negotiate an agreement for construction of ponding on the MHP site, the pipe sizes may be reduced. The SS&TP Master Plan text has been revised to eliminate the text requiring construction of the pond by the MHP.

TRACK TO CACOS

6. A LOMR to remove the floodplain will be prepared with the actual development and or platting of the area comprising Lots 1-5. These lots are not being created with the initial bulk land plat.

7. The SS&TP planning and design team recognizes existing landfill uses in the immediate vicinity of the park. Appropriate mitigation measures will be taken as required by the City's Environmental Department.

8. Appendix A has been revised to correct minor errors. However, please see note #1 under Appendix A for an explanation of the method of calculating the allowable discharge rates for Lots 1-8.

9. Appendix B has been modified to clearly indicated that it relates to overland flow for the analysis points, not pipe flow.

10. We propose that detailed design analysis reports be required to support approval of DRC plans. These design analysis reports would calculate the required number of inlets, design the connector pipes etc. If detailed calculations for number and type of inlets were performed now, they would undoubtedly have to be re-done with the final design of the streets (due to revisions to the slopes of streets, changes to the lot layout, etc.).

In addition to the items above, we have made other minor revisions and corrections to the report in order to improve its clarity and accuracy.

Sincerely,
Bohannan Huston, Inc.

Bruce Stidworthy, P.E.
Community Development
and Planning Group

BS/ca
Enclosure

cc: James Topmiller, BHI

FILE = AHYMO.SUM



| COMMAND | HYDROGRAPH IDENTIFICATION | FROM ID NO. | TO ID NO. | AREA (SQ MI) | PEAK DISCHARGE (CFS) | RUNOFF VOLUME (AC-FT) | RUNOFF (INCHES) | TIME TO PEAK (HOURS) | CFS PER ACRE | NOTATION |
|---|---|---|---|---|---|---|---|---|---|---|
| ROUTE | P401.02 | 1 | 2 | .01945 | 43.41 | 1.952 | 1.88134 | 1.533 | 3.487 | |
| COMPUTE NM HYD | 402.00 | - | 1 | .06011 | 69.29 | 3.796 | 1.18416 | 1.667 | 1.801 | PER IMP= 21.00 |
| ADD HYD | P402.1 | 1& 5 | 3 | .79700 | 1169.94 | 76.786 | 1.80644 | 1.633 | 2.294 | |
| COMPUTE NM HYD | 601.00 | - | 1 | .01639 | 37.11 | 1.645 | 1.88133 | 1.567 | 3.538 | PER IMP= 70.00 |
| *S**** P601.1 IS AP # 10 ***** | | | | | | | | | | |
| ADD HYD | P601.1 | 1& 2 | 4 | .03584 | 80.33 | 3.596 | 1.88131 | 1.533 | 3.502 | |
| *S TOTAL FLOW TO PROPOSED DETENTION BASIN | | | | | | | | | | |
| ADD HYD | P601.2 | 3& 4 | 5 | .83284 | 1237.97 | 80.382 | 1.80966 | 1.633 | 2.323 | |
| *S**** 601.RES IS AP # 8 ***** | | | | | | | | | | |
| *S**** AP # 7 = P303.22 - 601.RES ***** | | | | | | | | | | |
| *S ELEV 5467 IS INVERT OF 48" RCP | | | | | | | | | | |
| *S ELEV 5472.5 IS ELEV OF DET POND | | | | | | | | | | |
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*S

| *S OUTFLOW(CFS) | STORAGE(AC-FT) | ELEV(FT) |
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| *S 48 | 0.01 | 5470 |
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| *S 161 | 3.059 | 5476 |
| *S 174 | 5.744 | 5477 |
| *S 186 | 10.033 | 5478 |
| *S 197 | 16.126 | 5479 |
| *S 207 | 23.647 | 5480 |
| *S 216 | 31.703 | 5481 |
| *S 225 | 39.976 | 5482 |
| *S 234 | 48.442 | 5483 |
| *S 242 | 57.121 | 5484 |

*S

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *S**** P601.22 IS AP # 11 ***** | | | | | | | | | | |
| *S 66" DIAM; 1200 FT; S=0.01; Q(CAP)=336 CFS | | | | | | | | | | |
| ROUTE | P601.22 | 2 | 3 | .83284 | 232.23 | 80.447 | 1.81113 | 2.500 | .436 | |
| COMPUTE NM HYD | 602.00 | - | 6 | .02072 | 55.41 | 2.396 | 2.16835 | 1.533 | 4.179 | PER IMP= 90.00 |
| *S**** 603 IS AP # 12 ***** | | | | | | | | | | |
| COMPUTE NM HYD | 603.00 | - | 1 | .01761 | 42.05 | 2.037 | 2.16835 | 1.567 | 3.731 | PER IMP= 90.00 |
| *S 36" DIAM; 950 FT; S=0.005; Q(CAP)=47 CFS | | | | | | | | | | |
| ROUTE | P603.02 | 1 | 2 | .01761 | 40.91 | 2.037 | 2.16835 | 1.600 | 3.630 | |
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| *S**** P702.1 IS AP # 14 ***** | | | | | | | | | | |
| *S TOTAL PIPE FLOW AT EUBANK AND ELIZABETH | | | | | | | | | | |
| ADD HYD | P702.1 | 1& 2 | 3 | .93818 | 435.00 | 92.298 | 1.84462 | 1.567 | .724 | |
| *S 84" DIAM; 1400 FT; S=0.005; Q(CAP)=452 CFS | | | | | | | | | | |
| ROUTE | P702.12 | 3 | 10 | .93818 | 426.20 | 92.298 | 1.84462 | 1.600 | .710 | |

*S

*S

*S END MANZANO MESA MASTER DRAINAGE STUDY

*S

*S

*S SEE APPENDIX " E " FOR DRAINAGE BASINS DOWN STREAM OF MANZANO MESA

*S

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| COMPUTE NM HYD | SEA605 | - | 65 | .04536 | 80.92 | 5.286 | 2.18484 | 1.733 | 2.787 | PER IMP= 90.00 |
| ADD HYD | 605.10 | 65&10 | 67 | .98354 | 487.10 | 97.583 | 1.86031 | 1.600 | .774 | |
| *S ROUTING 606.2 IN PROPOSED 96" THRU SUB-BASIN 607 | | | | | | | | | | |
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| *S ROUTING 606.2 IN PROPOSED 96" THRU SUB-BASIN 607 | | | | | | | | | | |
| *S Q(CAP) = 600 CFS AT SLOPE=0.005 | | | | | | | | | | |
| ROUTE | 606.12 | 73 | 71 | 1.04987 | 619.73 | 105.312 | 1.88081 | 1.633 | .922 | |
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| ADD HYD | 607.10 | 65&71 | 72 | 1.17143 | 841.69 | 117.857 | 1.88643 | 1.633 | 1.123 | |
| *S ROUTING 607.1 IN PROPOSED 96" ; S=0.0082 FT/FT | | | | | | | | | | |

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103


April 6, 2001

James Topmiller, P.E.
Bruce Stidworthy, P.E.
Bohannan-Huston
7500 Jefferson St. NE
Albuquerque, NM 87109

**Re: Master Development Plan for Sandia Science and Technology**
**Drainage Master Plan**

Dear James,

The following are Hydrology comments on the proposed conceptual drainage master plan.

1. The maps presented in the plan show a 40 foot drainage easement along the west side of the 20 acre State Land Office tract that is currently being developed by Emcore. This easement needs to be confirmed as the City has no record of dedication of this easement.
2. Per the South Eubank Drainage Analysis and the Manzano Mesa DMP, Phase One, lots 1 thru 8, need to drain to the existing storm drain stub-out near the intersection of Eubank and Opportunity Rd. The existing storm drain outfall pipe downstream of the existing stub is sized to take all developed discharge for land south of Stephen Moody Ln. and west of Willowwood Subd. This will require a change in planned infrastructure and public easements.
3. Phase Two of the planned development shows a storm drain to be constructed from the existing mobile home park south to the Tijeras Arroyo. Prior to approval of this plan, the City will need recorded public drainage easements for this entire storm drain line. If easements cannot be obtained, the plan must be modified to provide drainage outfall systems westerly to the South Eubank outfall truckline, and modification of allowable discharge requirements for effected portions of Phase One and Phase Two.
4. Regarding Item 3 above, the plan indicates that the City has committed to participate in the cost of this storm drain. This is not part of the drainage master plan and needs to be deleted from the text. Any agreement for infrastructure participation is a separate agreement and not part of the plan.
5. The proposed plan indicates that the mobile home park is "required to pond on their site". As part of the bulk land plat that created the vacant parcel west of the mobile home park, the developer was required to address the off-site flow from the mobile home park. The total flow from the vacant land and the existing park would be restricted to 1.3 cfs per acre developed flow, assuming that all the flow discharged to the So. Eubank trunkline. Ponding on the existing mobile home park property is not a City requirement.

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

6. The FEMA floodplain maps indicate a small portion of floodplain at the intersection of Stephen Moody and Eubank Blvd. The infrastructure list must include completion of a Letter Of Map Revision (LOMR) by the SS&TP to remove the floodplain.
7. As a reminder, much of the surrounding land area has been used for landfill purposes. This needs to be factored into the location and design of any ponding areas, as may be required by the City Environmental Health Department.
8. Appendix A, allowable discharge rates, appears to be incorrect for data for Lots 1-8. Please check and revise as necessary.
9. Appendix B needs to be clarified that it represents overland flow only for the analysis points, and that it relates to available street capacities. Show the street flows that correspond with the analysis point on the map, which will then correspond with the inlet information requested in item 10 below.
10. Appendix D needs to be expanded to include a table for inlets, and number of inlets needed. Include inlet capacity calculations for inlets proposed.

Please provide the necessary modifications to the drainage report as indicated above and resubmit for final review.

If you have any questions, contact me at 924-3980.

Sincerely,

Loren D. Meinz, P.E.
Hydrology Development

c. Fred Aguirre
Terri Martin
file

CITY OF ALBUQUERQUE

EPC

ENVIRONMENTAL PLANNING COMMISSION

ALBUQUERQUE NEW MEXICO 1706

*Agenda Number: 9*
*Case Number: 01110 00000 00120/01128 00000 00121*
*March 22, 2001*

# *Staff Report*

| | |
|---|---|
| ***Agent*** | Consensus Planning |
| ***Applicant*** | Science and Technology Park Development Corporation |
| ***Request(s)*** | **Master Development Plan**<br>**Zone Map Amendment (40-acres, Tract E1)** |
| ***Legal Description*** | Tract A, Lands of Shaw, Mitchell & Malloy Partnership, Tract E1, Manzano Mesa, Section 33, T10N, R4E, SE1/4, NW1/4, Section 33, T10N, Range 4E, NW1/4, SW1/4, Section 33, T10N, R4E, SW1/4, NE1/4, Section 33, T10N, R4E, N1/2, SW1/4, NW1/4 |
| ***Location*** | Eubank Boulevard between Southern Boulevard and KAFB |
| ***Size*** | 219 acres |
| ***Existing Zoning*** | IP/SU-1 for Limited IP Uses/County A-1 |
| ***Proposed Zoning*** | IP |

## *Staff Recommendation*

***APPROVAL OF 01110 00000 00120, a zone map amendment, based on the findings on page 16.***

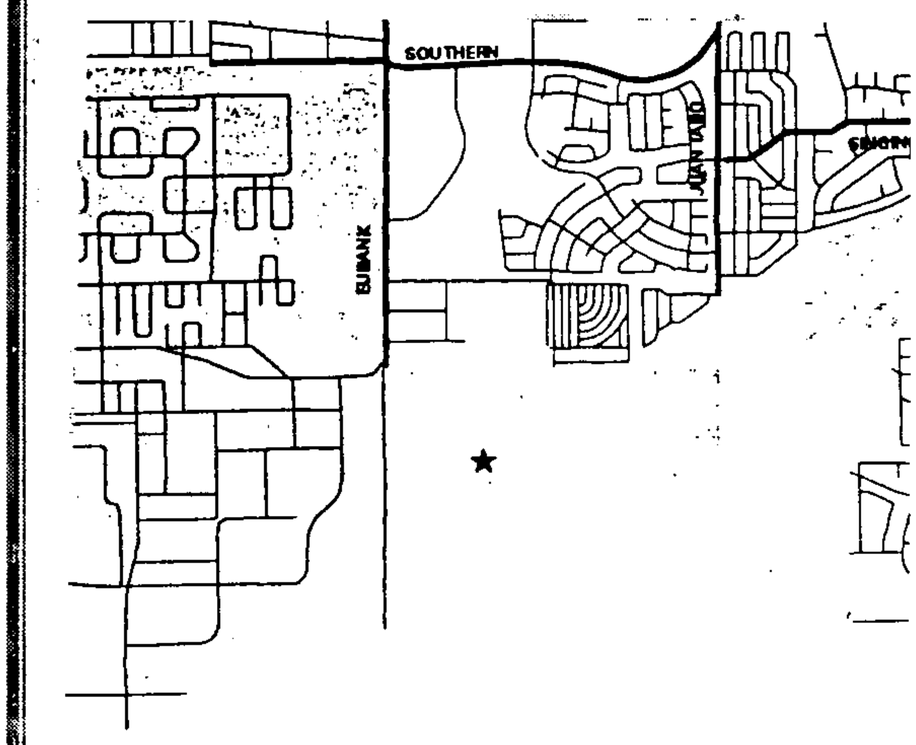
***APPROVAL OF 01128 00000 00121,a master development plan, based on the findings on page 16, and subject to the condition of approval on page18.***

***Staff Planner***

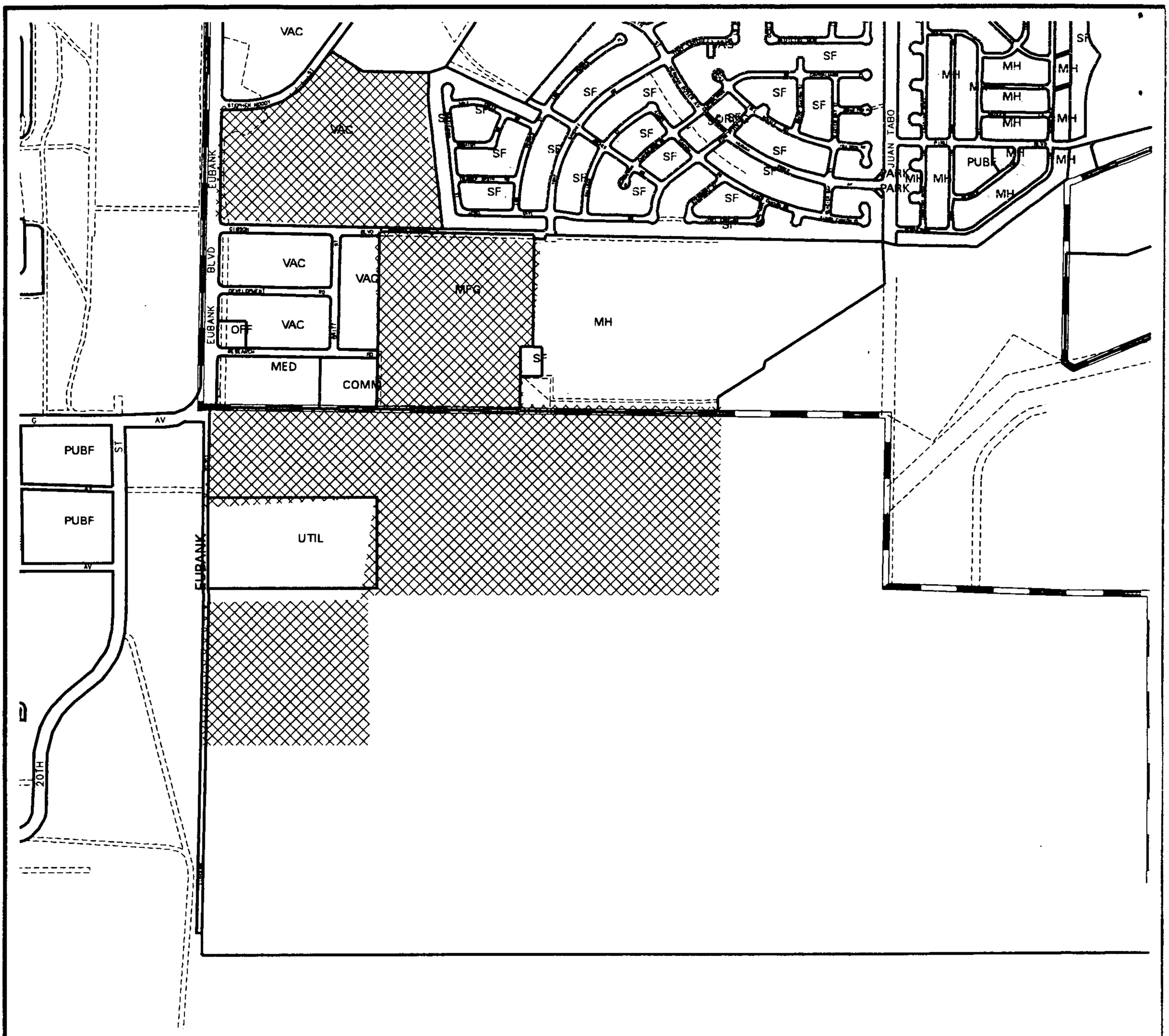
***Deborah L. Stover***

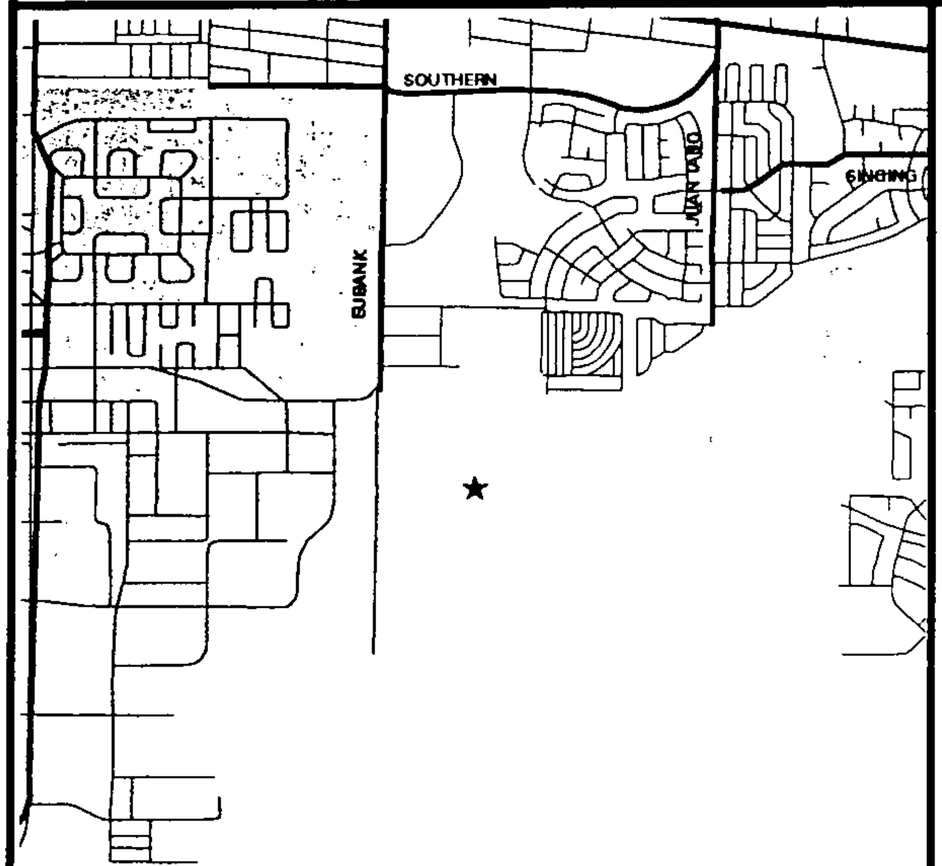
## *Summary of Analysis*

This is a request for approval of a Master Development Plan for a 219-acre Sandia Science and Technology Park and a zone change for 40-acres contained within the site. The Master Development Plan furthers the applicable Goals and policies of the Comprehensive Plan and meets the Zoning Code requirements for a Master Development Plan. The submitted Master Development Plan will be adequate with some changes and additions as stated in the conditions of approval.




City Departments and other interested agencies reviewed this application from 2/2/01 to 2/16/01.
Agency comments were used in the preparation of this report, and begin on page 24.




Note: Shaded area indicates County  Not to Scale

# LAND USE MAP

KEY to Land Use Abbreviations

AGRI Agricultural
COMM Commercial -Retail, Service, Wholesale
DRNG Drainage
EDUC Public or Private School
GOLF Golf Course
MED Medical Office or Facility
MFG Manufacturing or Mining
MH Mobile Home
MULT Multi-Family or Group Home
OFF Office
ORG Social or Civic Crganization
PARK Park, Recreation or Open Space
PRKG Parking
PUBF Public Facility
RELG Religious Facility
SF Single Family
TRAN Transportation Facility
UTIL Utility
VAC Vacant Land or Abandoned Bldgs
WH Warehousing & Storage

AGIS

Scale 1"= 1102 '

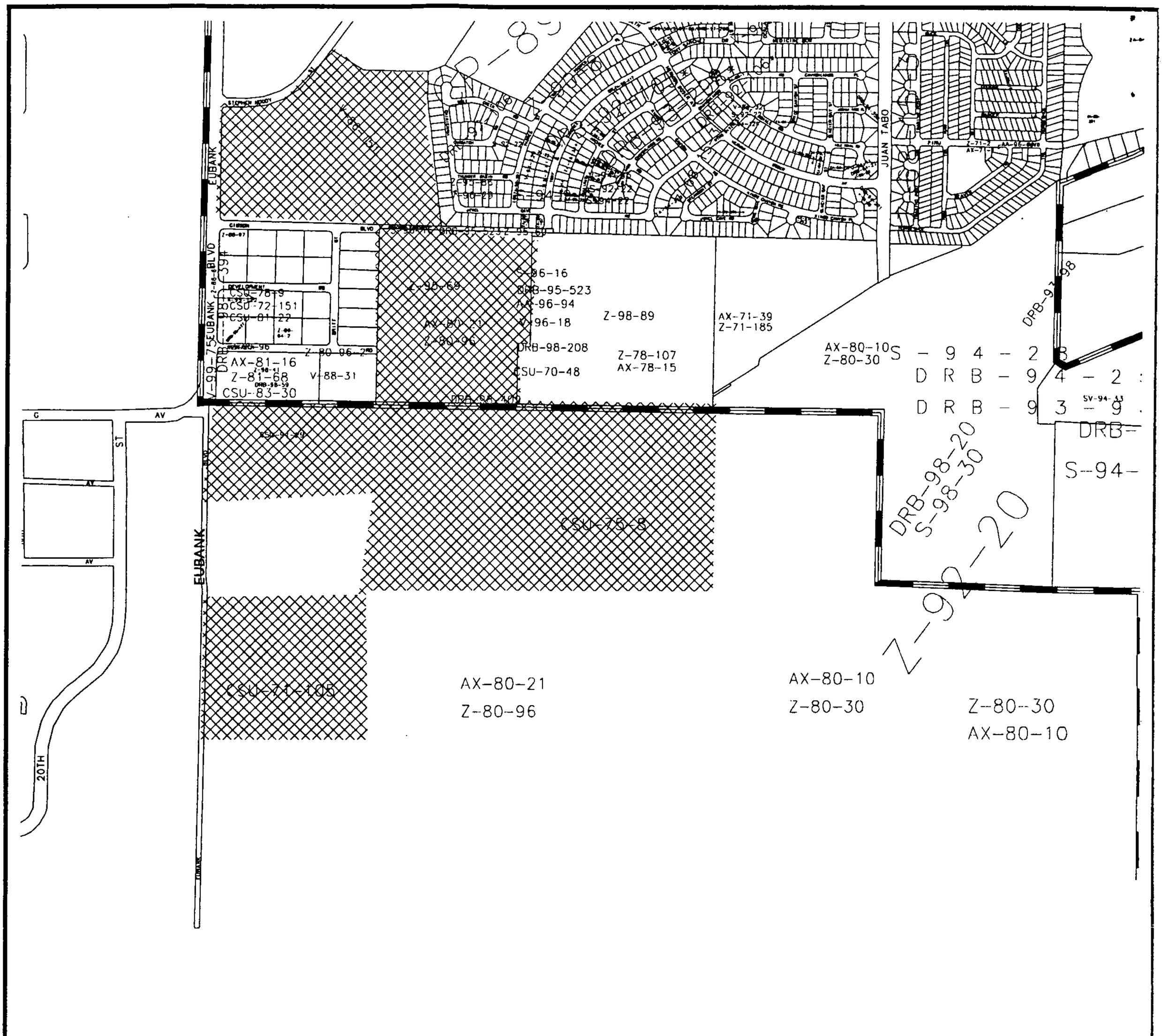
PROJECT NO.
1001031

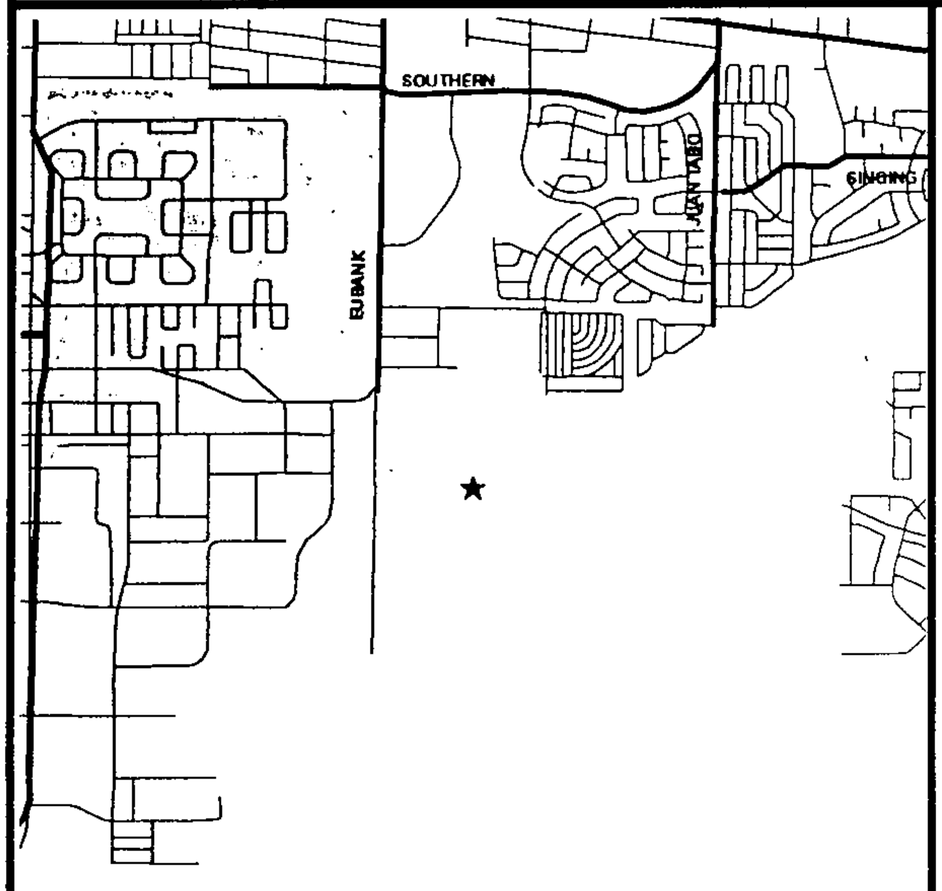
HEARING DATE
03-15-01

MAP NO.
M-21

APPLICATION NO.
01110-00000-00120
01128-00000-00121

# HISTORY MAP




Note: Shaded area indicates County  Not to Scale

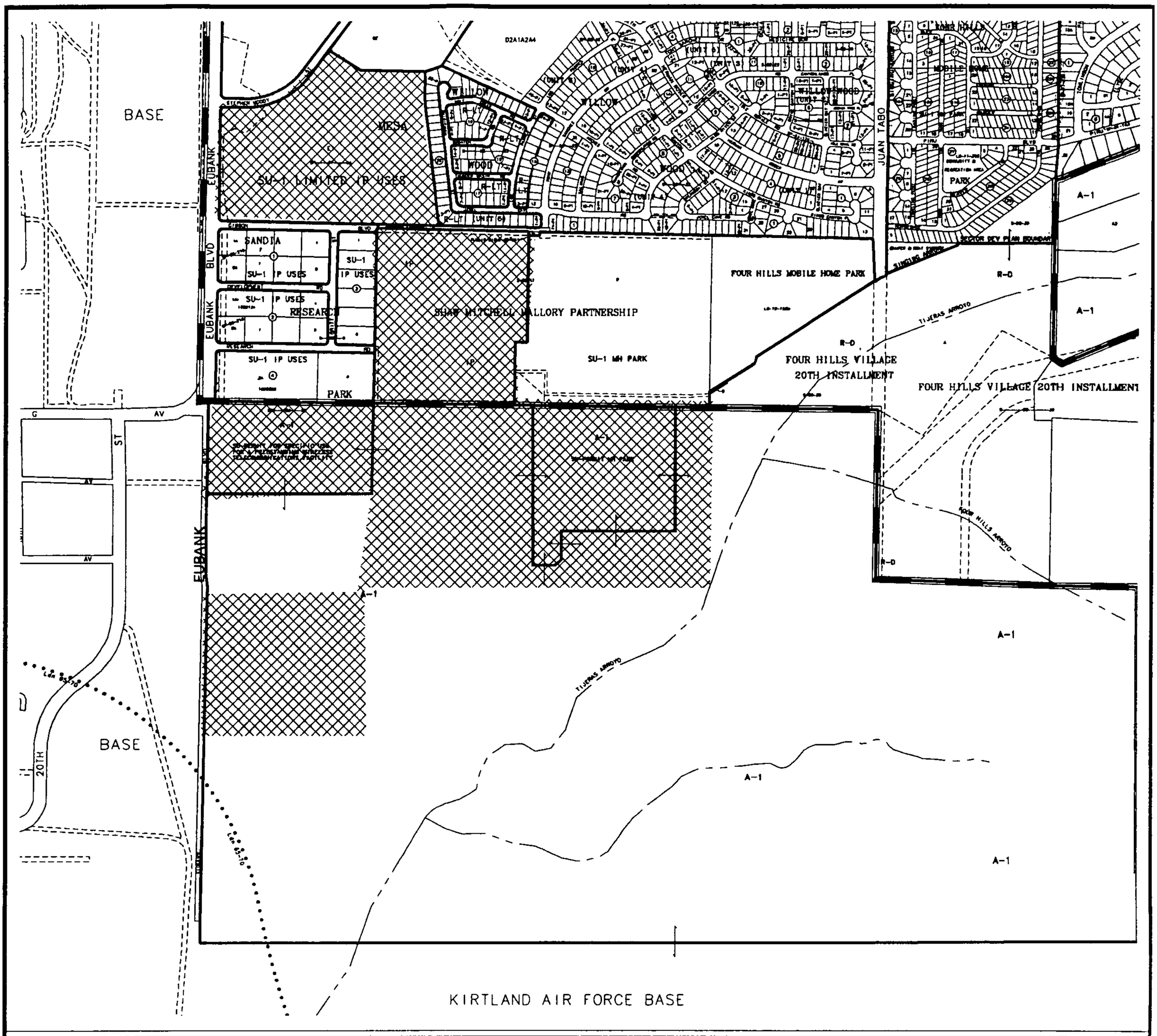
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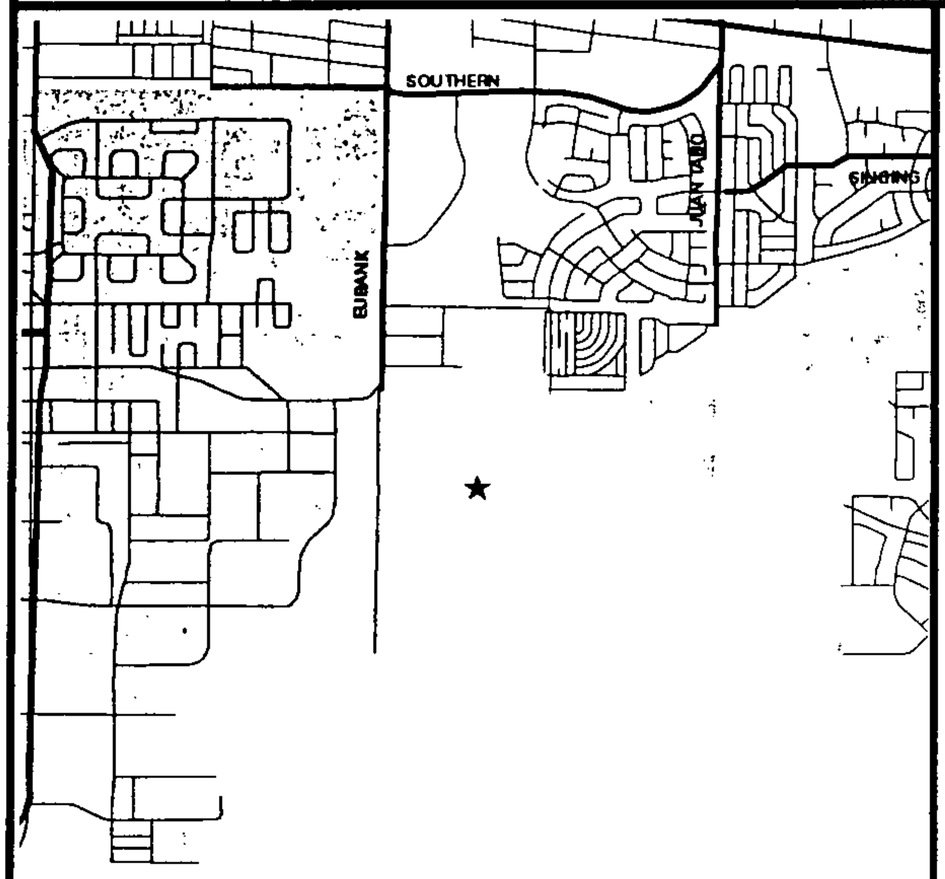
PROJECT NO.
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MAP NO.
M-21

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Note: Shaded area indicates County  Not to Scale

# ZONING MAP

AGIS

Scale 1"= 1102 '

PROJECT NO.
1001031

HEARING DATE
03-15-01

MAP NO.
M-21

APPLICATION NO.
01110-00000-00120
01128-00000-00121

# *Development Services Report*

## *SUMMARY OF REQUEST*

| | |
|---|---|
| ***Request(s)*** | *Master Development Plan Approval* |
| | *Zone Map Amendment* |
| ***Location*** | *Eubank Boulevard between Southern Boulevard and Kirtland Air Force Base SE* |

## *AREA CHARACTERISTICS AND ZONING HISTORY*

***Surrounding zoning, plan designations, and land uses:***

| | ***Zoning*** | ***Comprehensive Plan Area; Applicable Rank II & III Plans*** | ***Land Use*** |
|---|---|---|---|
| ***Site*** | IP, SU-1 Limited IP Uses, County A-1 | Established Urban | Undeveloped |
| ***North*** | SU-1 for R-2 Uses and SU-1 for Community Park | | Undeveloped |
| ***South*** | County A-1 | | Undeveloped |
| ***East*** | SU-1 MHP & County A-1 | | Mobile Home Park and undeveloped |
| ***West*** | US Government Land | | US Government Land |

***Background, History and Context***

This is a request for approval of a Master Development Plan for 219 acres called the Sandia Science and Technology Park and a request for approval of a zone map amendment for 40 acres *from* SU-1 for Limited IP Uses *to* IP. The proposed master planned area is largely undeveloped with the exception of the already existing and under construction EMCORE facilities. To the east of the site, single-family homes in the Willow Wood subdivision exist alongside the Four Hills Mobile Home Park. South of the site is undeveloped County land, the Tijeras Arroyo and Kirtland Air Force Base. West of the site is United States Government property which is mostly undeveloped and the EMCORE facility. North of the site is undeveloped land zoned SU-1 for R-2 (although set to be heard March 1 for zone change and site plan approval) and SU-1 for Community Park and Related Uses. A park is under construction in this area and a new school is programmed for this area.

Further changes in the area have occurred recently. Tract G-3 & Tract H-1, Manzano Mesa Addition, located on Eubank SE between Central Avenue SE and Sandia National Labs SE, containing approximately 36.3 acres was heard in January 2001 and a 36-acre tract of land on Southern Boulevard and Juan Tabo was approved for a zone map amendment and site plan for subdivision in February 2001. This approval included commercial, office and residential uses. On March 1, 2001, another mixed-use development was approved on Tracts G-3 and H-1, just north of the Master Development Plan area. Two sites related to the Technology Park were also recently heard by the Environmental Planning Commission. The first, a 40-acre APS site was recommended for annexation to the City Council, also in February 2001. The other was an application by the New Mexico State Land Office which is now a part of the current request. In January 2001, a Master Development Plan was approved for a portion of this site (the new EMCORE site). This Master Development Plan, if approved, will supercede the plan approved in January. In addition, a Costco Warehouse and fueling station were recently built on the northeast corner of Eubank and Southern Boulevard SE.

## *APPLICABLE PLANS AND POLICIES*

The subject site is located in an area designated **Developing Urban** in the *Comprehensive Plan* which has a Goal "to create a quality urban environment which perpetuates the tradition of identifiable, individual but integrated communities within the metropolitan area and which offers variety and maximum choice in housing, transportation, work areas, and life styles, while creating a visually pleasing built environment." Applicable policies include:

Policy a The Established and Developing Urban Areas . . . shall allow a full range of urban land uses, resulting in an overall gross density up to 5 dwelling units per acre.

Policy d The location, intensity, and design of new development shall respect existing neighborhood values, natural environmental conditions and carrying capacities, scenic resources, and resources of other social, cultural, or recreational concern.

Policy e New growth shall be accommodated through development in areas where vacant land is contiguous to existing or programmed urban facilities and services and where the integrity of existing neighborhoods can be ensured.

Policy g Development shall be carefully designed to conform to topographical features and include trail corridors in the development where appropriate.

Policy i Employment and service uses shall be located to complement residential areas and shall be sited to minimize adverse effects of noise, lighting, pollution, and traffic on residential environments.

Policy j Where new commercial development occurs, it should generally be located in existing commercially zoned areas as follows:

- in small neighborhood-oriented centers provided with pedestrian and bicycle access within reasonable distance of residential areas for walking or bicycling.
- in larger area-wide shopping centers located at intersections of arterial streets and provided with access via mass transit; more than one shopping center should be allowed at an intersection only when transportation problems do not result.
- in free-standing retailing and contiguous storefronts along streets in older neighborhoods.

Policy k Land adjacent to arterial streets shall be planned to minimize harmful effects of traffic; livability and safety of established residential neighborhoods shall be protected in transportation planning and operations.

Policy l Quality and innovation in design shall be encouraged in all new development; design shall be encouraged which is appropriate to the plan area.

***Resolution 270-1980 (Zone Change Policy)***

This Resolution requires that one of three findings be made for a change of zone: that there was an error when the existing zone map pattern was created, or that changed neighborhood or community conditions justify the change, or that a different use category is more advantageous to the community. The applicant is required to justify the request.

***Resolution 91-1998 (R-70)***

This Resolution establishes an overall direction for implementation of the City's growth policies, with a framework emphasizing:

- development of community and regional activity centers and major transportation corridors (high capacity corridors); encourage increased densities and mixed uses in activity centers and corridors; meet the needs of residents closer to their homes or employment to decrease Vehicle Miles Traveled and automobile dependence.
- maintenance, enhancements and upgrades of roads and utilities in the core area, to prevent deterioration of existing communities and to encourage infill; diversify the Downtown land use mix with public facilities, hotels, office and retail development, more and higher density housing; generate more activity and attract more private investment in the Downtown area.
- enhance transit system performance, consistent with the principles of a compact urban form and a network of centers and corridors; improve the viability of transit as an alternative to the single-occupancy vehicle and reduce Vehicle Miles Traveled; improve pedestrian mobility and the character of the pedestrian environment, transit orientation and bicycle connections, within centers and corridors.
- plan the timing of road and utility construction to ensure orderly growth, and coordinate capacity increases and street extensions; transportation improvement programs must

recognize the significance of natural, historic, and cultural resources and include strategies for minimizing adverse impacts on them.

***Long Range Roadway System***

The Long Range Roadway System designates Eubank as a Principal Arterial, with a right-of-way of 124'.

***ANALYSIS– Zone Map Amendment***

***Conformance to Adopted Plans, Policies, and Ordinances***

This is a request for a zone map amendment for Tract E-1 which is approximately 40 acres in size. The request is to change the existing zoning (SU-1 for Limited IP Uses) to IP zoning. And, although the zoning requested is "straight" IP, some prohibited uses are listed on page 12 of the accompanying master plan.

As required by the Zoning Code, the request for a change to IP is accompanied by a request for Master Development Plan approval for a larger 219-acre site. If approved, this request would bring consistency in zoning with Tract E-1 and the surrounding parcels. It is consistent with the Comprehensive Plan regarding economic development and employment opportunities. Economic development considerations and the economics of location have driven much of the technology-based development in the immediate area, taking advantage of the area's proximity to Sandia National Laboratories and other technology ventures. The purpose of this zone change is to facilitate the overall Sandia Science and Technology Park (SSTP) Master Development Plan which will assist the City of Albuquerque in taking a more direct role in the development of this area. Substantial changed conditions exist in this area, as stated in the *background* section of this report. The immediate area surrounding the Sandia Science and Technology Park is emerging as a major activity center that includes a mix of residential, commercial, office and community uses that will create a variety of employment and life style choices. The zone map amendment to IP would further stabilize the land use in the plan area as an industrial, research and technology park. The proposed zoning would not be harmful to adjacent property and is not in conflict with adopted City Plans or policies. It is consistent with the goals and policies of the City Comprehensive Plan regarding economic development and employment opportunities.

***ANALYSIS – Master Development Plan***

***Conformance to Adopted Plans, Policies, and Ordinances***

This is a request for approval of a Master Development Plan for a 219-acre site located on Eubank Boulevard, south of Gibson Boulevard. The master plan submittal furthers the applicable Goals and policies of the Comprehensive Plan by providing a framework for a quality urban environment which perpetuates the tradition of identifiable, individual but integrated communities within the

metropolitan area and which offers variety and choice in transportation, work areas, and life styles, while creating a visually pleasing built environment.

The master plan submittal will meet the *Zoning Code* requirements for a Master Development Plan with some additions and changes as discussed below.

The master plan proposes that individual site plans in conformance with the master development plan design guidelines and criteria go to the Planning Director for "expedited city review and approval process". In order for this to occur, the design guidelines/criteria should be reformatted into a section of conditions and expanded and/or amended. Planning staff has concerns regarding the feasibility of reviewing proposed projects in an expedited review process when the information that is required for evaluation is sandwiched between superfluous information.

Additionally, a Master Developer is proposed to administer the site. Interested parties are now in the process of applying for this job and a selection may be made prior to the time of the EPC March hearing.

As agreed to in the Memo Of Understanding between the City and the applicant, a pre-approved, infrastructure cost-sharing formula which assigns a fixed cost or fixed cost percentage for each parcel based on its prorated share of on-site and off-site infrastructure not been submitted.

In the Existing Conditions section of the plan on page 14, a Class II Cultural Resources Investigation report is mentioned. A copy of this report should be included with this submittal.

***Site Plan Layout / Configuration***

The site is specified with proposed uses as allowed in the IP zone. The subject site is currently comprised of 6 tracts and is to be divided into numerous smaller lots that are not specified but remain flexible in size according to potential user's needs. *

There are two phases proposed within the plan and are shown opposite page 66 in the plan. The first phase is the northern properties comprising proposed lots 1-16, the EMCORE expansion site, and Lots 17-21. The second phase is comprised of the southern portion of the site with proposed lots 22-40. Phase 2 of this plan is problematic in the number of encumbrances involving landfill and power line issues and the fact that an easement is needed to access the southernmost parcels. Also mentioned in the Phasing Plan on page 66 is an infrastructure requirement and cost-sharing program that would have to be administered by a coordinator either with the City of Albuquerque or within a landowner group. This needs clarification as to what the applicant is envisioning in the case that a Master Developer does not emerge.* The maximum building height allowed for the site is in accordance with the O-1 zone. Minimum

setbacks vary according to specific street frontages and are listed on page 42 of the plan. The maximum floor area ratio (FAR) for the entire site is 0.25.

The site layout in the Design Guidelines section of the plan discusses commons areas, plazas, courtyards and other outdoor activity or seating areas as well as pedestrian paving connections and bike trails that create a campus-like environment.

***Vehicular Access, Circulation and Parking***

Vehicular ingress and egress and internal circulation requirements for the site are addressed in the Circulation section of the Master Plan Concept on page 25. Eubank Boulevard is the only access to the SSTP at this point. The proposed Innovation Parkway will be the central access to the park when developed.

The master plan does not state whether the proposed internal campus streets are to be public or private. At the time of this writing, a Traffic Impact Analysis has not been submitted so it is unknown what improvements to Eubank Boulevard or other vicinity streets might be proposed. Eubank is currently under study by the City for, ultimately, a six-lane facility. This case may have to be deferred until the TIS is completed.

Parking for the SSTP is to be calculated at one parking space per 200 square feet of leasable space for office and retail parcels. Surplus parking is to be located in off-site areas and, according to the plan on page 40, "can exceed the minimum standard, plus 10 percent". In the same paragraph, the statement is made that "No maximum parking limit is established with this plan". The plan is unclear as to what the proposal is for parking within the site.

***Pedestrian and Bicycle Access and Circulation, Transit Access***

Pedestrian amenities listed in the plan include seating opportunities along trails and sidewalks in the form of fixed benches, informal grass berms and seawalls. Picnic tables, receptacles and bike racks will be provided within the street corridor and pocket parks. Some unique and welcome features called for in the pocket parks are drinking fountains and exercise stations. However, the pocket parks are not defined as to size and are called out as conceptual. The pocket parks should be enhanced and defined as to size, landscaping and amenities.

Pedestrian and bicycle circulation within the SSTP is to be accomplished through a system of trails and sidewalks. Pedestrian links are to be included between all building entries and street

side trails or sidewalks and connections are proposed to existing off-site facilities along Eubank Boulevard, the Tijeras Arroyo and Manzano Mesa Community Park.

The City's Trails and Bikeways Facility Plan identifies a planned primary trail along Southern Avenue and proposes a secondary trail along Eubank Boulevard from the KAFB gate. According to the submittal, pedestrian and bicycle circulation with the plan area "will be accomplished through a system of trails and sidewalks. Six foot sidewalks are being proposed on the opposite side of the street from the 10-foot trails." A Pedestrian Facilities Plan is shown on page 27. Although the plan states that "pedestrian links will be included between all building entries and street side trails or sidewalks" and that "connections will be made to existing off-site facilities along Eubank Boulevard and the Tijeras Arroyo and up through Manzano Park", there is no requirement of individual parcels to do so and no prescribed method of insuring that this occurs.

Bicycle parking is required at one space per 20 auto spaces. This requirement is the Zoning Code minimum. The Transit Department notes that if the intent is for "Bicycle parking for employees shall be provided to promote alternative vehicle use", then standards should be set above the minimum. Requirements for provision of bicycle lockers, showers, and changing rooms would better promote alternative vehicle use. Planning staff agrees with this observation.

Parks and Recreation Department notes that in the previous approval of the EMCORE expansion that a 9-foot trail was identified as a part of the infrastructure improvements to be made along Eubank. This previously approved trail should be included on the Pedestrian Facilities Plan. Parks is also concerned about how the timing of infrastructure improvements and easements and rights-of way for trails would be handled in the expedited approval process. The Parks Department wants to ensure that construction of trails would be done in a logical manner and that new trails are protected from damage during construction of other areas of the park.

Additionally, Parks would like language in the plan that ensures that a separation of at least 5-feet is allowed between the trails and the face of curb and a minimum of 3-feet between the trails and any wall or other vertical element; that the landscaping improvements along the asphalt trails must not encroach upon the trail itself; that trees be a minimum of 3-feet away from the trails and shrubs at their mature spread must not encroach upon the trail; and that design of all trails should comply with the ASHTO 1999 Guide for the Development of Bicycle Facilities and be further coordinated with the Trails Planner at DRC.

Transit in this area is serviced by Route 2. Transit notes that under Section 6, Infrastructure and Engineering, Transit Facilities, the second bullet under effective promotion should be re-worded. It is undesirable for a "transit stop design that screens those waiting for transit service from street traffic." It is important that those waiting for transit are not screened from the view of the transit driver. Better wording would include shelters or buffers from traffic. Also, enhanced transit stops should be located adjacent to Pedestrian Access routes. Enhanced transit stops would provide shelter, seating, and lighting for passengers. Pull-outs will be required along Innovation Parkway since it is planned to be a two-lane facility. Location and design of any transit amenities should be coordinated with the Transit Department.

***Lighting and Security***

Lighting is addressed in the plan on page 45. Site lighting is proposed to be 16-feet high at walkways and entry plazas, 20-feet high (max.) in parking lots and streetlights 30-feet high maximum. Public Service Company of New Mexico states that streetlights must me a minimum of 40-feet tall. Up lighting for trees, walls and architectural features is mentioned, but maximum wattage should be determined and designed to meet the New Mexico Night Sky Protection Act. An additional note should be added to the lighting criteria as follows: "Site lighting, pole-mounted and building-mounted, shall be full cut-off fixtures (e.g. shoe box fixtures) to minimize fugitive light".

***Landscaping***

The master development plan includes a Landscape Master Plan on page 31. The stated design goals of the plan are to buffer/screen, shade/climate control, defines uses or activities, highlight specific features, sensory stimulation and education.

The landscape plan shows conceptual treatment of certain areas within the plan site such as streetscapes, pocket parks, etc. Streetscapes are to be defined with a mix of coniferous and deciduous trees, flowering trees and shrubs. Entry zones are to be distinguished with the formal use of native turf grasses. Naturalistic areas are called for adjacent to the Tijeras arroyo and in the utility corridors at the southern end of the site. The Landscape Master Plan appears to be illustrative and would benefit from more prescriptive requirements.

Appendix B lists a general plant palette. The palette for the public view areas (streetscape, etc.) should be narrowed and defined in order to provide the cohesive appearance and "define a common image for architectural and landscape design while still providing for a broad palette for unique innovation". In addition, Ash species are listed in the palette and should be replaced with native oaks or other species that are not currently under infestation.

On page 40, steel edging is not allowed for the separation of turf and planting beds. On the next page, 41, the second bullet from the bottom states that steel headers may be used to separate turf and planting beds. The plan should distinguish between the two separators.

The master development landscape plan is basically a list of suggestions. However, a note under the Design Guidelines section on page 39 does require that "including tree coverage, living plant materials shall cover a minimum of 75 percent of the landscape area." This requirement is not acceptable, as trees are not considered part of that 75% coverage in the zoning code. Additionally, this type of note should be included under the landscape section.

In order to assure that adequate landscaping is provided with future site development plans, notes should be added to the Master Development Plan, the Master Landscape Plan, and the Design Guidelines - Criteria stating: "Individual site plans shall have landscaping on at least fifteen percent of the net lot area and live landscape, not including tree canopies, at maturity, shall cover 75% of the landscape area."

***Grading, Drainage, Utility Plans***

The master plan includes a Master Drainage Plan in the Infrastructure and Engineering Section. The stated goals of the drainage plan are to eliminate or minimize large dedicated ponds that reduce buildable areas, minimize expensive public and private storm drainage infrastructure, encourage water harvesting, and drain run-off to the public streets and storm sewers.

The Public Service Company of New Mexico has expressed concerns regarding the placement of ponding areas beneath power lines. Items of concern include ability to service lines with ponds underneath, drainage causing erosion around power lines, and grade issues for equipment to access power lines.

According to Public Works, Utility Development, the Utility plan (Pg. 63) has not been approved by The Public Works Department. They further state that approved plans for utilities, drainage, and traffic must be the basis for the SIA, which is supposed to accompany the MDP.

***Architecture and Signage***

An architectural control committee will be established by the SSTP or the Master Developer will be responsible for enforcing the design guidelines for the park.

The Architecture section (page 43) discusses site plan for subdivision requirements such as FAR, building heights and setbacks as well as context and building articulation. The section under

Building Articulation has certain prescribed requirements related to edge treatments that "step down" to relate to the scale of the pedestrian, employing variety in structural forms to create visual character and avoid long, unarticulated facades.

Rooftop and ground-mounted equipment are required to be architecturally screened with materials compatible with the buildings.
Materials and colors are addressed but none of those mentioned are required, only suggested and encouraged, with the exception of the entry monument theme. Materials that are prohibited are listed and include chain link fencing, metal paneling, untreated block or wood walls, highly reflective surfaces and materials with high maintenance requirements.

The open courtyard design is required and is employed to form transitions between parking areas and building facades. The plazas or commons areas that are identified in two areas of the plan have no process for becoming reality. There should be a land dedication requirement in order to assure that these pieces are earmarked and developed as plazas. Experience has shown that if items such as land dedication are not required than individual users may choose not to utilize their property in the desired manner. In addition, more of these commons areas should be provided in other areas of the park, specifically the large area south of the South Pointe Mobile Home Park. The applicant has stated that these were not shown in order to provide flexibility for a potential large user.

On page 43, the first bullet discusses awnings and canopies but does not prohibit plastic or vinyl. The features should be architecturally integrated with the buildings, as well.

## *Design Standards – Criteria*

As touched on throughout this report, design guidelines should be amended to make sure that development on this site is consistent, complimentary and of a high caliber. Although some of the following guidelines are in the master plan, many are not and some are worded differently so as to change the context or meaning of the condition. The following guidelines should be added to the submitted design guidelines criteria and the submitted design guidelines criteria amended accordingly:

**Parking / Circulation**

- The allowed parking shall be equal to the required parking plus 10%.
- ADA-compliant parking shall be located adjacent to main building entries.
- Cross-access provisions between adjoining parcels are required.

**Pedestrian Amenities**

- Pedestrian crossings that are a minimum width of 6-feet which are clearly demarcated with slightly raised and/or textured paving shall be provided where pedestrian paths cross-vehicular entrances and drive aisles.
- Pedestrian paths that are perpendicular to parking shall be protected from overlapping parked cars by permanently anchored tire stops, bollards or raising the walk to provide for a 6 foot wide clear pedestrian area (.assume a 2' overhang for cars).
- Shaded pedestrian access shall be provided, including a clear 6-foot-wide path with adjacent shade trees spaced 25-feet on center within planters that have a minimum interior dimension of 5 feet square.
- A sidewalk with a minimum clearance of 8 feet shall be provided along the front of smaller buildings (4,000 square feet or less).
- A shaded sidewalk that is a minimum of 15-feet-wide shall be provided along the front of larger buildings (more than 4,000 square feet). Shade can be provided with architecturally integrated portals or canopies, or by trees placed at intervals of 25 feet in planters with a minimum interior dimension of 5 feet x 5 feet.
- A continuous sidewalk that is a minimum of 6-feet wide shall be located around the perimeter of larger buildings (more than 4,000 square feet) to provide pedestrian connections between parking areas and entrances.
- Outdoor patio space, minimum 250 square feet, with tables and seating shall be provided for each building. The patio shall have adequate shading provided by trees and/or a shade structure that integrates with building architecture.
- Convenient Pedestrian connections shall be provided from each building to the internal circulation system and to adjacent roadways. A minimum 6-foot clear pathway is required with shade trees spaced at 25-foot intervals (as practical) in planters with interior dimensions of 5 x 5 feet.

**Bicycle Amenities**

- Bicycle racks shall be conveniently located near building entrances but not within pedestrian pathways or landscape areas.
- A covered and secured bicycle storage area that is a minimum of 200 square feet in size is required for each building.
- Each building shall provide a convenient shower facility available to bicyclists and other employees.

**Non-vehicular measures**

- The following measures to encourage non-vehicular travel are required:

a. On site bicycle lockers and/or a secured and covered bicycle storage area
b. Car/vanpool preferred parking near the entrances to buildings that is clearly demarcated for this purpose.

**Landscaping & Buffering**

- A 10-foot wide landscape buffer (with trees at least 8-feet high at the time of planting) is required along property lines' which abut residential zones. Trees shall be planted at a minimum interval of 25 feet; a mix of evergreens and deciduous trees shall be used in the buffer zone.
- A mix of evergreen (coniferous) and deciduous trees shall be used within parking areas.
- Buffer areas shall include a mix of evergreen (coniferous) and deciduous trees.
- 75% of landscape areas must be covered with living, vegetative material, not including tree canopies. High-water use turf must be limited in application to 20% of the landscaped area.
- Perimeter walls shall comply with the City's *Design Manual for Subdivision Access and Perimeter Walls*.
- No chain-link, razor wire (concertina) or plastic vinyl fencing is permitted.
- Low walls 2 to 3 feet high shall be used to screen parking areas adjacent to streets. The walls shall integrate with building materials/colors.

**Architecture**

- Building design shall be architecturally integrated within the site and contextual to buildings within the vicinity.
- All canopies and ancillary structures shall be architecturally integrated with main buildings. Special consideration shall be given to roof structures, including materials.
- The top of all rooftop equipment shall be below the top of parapet and screened from view from the property lines of this site. Alternatively, rooftop equipment shall be screened by rooftop walls that are painted to match the predominant building color. Rooftop equipment and other penetrations shall be painted to match the roof color or the predominant building color. All ground mounted equipment shall be screened by screen walls with top of equipment below top of screen wall.
- All roof penetrations shall be painted to match roof color or general building color.
- The front facade of all buildings shall have canopies, portals or awnings along the entire facade length providing pedestrians with shade. In the absence of architectural shading, shade trees shall be planted in 5 x 5 foot planters at a distance of 25 feet on center along the front facade.
- No generic franchise building elevations or canopies are permitted.
- No plastic or vinyl building panels, awnings or canopies are permitted. Awnings and canopies shall be integrated with building architecture.

- No chain link, razor wire or plastic/vinyl fencing is permitted.
- No freestanding cell towers or antenna shall be permitted, antenna shall be integrated into the building architecture.
- ATM's shall be architecturally integrated with building design.
- Loading docks shall be screened by walls and covers that are architecturally integrated with the building.
- Refuse enclosures shall be compatible in design, color and material with building architecture. The gates shall be opaque; chain link gates are not allowed.
- Drive through facilities shall be shaded with architecturally integrated canopies.

**Signage**

- Monument signs which are integrated with building colors and materials are the only free standing signs allowed.
- Building-mounted signs shall consist of individual channel letters. No illuminated plastic panel signs are allowed except logos.

**Lighting**

- Light fixtures shall be a maximum of 25 feet high. The light fixtures shall be fully shielded horizontal lamps so that no fugitive light shall escape beyond the property line. All light fixtures shall be full-cutoff type to prevent fugitive light; no light source shall be visible from the site perimeter.

***Concerns of Reviewing Agencies / Pre-Hearing Discussion***

Transportation Development Services has not received a TIS at the time of this writing. Staff expects a memo with conditions from Mr. Joe David Montano upon his receipt of this information. This memo will be forwarded to all concerned parties.

Public Service Company of New Mexico has submitted a letter which is included with this report. They state at the outset of their letter that they believe that satisfactory amendments to the plan can be made to address their concerns. A brief summary of those concerns include:

- The Eubank widening and how it will affect PNM's ability to operate at their switching station
- Restriction of vehicles and equipment parking on Innovation Road and any other roads that involve access to the utility facilities
- Coordination and cost discussion of undergrounding utilities
- Conflicts regarding easements and setbacks
- Power needs of the SSTP

- Drainage ponds beneath power lines
- Street light heights
- Placement of landscape and monument features interfering with PNM operations
- Buffer/screening as it relates to power line poles
- How PNM fits into the Administrative Approval process

Utility Development states concerns regarding the MOU (pg. 10) which specifies that the Master Development Plan 'will include a pre-approved cost sharing formula which assigns a fixed cost or percentage of fixed costs for each parcel.' The submittal includes neither. It offers only a general discussion of assumptions and suggestions to be administered by some unnamed future coordinator. (See Section 7:Phasing.)

The MDP does not identify parcels. It offers an 'Illustrative Master Plan' and no subdivision. Utility Development asks the question about the applicants' intention to leave the land unplatted and the use of 'Illustrative' in this context. Utility Development staff also believes, as does other City staff, that a master development plan that is only intended as an example or possible plan cannot be used to justify waiving further EPC and or DRB review.

The MOU calls for a Subdivision Improvements Agreement (SIA) to accompany the MDP. (Pg. 9) The SIA should be included in the EPC submittal.

These issues are critical if development is to occur in a 'piecemeal...fashion' as acknowledged in the MDP. (Pg. 65.) Utility Development recommends deferral until they are resolved.

Transit Department requires that a Transportation Demand Management (TDM) program is developed with each project in the Plan area. The Transit Department also recommends that individual TDM programs organize into a Transportation Management Association (TMA).

***Neighborhood Concerns***

Staff has not received any input from neighbors regarding this request.

***Conclusions***

The request for a zone map amendment to establish IP zoning is justified under Resolution 270-1980. The request furthers the applicable goals and policies of the Comprehensive Plan.

The request for approval of a Master Development Plan also furthers the goals and policies of the Comprehensive Plan as it is consistent with the Plan regarding economic development and employment opportunities. Much of the technology-based development in the immediate area is

driven by economic development considerations and the economics of location given the area's proximity to Sandia National Laboratories and other technology ventures. The request will meet the Zoning Code requirements for a Master Development Plan with some changes and additions. One such addition should be a listing of prescriptive conditions that will allow the administrative review process to proceed smoothly. Along these lines, the applicant has submitted a Draft flow chart of the Administrative Approval process and is working on a list of conditions that will assist the Planning Director in his or her evaluation of these projects as they come in for review. Other changes or amendments should be added to the plan and are listed in the Design Guidelines section of this report as well as in the conditions of approval.

***FINDINGS – 01110-00000-00120, March 22, 2001 – Zone Map Amendment***

1. This is a request for a zone map amendment from a 40-acre parcel from SU-1 for Limited IP Uses to IP zoning on Tract E-1, Manzano Mesa, located on Eubank Boulevard between Southern Boulevard and KAFB. This request accompanies a request for approval of a master development plan.

2. The requested zoning furthers the applicable Goals and policies of the *Comprehensive Plan* by providing the opportunity for a quality urban environment which perpetuates the tradition of identifiable, individual but integrated communities within the metropolitan area and which offers variety and choice in transportation, work areas, and life styles, while creating a visually pleasing built environment.

3. The requested zoning furthers and fulfills the policies of *R-270-1980.* The proposed zoning will further stabilize the land use in the area as an industrial, research and technology park. A different use category is more advantageous to the community as articulated in the *Comprehensive Plan.* This change of zone will not be harmful to adjacent property, the neighborhood or the community.

4. As required by the Zoning Code, this request for a change to IP zoning is accompanied by a Master Development Plan for the subject site.

***RECOMMENDATION - 01110-00000-00120, March 22, 2001***

***APPROVAL of 01110-00000-00120, a request for zone map amendment from SU-1 for Limited IP Uses to IP for Tract E1, Manzano Mesa, based on the preceding findings.***

***FINDINGS – 01128-00000-00121, March 22, 2001- Master Development Plan***

1. This is a request for a master development plan for a 219-acre site located on Eubank Boulevard between Southern Boulevard and KAFB.

2. The master plan submittal furthers the applicable Goals and Policies of the *Comprehensive Plan* by providing the framework for a quality urban environment which perpetuates the tradition of identifiable, individual but integrated communities within the metropolitan area and which offers

variety and choice in transportation, work areas, and life styles, while creating a visually pleasing built environment.

3. A list of clearly defined prescriptive conditions that will assist the Planning Director in his or her evaluation of these projects as they come in for review would be a valuable tool that would allow the administrative review process to proceed smoothly.

4. The second phase is comprised of the southern portion of the site with proposed lots 22-40. Phase 2 of this plan is problematic in the number of encumbrances involving landfill and power line issues and the fact that an easement is needed to access the southernmost parcels.

5. The pre-approved, infrastructure cost-sharing formula which assigns a fixed cost or fixed cost percentage for each parcel based on its prorated share of on-site and off-site infrastructure as agreed to in the Memo Of Understanding between has not been submitted.

6. The Landscape Master Plan is conceptual and would benefit from more prescriptive requirements.

7. The master plan submittal will meet the *Zoning Code* requirements for a Master Development Plan with some additions and changes.

8. The subject site is currently comprised of 6 tracts and is to be divided into numerous smaller lots that are not specified but remain flexible in size according to potential user's needs.

***RECOMMENDATION - 01128-00000-001210, March 22, 2001***

***APPROVAL of 01110-00000-00120, a request for approval of a master development plan for Tract A, Lands of Shaw, Mitchell & Malloy Partnership, Tract E1, Manzano Mesa, Section 33, T10N, R4E, SE ¼, NW ¼, SW ¼, Section 33, T10N, R4E, SW ¼, SE ¼, Section 33, T10N, R4E, N ½, SW ¼, NW ¼ between Eubank Boulevard and Southern Boulevard and KAFB based on the preceding findings and the following conditions:***

***CONDITIONS OF APPROVAL - 011280-00000-00121, March 22, 2001***

1. The submittal of this site plan to the DRB shall meet all EPC conditions; a letter shall accompany the submittal, indicating all modifications that have been made to the site plan since the EPC submittal, including how the site plan has been modified to meet each of the EPC conditions.

2. The pre-approved, infrastructure cost-sharing formula which assigns a fixed cost or fixed cost percentage for each parcel based on its prorated share of on-site and off-site infrastructure as agreed to in the Memo Of Understanding shall be been submitted prior to DRB approval.

3. A copy of the Class II Cultural Resources Investigation report mentioned in the Existing Conditions section of the plan on page 14, shall be included with this submittal.

4. Pocket parks sizes shall be specifically defined as to size, landscaping and amenities.

5. Pedestrian links shall be included between all building entries and street side trails or sidewalks and connections shall be made to existing off-site facilities along Eubank Boulevard, the Tijeras Arroyo and through Manzano Park.

6. Bicycle parking for employees shall be provided to promote alternative vehicle and provision of bicycle lockers, showers, and changing rooms shall be provided to promote alternative vehicle use.

7. Parks and Recreation Department notes that in the previous approval of the EMCORE expansion that a 9-foot trail was identified as a part of the infrastructure improvements to be made along Eubank. This previously approved trail shall be included on the Pedestrian Facilities Plan section of the master development plan.

8. Design of all trails shall comply with the ASHTO 1999 Guide for the Development of Bicycle Facilities and shall be further coordinated with Dian Scena, Trails Planner at DRC.

9. Enhanced transit stops shall be located adjacent to Pedestrian Access routes and shall provide shelter, seating, and lighting for passengers. Pull-outs are required along Innovation Parkway since it is planned to be a two-lane facility.

10. Up lighting for trees, walls and architectural features is mentioned shall specify maximum wattage and shall be designed to meet the New Mexico Night Sky Protection Act.

11. Steel edging shall not be used for the separation of turf and planting beds.

12. The plazas or commons areas that are identified in two areas of the plan shall be dedicated at time of platting to ensure that these pieces are earmarked and developed as plazas.

13. The following guidelines shall be added to the submitted design guidelines – criteria if they are not in the plan, and the submitted design guidelines - criteria amended accordingly:

a. The allowed parking shall be equal to the required parking plus 10%.

b. ADA-compliant parking shall be located adjacent to main building entries.

c. Cross-access provisions between adjoining parcels are required.

d. Pedestrian crossings that are a minimum width of 6-feet which are clearly demarcated with slightly raised and/or textured paving shall be provided where pedestrian paths cross-vehicular entrances and drive aisles.

e. Pedestrian paths that are perpendicular to parking shall be protected from overlapping parked cars by permanently anchored tire stops, bollards or raising the walk to provide for a 6 foot wide clear pedestrian area (.assume a 2' overhang for cars).

f. Shaded pedestrian access shall be provided, including a clear 6-foot-wide path with adjacent shade trees spaced 25-feet on center within planters that have a minimum interior dimension of 5 feet square.

g. A sidewalk with a minimum clearance of 8 feet shall be provided along the front of smaller buildings (4,000 square feet or less).

h. A shaded sidewalk that is a minimum of 15-feet-wide shall be provided along the front of larger buildings (more than 4,000 square feet). Shade can be provided with architecturally integrated portals or canopies, or by trees placed at intervals of 25 feet in planters with a minimum interior dimension of 5 feet x 5 feet.

i. A continuous sidewalk that is a minimum of 6-feet wide shall be located around the perimeter of larger buildings (more than 4,000 square feet) to provide pedestrian connections between parking areas and entrances.

j. An outdoor patio space, minimum 250 square feet, with tables and seating shall be provided for each building. The patio shall have adequate shading provided by trees and/or a shade structure that integrates with building architecture.

k. Convenient Pedestrian connections shall be provided from each building to the internal circulation system and to adjacent roadways. A minimum 6-foot clear pathway is required

with shade trees spaced at 25-foot intervals (as practical) in planters with interior dimensions of 5 x 5 feet.

l. Bicycle racks shall be conveniently located near building entrances but not within pedestrian pathways or landscape areas.

m. A covered and secured bicycle storage area that is a minimum of 200 square feet in size is required for each building.

n. Each building shall provide a convenient shower facility available to bicyclists and other employees.

o. The following measures to encourage non-vehicular travel are required:

- On site bicycle lockers and/or a secured and covered bicycle storage area
- Car/vanpool preferred parking near the entrances to buildings that is clearly demarcated for this purpose.

p. A 10-foot wide landscape buffer (with trees at least 8-feet high at the time of planting) is required along property lines which abut residential zones. Trees shall be planted at a minimum interval of 25 feet; a mix of evergreens and deciduous trees shall be used in the buffer zone.

q. A mix of evergreen (coniferous) and deciduous trees shall be used within parking areas.

r. Buffer areas shall include a mix of evergreen (coniferous) and deciduous trees.

s. 75% of landscape areas must be covered with living, vegetative material. High-water use turf must be limited in application to 20% of the landscaped area.

t. Perimeter walls shall comply with the City's *Design Manual for Subdivision Access and Perimeter Walls.*

u. No chain-link, razor wire (concertina) or plastic vinyl fencing is permitted.

v. Low walls 2 to 3 feet high shall be used to screen parking areas adjacent to streets. The walls shall integrate with building materials/colors.

w. Building design shall be architecturally integrated within the site and contextual to buildings within the vicinity.

x. All canopies and ancillary structures shall be architecturally integrated with main buildings. Special consideration shall be given to roof structures, including materials.

y. The top of all rooftop equipment shall be below the top of parapet and screened from view from the property lines of this site. Alternatively, rooftop equipment shall be screened by rooftop walls that are painted to match the predominant building color. Rooftop equipment and other penetrations shall be painted to match the roof color or the predominant building

color. All ground mounted equipment shall be screened by screen walls with top of equipment below top of screen wall.

z. All roof penetrations shall be painted to match roof color or general building color.

aa. The front facade of all buildings shall have canopies, portals or awnings along the entire facade length providing pedestrians with shade. In the absence of architectural shading, shade trees shall be planted in 5 x 5 foot planters at a distance of 25 feet on center along the front facade.

bb. No generic franchise building elevations or canopies are permitted.

cc. No plastic or vinyl building panels, awnings or canopies are permitted. Awnings and canopies shall be integrated with building architecture.

dd. No chain link, razor wire or plastic/vinyl fencing is permitted.

ee. No freestanding cell towers or antenna shall be permitted, antenna shall be integrated into the building architecture.

ff. ATM's shall be architecturally integrated with building design.

gg. Loading docks shall be screened by walls and covers that are architecturally integrated with the building.

hh. Refuse enclosures shall be compatible in design, color and material with building architecture. The gates shall be opaque; chain link gates are not allowed.

ii. Drive through facilities shall be shaded with architecturally integrated canopies.

jj. Monument signs which are integrated with building colors and materials are the only free standing signs allowed.

kk. Building-mounted signs shall consist of individual channel letters. No illuminated plastic panel signs are allowed except logos.

ll. Light fixtures shall be a maximum of 25 feet high. The light fixtures shall be fully shielded horizontal lamps so that no fugitive light shall escape beyond the property line. All light fixtures shall be full-cutoff type to prevent fugitive light; no light source shall be visible from the site perimeter.

14. Transportation Planning: Dedication of Right-of-Way for Eubank Boulevard, 78-feet from centerline, at an appropriate time as determined by the City Engineer.

15. Public Works Department, Transportation Development conditions:

*Deborah L. Stover*
*Planner*

cc: Science & Technology Park Devel. Corp., 10520 Research Rd SE, Albuq. NM 87123
Consensus Planning, 924 Park SW, Albuq. NM 87104
Dolores Keane, Four Hills MHP Residents Assoc., 828 Trading Post Trl. SE, Albuq. NM 87123
Nancy Smart, Four Hills MHP Residents Assoc., 12320 Beaver Trl SE, Albuq. NM 87123
Cal Irvin, Willow Wood Neigh. Assoc., 10819 Wolf Creek Rd. SE, Albuq. NM 87123
David Saxon, Willow Wood Neigh. Assoc., 10836 Wasatch Rd. SE, Albuq. NM 87123

***Attachments***

## *CITY OF ALBUQUERQUE AGENCY COMMENTS*

### *PLANNING DEPARTMENT*

***Zoning Code Services***

"Reviewed, no comment."

### *PUBLIC WORKS DEPARTMENT*

**Transportation Development Services:**
To be transmitted under separate cover.

**Utility Development:**
The MOU (pg. 10) specifies that the Master Development Plan 'MDP':
'will include a pre-approved cost sharing formula which assigns a fixed cost or percentage of fixed costs for each parcel.' The submittal includes neither. It offers only a general discussion of assumptions and suggestions to be administered by some unnamed future coordinator. (See Section 7:Phasing.)

The MDP does not even identify parcels. It offers on an 'Illustrative Master Plan' and no subdivision. Is it the applicants' intention to leave the land unplatted? I question the use of 'Illustrative' in this context. A master development plan that is only intended as an example or possible plan cannot be used to justify waiving further EPC and or DRB review.

The MOU calls for a Subdivision Improvements Agreement 'SIA' 'accompanying' the MDP. (Pg. 9) The SIA should be included in the EPC submittal.

The Utility plan included (Pg. 63) has not been approved by The Public Works Department. Approved plans for utilities, drainage, and traffic must be the basis for the SIA, which is supposed to accompany the MDP.

These issues are critical if development is to occur in a 'piecemeal...fashion' as acknowledged in the MDP. (Pg. 65.) Recommend deferral until they are resolved.

**Traffic Engineering Operations:**
Need significant improvement of Eubank south of Stephen Moody and possibly right-of-way to accommodate improvements.

**Hydrology:**
An approved grading and drainage plan is required for Master Plan sign-off by the City Engineer.

**Transportation Planning:**
City of Albuquerque comments Regarding Eubank Boulevard

At the time of this writing (2-22-01), the required Traffic Impact Analysis (TIA) has not yet been submitted. Therefore, we do not know what it might recommend for improvements to Eubank Boulevard or other vicinity streets. We are aware that Eubank is already a congested street, and it is doubtful that off-site Eubank improvements of the magnitude that might reasonably be required of this applicant can significantly check Eubank's congestion. It can be expected, instead, that congestion of Eubank will increase because of SSTP and other prospective developments, including those on the DOE strip. Whether Eubank congestion will be manageable or can be kept within an acceptable level of service is highly problematic.

Meanwhile, the Public Works Department has a project under way to improve/reconstruct Eubank between Central Avenue and the KAFB/SNL gate. The project is presently in a study phase to determine design criteria, environmental factors, etc. for an ultimate six-lane facility. This phase will be followed by design and construction phases. This project has been given impetus and priority by the City administration's interest in the SSTP.

The study will recommend a 156-foot Eubank right-of-way extending from Southern/Gibson Boulevard southward to the existing KAFB entrance. From that point southward, Eubank continues as a principal arterial on the Long-Range Major Street Plan map, and as such should also have a 156-foot right-of-way. Accordingly, the Public Works Department will seek dedication of 78 feet from centerline from the SLO parcels that front Eubank. An appropriate time for this dedication may depend on the timing of the Eubank reconstruction, or upon SSTP/SLO platting actions, etc. A City objective for Eubank is to incur no City costs for right-of-way.

The City will also be seeking developer contributions for a share of the construction costs of the Eubank reconstruction. Such contributions may be in addition to the costs of whatever off-site improvements are recommended by the TIA, or they may include the costs of off-site improvements.

The Eubank reconstruction will include utilities, signalized intersections, bike facilities, landscaping, etc

Comments Regarding On-site Streets

The Master Plan does not state whether the proposed on-site streets (internal campus streets) are to be public or private streets. We assume, however, that they will be public streets. This will be necessary because at least one of the streets will be a through street providing access to the Willow Wood area and South Pointe Mobile Home Park.

The site plan should hold open the possibility of a secondary eastern access road, which might be an extension of Juan Tabo Boulevard into SSTP, intersecting Venture Road. Such an access road might be important in alleviating Eubank congestion.

Assurance should be provided that the site plan will not preclude access to adjacent land parcels.

Comments Regarding Infrastructure Funding

One topic that is not mentioned in the Master Plan has to do with the question, "who will fund and build basic infrastructure to make the Park attractive and usable for prospective occupants?" The Master Plan speaks of each "parcel" paying for and building its prorated share of infrastructure, but we find no recognition that initial basic infrastructure for the entire Park needs to be front-end financed and built. Such infrastructure could include the full length of Innovation Parkway, together with its trunk water, sewer, and drainage lines, basic electrical distribution, and probably the above-mentioned contribution to Eubank reconstruction and/or to off-site street improvements recommended by the TIA.

We suggest that the Master Plan should at least suggest some ways to get basic infrastructure funded and built. Perhaps front-ended by a Master Developer? Perhaps front-ended by the City (and/or other partners) on a reimbursement basis?

CONDITION recommended for "approval of Master Plan":

- Dedication of right-of-way for Eubank Boulevard, 78 feet from centerline, at an appropriate time as determined by the City Engineer

***Hydrology:***

***Traffic Engineering Operations:***

***ENVIRONMENTAL HEALTH DEPARTMENT***
***Air Quality Division***

***Environmental Services Division***

***NEIGHBORHOOD SERVICES***

"Four Hills MHP & Willow wood (both recognized associations) have been notified."

***PARKS AND RECREATION***
***Design & Development***

Parks & Recreation is primarily concerned about the timing of the infrastructure improvements and how easements and/or right-of-way for trails will be granted in the expedited approval process. Specifically, we want to ensure that construction of trails would be done in a logical manner and that new trails are protected from damage during construction of other areas of the park.

The proposed location of trail along Innovation Parkway beginning at the southern entrance and continuing east along Venture Road (lots 21, 20, 19, 18, 22, 23, 24) with a connection to the Tijeras Arroyo bike path is consistent with the Trails & Bikeways Facility Plan. The Landscape Master Plan calls out a 20' landscape / pedestrian access easement between proposed lots 24 & 25, this should be called out as a **public trail access easement**. The proposed trail along Eubank beginning at Opportunity Road and continuing north to Innovation Parkway is also consistent with this plan. Parks & Recreation supports the development of these and other proposed trails in the SS & TP and anticipates that the developer and/or an association of lot owners and tenants will maintain these trails as part of the landscaping maintenance proposed in section 4.

In a previously approved Master Development Plan (#1000554) for the Emcore expansion, a 9' trail was identified as part of the infrastructure improvements to be made along Eubank. This previously approved trail should be included on the Pedestrian Facilities Plan.

Additionally, please allow for at least 5' of separation between the trails and face of curb and a minimum of 3' between the trails and wall or other vertical element. Be advised that landscaping improvements along the asphalt trails must not encroach on the trail itself. Trees must be a minimum of 3' away from the trail and shrubs, at their mature spread, must not encroach on the trail. Design of the trails should comply with the ASHTO 1999 Guide for the Development of Bicycle Facilities and be further coordinated with the Trails Planner Diane Scena at DRC.

***OPEN SPACE DIVISION***
"No Adverse Comment."

***POLICE DEPARTMENT/Planning***

***SOLID WASTE MANAGEMENT DEPARTMENT***
***Refuse Division***
"No Adverse Comment."

***FIRE DEPARTMENT/Planning***

***TRANSIT DEPARTMENT***

Enhanced Transit stops should be located adjacent to Pedestrian Access routes. Enhanced Transit stops would provide shelter, seating, and lighting for passengers. Pull-outs will be required along Innovation Parkway since it is planned to be a two-lane facility.

Transportation Demand Management Program- A condition of approval for the Master Development Plan for the Sandia Science and Technology Park should require that a Transportation Demand Management (TDM) program is developed with

each project in the Plan area. The Transit Department also recommends that individual TDM programs organize into a Transportation Management Association (TMA). TMA's are private, non-profit, member-controlled organizations that provide transportation services in a particular area, such as a business district, mall, medical center, or industrial park. Transportation Management Coordinators (TMC) are professionals who work for TMA's or individual employers. TMA's are a practical and effective way to deliver TDM services. They can usually provide more services at a lower cost than programs managed by individual businesses. TMA's allow small employers to provide commute trip reduction services comparable to those offered by large companies.
The Transit Department has developed an extensive TDM program (ACT Now) that can be tailored to suit an individual business's needs. The Transit staff can also assist a group of TDM programs in beginning a TMA.

**Section 5 Design Guidelines**

The Plan is confusing on page 40. Can surplus parking exceed the minimum plus 10% or is "No maximum parking limit is established with this Plan."?

Bicycle parking is required at one space per 20 auto spaces. This requirement is the Zoning Code minimum. If the intent is for "Bicycle parking for employees shall be provided to promote alternative vehicle use", then standards should be set above the minimum. Requirements for provision of bicycle lockers, showers, and changing rooms would better promote alternative vehicle use.

**Section 6 Infrastructure and Engineering**

**Transit Facilities-** The second bullet under effective promotion should be re-worded. It is undesirable for a "transit stop design that screens those waiting for transit service from street traffic." It is important that those waiting for transit are not screened from the view of the transit driver. Better wording would include shelters or buffers from traffic.

This area is currently served by Route 2.

## *COMMENTS FROM OTHER AGENCIES:*

***BERNALILLO COUNTY***

***ALBUQUERQUE METROPOLITAN FLOOD CONTROL AUTHORITY***
Sandia Science and Technology Park, South Eubank, M-21
No objection to requested action. When Phase 2 develops, AMAFCA will require storm water quality treatment for discharge into the Tijeras Arroyo.

***ALBUQUERQUE PUBLIC SCHOOLS***

"No Adverse Comment."

***MIDDLE RIO GRANDE COUNCIL OF GOVERNMENTS***

The Long Range Roadway System designates Eubank Boulevard as a principal arterial which requires 124 feet. The Long Range Bikeway System proposes a bike lane on Eubank. There is no adverse comment provided there is adequate right-of-way for Eubank.

# City of Albuquerque

# DEVELOPMENT REVIEW APPLICATION

| | Supplemental form |
|---|---|
| **SUBDIVISION** | **S** |
| ____ Major Subdivision Plat | |
| ____ Minor Subdivision Plat | |
| ____ Vacation | **V** |
| ____ Variance (Non-Zoning) | |
| **SITE DEVELOPMENT PLAN** | **P** |
| ____ ...for Subdivision Purposes | |
| __x*__ ...for Building Permit | |
| ____ IP Master Development Plan | |
| ____ Cert. of Appropriateness (LUCC) | **L** |

| | Supplemental form |
|---|---|
| **ZONING** | **Z** |
| ____ Annexation & Zone Establishment | |
| ____ Sector Plan | |
| __X__ Zone Change | |
| ____ Text Amendment | |
| ____ Special Exception | **E** |
| **APPEAL / PROTEST of...** | **A** |
| ____ Decision by: Planning Director or Staff, DRB, EPC, Zoning Board of Appeals, LUCC | |

PRINT OR TYPE IN BLACK INK ONLY. The applicant or agent must submit the completed application in person to the Planning Department Development Services Center, 600 2nd Street NW, Albuquerque, NM 87102. Fees must be paid at the time of application. Refer to supplemental forms for submittal requirements.

**APPLICANT INFORMATION:**

NAME: Science and Technology Park Development Corp. PHONE: 845-8107

ADDRESS: 10520 Research Road SE FAX: 844-1389

CITY: Albuquerque STATE NM ZIP 87123 E-MAIL:

Proprietary interest in site: Manager of Sandia Science & Technology Park

AGENT (if any): Consensus Planning PHONE: 764-9801

ADDRESS: 924 Park Ave. SW FAX: 842-5495

CITY: Albuquerque STATE NM ZIP 87102 E-MAIL: cp consensusplanning.com

**DESCRIPTION OF REQUEST:** Master Development Plan for Sandia Science and Technology Park

**SITE INFORMATION: ACCURACY OF THE LEGAL DESCRIPTION IS CRUCIAL! ATTACH A SEPARATE SHEET IF NECESSARY.**

Lot or Tract No. See attached Block: Unit:

Subdiv. / Addn.

Current Zoning: IP Proposed zoning:

Zone Atlas page(s): M-21 No. of **existing** lots: 6 No. of **proposed** lots: 6

Total area of site (acres): 219 - MDP 49 - ZMA Density if applicable: dwellings per gross acre: dwellings per net acre:

Within city limits? X Yes. No, but site is within 5 miles of the city limits (DRB jurisdiction.) Within 1000FT of a landfill? yes

UPC No. See attached MRGCD Map No.

LOCATION OF PROPERTY BY STREETS: On or Near: Eubank Blvd. SE

Between: Southern SE and KAFB

**CASE HISTORY:**

List any current or prior case number that may be relevant to your application (Proj., App., DRB-, AX_,Z_, V_, S_, etc.): 1000935; 1000960

Check-off if project was previously reviewed by Sketch Plat/Plan ☐ , or Pre-application Review Team ☐ . Date of review:

**SIGNATURE** Jacqueline Fishman DATE 1/25/01

(Print) JACQUELINE FISHMAN ___ Applicant X Agent

**FOR OFFICIAL USE ONLY** Form revised September 2000

| | Application case numbers | Action | S.F. | Fees |
|---|---|---|---|---|
| ☐ INTERNAL ROUTING | | | | |
| ☐ All checklists are complete | 01110 - 00020 | ZMA | Z | $ 1,171.50 |
| ☐ All fees have been collected | 01125 - 00021 | PMP | P(1) | $ |
| ☐ All case #s are assigned | - - | | | $ |
| ☐ AGIS copy has been sent | - - | | | $ |
| ☐ Case history #s are listed | - - | | | $ |
| ☑ Site is within 1000ft of a landfill | - - | | | $ |
| ☐ F.H.D.P. density bonus | | | | Total |
| ☐ F.H.D.P. fee rebate | Hearing date 3/15/01 | | | $ 1,171.50 |

J. Chiz 1-25-01
Planner signature / date

Project # 1001031

* SUBJECT TO SPECIAL REVIEW PROCESS AS DEFINED BY ATTACHED MEMORANDUM OF UNDERSTANDING - SIGNED BY MAYOR, C.O.A.

**FORM Z:** ZONE MAP AMENDMENT AND ZONING CODE TEXT AMENDMENT

❑ **ANNEXATION AND ESTABLISHMENT OF ZONING**
- __ Zone Atlas map with the entire property(ies) precisely and clearly outlined and crosshatched (to be photocopied)
  NOTE: The Zone Atlas must show that the site is in County jurisdiction, but is contiguous to City limits.
- __ Letter briefly describing, explaining, and justifying the request
- __ Letter of authorization from the property owner if application is submitted by an agent
- __ Property Boundary Survey prepared by a licensed professional surveyor
- __ Office of Community & Neighborhood Coordination inquiry response, notifying letter, certified mail receipts
- __ Sign Posting Agreement
- __ TIS/AQIA Traffic Impact Study / Air Quality Impact Assessment form
- __ Fee (see schedule)
- __ Any original and/or related file numbers are listed on the cover application

EPC hearings are approximately 7 weeks after the filing deadline. Refer to schedule. **Your attendance is required.**

❑ **SECTOR DEVELOPMENT PLAN PHASE I - DRB CONCEPTUAL PLAN REVIEW** (Unadvertised)

❑ **SECTOR DEVELOPMENT PLAN PHASE II - EPC FINAL REVIEW & APPROVAL** (Public Hearing)

❑ **SECTOR DEVELOPMENT PLAN PHASE II - DRB FINAL SIGN-OFF** (Unadvertised)
- __ Copy of findings from required pre-application meeting (for the DRB conceptual plan review only)
- __ Proposed Sector Plan (30 copies for EPC, 6 copies for DRB)
- __ Zone Atlas map with the entire plan area precisely and clearly outlined and crosshatched (to be photocopied)
- __ Letter briefly describing, explaining, and justifying the request
- __ Office of Community & Neighborhood Coordination inquiry response, notifying letter, certified mail receipts (for EPC final review and approval public hearing only)
- __ TIS/AQIA Traffic Impact Study / Air Quality Impact Assessment form
- __ Fee for final review and approval only (see schedule)
- __ Any original and/or related file numbers are listed on the cover application

Refer to the schedules for the dates, times and places of D.R.B. unadvertised meetings and E.P.C. hearings. **Your attendance is required.**

☑ **AMENDMENT TO ZONE MAP (ZONE CHANGE)**
- N/A Application for sector development plan amendment (required only if site is within a sector plan's boundaries.)
- X Zone Atlas map with the entire property(ies) precisely and clearly outlined and crosshatched (to be photocopied)
- X Letter briefly describing, explaining, and justifying the request
  NOTE: Justifications must adhere to the policies contained in "Resolution 270-1980"
- X Letter of authorization from the property owner if application is submitted by an agent
- X Office of Community & Neighborhood Coordination inquiry response, notifying letter, certified mail receipts
- X Sign Posting Agreement
- X TIS/AQIA Traffic Impact Study / Air Quality Impact Assessment form
- X Fee (see schedule)
- X Any original and/or related file numbers are listed on the cover application

EPC hearings are approximately 7 weeks after the filing deadline. Refer to schedule. **Your attendance is required.**

❑ **AMENDMENT TO SECTOR DEVELOPMENT PLAN**
- __ Proposed Amendment referenced to the materials in the sector plan being amended
- __ Sector Plan to be amended with materials to be changed noted and marked
- __ Zone Atlas map with the entire plan area precisely and clearly outlined and crosshatched (to be photocopied)
- __ Letter briefly describing, explaining, and justifying the request
- __ Office of Community & Neighborhood Coordination inquiry response, notifying letter, certified mail receipts
- __ TIS/AQIA Traffic Impact Study / Air Quality Impact Assessment form
- __ Fee (see schedule)
- __ Any original and/or related file numbers are listed on the cover application

EPC hearings are approximately 7 weeks after the filing deadline. Refer to schedule. **Your attendance is required.**

❑ **AMENDMENT TO ZONING CODE OR SUBDIVISION REGULATIONS TEXT**
- __ Amendment referenced to the sections of the Zone Code being amended
- __ Sections of the Zone Code to be amended with text to be changed noted and marked
- __ Letter briefly describing, explaining, and justifying the request
- __ Fee (see schedule)
- __ Any original and/or related file numbers are listed on the cover application

EPC hearings are approximately 7 weeks after the filing deadline. Refer to schedule. **Your attendance is required.**

I, the applicant; acknowledge that any information required but not submitted with this application will likely result in deferral of actions.

JACQUELINE FISHMAN
Applicant name (print)

Jacqueline Fishman 1/24/01
Applicant signature / date

Form revised September 2000

❑ Checklists complete
❑ Fees collected
❑ Case #s assigned
❑ Related #s listed

Application case numbers
~~01PX-00035~~ 01PX-00012
01110 - 00006 - 00125
_____ - _____ - _____

J. Chavez 1-25-01
Planner signature / date

Project # 1000131

**FORM P(1): SITE PLAN REVIEW – E.P.C. PUBLIC HEARING**

☒ **SITE DEVELOPMENT PLAN FOR SUBDIVISION**
☒ **IP MASTER DEVELOPMENT PLAN**

- ☒ Scaled site plan and related drawings (folded to fit into an 8.5" by 14" pocket) **30** copies for EPC public hearings. For IP master development plans, include general building and parking locations, and design requirements for buildings, landscaping, lighting, and signage.
- ☒ Site plans and related drawings reduced to 8.5" x 11" format See file Set
- ☒ Zone Atlas map with the entire property(ies) precisely and clearly outlined and crosshatched (to be photocopied)
- ☒ Letter briefly describing, explaining, and justifying the request
- ☒ Letter of authorization from the property owner if application is submitted by an agent
- ☒ Office of Community & Neighborhood Coordination inquiry response, notifying letter, certified mail receipts
- ☒ Sign Posting Agreement
- ☒ 2 copies of the Conceptual Utility Layout Plan (mark one for Planning, one for Utility development)
- ☒ TIS/AQIA Traffic Impact Study / Air Quality Impact Assessment form with required signatures
- ☒ Fee (see schedule)
- ☒ Any original and/or related file numbers are listed on the cover application

EPC hearings are approximately 7 weeks after the filing deadline. Refer to schedule. **Your attendance is required.**

❑ **SITE DEVELOPMENT PLAN FOR BUILDING PERMIT**
❑ **SITE DEVELOPMENT PLAN FOR BUILDING PERMIT OF WIRELESS TELECOM FACILITY**

- __ Site plan and related drawings (folded to fit into an 8.5" by 14" pocket) **30** copies for EPC public hearings.
- __ Site Plan for Subdivision, if applicable, previously approved or simultaneously submitted. (Folded to fit into an 8.5" by 14" pocket.) **30** copies for EPC public hearings.
- __ Site plans and related drawings reduced to 8.5" x 11" format
- __ Zone Atlas map with the entire property(ies) precisely and clearly outlined and crosshatched (to be photocopied)
- __ Letter briefly describing, explaining, and justifying the request
- __ Letter of authorization from the property owner if application is submitted by an agent
- __ Office of Community & Neighborhood Coordination inquiry response, notifying letter, certified mail receipts
- __ Sign Posting Agreement
- __ Completed Site Plan for Building Permit Checklist
- __ 2 copies of the Conceptual Utility Layout Plan (mark one for Planning, one for Utility development)
- __ TIS/AQIA Traffic Impact Study / Air Quality Impact Assessment form with required signatures
- __ Fee (see schedule)
- __ Any original and/or related file numbers are listed on the cover application

**NOTE;** For wireless telecommunications facilities that are concealed and/or subject to site development plan review, the following materials are required in addition to those listed above for application submittal:

- __ Collocation evidence as described in Zoning Code §14-16-3-17(A)(5)
- __ Notarized statement declaring # of antennas accommodated. Refer to §14-16-3-17(A)(10)(d)2
- __ Letter of intent regarding shared use. Refer to §14-16-3-17(A)(10)(e)
- __ Letter of description as above also addressing concealment issues, if relevant. Refer to §14-16-3-17(A)(12)(a)
- __ Distance to nearest existing free standing tower and its owner's name if the proposed facility is also a free standing tower
- __ Registered Engineer's stamp on the Site Development Plans
- __ Office of Community & Neighborhood Coordination inquiry response as above **based on ¼ mile radius**

EPC hearings are approximately 7 weeks after the filing deadline. Refer to schedule. **Your attendance is required.**

❑ **AMENDED SITE DEVELOPMENT PLAN FOR SUBDIVISION**
❑ **AMENDED SITE DEVELOPMENT PLAN FOR BUILDING PERMIT**

- __ Proposed amended Site Plan (folded to fit into an 8.5" by 14" pocket) **30** copies for EPC public hearings
- __ DRB signed Site Plan being amended (folded to fit into an 8.5" by 14" pocket) **30** copies for EPC public hearings
- __ DRB signed Site Plan for Subdivision, if applicable (required when amending SDP for Building Permit) **30** copies for EPC public hearings
- __ Site plans and related drawings reduced to 8.5" x 11" format
- __ Zone Atlas map with the entire property(ies) precisely and clearly outlined and crosshatched (to be photocopied)
- __ Letter briefly describing, explaining, and justifying the request
- __ Letter of authorization from the property owner if application is submitted by an agent
- __ Office of Community & Neighborhood Coordination inquiry response, notifying letter, certified mail receipts
- __ Sign Posting Agreement
- __ Completed Site Plan for Building Permit Checklist (not required for amendment of SDP for Subdivision)
- __ TIS/AQIA Traffic Impact Study / Air Quality Impact Assessment form with required signatures
- __ Fee (see schedule)
- __ Any original and/or related file numbers are listed on the cover application

EPC hearings are approximately 7 weeks after the filing deadline. Refer to schedule. **Your attendance is required.**

I, the applicant, acknowledge that any information required but not submitted with this application will likely result in deferral of actions.

JACQUELINE FISHMAN
Applicant name (print)

Jacqueline Fishman 1/25/01
Applicant signature / date

Form revised September 2000

- ❑ Checklists complete
- ❑ Fees collected
- ❑ Case #s assigned
- ❑ Related #s listed

Application case numbers
01128 - 00000 - 00191
_____ - _____ - _____
_____ - _____ - _____

L. Chavez 1-25-01
Planner signature / date

Project # 1001031

# SANDIA SCIENCE & TECHNOLOGY PARK
# EPC SUBMITTAL
# January 25, 2001

## UPC Property Numbers

- 102105606508030111
- 102105426146010160
- 102105533032810144
- 102105519932820122
- 102105506419030122
- 102105506436220115

## Legal Descriptions

- Tract A, Lands of Shaw, Mitchell, and Mallory Partnership (SMM Partnership, 35 acres)
- Tract E-1, Manzano Mesa (APS, 40.7 acres)
- Section 33, T10N, R4E, Tract SE ¼ NW ¼ (APS, 40 acres)
- Section 33, T10N, R4E, Tract NW ¼, SW ¼ (SLO, 40 acres)
- Section 33, T10N, R4E, SW ¼, NE ¼ (SLO, 35 acres)
- Section 33, T10N, R4E, Tract N ½, SW ¼, NW ¼ (EMCORE, 20 acres)

# SANDIA SCIENCE & TECHNOLOGY PARK

- **MASTER DEVELOPMENT PLAN**
- **ZONE MAP AMENDMENT**

## Introduction

This is a request for a Master Development Plan for the Sandia Science & Technology Park (SS&TP). The Master Development Plan encompasses six parcels totaling 219 acres located along Eubank Boulevard, south of Southern and east of the Kirtland Air Force Base. The request also includes a zone map amendment to IP for a 48.9 acre parcel (Tract E-1, Manzano Mesa) that is currently zoned SU-1 for IP, and to be included in the Master Development Plan.

The SS&TP is envisioned to become a key driver in the region's economic development efforts. The Master Development Plan has been created to govern the development of the Park. It includes extensive design guidelines, a list of permissive uses based on IP zoning, Illustrative Master Plan, and Landscape Master Plan, Pedestrian Facilities Plan, Phasing Plan, Master Drainage Plan, etc.

The basis of the zone map amendment request is to include this parcel in the SS&TP and the changed neighborhood conditions in the area. This request is consistent with other requests that are currently pending and all are part of the SS&TP including:

1. The recent petition for annexation and establishment of IP zoning for the 40-acre APS parcel approved by the Environmental Planning Commission (EPC) on January 18th and scheduled to be before the City Council for final action (Project #1000935).

2. A petition for annexation and establishment of IP zoning for two tracts owned by the State Land Office (one 40 acre and one 35 acre). This is scheduled for an EPC hearing on February 15th (Project #1000960).

## MEMORANDUM OF UNDERSTANDING

A Memorandum of Understanding (MOU) between the City of Albuquerque, Albuquerque Public Schools, State Land Office, Sandia National Laboratories, Department of Energy, and the Shaw, Mitchell, Mallory Partnership governs the development of the Park. The MOU is described in great detail in the Master Plan document and is included as Appendix A, in its entirety.

The key component in the MOU is that it calls for an expedited approval process for City review of all SS&TP projects (see Appendix A for the full text and page 8 for a summary of the process). In addition, although the Master Development Plan proposes IP uses, the Illustrative Master Plan does not show building pad sites, consistent with agreements in the MOU and discussions with the Planning Department.

## APPLICABLE PLANS AND POLICIES

This justification for zone map amendment meets and/or exceeds the requirements of City of Albuquerque Plans and policies and in fact, furthers the policies of the City of

Albuquerque by creating a high quality campus-style park that will support the City's desire for economic development.

***City of Albuquerque Zoning Code***

The 48.9 acre parcel is currently zoned SU-1 for IP uses and this zone map amendment is seeking a change to straight IP zoning. In addition, the permissive uses outlined in the Master Development Plan (pages 12-13) are based on IP uses, with several exceptions in order to create a high quality, high technology, office park. In addition, design guidelines (Section 5 in the Master Development Plan) will ensure that the Park will create a campus environment that creates opportunities for interaction between tenants, pedestrian activities, and alternative modes of transportation, while enhancing the natural environment.

***Albuquerque/Bernalillo County Comprehensive Plan***

The site is located within the Developing Urban area as designated by the Albuquerque/Bernalillo County Comprehensive Plan. Goals and policies applicable to this request are listed below:

Established and Developing Urban Areas

"The Goal is to create a quality urban environment which perpetuates the tradition of identifiable, individual but integrated communities within the metropolitan area and which offers variety and maximum choice in housing, transportation, work areas, and life styles, while creating a visual pleasing built environment."

Policy d *"The location, intensity, and design of new development shall respect existing neighborhood values, natural environmental conditions and carrying capacities, scenic resources, and resources of other social, cultural, or recreational concern."*

Policy e *"New growth shall be accommodated through development in areas where vacant land is contiguous to existing or programmed urban facilities and services and where integrity of existing neighborhoods can be ensured. "*

Policy i *"Employment and service uses shall be located to complement residential areas and shall be sited to minimize adverse effects of noise, lighting, pollution, and traffic on residential environments."*

Policy l *"Quality and innovation in design shall be encouraged in all new development; design shall be encouraged which is appropriate to the plan area."*

**Applicant Response:**

These 219 acres will provide the economy of scale needed for the type of research and development park planned. The desire is to create a high quality, campus-style park that would accommodate manufacturing and office uses, and will be complementary to the adjacent residential, commercial, and community uses. The Master Development Plan being submitted for the SSTP will include detailed design guidelines for pedestrian accessibility,

vehicular circulation, architecture, landscape, FARs, parking, lighting, etc.

**Economic Development Policies**

"The Goal is to achieve steady and diversified economic development balanced with other important social, cultural, and environmental goals."

Policy a *"New employment opportunities which will accommodate a wide range of occupational skills and salary levels shall be encouraged and new jobs located convenient to areas of most need.*

Policy f *"The City and the County should remove obstacles to sound growth management and economic development throughout the community."*

Policy g *"Concentrations of employment in activity centers should be promoted in an effort to balance jobs with housing and population and reduce the need to travel."*

**Applicant Response:**

The land uses proposed will support the development of the SS&TP, a major employment center capable of attracting well paying, high technology employment. The SS&TP will provide a needed balance to the large amount of residential development occurring to the north and east, the commercial development to the north (CostCo and Home Depot), and the community uses to the north. It has enormous potential to reduce vehicle trips traveled in this area.

***Trails & Bikeways Facility Plan***

The Trails & Bikeways Facility Plan is a Rank II Plan which recommends development standards, identifies specific site locations, and sets of priorities for the use of public funds for planning multi-use trail systems throughout the City. The Plan identifies a planned primary trail along Southern Avenue and proposes a secondary trail located along Eubank Boulevard from the KAFB north gate.

The consultants have already met with Diane Scena, City Trails Coordinator regarding trails around the SSTP. The Proposed Trail Map shows a connection through the SSTP between Eubank and an existing mountain bike trail along the Tijeras Arroyo and south of the Shaw Mobile Home Park to the east. The existing bike trail connects to Juan Tabo.

The Master Development Plan includes a pedestrian circulation system of trails and sidewalks. It is designed to connect to the Tijeras Arroyo Trail and the trails along Eubank through the south end of the EMCORE site, as well as internal connections within the Park.

***Resolution 270-1980***

A. This request for a Master Development Plan and a zone map amendment to IP zoning is consistent with the health, safety, morals, and general welfare of the City. IP zoning will create the economy of scale and critical mass needed to make the Park the single most important economic development project in the City of Albuquerque. The Park is intended to attract users in the high technology sector

that will bring high paying jobs to the region. It will also help support Sandia National Lab's focus on technological commercialization.

B. This request recognizes that stability of land use and zoning is desirable. The proposed zoning, IP, is consistent with adjacent parcels and will help stabilize land use in the area for the development of the SS&TP, a major employment center. The proposed zoning will not be harmful to adjacent property, the neighborhood, or the community, and the Master Development Plan proposes a set of stringent design guidelines that will help ensure adjacent properties are protected (see Section 5 in the Master Development Plan).

C. This Master Development Plan and zone map amendment request is not in conflict with adopted City plans or policies. Rather, it is consistent with the goals and policies of the City of Albuquerque/Bernalillo County Comprehensive Plan regarding economic development and employment opportunities. The SS&TP will "provide the opportunity for a quality urban environment which perpetuates the tradition of identifiable, individual but integrated communities within the metropolitan area and which offers variety and choice in transportation, work areas, and lifestyles while creating a visually pleasing built environment".

The SS&TP is designed to promote alternative transportation modes. Pedestrian and bicycle access will be given high priority, and transit options have been discussed with City Transit staff (see Pedestrian Facilities Plan, page 27)

D2. Substantial changed neighborhood conditions exist in this area. The immediate area around the SS&TP is emerging as a major activity center that will include a mix of residential, commercial, and community uses, creating many opportunities for employment. The Master Development Plan describes the current land use and zoning, as well as surrounding uses in detail. Numerous zone map amendments, annexations, and site plan approvals have occurred in this area over the past 3-4 years. Manzano Mesa, a master plan area comprising commercial, office, park, and multi-family and single family residential uses, has been developing at a rapid pace with a variety of projects. Also, the creation of the SS&TP development process occurred with the signing of the Memorandum of Understanding in February, 2000, which significantly changed development conditions for this area. These changed conditions include:

***Office/Industrial Uses***

EMCORE Corp, a high technology user located within the SSTP and serving as its anchor, recently received approval by the City Council for annexation and establishment of IP zoning on a 20-acre parcel to the north. The request also included approval of a master development plan. The plan is for a multi-million dollar expansion of its Albuquerque operation, which involves the manufacture of material for semiconductors. Adding to its existing 50,000 square foot building, Phase 1 will include a two-story, 36,000 square foot building. It is anticipated to create 200 new jobs. Phase 2 will include a 58,000 square foot building, anticipated to create another 400 new jobs.

***Commercial Uses***
Two major commercial developments have occurred in this area. CostCo Wholesale retail store, comprising 152,000 square feet, recently opened just north of Southern Boulevard and adjacent to Eubank Boulevard. In this case, the EPC approved a zone map amendment from SU-1 for Limited IP purposes to SU-1 for C-2 (Z-99-136). Home Depot is located north of CostCo and has been in operation for two years (Z-94-45).

***Residential Uses***
Residential development in the area has included Willow Wood and Mirabella, both single-family residential communities to the east of this property. In addition, a zone map amendment that involved a rearrangement of land uses to allow office development adjacent to the SSTP on the north and relocate the multi-family residential (504 dwelling units) further to the north was approved by the EPC on the property just to the north of the SS&TP (1000938).

***Community Uses***
Located north of the SS&TP, Manzano Mesa Community Park is zoned SU-1 for Community Park and Related Uses and has been developing for the last four years. Manzano Mesa Multi-Generational Center, to be located in the northeast corner of the park, is currently planned to start construction in Spring, 2001. APS is also planning a new elementary school north of the SS&TP, and scheduled to be open in Fall, 2003.

E. The proposed uses will not be harmful to the adjacent properties, the neighborhood, or the community (see Master Development Plan, Section 2: Existing Conditions for detail on permissive uses). The permissive uses contained in the Master Development Plan are based on IP zoning, with a few exclusions that were determined to be contrary to the vision for the Park. The SS&TP will benefit both the immediate and the greater community by creating a major employment center adjacent to Sandia Labs. The intent is to design a high quality research and development park with rigorous design guidelines (contained in the Master Development Plan) for all potential tenants.

F. The proposed Master Development Plan and accompanying zone map amendment will not require major or unprogrammed capital expenditures by the City (see Section 6: Infrastructure and Engineering for discussion of these issues). The SS&TP project team has held meetings with representatives from the Planning Department, Public Works, Parks and Recreation, and Environmental Health to introduce the project and to review the Memorandum of Understanding. Additional coordination meetings are planned. The City has identified funding for improvements to Eubank Boulevard including expansion to six lanes, landscaping, and sidewalks. A master developer will be chosen by the STPDC for the Park.

G. Economic factors are not the determining factor for Master Development Plan and zone map amendment. The SS&TP will provide much needed, high paying jobs in the region.

H. This request recognizes that the location of this property close to Eubank Boulevard (a principal arterial) is not by itself a justification for the Master Development Plan or the zone map amendment. However, a research and development park of this scale (219 acres) requires a major facility to provide adequate access.

I-J. This request does not constitute a spot or strip zone since adjacent IP zoning already exists and has been recently approved by City Council for the EMCORE site. In addition, the EPC recommended approval for annexation and IP zoning for Tract E-1, Manzano Mesa. All of these actions and pending requests are designed to be part of the SS&TP and will be subject to the requirements set forth in the Master Development Plan.

***Resolution 91-1998 (R-70)***

Resolution 91-1998 (R-70) establishes an overall direction for implementation of the City's growth policies. The framework emphasizes many elements, many of which are covered by this request.

The area is emerging as a major activity center that will include many opportunities for employment, residential, commercial, and community uses. The SS&TP is consistent with City goals for creating a network of centers and corridors. The residential areas to the east of the site and the multi-family residential planned by GSL Properties, Inc. just to the north provide a good balance to the SS&TP.

Eubank, a principal arterial, has been long planned for expansion to six lanes. This, along with the ability to provide links to the City's trail system through the SS&TP, will encourage alternative modes of transportation and less dependence on single occupancy vehicles, and will facilitate the reduction of vehicle miles traveled.

## CONCLUSIONS

This request is for a Master Development Plan for the 219 acre Sandia Science and Technology Park. In addition, a zone map amendment from SU-1 IP to IP is requested for one 48.9 acre parcel to be included in the Park (Tract E-1, Manzano Mesa). The SS&TP area is designated as Developing Urban by the Comprehensive Plan, and the City has determined that development of these areas is desired and encouraged. The site is fully serviceable with City of Albuquerque infrastructure.

This request for the SS&TP is consistent with the Comprehensive Plan policies and Resolution 270-1980 regarding economic development and employment opportunities, infill and the reduction of vehicle miles traveled, and changed neighborhood conditions (single-family and multi family residential, commercial, industrial, and community related development). In addition, it furthers the goals expressed in the Memorandum of Understanding between the City of Albuquerque, the State Land Office, Albuquerque Public Schools, Sandia National Laboratories, Department of Energy, and the Shaw, Mitchell, Mallory Partnership.

We respectfully request approval of this request for a Master Development Plan and zone map amendment for the Sandia Science & Technology Park.

**FirstCommercial**
REAL ESTATE SERVICES, INC.

ONE CORONADO PLACE
6201 UPTOWN BLVD. NE
SUITE 202
ALBUQUERQUE, NM 87110
TOLL FREE 1.800.264.3223
MAIN 505.881.9810
FAX 505.881.9838
www.firstcommercialre.com

January 23, 2001

City of Albuquerque Planning Department
P.O. Box 1293
Albuquerque, NM 87103

**Re: Tract "A" plat of Tracts "A" and "B", Lands of Shaw, Mitchell, Mallory Partnership**

To Whom It May Concern:

This letter hereby authorizes Consensus Planning to work on behalf of Shaw, Mitchell and Mallory Limited Partnership in seeking approval for the Master Development Plan for the Sandia Science and Technology Park. There are approximately 35.2742 acres belonging to Shaw, Mitchell and Mallory Limited Partnership within the plan boundary.

Please do no hesitate to contact me at 881-9810 if you have any questions or need any additional information.

Sincerely,

**Shaw, Mitchell and Mallory Limited Partnership**

Bill Robertson – Agent for Shaw Mitchell and Mallory Limited Partnership

jlc

naiop
TCN Worldwide Real Estate Services
www.tcnre.com

COMMISSIONER'S OFFICE
Phone (505) 827-5760
Fax (505) 827-5766

ADMINISTRATION
Phone (505) 827-5700
Fax (505) 827-5853

GENERAL COUNSEL
Phone (505) 827-5713
Fax (505) 827-4262

PUBLIC AFFAIRS
Phone (505) 827-1245
Fax (505) 827-5766

# New Mexico State Land Office
# Commissioner of Public Lands
# Ray Powell, M.S., D.V.M.

COMMERCIAL RESOURCES
Phone (505) 827-5724
Fax (505) 827-6157

MINERAL RESOURCES
Phone (505) 827-5744
Fax (505) 827-4739

ROYALTY MANAGEMENT
Phone (505) 827-5772
Fax (505) 827-4739

SURFACE RESOURCES
Phone (505) 827-5793
Fax (505) 827-5711

January 23, 2001

City of Albuquerque Planning Department
600 2nd St NW, Plaza del Sol
Albuquerque, NM

Re: Authorization for Consensus Planning to Act as Agent

To Whom It May Concern:

This letter serves as authorization from the Commissioner of Public Lands for Consensus Planning to act as agents for the State Land Office in seeking for the Master Development Plan for the Sandia Science and Technology Park. There are three parcels of State Trust Land totaling approximately 95 acres.

Please do not hesitate to contact me at 827-5760 if you have any questions or need any additional information.

Sincerely,

**RAY POWELL, M.S., D.V.M.**
**COMMISSIONER OF PUBLIC LANDS**

**Science and Technology Park Development Corporation**
**1155 University Boulevard, SE**
**Albuquerque, NM 87106**
**(505) 246-2882**

January 22, 2001

TO WHOM IT MAY CONCERN:

This letter hereby authorizes Consensus Planning to work on behalf of the Science and Technology Park Development Corporation (STPDC) in seeking approval for the Master Development Plan for the Sandia Science & Technology Park. The STPDC, a nonprofit organization, has oversight for the management and development of the Park.

Please do not hesitate to contact Jackie Kerby Moore at (505) 845-8107 if you have any questions or need any additional information.

Sincerely,

Sherman McCorkle
President & CEO

# ALBUQUERQUE PUBLIC SCHOOLS

REAL ESTATE DEPARTMENT
915 Locust Street, SE
P.O. Box 25704
Albuquerque, New Mexico 87125-0704

**BRADFORD ALLISON, Ph.D.**
SUPERINTENDENT

**CHARLES O. ATWOOD**
REAL ESTATE DIRECTOR


January 22, 2001

Mr. Chuck Gara, Chairman
City of Albuquerque
Environmental Planning Commission
P.O. Box 1293
Albuquerque, New Mexico 87103

Dear Mr. Gara:

**RE: Annexation**

This letter hereby authorizes Consensus Planning to work on behalf of Albuquerque Public Schools in seeking approval for the APS lands included within the development plan for the Sandia Science and Technology Park. This project includes zoning and master development plan approval by the City of Albuquerque.

Please do not hesitate to contact me at 765-5950, Ext. 265, if you have any questions or need any additional information.

Sincerely,

Charles O. Atwood
Real Estate Director

COA/pt

CC: W. Koelm

# INTER-OFFICE CORRESPONDENCE

**DATE:** January 24, 2001

**TO:** Fred Aguirre, City Engineer, Public Works Department

**FROM:** Marcia A. Pincus, Environmental Engineer, Albuquerque Environmental Health Department

**SUBJECT:** Master Development Plan for the Sandia Science and Technology Park Located Near/On the Former City of Albuquerque Eubank Landfill.

The Environmental Health Department (EHD) recommends that the Master Development Plan for the Sandia Science and Technology Park (SSTP) proceed through the Planning process. EHD is working closely with the developers and/or their representatives of SSTP to resolve any landfill gas issues that need to be addressed prior to physical development of this park.

Prior to any construction permits being issued, the developer and/or their representatives will need to follow the "Interim Guidelines for Development within 1000 feet of Landfills" revised August 29, 2000, or as amended thereafter.

cc: Kevin Curran, Legal Department
Janet Cunningham, Planning Department
Lenora Chavez, Planning Department
Bruce Thompson, Legal Department
Jacqueline Fishman, Consensus Planning, Inc.

# "ATTACHMENT A"

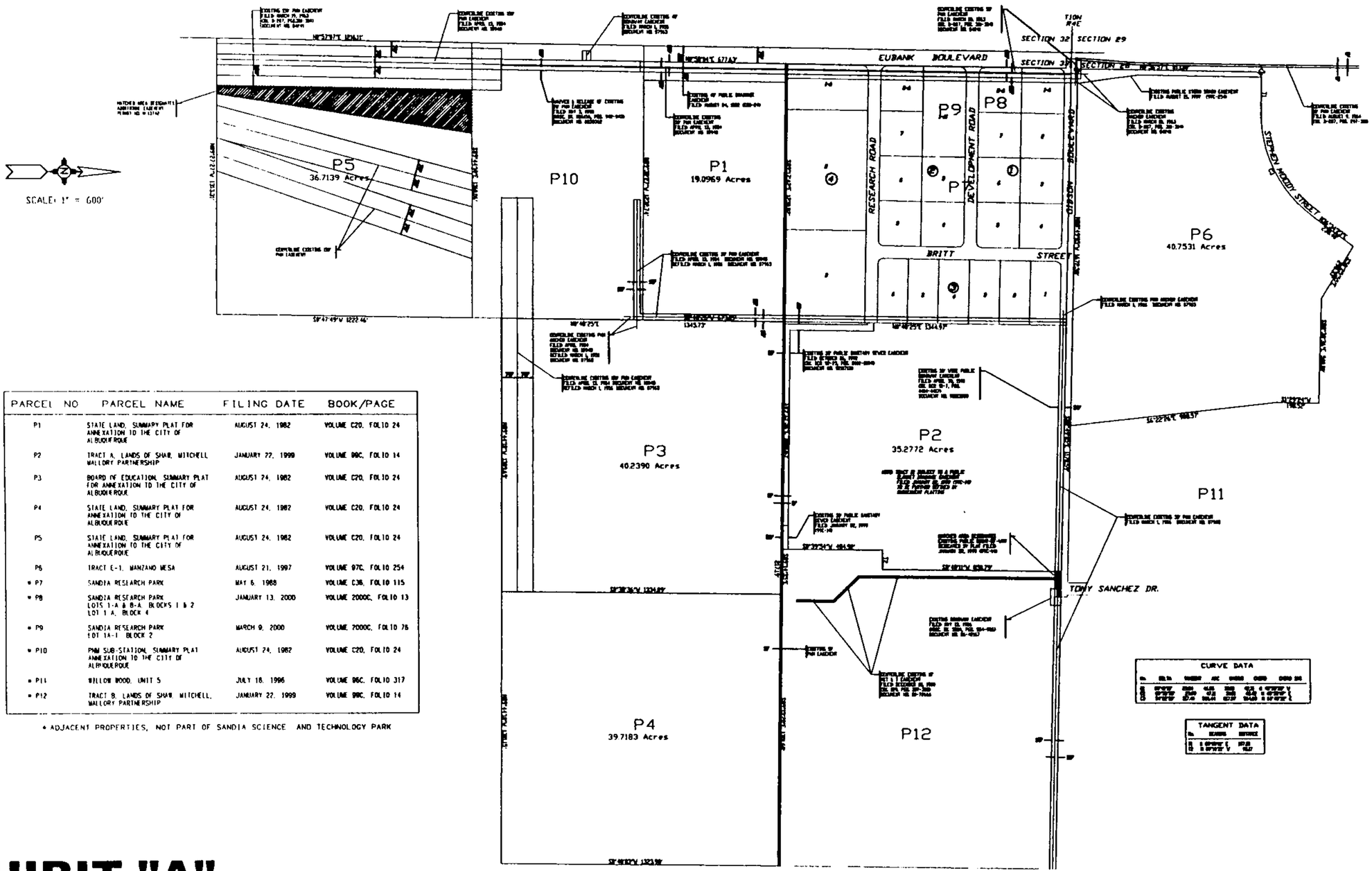
*John Valdez, Consensus Planning*
*Zone Map L-M-21*

**FOUR HILLS M.H.P. RESIDENTS' ASSOC.** (R)
***Dolores Keane**
828 Trading Post Trl. SE/87123 293-7884 (h)
Nancy Smart
12320 Beaver Trl. SE/87123 292-1967 (h)

**WILLOW WOOD N.A.** (R)
***Cal Irvin**
10819 Wolf Creek Rd. SE/87123 332-3516 (h) 845-5283 (w)
David Saxon
10836 Wasatch Rd. SE/87123 271-1738 (h) 855-5140 (w)

# FOR YOUR INFORMATION:

**LETTERS MUST BE SENT TO BOTH CONTACTS OF EACH NEIGHBORHOOD ASSOCIATION.**




| PARCEL NO | PARCEL NAME | FILING DATE | BOOK/PAGE |
|---|---|---|---|
| P1 | STATE LAND, SUMMARY PLAT FOR ANNEXATION TO THE CITY OF ALBUQUERQUE | AUGUST 24, 1982 | VOLUME C20, FOLIO 24 |
| P2 | TRACT A, LANDS OF SHAW, MITCHELL WALLORY PARTNERSHIP | JANUARY 22, 1999 | VOLUME 98C, FOLIO 14 |
| P3 | BOARD OF EDUCATION, SUMMARY PLAT FOR ANNEXATION TO THE CITY OF ALBUQUERQUE | AUGUST 24, 1982 | VOLUME C20, FOLIO 24 |
| P4 | STATE LAND, SUMMARY PLAT FOR ANNEXATION TO THE CITY OF ALBUQUERQUE | AUGUST 24, 1982 | VOLUME C20, FOLIO 24 |
| P5 | STATE LAND, SUMMARY PLAT FOR ANNEXATION TO THE CITY OF ALBUQUERQUE | AUGUST 24, 1982 | VOLUME C20, FOLIO 24 |
| P6 | TRACT E-1, MANZANO MESA | AUGUST 21, 1997 | VOLUME 97C, FOLIO 254 |
| * P7 | SANDIA RESEARCH PARK | MAY 6, 1988 | VOLUME C38, FOLIO 115 |
| * P8 | SANDIA RESEARCH PARK LOTS 1-A & B-A, BLOCKS 1 & 2 LOT 1 A, BLOCK 4 | JANUARY 13, 2000 | VOLUME 2000C, FOLIO 13 |
| * P9 | SANDIA RESEARCH PARK LOT 1A-1 BLOCK 2 | MARCH 9, 2000 | VOLUME 2000C, FOLIO 76 |
| * P10 | PNM SUB-STATION, SUMMARY PLAT ANNEXATION TO THE CITY OF ALBUQUERQUE | AUGUST 24, 1982 | VOLUME C20, FOLIO 24 |
| * P11 | WILLOW WOOD, UNIT 5 | JULY 18, 1996 | VOLUME 96C, FOLIO 317 |
| * P12 | TRACT B, LANDS OF SHAW MITCHELL, WALLORY PARTNERSHIP | JANUARY 22, 1999 | VOLUME 98C, FOLIO 14 |

* ADJACENT PROPERTIES, NOT PART OF SANDIA SCIENCE AND TECHNOLOGY PARK

# EXHIBIT "A"

Bohannan ▲ Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

# LEGAL DESCRIPTIONS

## SANDIA SCIENCE AND TECHNOLOGY PARK

### JANUARY 23, 2001

*Public Service Company*
*of New Mexico*
*Alvarado Square MS 1110*
*Albuquerque, N.M. 87158*

March 6, 2001

Ms. Debbie Stover
City of Albuquerque
Planning Department
Development Services Division
PO Box 1293
Albuquerque, NM 87103

Dear Ms. Stover:

Subject: Comments to the Sandia Science and Technology Park Master Development Plan

Public Service Company of New Mexico (PNM) has reviewed the January, 2001 Sandia Science and Technology Park (SSTP) Master Development Plan (MDP), and wishes to submit comments. The comments being submitted by this letter have been discussed with you on Thursday, March 1, 2001, and also with Karen Marcotte (Consensus Planning, Inc.) on Friday, March 2, 2001. From the discussion with Ms. Marcotte, PNM believes that mutually satisfactory amendments will be able to be developed by Ms. Marcotte to this Master Development Plan. PNM will continue discussions with Ms. Marcotte and SSTP staff to achieve this goal before approval of the MDP, since PNM does support the concept of the SSTP.

While PNM is not a party to the MOU agreement it is providing comments to the MDP to ensure that it is not adversely impacted by the MDP. The comments cover a range of PNM concerns for meeting its obligations to serve all of its customers, and not just the SSTP. The PNM facilities, which are in and around the vicinity of the SSTP, are vital to service for a large portion of the Albuquerque and East Mountain areas, including Kirtland Air Force Base and Sandia National Laboratory.

The comments will be made by topic, and some pages in the MDP will be indicated as a general reference. The pages listed in this letter may not be the only pages of concern in the MDP, but the intent is that all appropriate sections of the MDP would be modified to reflect consistent treatment of the topic throughout the document.

**Land Use and Zoning**
PNM supports the IP zoning designation for the SSTP.

**Eubank Boulevard Expansion to Six Lanes**
The Eubank widening design proposal should address access constraints into and out of the Sandia Switching Station and utility easements on both sides of Eubank. The design of the Sandia Switching Station is for access and transport of large vehicles and equipment from Eubank Blvd. The access requirements have turning radius and grade restrictions for transporting the equipment, for example. The Eubank design plans need to address PNM's requirements, and impacts of setbacks, medians and curbs near this switchyard.

South of Southern Blvd, PNM has 115kV lines on the west side of Eubank Blvd and distribution lines on the east side of Eubank Blvd. The impacts to these facilities are not clearly known, and discussions are necessary to ensure that PNM will continue to have the ability to operate and maintain these facilities with the new design of Eubank Blvd.

(Refer to MDP pages 17, 18, 21, 25, 26, and 53)

**Innovation Parkway Width and Restrictions**
Innovation Parkway's easements, uses and restrictions, particularly near the Sandia Switching Station need to be better understood. The restriction of prohibiting vehicles and equipment from parking is unacceptable, since PNM needs to be able to perform maintenance or repairs on its facilities.

PNM suggests that some exception language be included to address these concerns for any roads that involve access to the utility facilities.

(Refer to MDP pages 21, 25, 26, and 39)

**Coordinated Infrastructure Plans**
PNM commends the MDP for addressing infrastructure coordination, and suggests inclusion of gas and electric facilities in the discussion. PNM suggests that, if undergrounding is a desired ultimate outcome, that the MDP consider the idea of installing enough underground conduits, with manholes for access to the conduits, to meet reasonable potential needs for fiberoptic and underground distribution lines. Consolidating both facilities in the early development plans may afford overall lower costs for the ultimate design.

PNM would request that it be included in the coordination and approvals of the infrastructure topics that may involve PNM.

(Refer to MDP pages 52, 53, 55, 57, 61, 62, 65, and 66)

**Existing and Future Easements**

PNM and SSTP recognize the desire to optimize placement of infrastructure in the design within the MDP. The achievement of the overall design of the proposed MDP has some conflicts with existing utility easements. The possible future utility facilities that may be required to support new loads in and around the SSTP are uncertain at this time.

The MDP indicates that, generally, easements will be preserved. The MDP currently contains a number of easement questions for PNM, which need to be discussed and mutually agreed upon so that PNM, City of Albuquerque and SSTP staff understand the future intentions and plans.

Discussions are continuing between PNM and SSTP staff to clarify which easements will remain, and which easements may need to be relocated, and relocation solutions. For example, if roads are developed under power lines (example – Progress Road area), it is likely that some poles may have to be replaced with taller poles to meet safety clearances due to the changed land use.

Further, the future electric infrastructure that may be needed in and around the SSTP is still under discussion. The reference to using 10-15 foot widths for utility easements is only workable for distribution lines, but not for transmission lines rated above 15 kV, such as the 115 kV and 345 kV transmission lines. PNM suggests the use of language that properly defines easement widths for the appropriate facility.

(Refer to MDP pages 5, 12, 15, 18, 21, 39, 54, 55, 61, 63, 65, and 66)

**Four Hills Distribution Line**

A distribution line from Four Hills substation will use existing easements that cross the planned commons area of the MDP. PNM will continue to discuss relocation options, customer costs, and timings, with SSTP staff to result in a mutually agreeable solution. The discussions need to address overhead versus underground construction, final road plans, and final grades of roads and lots, for example, so that overall costs to all involved parties are minimized.

(Refer to MDP pages 56, 61)

**Substation Sites**

Overall power requirements for the SSTP and the surrounding area are not known, and all developed uses of the land are not yet finalized. PNM and SSTP staff will need to further discuss substation site possibilities within the SSTP, as well as in the vicinity of the SSTP. Sites need to be in areas close to 115 kV lines. PNM has suggested to SSTP staff a strategy for substation locations on the north and south. PNM will continue these discussions with SSTP staff.

(Refer to MDP pages 12, 55, 56, and 61)

**Drainage Plans**

The MDP drainage plans indicate new drainage ponds underneath PNM power lines. This proposal will not enable PNM to perform maintenance or repairs if ponds are located under the power lines, since trucks or cranes would not be able to access certain portions of the lines. Further, drainage pond plans could possibly create erosion around power line poles or grade issues for vehicles and equipment to access the power lines.

Also, any drainage plans should not create flooding within the Sandia Switchyard. PNM suggests discussions to reach mutual agreement on the locations of the ponds.

(Refer to MDP pages 49, 51, and 55)

**Streetlights**

PNM is unsure if the streets within the MDP will be public or private. If they are public streets, the current streetlight height being used in Albuquerque along public streets is 40 feet, not 30 feet.

PNM suggests acknowledgement of the Night Sky Protection Act, and use of streetlights designed to comply with this act.

(Refer to MDP page 45)

**Vegetation and Monoliths -- Placement and Heights**

The MDP is not clear on the potential impacts of tree heights, vegetation and monument placement to PNM's reliability of service and PNM's ability to access its facilities with trucks and equipment. PNM needs to ensure that the MDP does not create situations where tree heights cause clearance problems. The MDP, for example, states that mature trees shall be a minimum of 25 feet.

PNM suggests that language be added to address proper height restrictions or vegetation choices, and placement of vegetation, shrubs or monuments in the vicinity of electric utility facilities, which will allow PNM to safely and reliably operate and maintain its facilities.

(Refer to MDP pages 26, 31, 33, 36, 37, 41, 42)

**Screening, Buffering and Fencing**

PNM desires to clarify its obligations or exceptions to screening of its facilities. Some PNM facility designs require open view for microwave operation between sites and for safety clearance requirements. PNM understands that the pre-annexation agreement of the Sandia Switching Station requires no changes to PNM properties.

PNM also desires that clarification be made regarding the buffer/screen goals for utility facilities on the SSTP. For example, a requirement to screen power line poles would be a safety and access problem for PNM.

(Refer to MDP pages 31, 33, 42, and 55)

**Undergrounding, Relocations and Power Line Upgrades / Cost Sharing**

The MDP desires to underground power lines. While this is technically feasible, PNM is obligated to provide a basic level of reliability at lowest cost. Overhead construction is the lowest cost construction method. Underground construction can be done if the customer pays the incremental difference in costs between overhead and underground construction.

PNM requests this understanding be clear in the MDP, and suggests that the cost sharing discussions and methodology in the MDP be expanded to include the undergrounding incremental costs.

Another cost topic may be relocations and replacements. Relocations of distribution and power lines from one existing easement to a new easement will involve costs to the requesting customer. Also, replacement upgrades (for example, replacing power line poles with taller poles as roads are developed near or under power lines) may be required to meet safety clearances, etc. An evaluation typically needs to be made for each location request, and should incorporate grade changes, facilities in the area, etc.

PNM suggests that the cost sharing discussions and methodology in the MDP be expanded to include these types of costs as well.

(Refer to MDP pages 18, 47, 55, 65, and 66)

**Setbacks**

PNM needs to understand that the setbacks do not encroach on our easements. PNM is concerned with its ability to have access to facilities to safely operate and maintain those facilities.

(Refer to MDP pages 26, 42)

**Administrative Approval Process**

PNM needs to understand the impacts to PNM for protecting, acquiring easements and sites to meet future load growth if there is only an administrative process required, and where in the process PNM would need to obtain its approvals. PNM suggests clarification to which processes, including City Facility Plan processes, need to be followed.

(Refer to MDP page 8, and page 10 of the MOU in Appendix A, section III)

**Enhanced Reliability**

PNM and SSTP need to continue discussing the concept of utility facility design that enables the SSTP to provide enhanced reliability and power quality to occupants of the SSTP, if desired by the occupants of the SSTP. Achievement of this goal may typically require multiple delivery paths and proper placement of electrical facilities (transmission lines, substations and distribution lines) to provide redundant delivery of electrical power and energy for the SSTP occupants. Power quality solutions, and cost effectiveness, more frequently involve customer options to address customer equipment and operating impacts.

Undergrounding is not included in the power quality category (page 56).

(Refer to MDP pages 4, 55, 56, 57, and 61)

**Maps and Easements**
PNM requests that all PNM easements be included on all maps.

Thank you for consideration of PNM's comments to the Sandia Science and Technology Park Master Development Plan.

Respectfully submitted,

Daniel M. Zientek
Manager, Distribution Planning

Laurie W. Moye
Senior Public Affairs Representative

. cc Bob Bell – MS-ES10
Paul Cote – MS-ES62
Dennis Hines – MS-0600
Ms. Jackie Kerby-Moore, SSTP Development Corp.
Ms. Karen Marcotte, Consensus Planning, Inc.
Carol Radosevich – MS-0402
Rob Roberts – MS-2101

# Sandia Science & Technology Park
## Process Flow Chart
## 2/28/01

Draft

**Environmental Planning Commission**

1. Master Development Plan

• Public Hearing

↓

**Development Review Board**

1. Master Development Plan
2. Bulk Land Plat/Waiver
3. Vacation Actions
4. Special Subdivision Improvements Agreement ("Special SIA") - identification of onsite/offsite transportation infrastructure for overall Park (no F.G.)

• Public Hearing for Waiver and Vacation Actions (can submit in advance of DRB submittal to minimize time schedule)

↓

**Individual Site Development**

• No Replat required

• Replat required/"minor subdivision"
• No public hearing if less than 10 new tracts created and no vacation actions

**Planning Director**

1. Site Plan Review
2. CE input on grading/drainage and "required infrastructure"
3. CE review of "Special SIA" for offsite transportation mitigation infrastructure requirements

**Development Review Board**

1. Replat
2. CE identification of "required infrastructure"
3. CE reviews special SIA for offsite transportation mitigation infrastructure requirements

**Planning Director**

1. Site Plan
2. CE input on drainage/grading plan

• Letter to Developer

• Letter to Developer

↓

**Code Administration**

1. Building Permit

• W.O. acceptance by City prior to C.O. (if required infrastructure applied)
• Drainage certification

↓

**Code Administration**

1. Certificates of Occupancy (C.O.)

**Notes:**

1. "Required infrastructure" is the minimum infrastructure required to serve an individual site development parcel with basic services.
2. "Deferred" infrastructure is "guaranteed" by City/Memorandum of Understanding.
3. Future subdivisions over 10 tracts and all vacations will require public hearings.
4. "Letter to Developer" provides site plan comments, drainage/grading plan comments, "required infrastructure" and offsite transportation mitigation infrastructure (as applicable, per "Special SIA").

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**jtopmiller@bhinc.com**

03/09/01 07:29 AM

To: marcotte@consensusplanning.com

cc: faguirre@cabq.gov, kcurren@cabq.gov

Subject: SS&TP Process Flowchart

Hi Karen, I wanted to give you an update on the "process flowchart" progress. I have had good working meetings with Fred Aguirre and Kevin Curren, and others, although not totally in agreement in some important areas of process. I hope that I have accurately and fairly captured their thoughts below, and my thoughts are in parenthesis.

In these meetings, it has been recognized that an MOU exists and has been signed at the highest levels. We have also known that the MOU states that, after initial the EPC/DRB, there will be no DRB review of development projects, only Planning Director, prior to building permit. It is assumed that a master developer is not present. I have not clearly stated the importance of following the exact provisions of the MOU that some of the land owners have expressed, and in fact, have held out the hope that there may be room for compromise on both sides. The goal was to determine "what is the most expeditious process?", given the various constraints presented by policies and Ordinances.

There were significant concerns expressed to me in the following areas (and all of these steps conflict with the MOU):

**1. It is felt that the City Engineer should provide input to the Planning Director's review.** (I agree, it will happen behind the scenes anyway)

**2. It is felt that we can not obtain bulk land waiver at the initial DRB for the initial plat of the property unless DRB is assured that all future site plans/replats go to DRB in the future.** ( I am not totally sold on this, I think it is the strictest interpretation of the Subd. Ordinance, and has some flexibility that we are not claiming)

**3. It is also felt that replats must go back to DRB by Subd. Ordinance.** (unavoidable, I agree)

**4. It is problematic, based on past interpretation and then practice, to avoid a "major subdivision" designation (which means public hearing and 45 day process). A major subdivision, by Subd. Ordinance, is one with "significant" infrastructure.** ("significant" is not defined and is a relative term anyway, so I believe that there is room for flexibility here as well, Fred also thought we may be able to get by this and go the "minor" subdivision process)

**5. Restricting infrastructure to "required infrastructure" only, ie, the minimum amount of infrastructure necessary to provide services to a proposed development within a single proposed tract of an overall plat (as opposed to covering all plat frontage with constructed infrastructure or FG) is also a difficulty.** (Fred is open to a "phased infrastructure list" approach on this, which helps, as opposed to a new bulk land waiver with every plat. But also I haven't seen the Subdivision Ord. say build all possible infrastructure, instead it says "adequate provision for...water, drainage,...", and there is room for flex here as well )

**6. Avoiding financial guarantees as an assurance for infrastructure installation (they're a hassle for everyone and there's a significant timeframe involved) is not easy thing to do either. Certificates of occupancy (CO's) could be used but this is not looked upon in favor as an acceptable method, primarily because the Building Dept./Code Administration (Code) will not hold**

**up CO's for Public Works issues.** (Fred, although not Kevin, is OK with CO's in lieu of FG's, provided Code is brought into the program, this is possibly something the Mayor's office can cause to happen, and frankly I don't understand the Building Dept's unwillingness to assist here as a matter of course, otherwise why have ? Fred also thought that perhaps water meters hookups could also be denied and therefore used as an "assurance")

**Fred was also very concerned that a new process for SS&TP may not end up being any faster than a more normal one, especially if some special SS&TP concessions were made to the normal process regarding submittal timeframes to the DRB, use of the "Other Matters" agenda item on DRB, one week turnaround and only one DRB hearing per project (ie, immediate delegation of the item off the DRB), etc.** (I think that there is some truth to this, unless there is significant buy-in at the staff level and significant political will at the upper levels for a new process, and the precedence it sets. Also, I do note that the Mayor has the ability to establish Emergency Rules, which may help Fred/Kevin/us over the hump on some of these issues)

Given your recent comments about the steadfastness of some of the landowners on the letter of the MOU, I believe now that I should step back and let this process discussion be taken by Fred, Kevin and Erik to the higher levels of City Hall, especially since the commitments were made there. I remain ready to assist in any way, although sometimes I feel the task is overwhelming to do something new.

One last comment is that it is difficult (not impossible) for City staff and consultants as well to make new processes out of old ordinances and traditional practices, and I believe the best approach is to take a top-down (Mayor/City Council/Planning Dept) approach to modifying the applicable ordinances and regulations in advance of significant projects and economic initiatives. I do think that a partial step in this direction is the use of the Emergency Rules paragraph of the Subd. Ordinance.

The last flowchart produced is attached. It represents something in the middle of the MOU and Fred/Kevin's desires (perhaps a bit closer to the MOU).

<<SandiaSciProcesschart.xls>>

*James R. Topmiller*
Bohannan Huston
jtopmill@bhinc.com

- SandiaSciProcesschart.xls

# Sandia Science & Technology Park

## Process Flow Chart

## 3/06/01

Draft

**Environmental Planning Commission**

1. Master Development Plan

- Public Hearing

↓

**Development Review Board**

1. Master Development Plan
2. Bulk Land Plat/Waiver
3. Vacation Actions
4. Special Agreement - identification of onsite/offsite infrastructure for overall Park (no F.G.)

- Public Hearing for Waiver and Vacation Actions
- Master Plan requires Planning Director and CE review and approval of individual site development plans prior to C.O.

↓

**Individual Site Development Plans**

↓ · No Replat required

**Planning Director**

1. Site Plan Review
2. CE input on grading/drainage and "required infrastructure"
3. CE review of "Special Agreement" for offsite transportation mitigation infrastructure requirements

· Letter to Developer
· Plan Revisions, as needed

↓ · Replat required/"minor subdivision" process
· No public hearing if less than 10 new tracts created and no vacation actions

**Development Review Board**

1. Replat
2. CE identification of "required infrastructure"
3. CE reviews Special Agreement for offisite transportation mitigation infrastructure requirements

→

**Planning Director**

1. Site Plan Review
2. CE input on drainage/ grading plan

· Letter to Developer
· Plan Revisions as needed

→ **Planning Director signs off**

→ **Code Administration**

1. Building Permit Review/Approval

← **Planning Director signs off**

↓ · DRC infrastructure plan review/Procedure "A" SIA

**Public Infrastructure & Building Construction**

↓ · W.O. acceptance by City prior to permanent C.O.
· Drainage certification

**Code Administration**

1. Certificates of Occupancy (C.O.)

**Notes:**

1. "Required infrastructure" is the minimum infrastructure required to serve an individual site development parcel with basic services.
2. Future subdivisions over 10 tracts and all vacations will require public hearings.
3. "Letter to Developer" provides site plan comments, drainage/grading plan comments, "required infrastructure" and offsite transportation mitigation infrastructure (as applicable, per "Special Agreement"). It is signed by both the CE and the Planning Director.

p:\projects\01222\cdp\corres\SandiaSciProcesschart.xls

# Sandia Science & Technology Park
## Process Flow Chart
## 2/28/01

Draft

**Environmental Planning Commission**

1. Master Development Plan

· Public Hearing

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**Development Review Board**

1. Master Development Plan
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↓

**Individual Site Development**

· No Replat required

· Replat required/"minor subdivision"
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**Planning Director**

1. Site Plan Review
2. CE input on grading/drainage and "required infrastructure"
3. CE review of "Special SIA" for offsite transportation mitigation infrastructure requirements

**Development Review Board**

1. Replat
2. CE identification of "required infrastructure"
3. CE reviews special SIA for offisite transportation mitigation infrastructure requirements

**Planning Director**

1. Site Plan
2. CE input on drainage/grading plan

· Letter to Developer

Planning Div. Signoff

· Letter to Developer

**Code Administration**

1. Building Permit

· W.O. acceptance by City prior to C.O. (if required infrastructure applied)
· Drainage certification

**Code Administration**

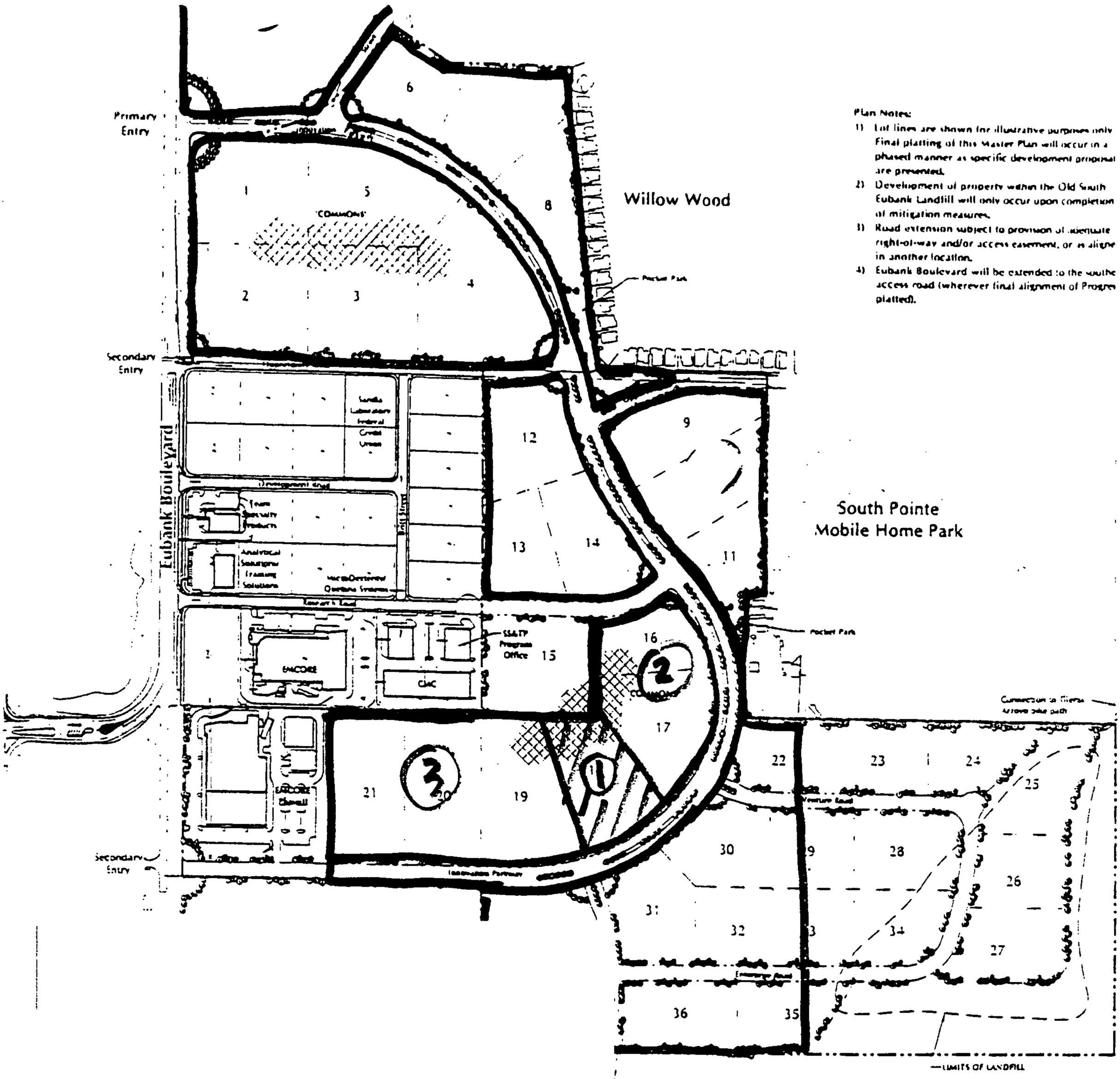
1. Certificates of Occupancy (C.O.)

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M21/D007A




Plan Notes:

1) Lot lines are shown for illustrative purposes only. Final platting of this Master Plan will occur in a phased manner as specific development proposal are presented.
2) Development of property within the Old South Eubank Landfill will only occur upon completion of mitigation measures.
3) Road extension subject to provision of adequate right-of-way and/or access easement, or realigne in another location.
4) Eubank Boulevard will be extended to the southe access road (wherever final alignment of Progres platted).

FIRST REPLAT

Example

Tract 1 lies outside SS & TP but is included so that street R/W's can be replatted

Plan Notes:

1) Lot lines are shown for illustrative purposes only. Final platting of this Master Plan will occur in a phased manner as specific development proposal are presented.
2) Development of property within the Old South Eubank Landfill will only occur upon completion of mitigation measures.
3) Road extension subject to provision of adequate right-of-way and/or access easement, or as aligns in another location.
4) Eubank Boulevard will be extended to the southe access road (wherever final alignment of Progres platted).

Primary Entry

Secondary Entry

Willow Wood

Eubank Boulevard

REPLAT ROAD R/W but leave easements for existing public road and utilities.

Future Platting

Future Platting

# BULK LAND PLAT

- Submitted with MDP
- Includes some vacations
- Waiver of infrastructure
- Develop "Special S/A" and reference on plat's waiver language

BOHANNAN HUSTON, INC.

Courtyard One

7500 JEFFERSON NE

Albuquerque,

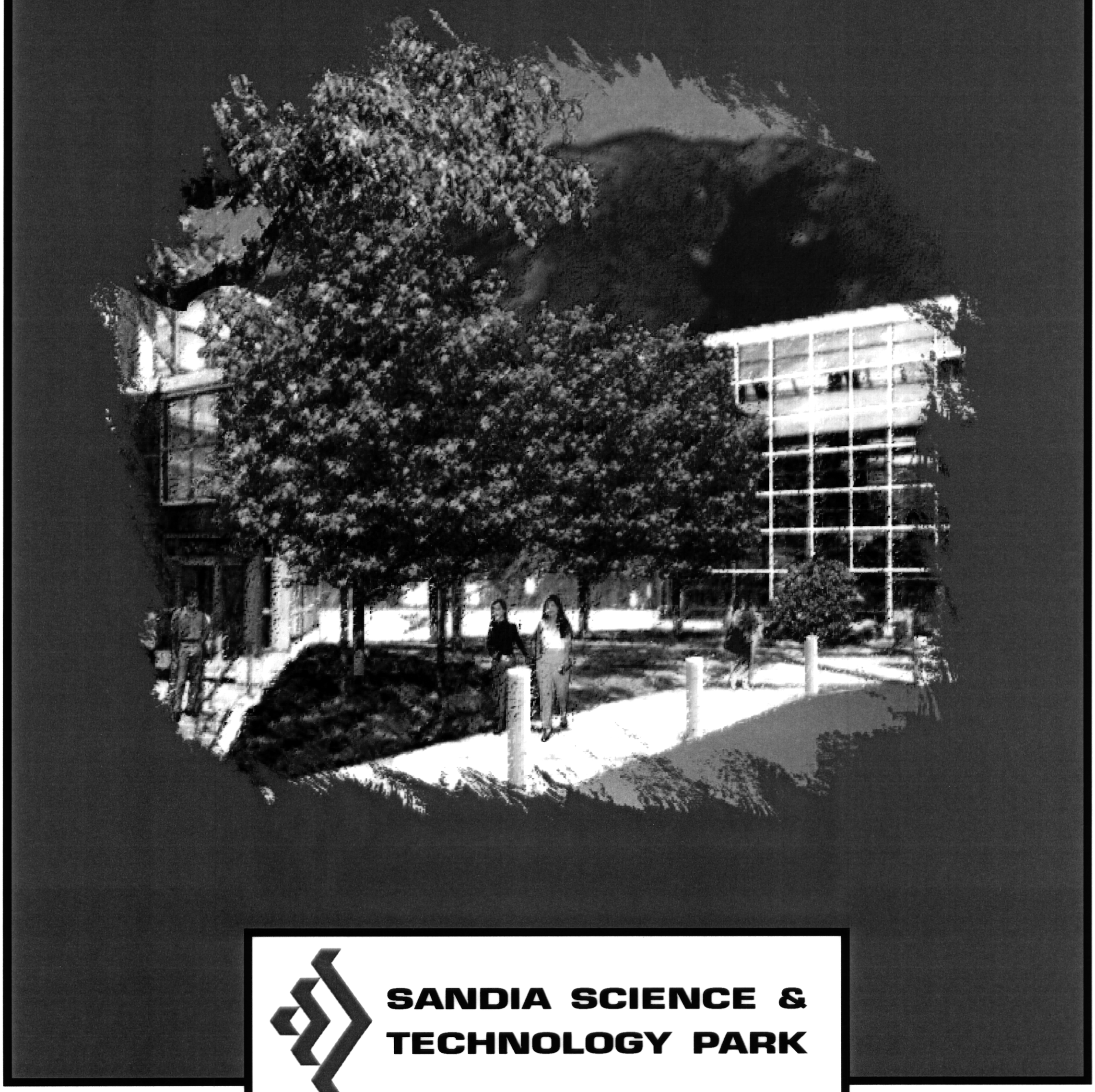
NEW MEXICO 87109-4335

voice 505.823.1000

fax 505.821.0892

# Master Development Plan

January, 2001



## SANDIA SCIENCE & TECHNOLOGY PARK

SANDIA SCIENCE & TECHNOLOGY PARK

# ACKNOWLEDGEMENTS


**Science and Technology Park Development Corporation - Board of Directors/Officers**
Sherman McCorkle, President
Randy Wilson, Secretary-Treasurer
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Sandra Begay-Campbell
Terri Cole
Jesse Dompreh
Edward Lujan
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Gary Tonjes

**Sandia Science & Technology Park Program Office**
Jackie Kerby Moore, Program Manager
Jim Clinch, Program Leader
Carl Becker, Project Engineer
Janice DeMeza, Administrative Assistant

**Federal Delegation from NM**
Pete Domenici, US Senate
Jeff Bingaman, US Senate
Heather Wilson, US Congress

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Lawrence Rael, Chief Administrative Officer

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Michael Brasher, District 9

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Alan Schwartz, Vice-Chairman
Chuck Gara
Mick McMahan
Susan Johnson
Larry Chavez
Camilla Serrano

**City Staff**
Erik Pfeiffer, Office of Economic Development Director
Deirdre Firth, Senior Economic Developer
Bob McCabe, Planning Director
Richard Dineen, Planning Development Services
Larry Blair, Public Works Director
Fred Aguirre, City Engineer
Sarah Kotchian, Environmental Health Director

**Landowners**

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Matthew E. Archuleta, Secretary
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Harry Relkin, Assistant Commissioner, Community Dev.
Don Britt, Assistant Commissioner, Commercial Resources
Will Gleason, Manager, Planning & Dev.

**Shaw, Mitchell, and Mallory Limited Partnership**
Geneva Mitchell
Bill Robertson

***We would like to thank the Department of Energy and the State of New Mexico for funding this Master Development Plan.***

***We would like to give special recognition and thanks to Dan Hartley for his vision and leadership in founding the Sandia Science & Technology Park***

SANDIA SCIENCE & TECHNOLOGY PARK

# ACKNOWLEDGEMENTS


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Department of Energy (DOE)
Next Generation Economy Initiative
Sandia National Laboratories (SNL)
Technology Ventures Corporation
EMCORE Photovoltaics
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Team Specialty Products (TSP)
Analytical Solutions
Training Solutions
MicroDexterity Systems
Quetana
Cooperative Monitoring Center
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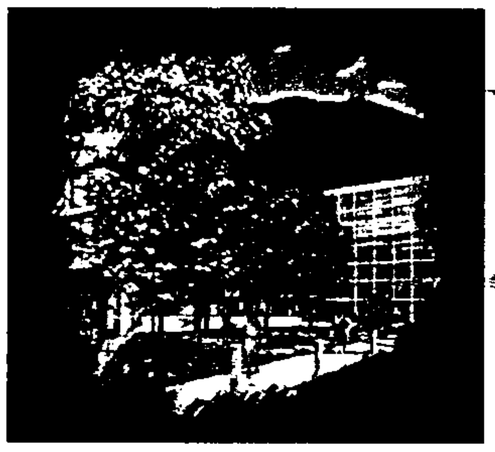

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# 1. EXECUTIVE SUMMARY

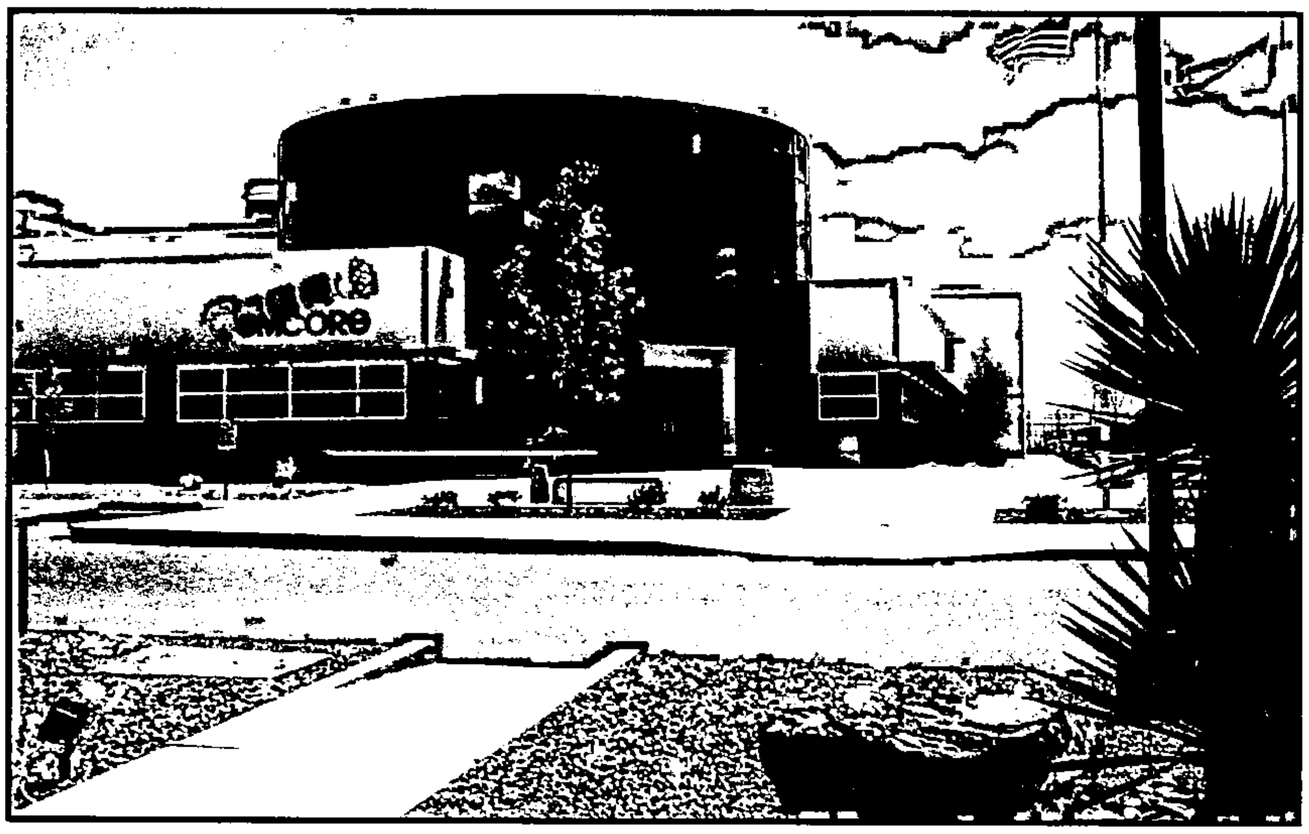


# 1. EXECUTIVE SUMMARY

## SANDIA SCIENCE & TECHNOLOGY PARK
## *"THE GATEWAY TO ALBUQUERQUE'S HIGH-TECH ECONOMY"*

## PURPOSE

This Master Development Plan covering the approximately 219 acres of the Sandia Science & Technology Park (SS&TP) provides an overall framework for the continuing development of the Park. The SS&TP is a unique opportunity for the enhancement of Albuquerque's high-technology economy and provides for a research park located in direct proximity to Sandia National Laboratories (SNL), encouraging co-location of researchers in a congenial collaborative environment. The Sandia Science and Technology Park is a public/private partnership committing the landowners and the other parties to the Park to build out their vision of a large science and technology research park in a campus-style setting in the South Eubank corridor.



EMCORE

The parties are further committed to the development of the Sandia Science and Technology Park with the understanding that its success will positively impact New Mexico's economy and the Albuquerque regional economy. It is anticipated that technology-based companies and their suppliers will locate facilities within the SS&TP to jointly pursue commercial activities with SNL and the other area research institutions and companies. The result will be new and better jobs for New Mexicans.

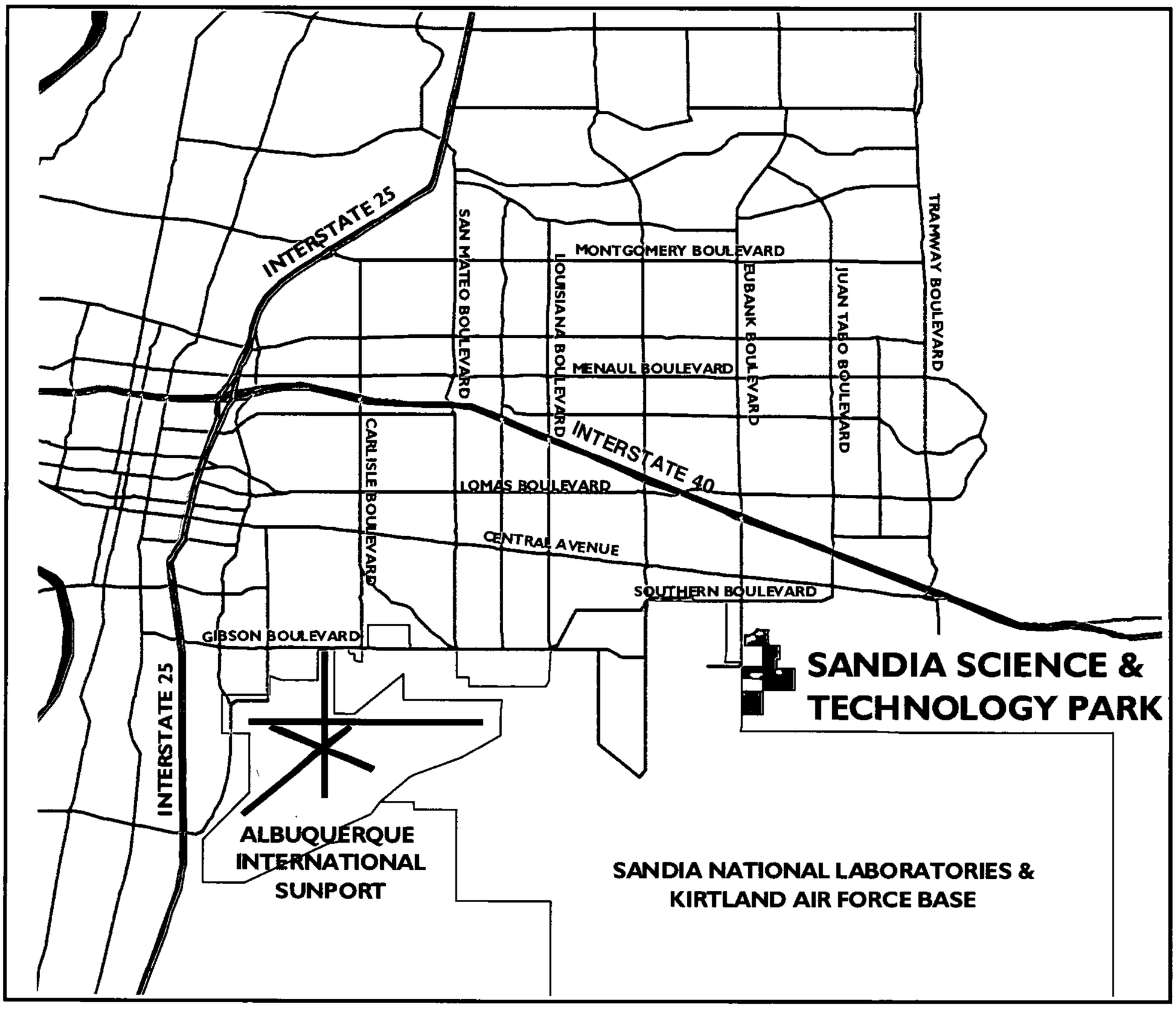
The development of the Sandia Science and Technology Park serves a unique public purpose that is not replicated elsewhere in the Albuquerque Metropolitan Area. The unique role of the SS&TP is based on its location immediately adjacent to SNL, a distinct advantage for the commercialization of technology ventures sponsored by SNL. The Park provides a site for SNL technology partners and suppliers to locate and/or expand facilities in close proximity to the highly specialized technology and highly trained staff of SNL. The development of the Sandia Science and Technology Park meets many other public purpose goals as well, as described below.

## GOALS AND OBJECTIVES

- Create a unique science and technology research park in close proximity to Sandia National Laboratories and the Department of Energy facilities in the South Eubank Corridor.

- Strengthen the economic base of the greater community through the provision of new, high paying, high technology jobs.

- Partner with both private and public entities in a model relationship for future industrial park development.




**Regional Vicinity**

- Fulfill the City of Albuquerque's goals with respect to infill development and steering new development to sites already within the City's utility service area.

- Fulfill the City of Albuquerque's goals and policies with respect to creating mixed-use urban environments where residential, commercial, and industrial activities are located in close proximity to each other to reduce vehicle trips and encourage wise use of limited resources.

- Provide opportunities to leverage federal dollars with local matching funds to achieve improved infrastructure in the area.

- Enhance Sandia National Laboratories' role in partnering with the local community to diversify the economy through new private sector job creation opportunities.

- Provide locations for high-technology businesses to locate in Albuquerque to enhance and expand the industry clusters already developing in the region.

- Fulfill the City of Albuquerque's goals for the development of a prototypical, expedited, predictable, and fair development approval process to encourage investment by the private sector.




**NEIGHBORHOOD CONTEXT**

- Provide for a coordinated development strategy governing a large area owned by separate landowners in order to create a cohesive and well-planned Park.

- Provide for a campus-style research park with potential for collaboration between companies and public entities.

- Create an overall Master Development Plan that establishes a framework for future Park development, with design guidelines and common entry and landscape design as unifying elements.

- Develop a strategy for the eventual build-out of the Park considering the provision of infrastructure and the realities of separate land ownership and the phased development needs of the Park.

- Create opportunities for state-of-the-art information connectivity and premium power to service the specialized high-technology businesses likely to locate in the Park.

- Provide a "ready to go" development setting for swift location of new businesses to accommodate the fast-track site development needs of today's economy.

- Provide a marketable development opportunity for landowners to encourage participation in a common planning process while maintaining land values.

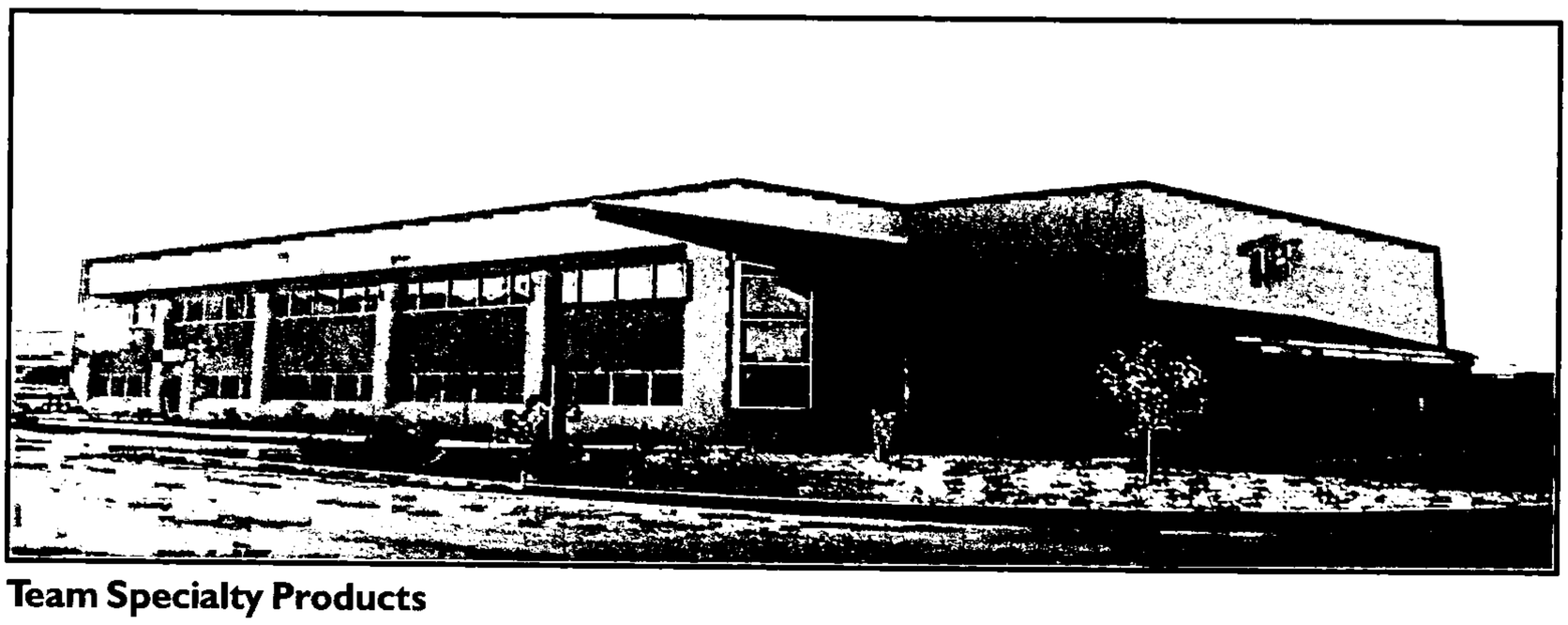
- Provide opportunities for Albuquerque Public Schools and the State Land Office to develop landholdings within the Park in order to benefit public education opportunities in New Mexico.

## BACKGROUND & HISTORY

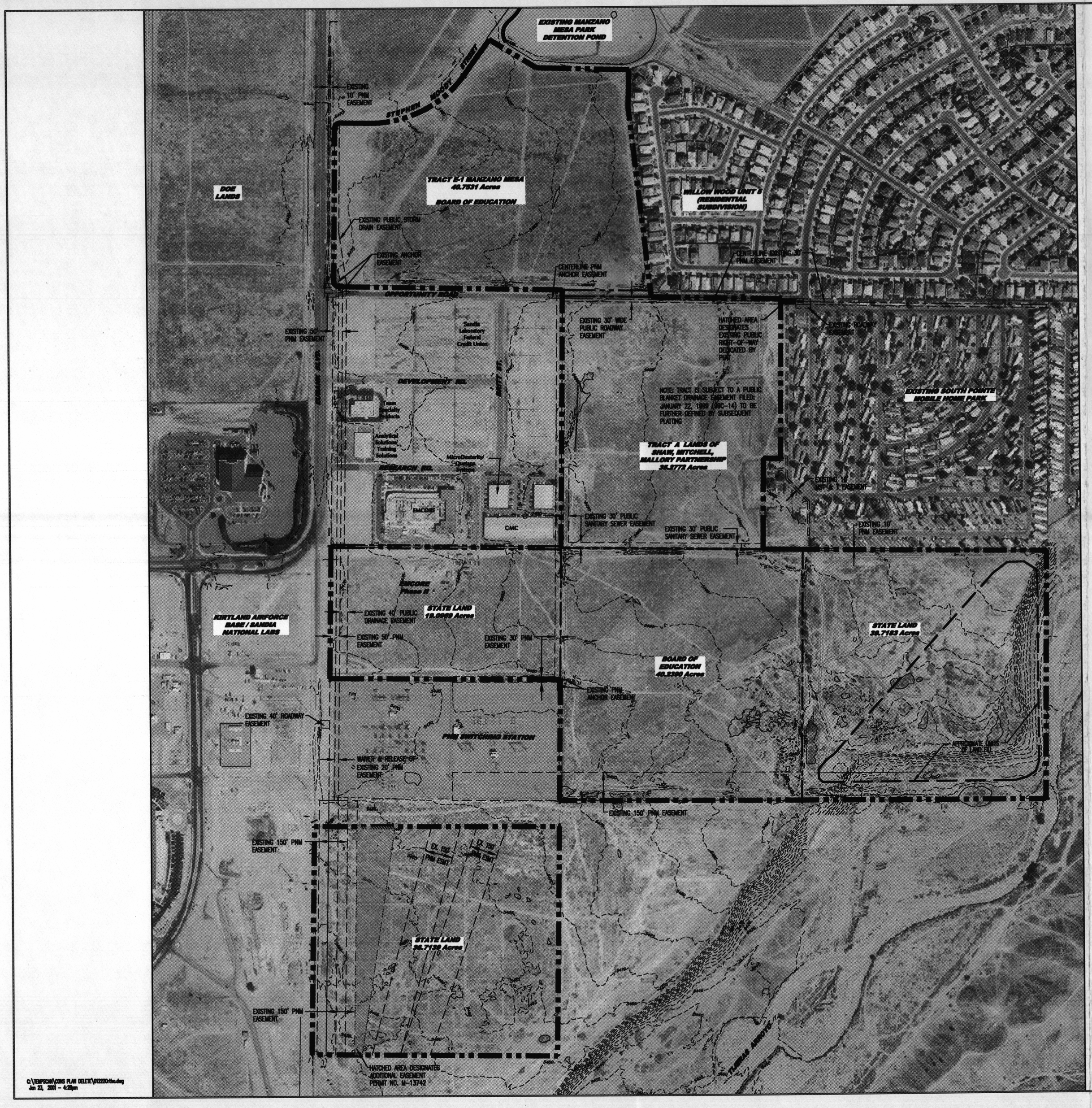
The idea of creating a high-tech research park in Albuquerque began in 1996 when several companies approached Sandia National Laboratories seeking space to physically locate near Sandia in order to enhance their partnership with the Labs. Since locating on Kirtland Air Force Base was not feasible, land east of the Labs along Eubank Boulevard and south of Central Avenue was proposed as a location for a new research park.

In December 1996, Sherman McCorkle and Dan Hartley hosted a breakfast meeting with Albuquerque community leaders to propose the idea of a research park located near Sandia. The idea for the Park received wide community support. Erik Pfeiffer, Director of Economic Development for the City of Albuquerque, pledged State funding dollars granted to the City in order to do a market survey and conceptual design for the proposed Park. The survey found that a science and technology park in Albuquerque would help attract companies to the area that are interested in working with Sandia as well as other technology institutions and universities nearby.

In October 1997, under the leadership of Dan Hartley, Sandia Vice President for Laboratory Development, a Sandia Science & Technology Park program office was set up to bring the concept of a park to reality. Jackie Kerby Moore was chosen by Mr. Hartley to manage the program. Shortly thereafter, the landowners, representatives from the local economic development agencies, and community stakeholders met to decide how to work together to create the Park. Over the next year, Dan and Jac' ie



**Team Specialty Products**




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**LEGEND**

- SANDIA SCIENCE & TECHNOLOGY PARK BOUNDARY
- TRACT BOUNDARIES
- 5305 EXISTING CONTOURS
- EASEMENT

**Ortho Photo**

# Sandia Science and Technology Park

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Albuquerque, New Mexico 87120

**Prepared By:**

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gave more than 100 presentations on the Park to various groups throughout the state, including educational institutions; government officials and agencies; economic development groups; local neighborhood associations; and industry partners to make them aware of the plans for the Park.

In April 1998, with the concept of a research park associated with a national laboratory still in its infancy, the National Academy of Sciences held a symposium in Washington, D.C. that focused on the SS&TP. The discussion centered on the Park as a location for Sandia industry partners that would encourage and strengthen their collaborations with Sandia by enabling easy access to the R&D facilities and personnel located at the Labs.

In May 1998, the SS&TP was officially founded when EMCORE broke ground on their new 50,000 square foot facility in the Park.

In July 1999, Technology Ventures Corporation formed the Science and Technology Park Development Corporation (STPDC) to manage the development of the Park. The STPDC, a nonprofit organization, has a board of directors made up of members from the local community.

In February 2000, the landowners in the SS&TP - Albuquerque Public Schools; the New Mexico State Land Office; and the Shaw, Mitchell, and Mallory Limited Partnership - together with Sandia National Laboratories, the City of Albuquerque, and the STPDC, entered into a Memorandum of Understanding (MOU) whereby the landowners agreed to develop their land into a campus-style, pedestrian-oriented, high-technology park focused on attracting high-technology companies that either have a working relationship with Sandia or the potential to establish such a relationship. As a signatory to the MOU, the City of Albuquerque agreed to pursue an expedited land use and infrastructure approval process for the Park. Sandia agreed to provide a program team to support the Park. This program team is officially on executive loan from Sandia to the STPDC. The STPDC agreed to pursue funding for a master development plan for the Park. The Department of Energy, though not a signatory to the MOU, is a partner in the Park and has provided much of the funding for the development.

To date, the SS&TP has received over $2.25 million in funding, including $1 million from the U.S. Economic Development Administration for fiber optic infrastructure; $700,000 from the City of Albuquerque for road and stormwater improvements; $200,000 each from the Department of Energy and the New Mexico State Legislature for the Master Development Plan; and $150,000 from the State/City for a Market Survey and Conceptual Design.

Currently, there are eight tenants in the SS&TP employing 343 people. The Park is expected to create between 6,000 and 12,000 high-tech, high-paying jobs for the Central New Mexico community over the next 10-20 years.

## MEMORANDUM OF UNDERSTANDING

On February 28, 2000, six parties signed a Memorandum of Understanding (MOU) that set forth the process for the Master Development Plan for the Park, for a marketing and referral system for future Park tenants, for an expedited City of Albuquerque development approval process for the Park, for continued participation by the individual landowners in the broader public purpose goals for the Park, and that set forth the terms and conditions that would govern the Park until such time as a Master Development Plan was approved. A copy of that Memorandum of Understanding is included as Appendix A of this document.

The parties to the agreement include: the Mayor of the City of Albuquerque; President of the Board of Education for Albuquerque Public Schools; the Assistant Commissioner for the New Mexico State Land Office; the General Partner for the Shaw, Mitchell, Mallory Limited Partnership; a Vice President of Sandia National Laboratories; and an Officer of the Science and Technology Park Development Corporation. These landowners and agencies have agreed to participate in the planning and development of the Sandia Science and Technology Park as set forth in this Master Development Plan.

An integral part of the MOU is the expedited approval process through the City of Albuquerque (see page 8 for more information on the Expedited City Review and Approval Process). The Master Devel-

opment Plan provides the framework for overall approval of the land use, zoning, and infrastructure concepts for the Park. This will greatly increase the STPDC's ability to market the SS&TP to potential employers interested in locating at the Park.

## EXPEDITED CITY REVIEW and APPROVAL PROCESS

The MOU signed by the landowners and interested parties to the SS&TP on February 28, 2000 set forth an expedited approval process for City review of SS&TP projects (see Appendix A for more detail on the MOU). The anticipated process is also described below, with some additional detail on specific plan elements, that are still in keeping with the original spirit of the MOU.

The MDP process provides a framework for the overall approval of the land use and infrastructure requirements for the Park, along with an expedited process for the approval of site development and subdivision requests. Key elements of the expedited process include:

- The MDP will include overall land use, design guidelines, transportation, utility, drainage, and telecommunications needs of the Park.

- The MDP and infrastructure necessary for MDP development will be reviewed and approved by the City's Environmental Planning Commission (EPC) and the Development Review Board (DRB). After the initial approval by the EPC and the DRB, neither the MDP nor individual end-user projects within the SS&TP will be reviewed by the DRB or EPC, unless major amendments to the MDP are necessary or unless a platting or vacation action is required (plats and vacation of easements or rights-of-way require review by the DRB only, without a public hearing and without an EPC review).

- Administrative approval authority for all SS&TP site development requests will be assigned to the City Planning Department Director. The Planning Director will require in-house review by the City Engineer during this administrative review process.

- The MDP will include a pre-approved, infrastructure cost-sharing formula which assigns a fixed cost or fixed cost percentage for each parcel based upon its prorated share of on-site and off-site infrastructure. Payment of costs associated with the approved MDP and site specific infrastructure for a parcel shall be deferred until the building permit stage of the project, after approval of a development request by the City's Planning Department Director. So, rather than providing financial guarantees at the DRB level, the end-user will provide financial guarantees and/or build their required infrastructure in order to obtain building permit approval. No additional hearings before the EPC or DRB are required to obtain this approval, except in cases of major amendment to the overall MDP as noted above.

- In addition, the City of Albuquerque shall pursue the timely implementation of approved capital improvement projects that support the SS&TP. As part of the MDP's approved infrastructure requirements identified during the DRB process, the City of Albuquerque's capital improvements in the vicinity of the SS&TP will be identified by the City. City commitments shall be provided regarding the scheduling and construction of those identified City improvements.

- City staff to EPC, DRB, and the Development Review Committee (DRC) shall implement the approval process described above with the goal of expediting and streamlining the process wherever possible.

- End user applicants within the SS&TP shall sufficiently demonstrate compliance with the approved MDP and accompanying infrastructure requirements at the time of their parcel-level application to satisfy the Planning Director and in-house review by the City Engineer in order to proceed to the DRC for building permit. Applicants recognize

that their proportional share of the MDP infrastructure must be financially guaranteed and/or constructed at this time in order to complete the building permit process outlined above.

## MASTER DEVELOPER

At the time of this Master Development Plan, there is no Master Developer for the Park. Rather, the landowners and other agencies have bound themselves together through the Memorandum of Understanding to achieve the Park's common goals. However, a Master Developer is seen as a desirable outcome of the planning for the Park, in that development of individual sites will be more easily coordinated if a unifying entity with contractual control of the Park is present. Towards this end, the Science and Technology Park Development Corporation (STPDC, a non-profit organization providing coordination of the Park and its interested parties) has issued a Request for Qualifications for interested Master Developers. During the first quarter of 2001, the landowners and STPDC will issue a Request for Proposal and assess the level of interest and capabilities of responding developers. Regardless of whether or not a Master Developer is ultimately responsible for the Park, this Master Development Plan shall still govern future development of the site as envisioned by the MOU.

## NEIGHBORHOOD ISSUES

Staff members from the STPDC have met with neighborhood groups for the past few years regarding development of the SS&TP, and the response has been generally positive. These neighborhood groups include the Willow Wood Homeowner's Association and the District 9 Coalition of Neighborhood Associations, which represents South Pointe Mobile Home Park and Mirabella Homeowner's Association. It is anticipated that future meetings with the neighborhoods will be held to discuss various issues as the Master Development Plan goes through the approval process and the Park begins to develop.



# 2. EXISTING CONDITIONS

## LAND USE AND ZONING

Existing zoning on the SS&TP site is IP and County A-1. The SS&TP falls within the Developing Urban area as designated by the Albuquerque/Bernalillo County Comprehensive Plan. The goal of the Master Development Plan is to have the entire Park site zoned IP, consistent with adjacent zoning and recent requests for a zone map amendment for the EMCORE site.

The County portion of the SS&TP is the subject of two current petitions for annexations and establishment of zoning; one for the 40 acre Albuquerque Public School tract and one for the 40 acre and 35 acre tracts owned by the State Land Office. It is anticipated that the annexation requests will be before the City Council during the Spring of 2001. The annexation and establishment of zoning requests were evaluated for consistency with applicable City-adopted plans and policies including the Albuquerque/Bernalillo County Comprehensive Plan, Trails and Bikeways Facility Plan, Resolution 270-1980, Resolution 54-1990, and Resolution 91-1998 (R-70).

The immediate area around the SS&TP is emerging as a major activity center that will include many opportunities for employment, residential, commercial, and community uses. Substantial changed neighborhood conditions exist in this area and support the development of the SS&TP. Numerous zone map amendments, annexations, and site plan approvals have occurred in this area over the past 3-4 years. Manzano Mesa, a master plan area comprising commercial, office, park, and multi-family and single family residential uses, has been developing at a rapid pace with a variety of projects. Tract E-1, Manzano Mesa Master Plan, is zoned IP and is incorporated into the SS&TP.

## SURROUNDING USES

***Office/Industrial***

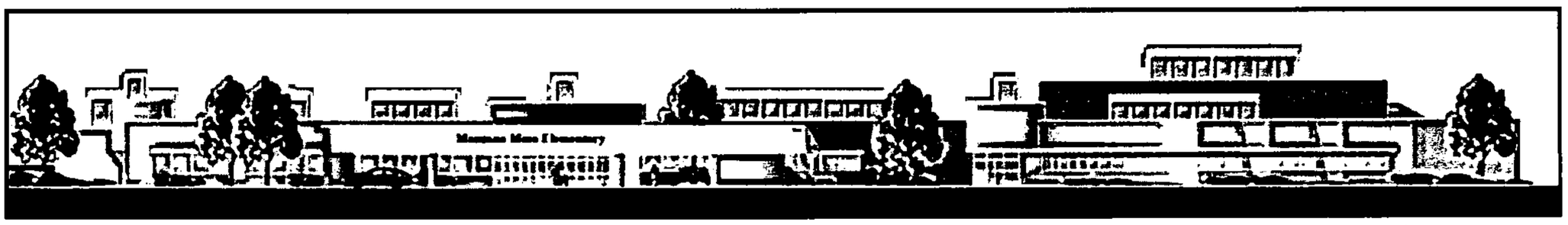
EMCORE Corp, a high technology user located within the SS&TP and serving as its current anchor, recently received approval by the City Council for annexation and establishment of IP zoning on a 20 acre parcel to the south. The request also included approval of a master development plan. The plan is for a multi-million dollar expansion of its Albuquerque operation, which involves the manufacture of material for semiconductors. Adding to its existing 50,000 square foot building, Phase 1 will include a two-story, 36,000 square foot building. It is anticipated to create 200 new jobs. Phase 2 will include a 58,000 square foot building, anticipated to create another 400 new jobs. Existing businesses adjacent to the Park include Team Specialty Products (TSP), Analytical Solutions, Training Solutions, MicroDexterity Systems, Quetana, and Cooperative Monitoring Center.

***Commercial Uses***

Two major commercial developments have occurred in this area. CostCo Wholesale retail store (within Manzano Mesa), comprising 152,000 square feet, recently opened just north of Southern Boulevard and adjacent to Eubank Boulevard. In this case, the EPC approved a zone map amendment from SU-1 for Limited IP purposes to SU-1 for C-2 (Z-99-136). Home Depot is located north of Costco and has been in operation for two years. It went through the City approval process in 1994 (Z-94-45).

***Residential Uses***

Residential development in Manzano Mesa has included Willow Wood and Mirabella, both single family residential communities to the east of the SS&TP. In addition, a zone map amendment is being requested by GSL Properties, Inc. on the property just to the north of the SS&TP. This request involves a rearrangement of land uses to allow office development adjacent to the SS&TP on the north and relocates the multi-family residential further to the north. The site plan proposes a total of 504 dwelling units.



**Manzano Mesa Elementary**

***Community Uses***

Located north of the SS&TP, Manzano Mesa Community Park is zoned SU-1 for Community Park and Related Uses and has been developing for the last four years. Manzano Mesa Multi-Generational Center, to be located in the northeast corner of the Park, is currently planned to start construction in January, 2001. Albuquerque Public Schools is also planning a new elementary school north of the SS&TP, which is scheduled to be open in Fall, 2003.

## PERMISSIVE USES

The land uses listed below are consistent with the City of Albuquerque Zoning Code. There are several permissive uses under the IP zone that will be prohibited at the SS&TP in order to create a world class, high technology, office park. The following list includes the permissive uses allowed at the SS&TP within the IP zone. Note that the Design Guidelines must still be met in order for development to occur, in addition to approval of any proposed uses by the Architectural Control Committee (see Section 5, page 39).

- Auditorium, place of assembly
- Bottling plant
- Club
- Cold storage plant
- Golf course or golf driving range
- Hospital for animals
- Ice plant, wholesale
- Institution, including library, museum, school, day care center, but not disciplinary institutions or hospitals for human beings
- Laboratory - experimental, testing, or medical, provided all activities are conducted within a completely enclosed building. Noxious fumes, odor, or dust shall not be emitted from the premises
- Machine shop
- Manufacturing, assembling, treating, repairing, or rebuilding articles except those conditional or otherwise limited in this zone and the M-1 zone or specifically listed as permissive or conditional in the M-2 zone, provided manufacturing is conducted within a completely enclosed building
- Metal stamps, tool and die making
- Office
- Office machine equipment sales and repairs
- One dwelling per premises for a watchman or caretaker on the same premises with commercial or industrial use
- Park and ride temporary facilities
- Parking lot related to another use permitted in this zone, as regulated in the O-1 zone, including off-site or shared parking facilities for Park tenants
- Printing, publishing, lithographing, blueprinting, or photostating
- Public utility use or structure and fire stations
- Retail sales of the following goods, plus incidental retailing of related goods and incidental service or repair:
  - Books, magazines, newspapers, except no adult book stores or adult uses
  - Cosmetics, notions, gifts
  - Drugs, medical supplies
  - Flowers and plants
  - Food and drink, for consumption on premises
- Sales and display rooms or buildings for wholesalers, distributors, warehouses, or manufacturers
- Services:
  - Banking, loaning money, drive-in facilities
  - Barber, beauty
  - Clinic
  - Day care center
  - Dry cleaning, laundry, clothes pressing
  - Health gymnasium
  - Hotel including incidental uses
  - Photography, except not adult photo studio
- Sign, on-premises only (see Section 5: Design Guidelines for detail on signs)

- Sheet metal working
- Swimming pool
- Warehouse
- Wholesaling
- Wireless telecommunications facility (see Section 5: Design Guidelines for detail)

**Prohibited Uses**

- Railroad right-of-way and incidental facilities
- Automobile sales, rentals, service, repair, dismantling, and storage
- Pawn shops
- Car washing
- Off-site signage
- Community residential program or emergency shelter
- Motels

## LANDFILL and SURFACE DUMPING

A portion of the SS&TP includes the old South Eubank Landfill, generally located along the Tijeras Arroyo east of Eubank. The landfill was operated by the City of Albuquerque from the mid-1950s to 1970s. Site reconnaissance has been conducted to determine the extent of the landfill, and it is anticipated that some level of landfill mitigation measures will be undertaken in the future in order to reclaim more land within the SS&TP for development purposes. The Master Development Plan recognizes that areas found to be most impacted by the landfill may be in later phases of development, and/or may be restricted from certain types of development in the future when more detailed survey work has been completed.

Based on conversations with the City Environmental Health staff, it is understood that the City is initiating a landfill survey and mitigation plan with an environmental engineering consultant during 2001. This project will look at all of the City's landfills and make recommendations for monitoring, remediation, and/or distances that future development should consider as buffer zones. After the consultant's work is finished, the City's Environmental Health Department shall prepare a Landfill Management Plan, that will include plans for methane gas generation monitoring or mitigation. Monitoring well installation or other monitoring/mitigation measures shall be at the City's cost, if required. The City and landowners in the area are cooperating on sharing of information and will develop a Landfill Management Plan with concurrence from all parties.

In addition to the landfill, there has also been a long history of surface dumping at the Park site. Many of the properties within Phase 2 of the Master Development Plan have been disturbed and contain illegally dumped refuse such as old appliances and furniture. Clean-up efforts of the surface dumping areas are being planned in a cooperative effort between the State Environmental Department, Bernalillo County Sheriff's Department, City Environmental Health, and the landowners. The landowners have currently been working with the Bernalillo County Sheriff's Department to help prevent further trespassing and dumping on the site. All areas containing debris will be cleaned up prior to site development, and increased activity in the area will help to prevent future illegal dumping in the area.

## BIOLOGICAL SURVEY

A 100% survey of approximately 300 acres encompassing all of the SS&TP and some adjacent lands was completed on October 3, 2000. The primary objective was to assess the area for State or Federal species of concern. No species of concern were observed at the site. A list of observed species is on file with the Project Team.

The Burrowing Owl (Athene cunicularia) was the most likely species of concern that could be found on these parcels. The Burrowing Owl is declining in most of the Western United States. However, Kirtland Air Force Base (KAFB) has a stable population. The Burrowing Owls on KAFB primarily use the burrows of Prairie Dogs (Cynomy gunnsioni) as their nests. There were no Burrowing Owls observed during the surveys. However, many of the Burrowing Owls may have left the area for migration south, and the ones that remain are very secretive during the fall season.

There were observations of prairie dogs and/or their burrows on most of the parcels within the SS&TP so habitat for Burrowing Owls is present in the area. If Burrowing Owls are subsequently observed on a site slated for construction, a U.S. Fish and Wildlife Permit for relocation of the birds and/or eggs must be obtained. There are several local organizations that will relocate the birds and eggs to another safe location, and construction can proceed.

The land areas within the Park are dominated by desert grassland habitat with some dryland shrubs and a few scattered elms and poplar trees located in low-lying areas. All of the areas have been highly disturbed and there are no naturally vegetated areas that need to be preserved in this location.

## CULTURAL RESOURCE EVALUATION

A Class II Cultural Resource Investigation was completed for the proposed SS&TP. A cultural resource records search of the New Mexico Cultural Resource Information System (NMCIS) files revealed that no archaeological or historical properties have been previously identified within or in direct proximity to the proposed project. A review of the New Mexico Register of Cultural Properties and the National Register of Historic Places indicates that no nominated properties occur within or in close proximity to the project. The closest nominated property listed on the New Mexico Register of Cultural Properties is the Luna Lodge (HPD No.1694) at 9019 Central Avenue NE, on the north side of Central Avenue between Wyoming Boulevard and Eubank Boulevard. It is clear that the proposed project will have no direct or indirect effect on any historic buildings or structures. There are no buildings or other structures within the project area.

The Class II (archaeological reconnaissance) involved a series of random transects across the various project land units. It is estimated that the reconnaissance resulted in the inspection of 10 to 20 percent of the land surface within the project area. Most areas with potential for intact cultural resources (i.e., the edge of Tijeras Arroyo, low elevations in the grassland plain, and undisturbed land areas) were inspected. The reconnaissance revealed that much of the project area has been subject to previous disturbance, and that large sections of the project in the south and southeastern sectors were formerly a landfill. The archaeological reconnaissance failed to identify any intact cultural features within the project area, with the exception of an abandoned two-track road that crosses the north sample unit. No cultural resources were identified in the Class II study within the project area. However, six roads were identified in the 1881 Plat map and 1936 aerial photography of the area. Three of the roads were destroyed by later land fill operations and the other three roads could still be present. These roads are of historic interest, but it is unlikely that they would require any treatment other than survey documentation.

The archaeological reconnaissance indicates that few or no important cultural resources are present in the project study area. A systematic Class III archaeological survey would be needed to verify this assumption, but it is clear that the cultural resource preservation and density within the project area is low to absent.

A Class II Cultural Resources Investigation for the proposed SS&TP, Bernalillo County, New Mexico report, Report No. 272, will be delivered to the State Historic Preservation Office (SHPO) when the Master Development Plan has been finalized. In summary, the preliminary cultural resource evaluation for the SS&TP indicates that the project should have little or no effect on the cultural-historical properties of the area. There are numerous cultural resources along the edges and floor of Tijeras Canyon, but cultural resource density in the open grassland marginal to the arroyo, such as the project area, are very infrequent.

## PHYSICAL CHARACTERISTICS

***Soils***

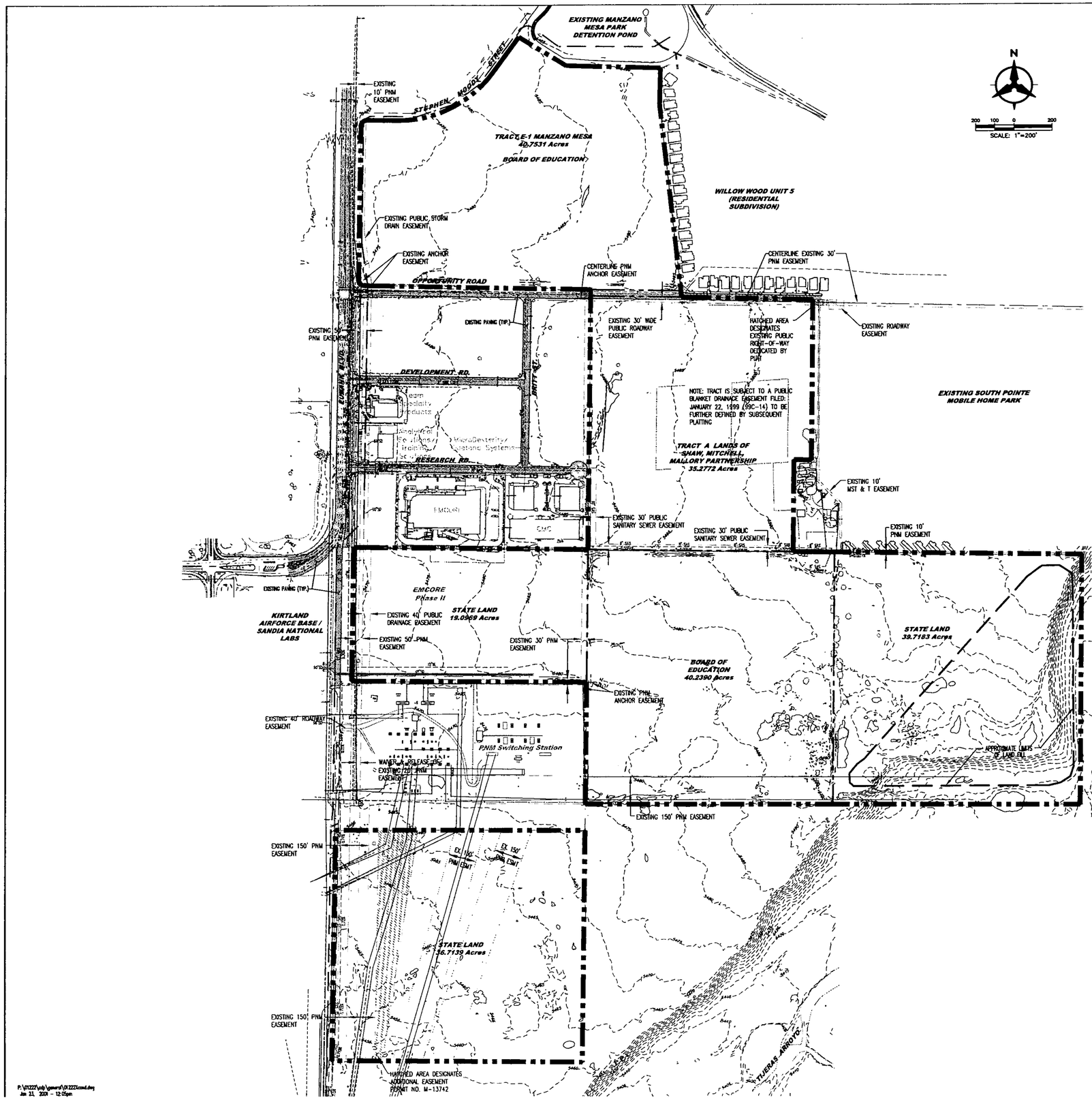
Based on information from the Soil Conservation Services' Soil Survey of Bernalillo County, the site consists of a number of soil types, primarily:

- "Tijeras gravelly fine sand loam" – This soil type is commonly referred to as decomposed granite. Runoff is moderate. Potential for water erosion is also moderate.

- "Embudo gravelly fine sand loam" — This soil type is also commonly referred to as decomposed granite. Runoff is medium. Potential for water erosion is moderate.

- "Madurez-Wink association" – This is a fine sandy loam soil with slow runoff and moderate to severe wind erosion potential.

These soils are common to the Northeast Heights area, and are suitable for development purposes.




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Jan 23, 2001 - 12:05pm

Existing Conditions Map

# Sandia Science and Technology Park

Prepared For:

Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

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### *Existing Vegetation and Ground Slopes*

Existing vegetation on the site consists almost exclusively of a light covering of native grasses. Some small trees and higher-water use vegetation exists along the path of the runoff from the South Pointe Mobile Home Park. Much of the site has been scarred by vehicular use on existing dirt roads criss-crossing the site.

Typical ground slopes range between 1 and 3 percent from east to west. Extremely steep slopes of approximately 50 percent (2 feet horizontally for every 1 foot vertically) are found along the edge of the Tijeras Arroyo.

## EXISTING DRAINAGE INFRASTRUCTURE

The most important drainage feature in the region is the existing and planned large diameter South Eubank Storm Drain (jointly funded by the City of Albuquerque and Albuquerque Public Schools). Phase 1 construction of this City storm drain project, which runs in Eubank and Stephen Moody from the Manzano Mesa Park Detention Pond to the Tijeras Arroyo, is complete. Phase 2 is currently under construction, and runs from the Manzano Mesa Park Detention Pond north up Elizabeth Street to Central Ave. The large majority of SS&TP drains to this existing storm drain.

## EXISTING WATER and SANITARY SEWER INFRASTRUCTURE

The primary existing waterline in the vicinity of the SS&TP is a 14" waterline in Eubank. The 14" waterline is connected to a 30" transmission line near Southern Boulevard, and extends from that point south, approximately to Research Road. The EMCORE project is responsible for extending that line south to Innovation Parkway, and along Innovation Parkway to the east side of the EMCORE project. In addition, there are 8" or 10" distribution water lines in Gibson Avenue, Britt Street, Development Road, and Research Road. There is also an existing 10" waterline in the South Pointe Mobile Home Park (MHP) which terminates near its southwest corner.

The primary sanitary sewer line for the area is 21" diameter, and runs down Eubank along the entire frontage of the property, and drains to the Tijeras interceptor line. In addition, there is an existing sewer line in Opportunity Road that carries wastewater from a portion of the Willow Wood Subdivision. Another sewer line carries wastewater from the MHP west to the east end of Research Road, and down Research Road to Eubank. Development Road also contains a sanitary sewer line which conveys local wastewater from the adjacent lots to the 21" line in Eubank.

## EXISTING TRANSPORTATION FACILITIES

### *Immediate Vicinity of SS&TP*

Clearly, the primary roadway in the area is Eubank Boulevard. Eubank Boulevard is currently a four-lane undivided facility from Southern Boulevard south to the Base Entrance. From the Base entrance south approximately to Innovation Parkway, Eubank Boulevard is paved to a width of 24 feet, primarily to provide paved access to a secondary base entrance. With the exception of the east side of Eubank Boulevard between Opportunity Road and Research Road, there is no curb and gutter or sidewalk along Eubank. Opportunity Road is the only other paved facility within the SS&TP. Opportunity Road is approximately 24 feet in width with no curb and gutter or sidewalk.

### *Surrounding Region*

Eubank Boulevard from Southern Boulevard north to the I-40 interchange is six lanes wide, the majority of the reach contains a median to allow for left turn lanes, as well as curb and gutter and sidewalk on both sides. Juan Tabo Boulevard is a four lane urban arterial from Southern Boulevard to Central Boulevard, and six lanes from Central Boulevard north to the I-40 interchange. Southern Boulevard provides a vital connection from Eubank Boulevard to Juan Tabo Boulevard. Currently, Southern Boulevard is only one-lane in each direction.

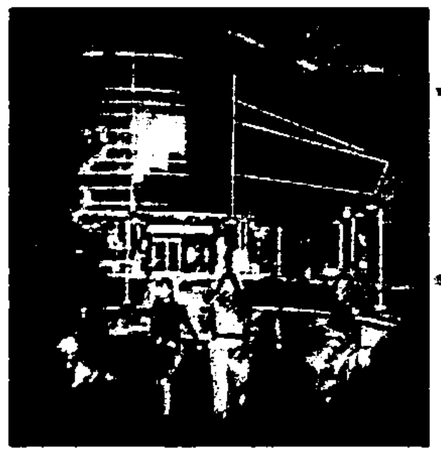
### *Existing Roadway Easements and Rights-of-Way*

Existing right-of-way for Eubank Boulevard on the east side of the centerline is 78 feet. On the west side of the centerline there is 30 feet of right-of-way. The City has recently begun to design improvements to Eubank. The improvements will most likely consist of widening the road to provide three lanes

each direction, with a median, bicycle lanes, and sidewalks or wide trails on each side of the road, with proposed right-of-way width expansion on the west side of Eubank Boulevard.

Steven Moody Road is a 68 foot right-of-way, currently with no improvements. The existing right-of-way is sufficient for proposed improvements. However, the alignment of the existing right-of-way will have to be adjusted to allow for the proposed intersection of Stephen Moody and Innovation Parkway. A small amount of additional right-of-way may need to be dedicated to accommodate the new intersection.

Opportunity Road is currently a 60 foot right-of-way. The existing right-of-way is sufficient for anticipated improvements.



# 3. MASTER PLAN CONCEPT

## INTRODUCTION

The SS&TP provides an opportunity seldom realized in this area to create a unique, high technology, research park through cooperation between landowners and other parties. The Master Plan Concept is the result of several months of meetings and brainstorming sessions between these various entities, as well as other business leaders in the community, architectural massing studies, fly-throughs, etc. Meetings to discuss various concepts were also held with numerous members of City, County, and State government. As such, the Master Plan Concept is presented here with great enthusiasm and momentum.



**Design Character Sketch**

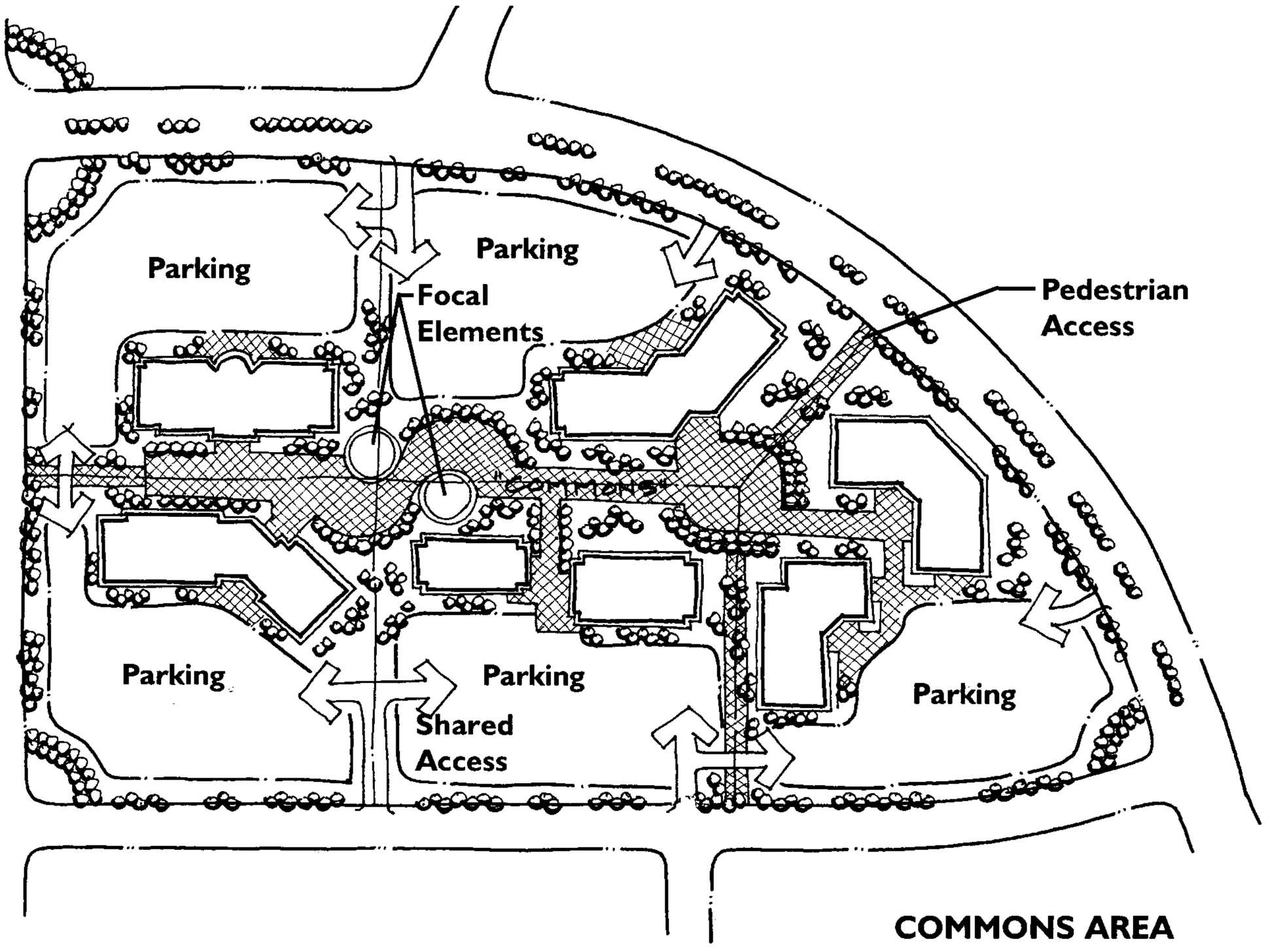
## DESIGN GOALS

Key design goals were created by the consultant team in order to express the ultimate vision for development of the SS&TP. They are as follows:

- Create a premier high technology park that will benefit the greater community of New Mexico
- Create opportunities for synergy and interaction between tenants
- Create a campus environment that supports pedestrian activities and alternative modes of transportation
- Design a network of trails, buffers, and sidewalks which emphasizes pedestrian and bicycle access and circulation, removed from vehicular circulation
- Provide a symbolic and physical link to Sandia National Laboratories
- Highlight views to the Sandia and Manzano Mountains
- Explore new building technologies and solutions
- Visually buffer all parking areas with landscaping and berming and allow for off-site, shared parking facilities
- Reclaim vacant, underutilized land and enhance the natural environment

## COMMONS PRINCIPLES

An integral part of the SS&TP design concept is the creation of a campus style research and development park. In order to achieve this design concept, the Master Development Plan includes commons areas (see Master Plan Concept for the location of these Commons areas). These are areas where buildings should be grouped together and faced inward. Pe-



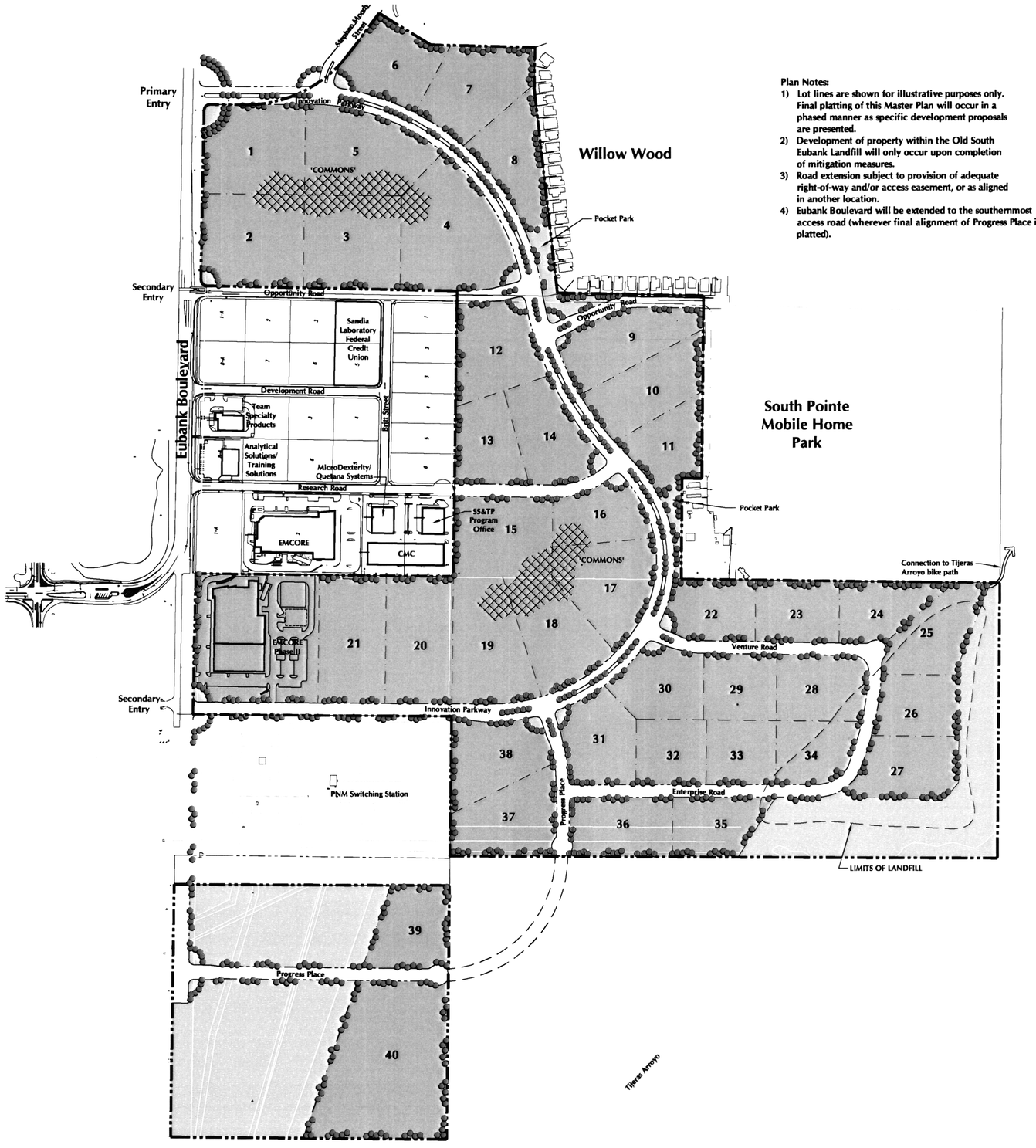

**COMMONS AREA**

destrian accessibility will be the premium design goal for these areas. The following concepts form the underlying principles for the Commons areas:

- Pedestrian-oriented plazas linking all buildings
- Reciprocal cross-access easements between lots allowing for vehicular circulation between lots
- Provision of focal elements, such as artwork, water features, etc., to define specific areas
- Variety of seating opportunities, both formal and informal
- Pedestrian access to the perimeter of the site for connection to park-wide trail network
- Significant landscaping to provide shade, create visual interest, frame and define areas, etc.
- Option to provide retail/restaurant component adjacent to the "Commons"
- Large gathering areas for company functions, parkwide events, etc.
- Opportunities to create synergy between companies

## ARCHITECTURAL CHARACTER

All landscape and building design should be complementary to each other. They should work in concert to project a "building in a park" image. This does not imply the use of water thirsty plant materials. Conversely, the Master Development Plan encourages the use of xeriscape landscape concepts contrasted to a limited quantity of lush landscaping. The contrast of these two extremes creates an exciting and dynamic relationship. This dynamic contrast has proven to be highly successful in desert environments around the country. This approach is not only attractive, but it is also environmentally responsible.




Plan Notes:

1) Lot lines are shown for illustrative purposes only. Final platting of this Master Plan will occur in a phased manner as specific development proposals are presented.
2) Development of property within the Old South Eubank Landfill will only occur upon completion of mitigation measures.
3) Road extension subject to provision of adequate right-of-way and/or access easement, or as aligned in another location.
4) Eubank Boulevard will be extended to the southernmost access road (wherever final alignment of Progress Place is platted).

## Illustrative Master Plan

# Sandia Science and Technology Park

**Prepared For:**

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SMPC

Scale 1" = 200'

100 0 200 400 North

January 25, 2001

The Master Plan Concept is designed to encourage pedestrian activities such as outdoor gathering spaces and reading areas. It is a goal of the Master Development Plan to create a physical environment that stimulates creativity. One of the proven methods is to encourage dialogue and interaction between workers. This type of cross-pollination of ideas should be developed on individual company sites. Also, individual companies are strongly encouraged to interact in a similar manner with neighboring businesses.

The SS&TP encourages new building designs to "be a good neighbor" and establish a visual and symbolic dialogue with neighboring structures. This can be accomplished through the use of compatible forms, massing and/or colors. Shared landscaping can also be an important "unifier" by creating visual "linkages" between buildings.

Every building should be unique and express the special character of its function and the nature of the business and aspirations for the future. However, while achieving uniqueness, it should also respect and harmonize with surrounding architecture. It should also use materials, details, forms or colors to pay homage to this very special place, New Mexico.

The success of the architecture within the Park will rely on the dynamic contrast and balance between individual building expression and the ability of new structures to interact visually with neighboring buildings to create a strong sense of unity and community.

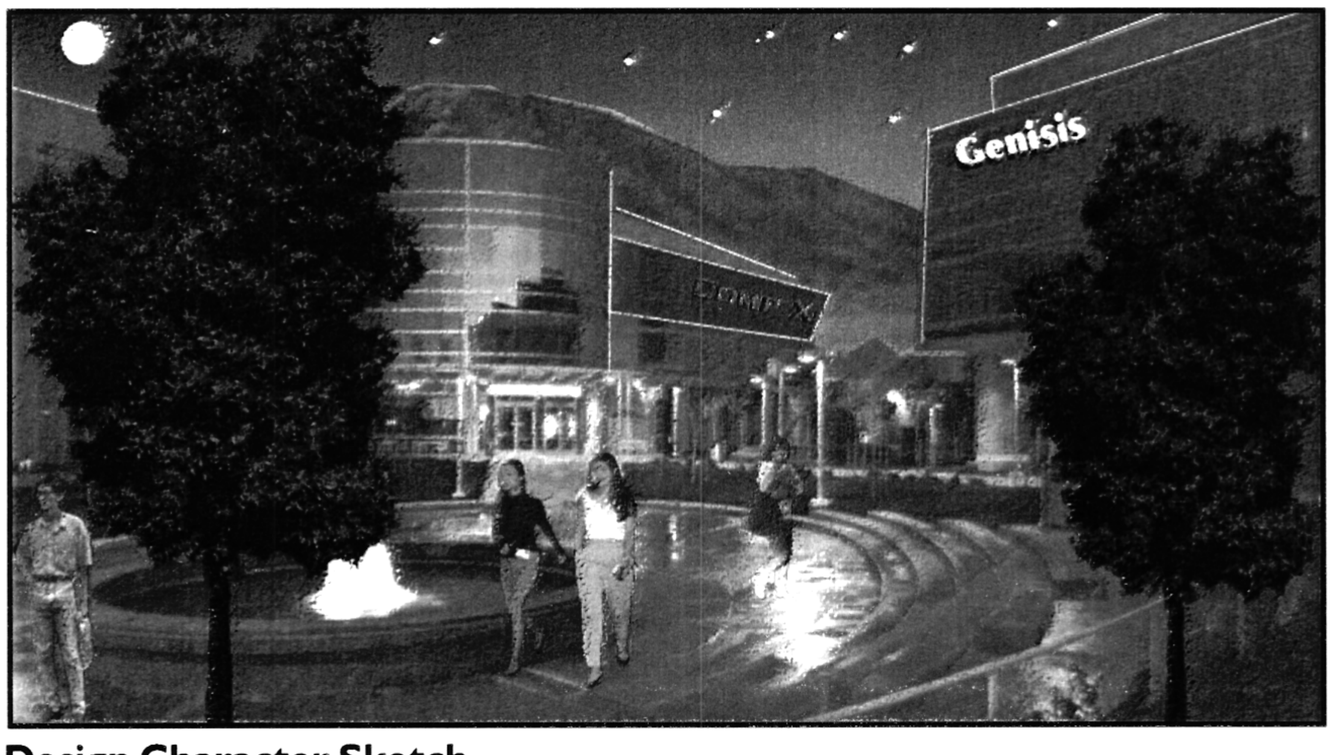
## DESIGN CHARACTER CONCEPTS

The SS&TP provides a unique opportunity for new development in Albuquerque. Due to the special nature of the SS&TP, much attention will be given to its progress by the greater community. All building design, regardless of function or budget, should be inspired and become a visible symbol of our high goals and aspirations. Each building design should express the unique nature of its function. Included in this section are sketches which illustrate a high technology design character.

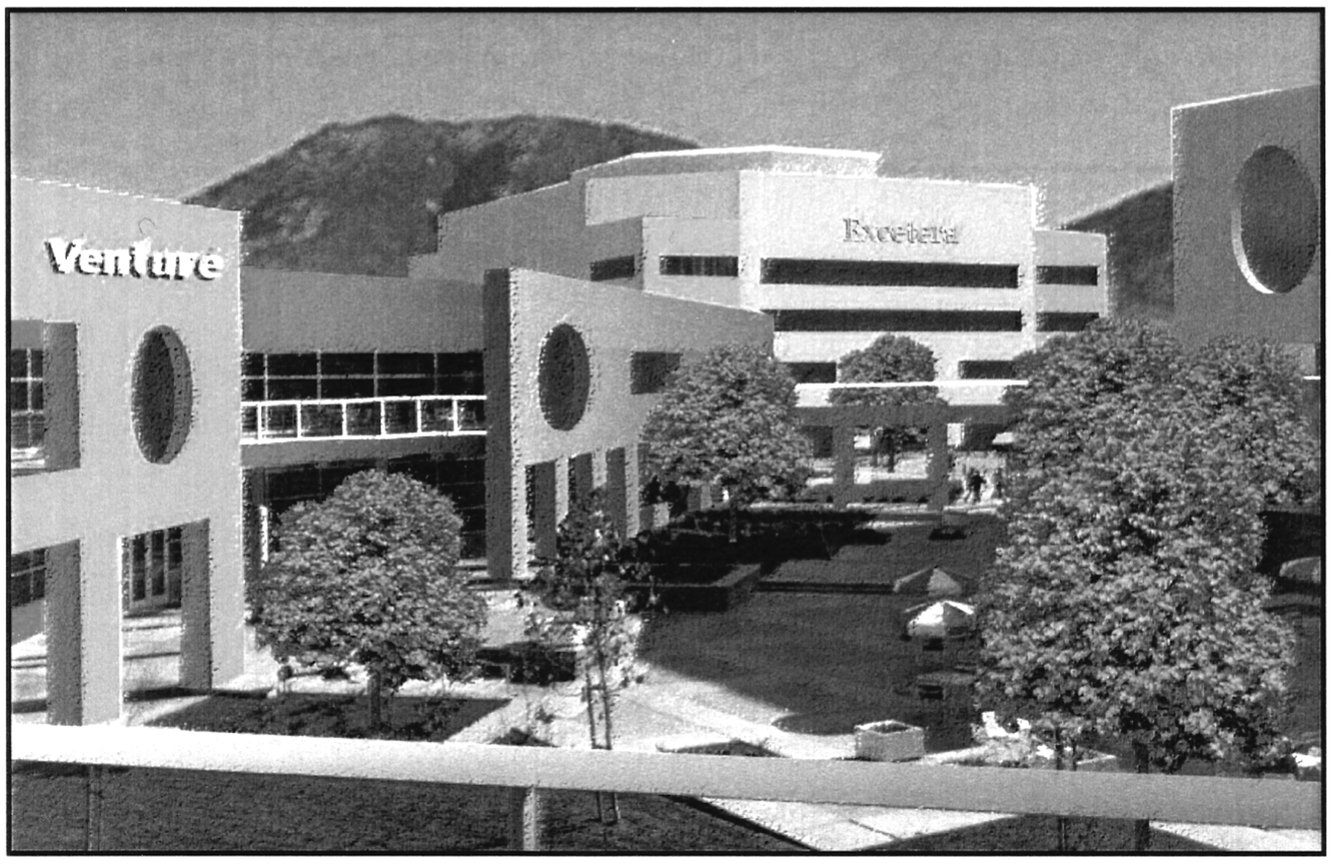



**Design Character Sketch**

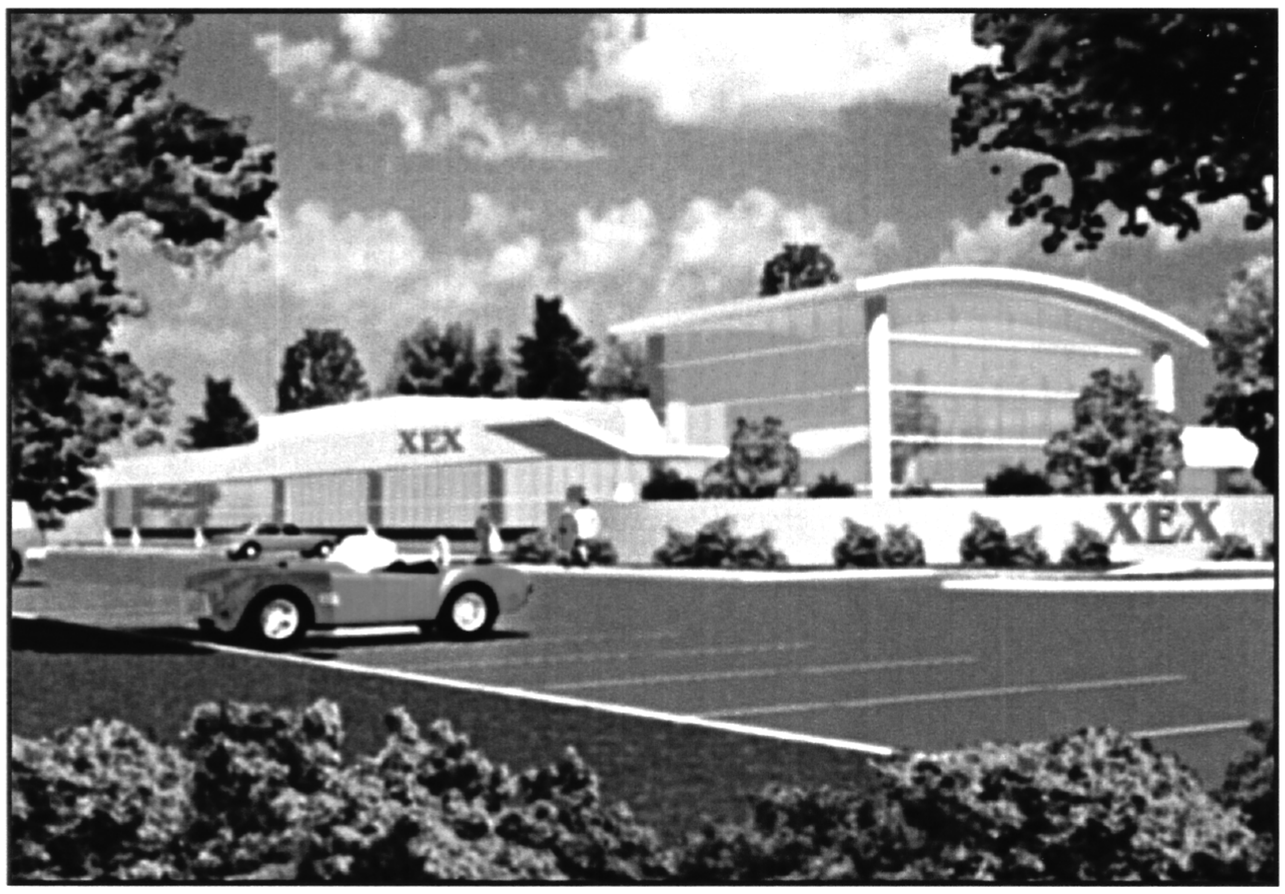
The ancient history of New Mexico is rich and should influence the building design. We are in a very special position. Albuquerque stands with one foot firmly planted in a distant past and the other foot stretched out to an exciting future filled with discovery and invention. The blending of ancient and futuristic design vocabularies adds a unique and dynamic quality that will set the SS&TP apart from other science and technology parks.



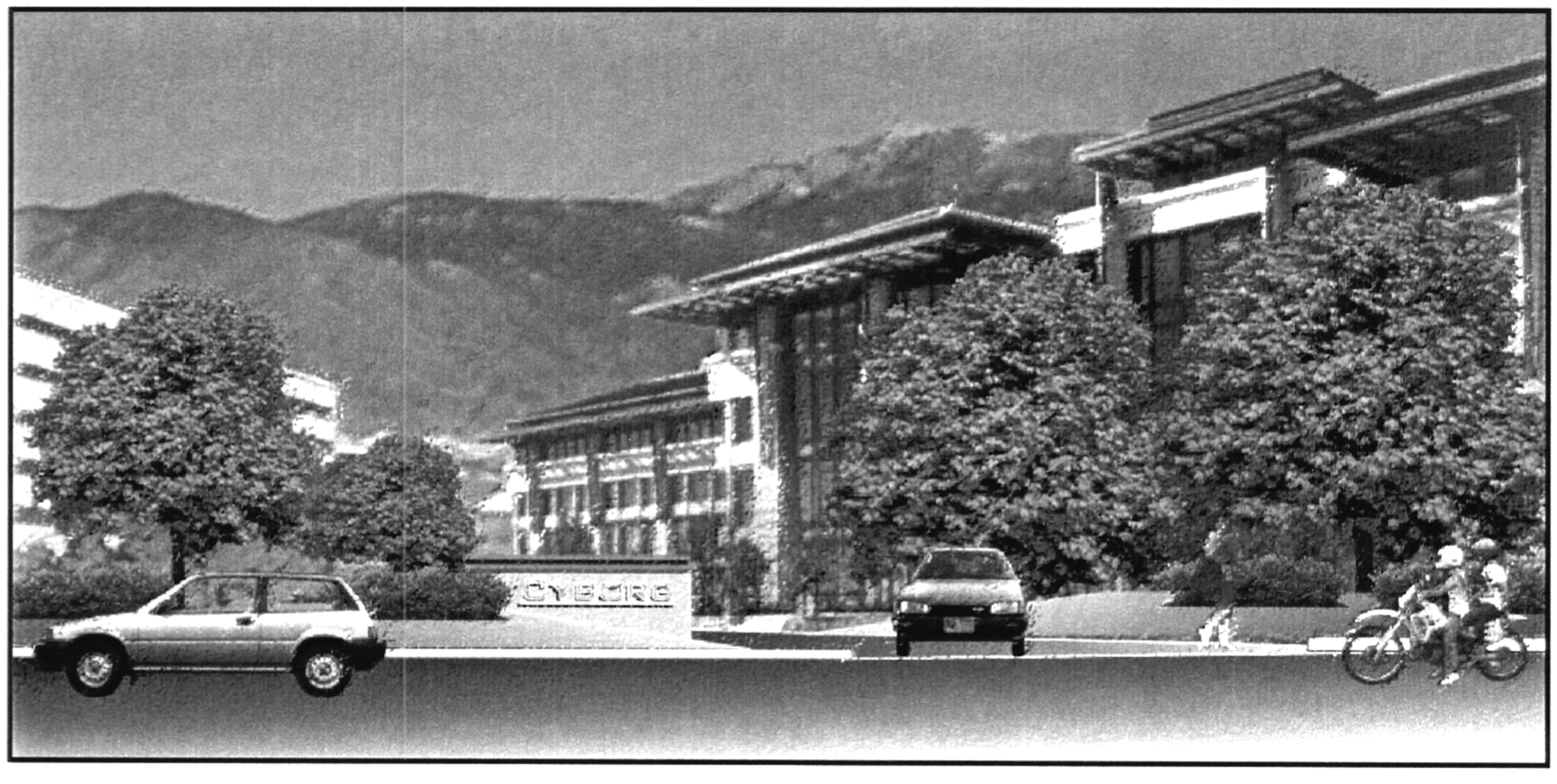

**Design Character Sketch**




**Design Character Sketch**




**Design Character Sketch**




**Design Character Sketch**

## TRAILS

The City's Trails & Bikeways Facility Plan identifies a planned primary trail along Southern Avenue and proposes a secondary trail located along Eubank Boulevard from the KAFB north gate. The Pedestrian Facilities Plan (see page 27) shows a connection through the SS&TP between Eubank Boulevard and an existing mountain bike trail along the Tijeras Arroyo and south of the South Pointe Mobile Home Park to the east. The existing bike trail connects to Juan Tabo Boulevard.

A trail connection will be created between the existing trail through the SS&TP to Eubank Boulevard. These trails will be designed to be 10 feet in width and are intended to serve regional bicycle commuters and local residents. They can either be located within rights-of-way for roads or in separate trail easements (see Section 5: Design Guidelines for detail on trail design issues). The trail will most likely need to line up with the road and access easement along the southern boundary of the EMCORE Phase 2 site.

## CIRCULATION

Vehicular, pedestrian and bicycle circulation within the SS&TP and surrounding areas is a significant design and planning issue. The intent of the Master Development Plan is for the SS&TP to be pedestrian/bicycle-friendly and to promote a 'campus-like' environment (see Pedestrian Facilities Plan on page 27).

Pedestrian and bicycle circulation within the SS&TP will be accomplished through a system of trails and sidewalks. Six foot wide sidewalks are being proposed on the opposite side of the street from the 10 foot trails. Pedestrian links will be included between all building entries and street side trails or sidewalks. In addition, connections will be made to existing offsite facilities along Eubank Boulevard and the Tijeras Arroyo, and up through Manzano Mesa Park and adjacent neighborhood to facilitate access to the SS&TP and SNL.

***Primary Access to SS&TP - Eubank Boulevard, Southern Boulevard to KAFB Entry***

The importance of Eubank Boulevard to the employers and employees of this area can not be understated. Currently, and for the foreseeable future, Eubank is the only access of significance to SS&TP. At the time of this report, Eubank Boulevard is under contract negotiations between the City and a consultant to begin design of a new six-lane facility with raised median. Construction completion of this facility is anticipated for Summer, 2002. The Master Development Plan anticipates the terminus of Eubank to be linked with the southernmost entry to the Park at Progress Place.

That portion of the anticipated Eubank extension, south of EMCORE, will be constructed in Phase 2. Construction of Eubank Boulevard will end at Progress Place (subject to final platting to determine actual location). The anticipated removal of Eubank from the "southeast loop road" concept of the Long Range Major Street Plan removes the impetus for an extension of Eubank beyond Progress Place.

***Gibson Corridor***

The much anticipated Gibson Corridor - the east/west connection of Interstate 25 and Interstate 40, largely along the existing Gibson and Southern road alignments and extending to Juan Tabo at Southern Boulevard - is still many years from completion. An Environmental Assessment has been completed, but is still under review. Completion of this major roadway will provide significant traffic relief for area motorists, including those from the SS&TP.

***Primary Access within SS&TP- Innovation Parkway***

Innovation Parkway is the central spine of the whole SS&TP. It is the primary access point into the Park from Eubank Boulevard. Innovation Parkway will primarily be a two-lane facility with a raised median between lanes. The lanes will be 18 feet wide between curbs. In order to assist the Fire Department's approval of this reduced lane width (typically, a single lane is sized at 20 feet in width), the median will utilize roll curb which permits an emergency response vehicle to pass over the curb, when necessary. A short length of Innovation Parkway, estimated to be from Eubank to just beyond Stephen Moody, will be a four-lane facility in order to transition the double left turn lanes (southbound Eubank to eastbound Innovation Parkway) at the Eubank/Innovation Parkway intersection to the two-lane roadway pro-

posed southeast of Stephen Moody. Parking along the driving lanes will be prohibited in order to assure this roadway's main purpose of collecting and distributing traffic to the internal properties of the SS&TP.

The northern terminus of Innovation Parkway will be located at the existing intersection of Stephen Moody and Eubank. However, in order to create a main entry unique to the SS&TP and to develop a geometrically satisfactory intersection with Stephen Moody, the existing alignment of Stephen Moody will be revised to create a tee intersection with Innovation Parkway. The proposed tee intersection has the added benefit of providing a continuous central spine or loop roadway. Replatting of adjacent APS lands will be necessary to accomplish this goal. Platting of this intersection will occur when Innovation Parkway is platted. The existing signal at the intersection of Opportunity and Eubank would then be relocated to the new intersection of Innovation Parkway and Eubank Boulevard.

The intersection of Eubank/Innovation Parkway will be a significant facility due to the large volumes of traffic on both roadways, likely to require three southbound lanes, two left turning lanes (southbound to eastbound), and three northbound lanes. Potentially, further study may show the need for an acceleration lane for left turning Innovation Parkway traffic at Eubank (westbound to northbound). Additional right-of-way may be required in the vicinity of this intersection to permit the needed work.

The southern terminus of Innovation Parkway will occur at Eubank, near the southwest corner of the PNM Switching Station. This intersection may require traffic signal control with continued development of the area, but this may not occur for some years. The need for signalization would be established by an appropriate engineering study.

The portion of Innovation Parkway along the southern frontage of the EMCORE project will be constructed in conjunction with the EMCORE project, in the near future.

***Opportunity Road – A Neighborhood Concern***

Currently, a significant concern with traffic circulation in the region is SNL and KAFB traffic using Opportunity Road to cut-through the adjacent Willow Wood Subdivision to get to and from Juan Tabo quickly. By offsetting the intersection of Opportunity with Innovation Parkway, an opportunity is seized to discourage cut-through traffic via Opportunity.

***Progress Place***

Progress Place is an interior Phase 2 circulation road, which in the future may connect the main portion of the Park with the State Land tract south of the PNM Switching Station (containing Lots 39 and 40). Currently, the lands required to make the connection are not part of the Master Development Plan area. Cul-de-Sacs or other means are proposed for the termini of Progress Place, until such time as negotiations with this adjacent landowner are complete.

***Other SS&TP Roadways***

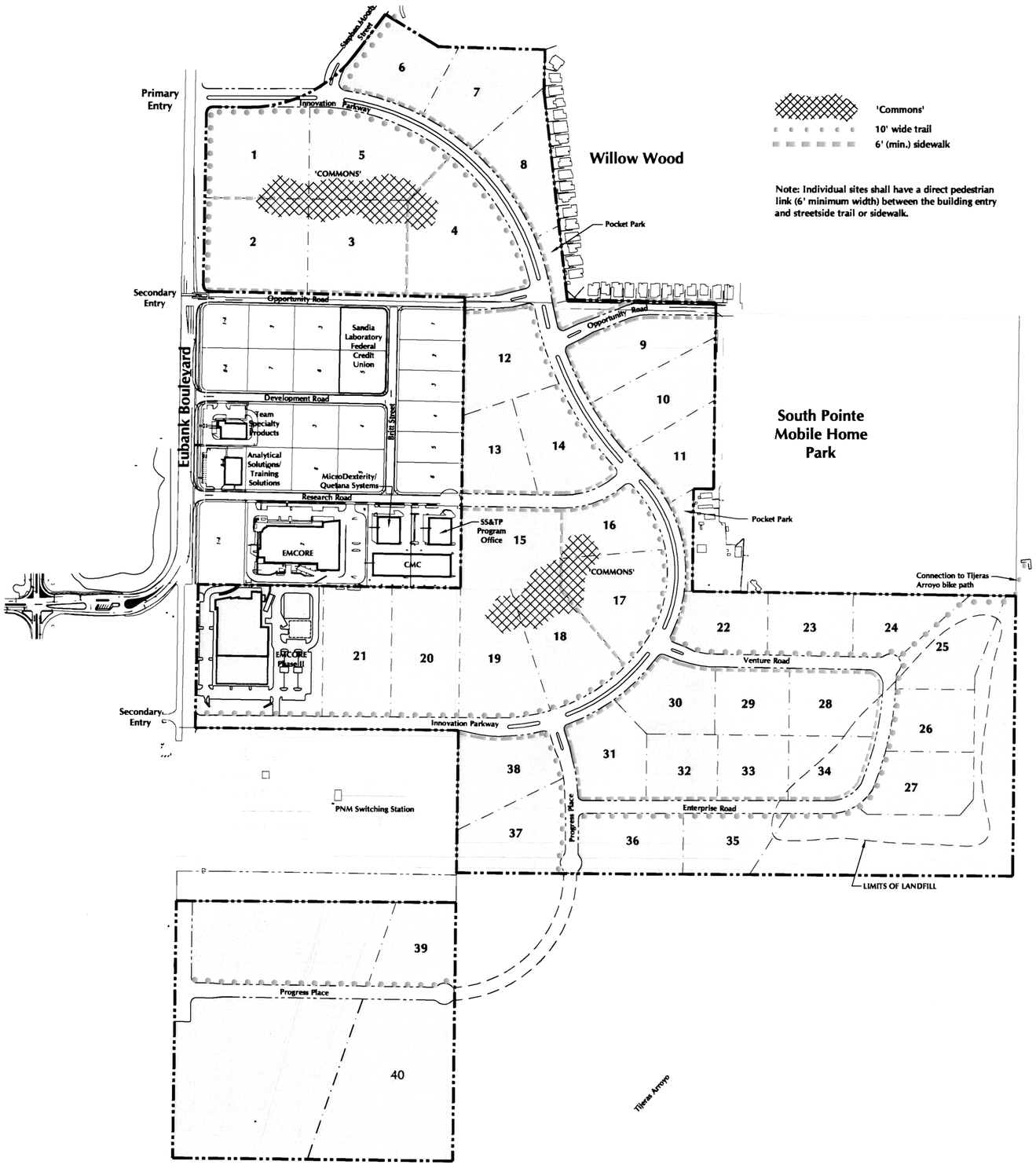
All of the roads within the SS&TP other than Innovation Parkway are proposed to have the following characteristics:

- 60 foot right-of-way
- 40 foot face-to-face streets with curb and gutter on both sides
- A 6 foot sidewalk on one side and a 10 foot trail on the other side.
- Landscaping on both sides of street

There is a sufficient number of grid-like streets in SS&TP, accessing Eubank Boulevard and each other, to provide a reasonable distribution of traffic to the roads in SS&TP (see proposed road cross-sections in Section 4: Landscape Master Plan, page 40).

***Potential Relocation of Eubank Gate***

It is anticipated that the existing Eubank Gate will be relocated to a south location (near Progress Place) in the next 10 years, hopefully to match up well with the intersection of Progress Place. This will significantly increase traffic on the lower reach of Eubank Boulevard.




## Pedestrian Facilities Plan

# Sandia Science and Technology Park

**Prepared For:**
Science and Technology Park Development Corporation
Albuquerque, New Mexico 87120

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SMPC

Scale 1" = 200'

100 0 200 400 North

January 25, 2001

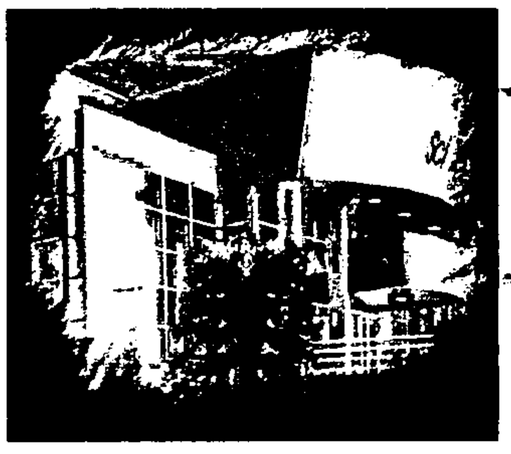
## PARKING

The Master Development Plan provides parking both on-site for the individual parcels and off-site, shared parking in some of the areas that may be impacted by the landfill or utility easements. Areas for bicycle parking will be distributed throughout the SS&TP at each building development.

## TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Transportation Demand Management programs (TDMP) are designed to increase transit use through incentive programs, organized employee programs, and more. Clearly, the concepts behind the TDMP are desirable and beneficial. However, they are especially suited to a single large motivated employer situation, where control of the program can be placed in a single staff manager for the entire employee base.

In contrast, the SS&TP anticipates many individual employers, joining the SS&TP over the course of many years and with highly varied workforce counts (see Section 6: Infrastructure & Engineering for discussion on transit facilities). Due to the difficulty this presents in organizing and maintaining a complicated TDMP, SS&TP commits at this time to participate in a future TDMP that is established and organized by an outside interested party. The SS&TP further encourages the City to review options and to consider taking the initiative for a TDMP in the SS&TP and other adjacent employment centers, similar to current City programs in the Downtown and Uptown areas.



# 4. LANDSCAPE MASTER PLAN

## INTRODUCTION

The key to creating a high quality environment for the Sandia Science and Technology Park will be the development of an overall landscape master plan. The environmental value, as well as aesthetic value of landscaping in an arid region can not be overestimated.

Recognizing the increased public awareness of water conservation, these Guidelines promote the use of native and naturalized plant species that perform well in an arid environment (see Appendix B: General Plant Palette). Major arterials shall be predominantly landscaped with native and adapted species and will serve as a demonstration project for the rest of the development.

## DESIGN GOALS

Specific plant materials will be used for a variety of purposes, including the following:

- Buffer/screen - plant materials will be used to buffer certain facilities from noise and winds, and screen views to/from objectionable elements;

- Shade/climate control - shade trees will be used extensively throughout parking areas and pedestrian activity areas to provide a welcome retreat during the hot summer months;

- Define uses or activities - trees and shrubs will be used to define outdoor pedestrian activity areas;

- Highlight specific features - trees and shrubs will be used to frame elements, provide foreground and background interest, etc.;

- Sensory stimulation - fragrant and flowering trees and shrubs are used to stimulate the senses of sight, smell, and touch; and

- Education - areas of the Park will be planted to serve as an educational tool to educate people about the native landscape.

## STREETSCAPE

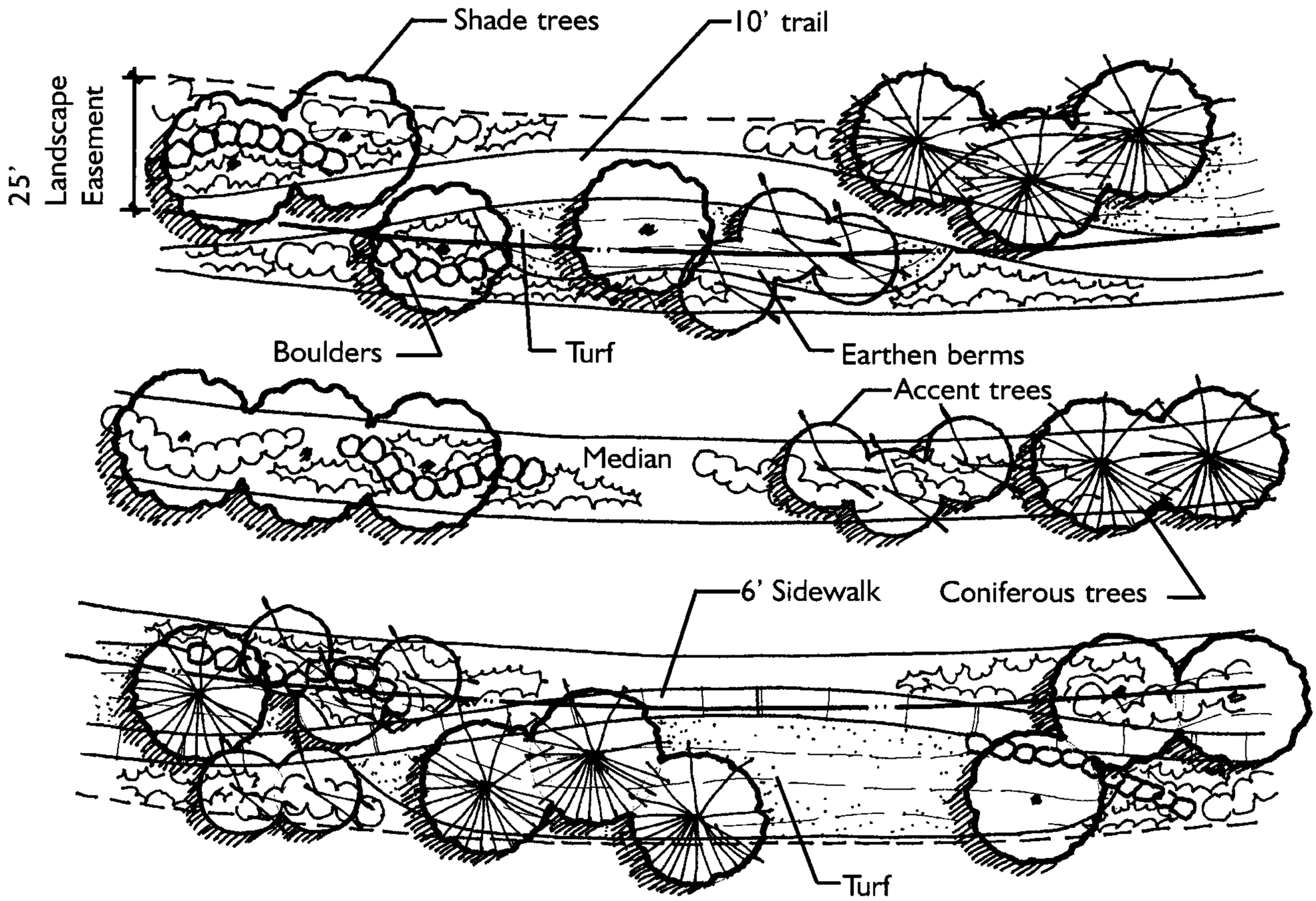
The use of large deciduous trees will form the primary theme for the streetscape at the SS&TP. These trees will frame the street section and create a sense of place within the Park. The streetscape will be punctuated with massings of flowering trees and shrubs which will add a unique textural quality to the landscape. Within the significant parking and building setbacks, contouring of the groundplain will create a naturalistic progression of earthen berming and swales. This will create opportunities to screen parking areas and harvest water. The formal use of native turf grasses will highlight entry zones and provide view corridors into sites at specific locations. By providing turf on bermed areas, the turf will be elevated to take full advantage of its visual quality.

## NATURALISTIC AREAS

Several areas within the Park present opportunities to create naturalistic landscapes with native vegetation, and provide wildlife habitat. Scarred areas adjacent to the Tijeras Arroyo and in the significant utility corridors at the south end of the site will be re-established with native grasses, shrubs and trees. The natural areas create an opportunity to provide passive park-like development in the form of rustic trails and seating areas.

## PARK AMENITIES

Amenities that enhance the pedestrian experience will be provided within common areas throughout the Park. Seating opportunities will be provided along pedestrian trails and sidewalks in the form of fixed benches, informal turfed berms, and seatwalls. Picnic tables, trash receptacles and bicycle racks will be provided in pedestrian gathering areas within the



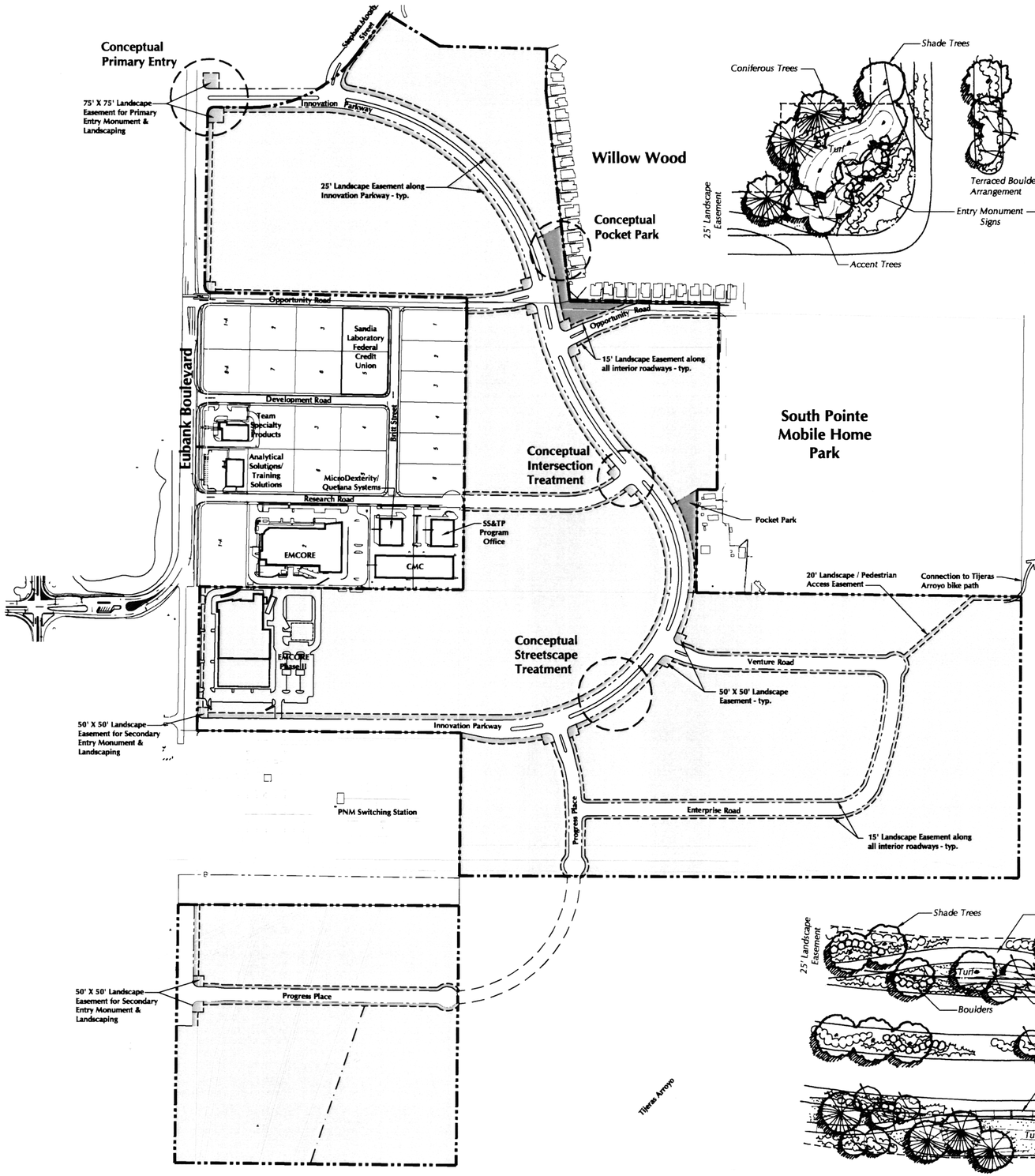

**CONCEPTUAL STREETSCAPE TREATMENT**

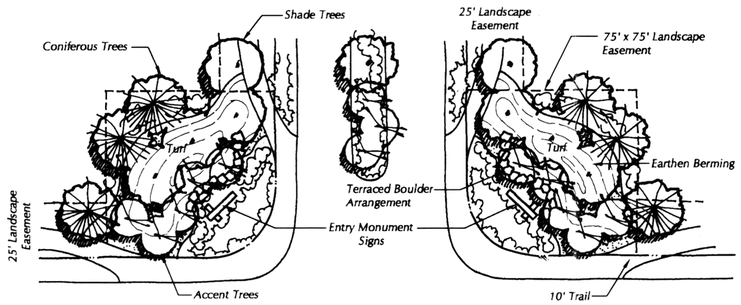
street corridor and at the pocket parks. A trail network (see Pedestrian Facilities Plan) will provide opportunities for walking, jogging, and bicycling throughout the Park. Bus stops/shelters will be provided along Innovation Parkway, and have direct connection to the streetside sidewalks. Bus routes and shelter locations will be coordinated with the City of Albuquerque Transit Department.

The close proximity of the development to the Manzano Mesa Community Park provides additional recreational opportunities. Manzano Mesa Park, upon complete build-out, will have baseball/softball fields, soccer fields, tennis courts, basketball courts, sand volleyball courts, and children's play areas. The Manzano Mesa Multi-Generational Center is slated for construction during 2001, and will provide functions and activities for the surrounding community. A trail connection along Stephen Moody will provide access to Manzano Mesa Park, and to the future bike trail along the south boundary. This trail was designed to accommodate bicycle commuters from north/east developments who need access to the SNL.

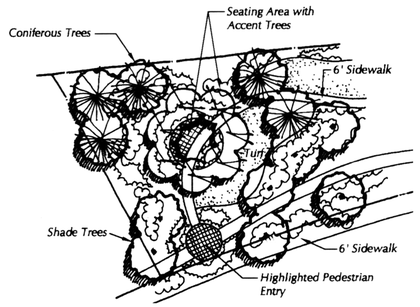
## POCKET PARKS

Several small park areas have been established around the SS&TP (see page 35, Conceptual Pocket Park). These parks will be designed to provide locations away from the office for employees to relax, meditate, or recreate in a passive setting. Seating areas will be provided for individual use or larger groups to allow for interaction. Picnic tables, drinking fountains, and litter receptacles will be provided for those who wish to enjoy their lunch outdoors. Open turf areas will be provided for recreation and balanced with trees and shrubs. Pedestrian paths will meander throughout the SS&TP. Exercise stations will be provided along the pathways and linked to the Park-wide trail system.

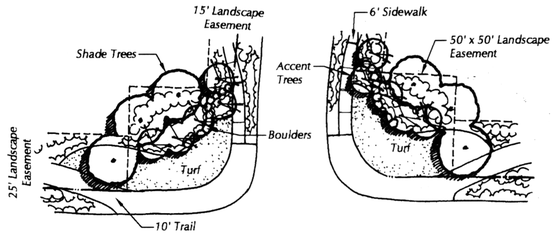


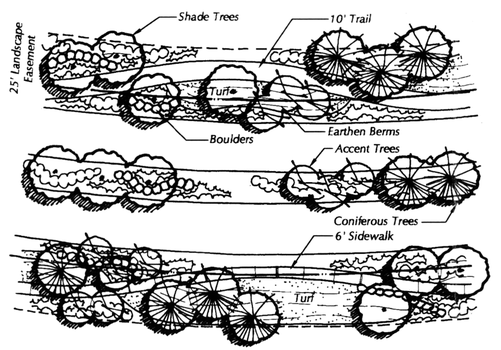

Conceptual Primary Entry




Conceptual Pocket Park




Conceptual Intersection Treatment




Conceptual Streetscape Treatment

Landscape Master Plan

# Sandia Science and Technology Park

Prepared For:

Science and Technology Park Development Corporation
Albuquerque, New Mexico 87120

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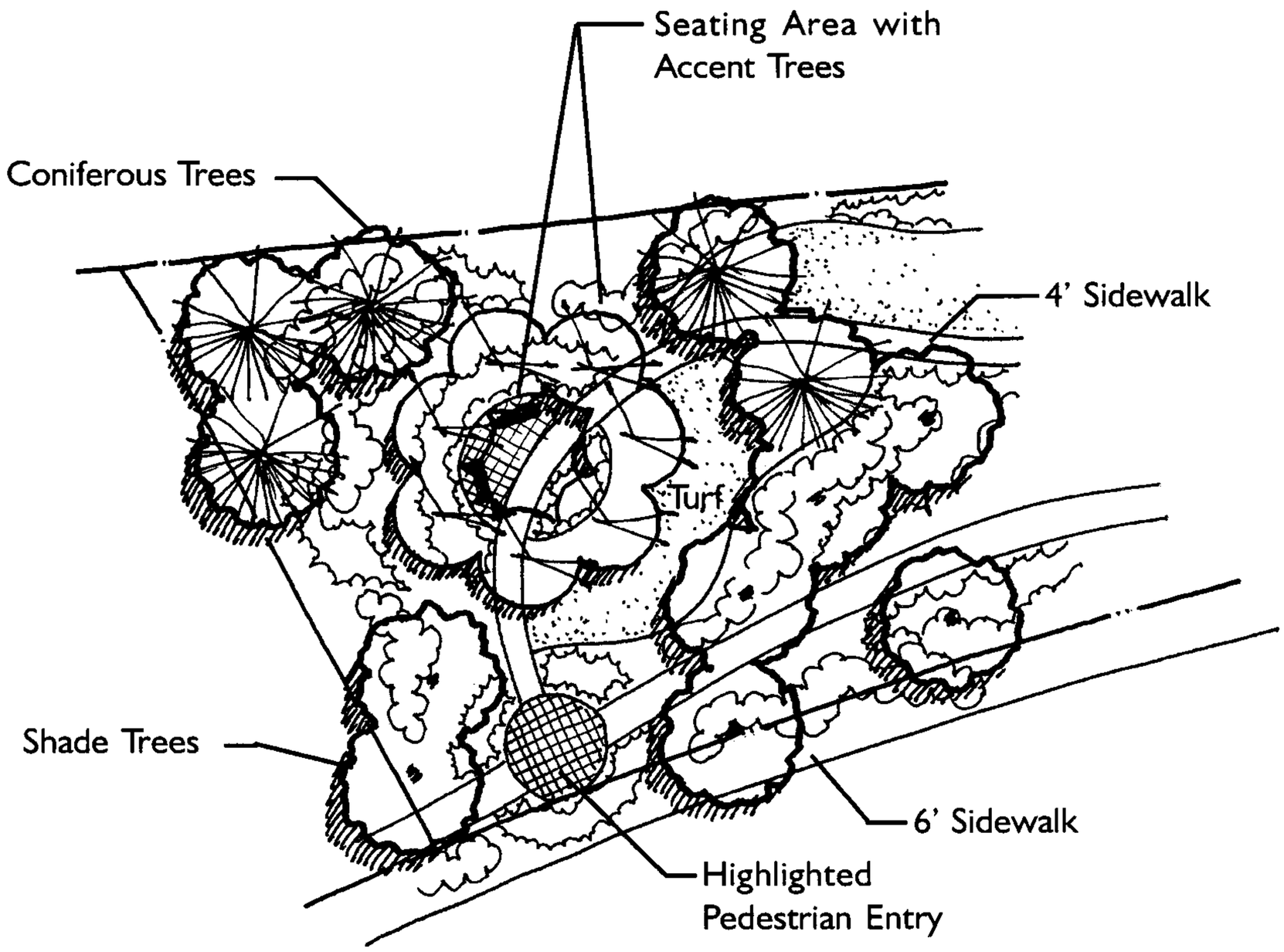
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ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

SMPC

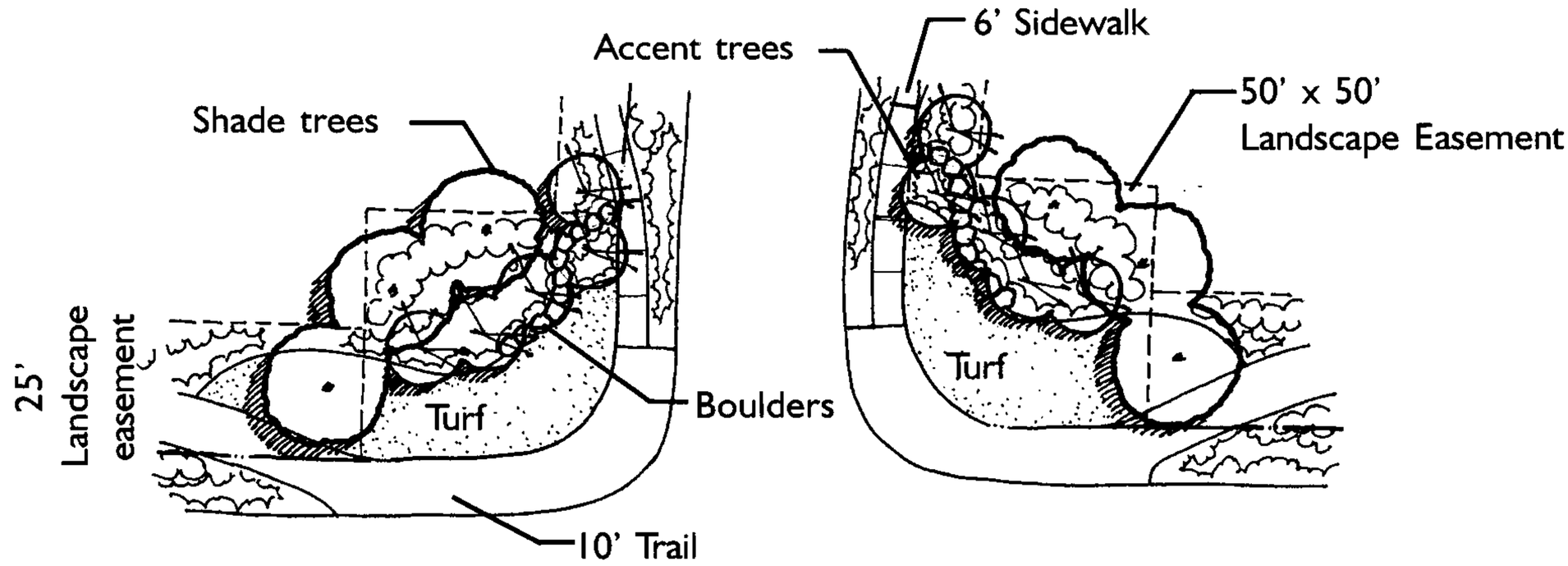
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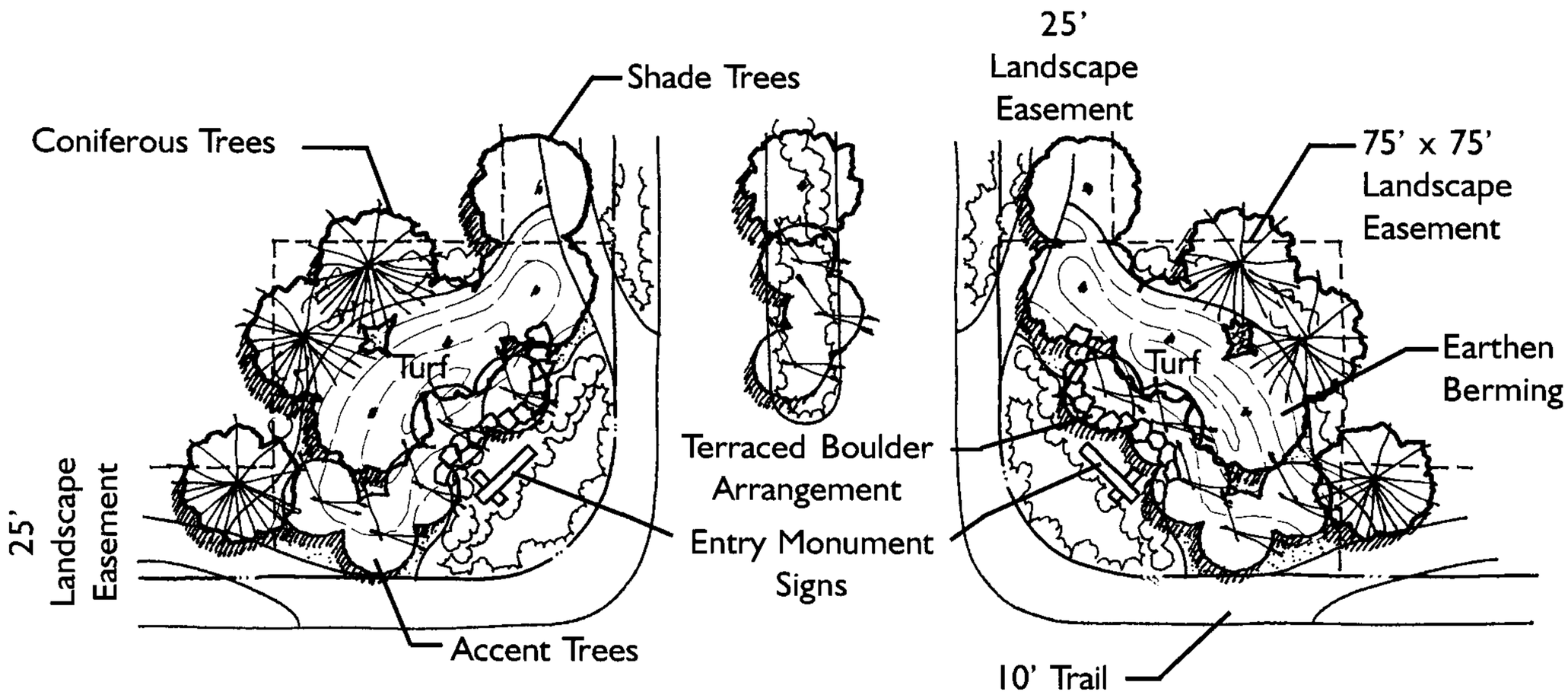
January 25, 2001




**CONCEPTUAL POCKET PARK**




**CONCEPTUAL INTERSECTION TREATMENT**




**CONCEPTUAL PRIMARY ENTRY**

## IRRIGATION SYSTEM

The irrigation system serving the streetscape and other common areas will be a fully automated system with a centralized computer control system. Satellite controllers will be placed at strategic areas and linked back to the central system. Irrigation components will be selected for use with non-potable water sources to allow for future connection to potential treated water systems. Backflow prevention will be provided per local codes to protect the potable water system from the irrigation system.

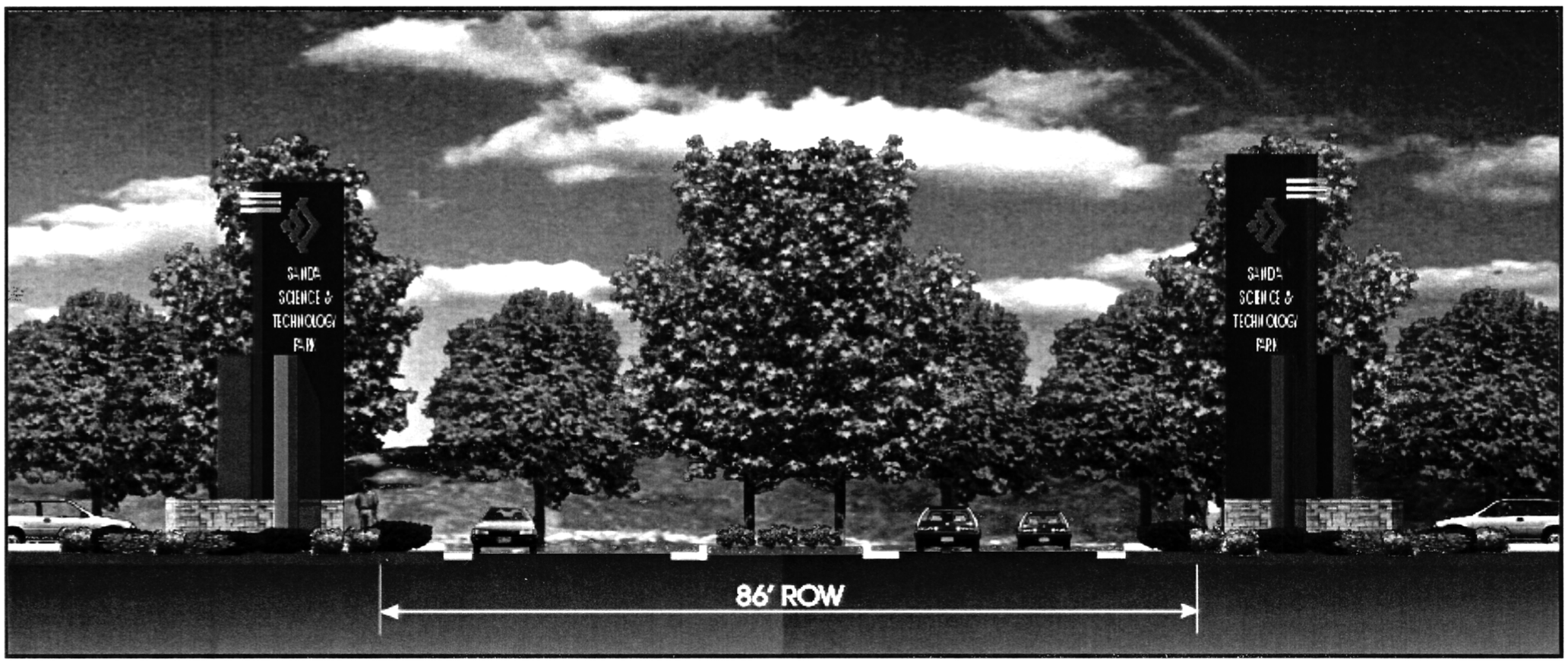
Turf areas will be irrigated with pop-up rotary sprinklers with high efficiency nozzles. Trees, shrubs and groundcovers will be irrigated with a combination of hard pipe and poly pipe feeding single and multi-outlet drip emitters. The entire irrigation system will be state-of-the-art to maximize water efficiency.

## LANDSCAPE MAINTENANCE

The landscape for the streetscape and common areas within the Park is designed to require minimal levels of maintenance. Plant materials will be native or adapted to the region, requiring minimal water and maintenance. All plantings and landscape elements, such as benches, litter receptacles, signs, etc., within these common areas shall be maintained by the Master Developer and/or an association of lot owners and tenants.

## WALL and ENTRY FEATURES

The entries into the Park and individual sites will be accented with specialty landscaping consisting of massings of large shade trees, evergreen trees, and flowering ornamental trees. The groundplain will be established with a combination of evergreen shrubs and colorful flowering shrubs. Moderate-sized fields of low-water use turf will be used to create a more formal appearance and transition to an entry monument. The use of native and adapted trees and shrubs will demonstrate a commitment to a water conservative and sustainable landscape.






These dynamic monoliths symbolize the boldness of new ideas (see Project Entry sketch above). They are large and powerful statements. It introduces turquoise into the color scheme which is one of the "branded" colors for the Park and pays homage to a native stone that has enriched our ancient New Mexican culture. The entry feature theme will be repeated throughout the project in individual building signage, materials, and color.



# 5. DESIGN GUIDELINES

## INTRODUCTION

These Design Guidelines are established to provide planners and designers with a design framework to accomplish the following:

- Create an attractive built environment that promotes opportunities for personal interaction, which allows for increased flow of information.

- Define a common image for architectural and landscape design, while still providing a broad palette for unique innovation.

## ARCHITECTURAL CONTROL COMMITTEE

An Architectural Control Committee (ACC) will be established by the STPDC and/or a future Master Developer, and be responsible for the enforcement of the following design guidelines. Rules and procedures shall be created to govern the performance of the ACC.

## STREETSCAPE

The development of a bold and dynamic entry and streetscape is essential to defining an image for the SS&TP that places it at the forefront of today's technological explosion. The streetscape will provide a unifying element that weaves its way through, and ties together the vast development potential of the project.

- Easements shall be provided, in addition to the dedicated right-of-way, to provide additional flexibility for entry monumentation landscaping, trail/sidewalk development, other pedestrian amenities, and opportunities for screening and water harvesting. Easements shall be as follows, and as identified on the Landscape Master Plan (page 33):

  - 25 feet on each side of Innovation Parkway (with the exception of the area adjacent to the PNM switching station and current development of EMCORE Phase 2.

  - 15 feet on each side of Opportunity Road and Progress Place.

  - 75 feet by 75 feet at the intersection of Eubank Boulevard and Innovation Parkway (north) for development of the primary entry.

  - 50 feet by 50 feet at the intersection.

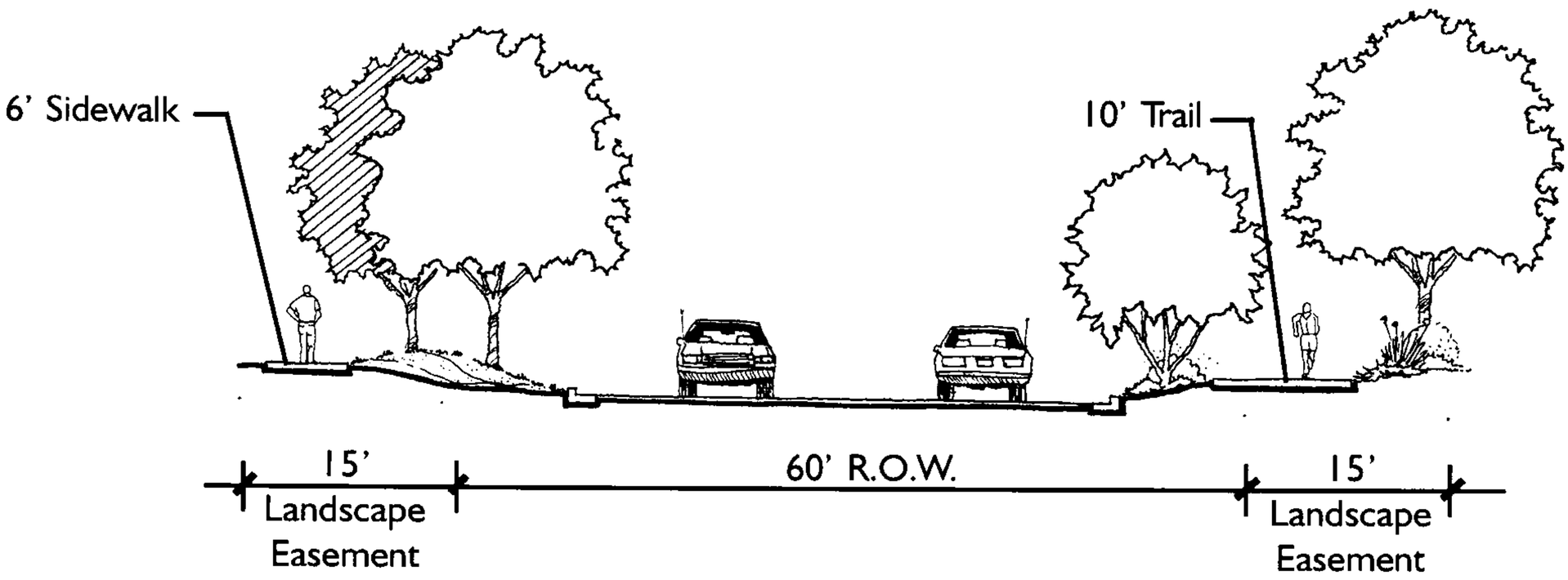
  - 50 feet by 50 feet at interval intersections to provide for highlighted landscape improvements.

  - 20 feet wide in the approximate location between Lots 24 and 25 to provide a trail connection to the Tijeras Arroyo Trail.

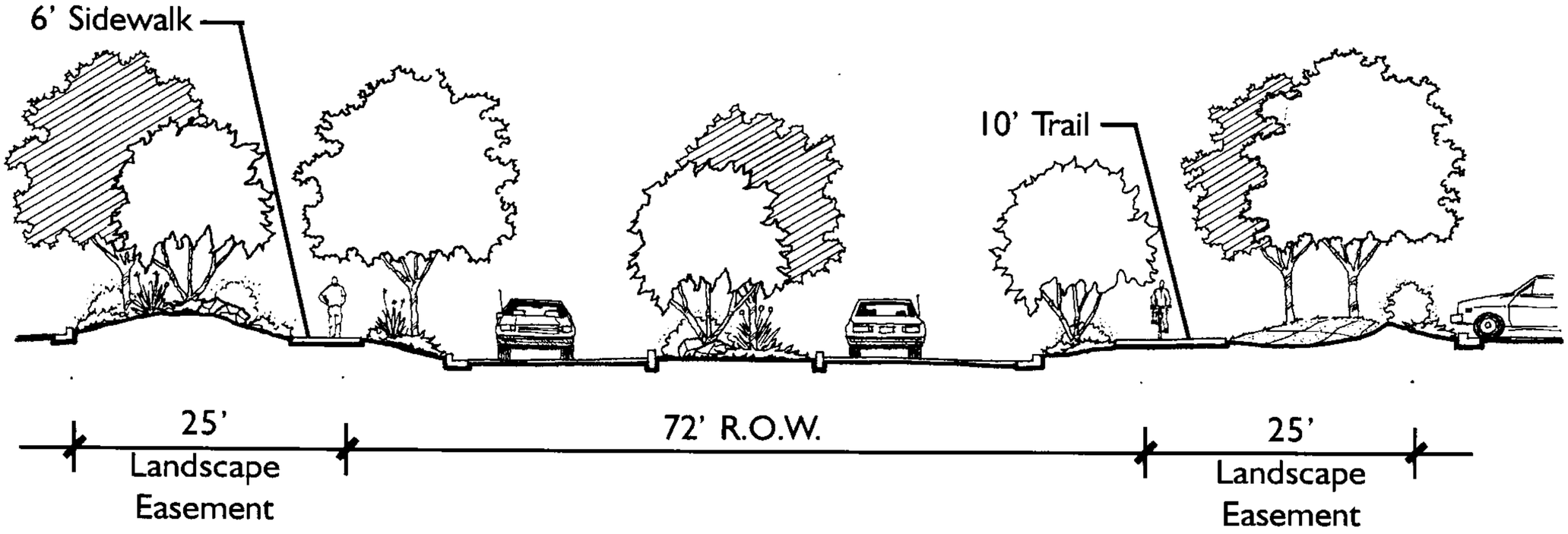
- Street trees shall be provided at an average spacing of 20 feet on-center along Innovation Parkway, and at an average spacing of 30 feet on-center on all other roads. Trees shall be provided in medians at an average spacing of 50 feet on-center (only includes landscapeable length of median).

- Including tree coverage, living plant materials shall cover a minimum of 75 percent of the landscape area.

- Low water use turf shall be provided on a minimum of 20 percent and a maximum of 40 percent of the landscape area.




**LOCAL COLLECTOR SECTION**




**INNOVATION PARKWAY SECTION**

- Materials for the separation of turf and planting beds may be concrete, brick, or similar quality material. Steel edging is not allowed.

## PARKING

The intent of the guidelines for the development of parking areas is to: mitigate heat/glare through the provision of landscaping; minimize the visual impact of parking areas; and provide accessible, safe circulation within and adjacent to the parking areas.

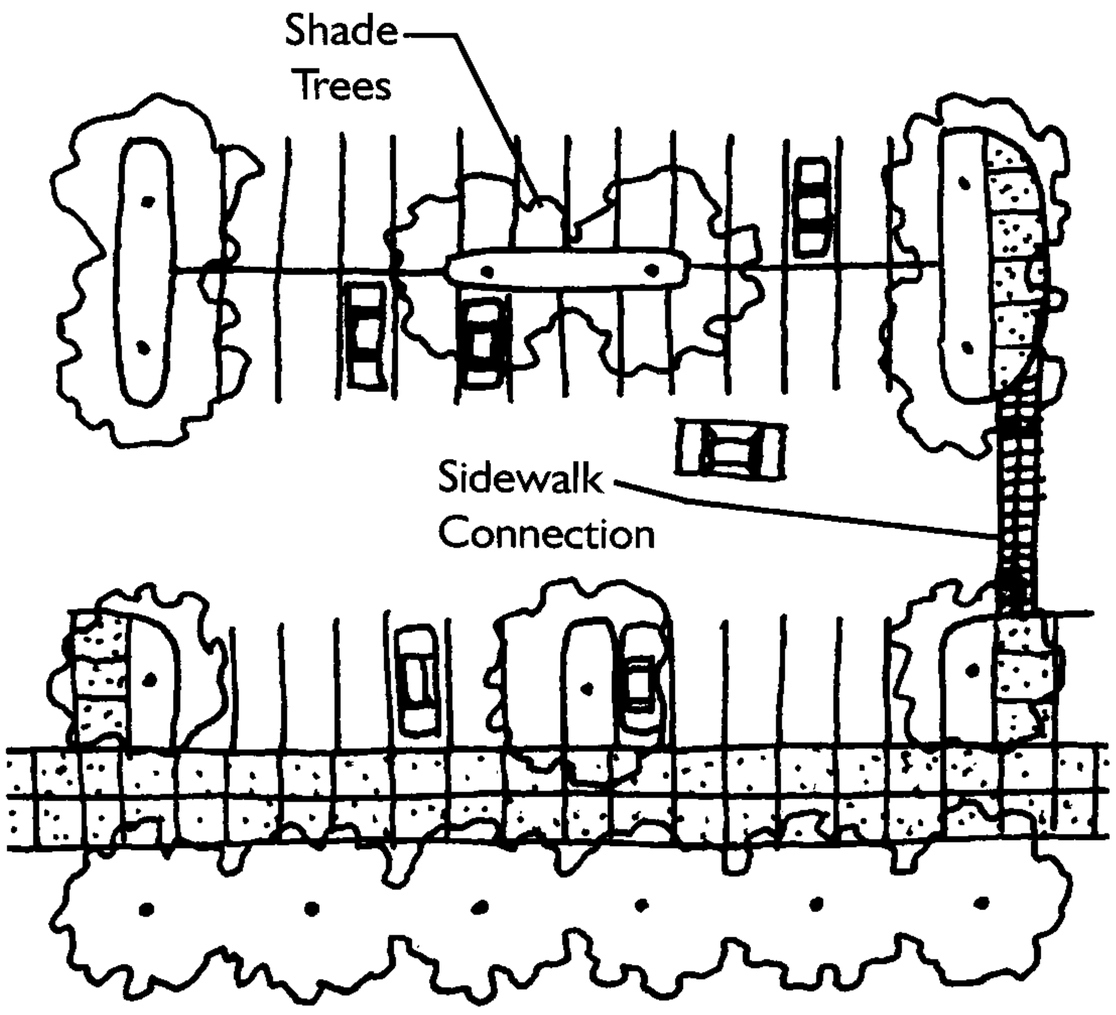
- Parking space standards shall be per the City of Albuquerque's Zoning Code.

- A minimum of one parking space per 200 square feet of leasable space is required for office and retail parcels. More parking spaces are desirable in today's new economy where more employees are included in smaller building spaces. Some of the additional parking to meet tenant demand can be located in remote parking lots for employees. Off-site parking can also be provided in certain easement and landfill areas where buildings cannot be located. Surplus parking can exceed the minimum standard, plus 10 percent, due to potential for remote parking and requirements to break up large parking areas and provide suitable landscaping. No maximum parking limit is established with this Plan.

- Large parking areas shall be broken into smaller parking areas of 100 or fewer spaces, with landscaped medians a minimum of 12 feet wide.

- Clear pedestrian connections shall be provided through parking areas. Shade trees shall be provided along pedestrian walks at approximately 25 feet on center. Sidewalks provided at the front of parking spaces shall be a minimum of 8 feet wide, allowing for a 2-foot vehicle overhang and 6-foot clear pedestrian zone.

- Landscaped islands shall be distributed throughout parking areas. Parking areas shall include at least one tree for every six parking spaces, and the maximum distance from any parking space to a tree shall be 50 feet. Trees located within 8 feet of the perimeter of the parking area may be counted toward this requirement, but may not be used to fulfill street tree requirements. A minimum of 75 percent of parking lot trees shall be large canopied deciduous trees to provide shade during the summer months and reduce shading during the winter months.




**PARKING LOT LAYOUT**

- Parking shall be distributed among several parking courts on each site and shall be placed behind buildings or be screened from surrounding neighborhoods. Screening may include earth berms, perimeter or retaining walls, landscaping, or buildings.

- Bicycle parking for employees shall be provided to promote alternative vehicle use. One bicycle rack space per 20 parking spaces is required.

## SITE LANDSCAPE

The landscape environment serves to enhance the visual dynamic of the development and aid in reinforcing the street edge and pedestrian environment. The plant palette for the SS&TP (see Appendix B: Plant Palette) will provide for year-round color and interest, and reflect the natural beauty of New Mexico. Landscape elements, such as street furniture, lighting, bollards, and graphic pylons shall be used to reinforce the street edge. A clear theme and image for the SS&TP will be established through the use of these materials, as well as consistent paving materials, plantings, signage, etc.

- Landscape plans must comply with the City's Water Conservation Ordinance and Pollen Ordinance.

- A minimum of 15 percent of the site area (minus building square footage) shall be devoted to landscape materials.

- Trees shall be provided at an average density of 1 tree per 500 square feet of landscape area.

- A mixture of drought tolerant species and lawn areas shall be used at landscaped areas and in conformance with the City's Water Conservation Ordinance. Live plant materials shall cover a minimum of 75 percent of all landscaped areas.

- Landscape headers shall be used to separate turf and planting beds. Headers may be concrete, brick, steel, or other similar quality material.

- Gravel mulch, cobble, bark, and similar materials are acceptable as a top dressing for landscape areas, however, they are not to be considered a focal landscape element.

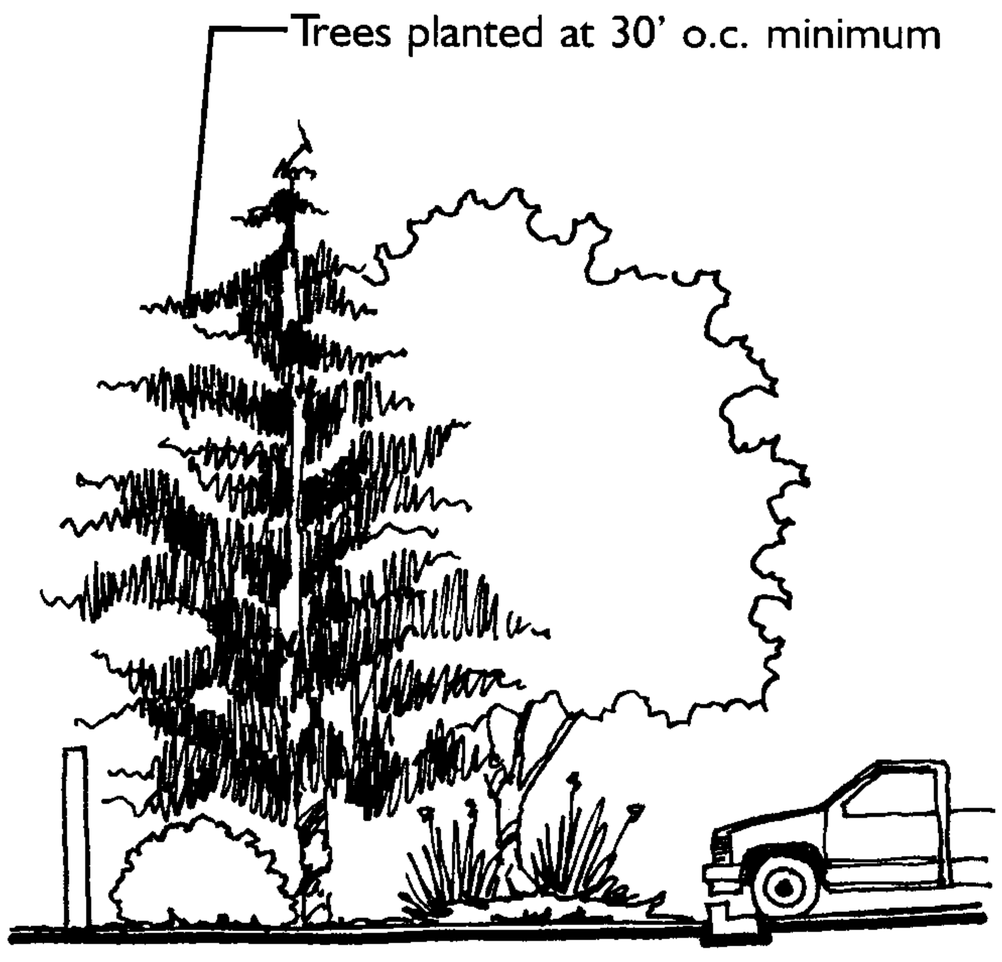
- An automatic underground irrigation system is required to support all site landscaping. The system shall be designed to avoid overspraying onto walks, buildings, fences, etc. Irrigation components shall be checked periodically to ensure maximum efficiency.

- All plant material shall be maintained by the Owner in a living, attractive condition. All areas shall be maintained free of weeds.

- Landscape buffering shall be provided adjacent to existing residential development and the PNM Switching Station. Within the required setbacks, trees shall be planted at an average spacing of 25 feet. Selected trees shall be capable of reaching a minimum height of 25 feet at maturity. Seventy-five percent of the trees shall be coniferous (evergreen).

- Minimum plant material sizes at the time of installation shall be as follows:

  - Canopy trees - 2" caliper B&B
  - Evergreen trees - 8 foot minimum height
  - Accent trees - 1 1/2" caliper B&B
  - Shrubs and groundcovers - 1 gallon minimum




**BUFFERING**

## SITE PLANNING

The Commons areas are intended to be attractive, lively, pedestrian-friendly, and a useful asset to the community. The plaza may include pedestrian places, bicycle storage, ATMs, kiosks, and/or support for other activities to encourage multi-modal transportation and a community friendly environment.

- Plazas, courtyards, and other outdoor activity or seating areas shall be shaded (25 percent minimum, 50 percent maximum) from summer sunlight by tree canopies or architectural devices.

- Paving of primary pedestrian connections and primary outdoor activity areas shall use patterned, stained or integrally colored concrete, and/or concrete inlaid with tile.

- Asphaltic paving shall only be used in parking/service areas and bicycle trails.

- Stabilized crusher fine surfaces may be considered for secondary pedestrian pathways or plazas.

## SETBACKS

The use of building and parking area setbacks is required to provide space for the creation of visually attractive streetscapes throughout the Sandia Science and Technology Park. Required within these setbacks will be pedestrian walkways, screening devices, and landscape improvements.

- Buildings shall be located according to the following minimum setback dimensions:

  - 50 feet from the right-of-way line of Primary Loop Road (Innovation Parkway)
  - 35 feet from the right-of-way line of Secondary Roads
  - 60 feet from the property line of residential zones
  - 25 feet from the property line of other adjacent properties

- Parking areas shall be setback as follows:
  - 25 feet from the right-of-way line of the Primary Loop Road (Innovation Parkway)
  - 15 feet from the right-of-way line of Secondary Roads
  - 25 feet from the property line of residential zones
  - 15 feet from the property line of other adjacent properties

## PUBLIC ART

In order to create an exciting and pleasant pedestrian environment, developments are encouraged to integrate artwork into the design of all public spaces, both indoors and out. Consideration of integrating artwork into the design of bus shelters, outdoor furniture, information kiosks, yard walls, entry portals, plaza fountains, vertical element, etc. is encouraged, instead of standing artwork in isolation, away from such usable elements. Future developments are encouraged to make use of the City of Albuquerque's '1% for the Arts' program, as well as to consider opportunities for private endowments or sponsorships to allow artistic enhancements throughout the Park.

## ARCHITECTURE

In general, all buildings shall comply with the most current approved City of Albuquerque Zoning Code. However, in cases where the SS&TP requirements exceed the Zoning Code, the SS&TP standards will govern.

***Development Densities***

Infrastructure for the Sandia Science and Technology Park is currently master planned for an overall Floor Area Ratio of .25. Individual sites should be planned accordingly.

***Building Heights***

Building height limits will be enforced in accordance with the City of Albuquerque Zoning Code for the O-1 zone.

***Building Entrances***

- The major public entry to each building should face the "fronting street" that is established by the business address. Provisions for a second "frontdoor" should be provided to access the Commons area, if applicable.
- At entryways, an awning, canopy/marquee or inset shall be provided to provide shade and shelter and a sense of arrival.
- Entries shall be clearly defined and connect to pedestrian linkages.
- Entryways shall be distinguished by lighting in order to enhance the perception of surface variety.

***Service Areas***

- It is assumed that most, if not all buildings in the Park will have a service area. All service functions should be screened from view on all sides. This includes but is not limited to; exterior refuse facilities, mechanical equipment, and storage yards. Screens should be visually solid and designed using materials compatible with the overall building. Exterior screening may be provided by shrub planting, walls or solid fencing.

***Context***

- New buildings should be designed to harmonize with adjacent buildings.

***Building Articulation***

- Buildings should convey an image appropriate to a state-of the–art research facility.
- Buildings should be sensitive to the local character of the region and the vernacular elements of buildings.
- Edge treatments shall "step down" to relate to the scale of pedestrians: reduce the scale of the building edge by stepping down to the street. It is encouraged that building masses be arranged in order to cast shadows on each other to emphasize the contrast of light and shaded surfaces at corners and edges.
- Buildings shall employ variety in structural forms to create visual character and inter-

est. Avoid long, unarticulated facades. Facades should have varied front setbacks, with wall planes not running in one continuous direction for more than 100 feet without a change in architectural treatment (i.e., 3 foot minimum offset, fenestration, material change, etc.)

- Columns, arcades, corner articulation, overhangs, awnings, marquees, gutters and scuppers, breezeways, and soffits shall be carefully dimensioned and detailed to provide a human scale and visual interest.

- Extended architectural detailing on the ground floor in an elevational band from 0 to 10 feet, such as a change in color or texture, the architectural expression expansion joints as reveals, door and window articulation and architectural accents, is required in order to enhance the pedestrian level experience.

- The inclusion of an outdoor café or a restaurant with seasonal outdoor seating should be incorporated into the Commons areas wherever possible.

***Equipment***

- All roof top equipment, appurtenances and penthouses shall be architecturally screened with a visually solid surround that is compatible with the overall building materials. All ground-mounted equipment shall be architecturally screened and enclosed. This includes but is not limited to: water meters, gas meters, electric meters, exposed conduit, cabling and wiring.

***Portable Buildings***

- All plans for portable buildings must be submitted to and approved by the Architectural Control Committee. All portable buildings, both temporary (buildings on site for less than 1 year) and permanent (buildings on site for more than 1 year) must be completely screened from view with dense landscaping. Permanent portable buildings must be finished to match the primary materials of the overall building.

***Materials and Colors***

Buildings should convey solidity and durability and employ high quality materials. Materials and colors should pay homage to the vernacular architecture of the area. Acceptable materials include: stucco, concrete (sand blasted or finished surface), stone, split face block, burnished block, glass curtain wall, glass block, brick, exterior ceramic tile, and EIFS. Architects shall use those materials traditionally used in the Albuquerque or New Mexico area.

- Acceptable colors include those taken from the native New Mexican landscape palette, such as: Sand, Terracotta and Sage Green. Colors shall be the inherent color of rather than from application of color (painted), except when used as an accent color.

- Materials prohibited as the main architectural feature include the following:

  - exposed, untreated precision block or wood walls
  - highly reflective surfaces
  - chain link fence or barbed wire
  - metal paneling
  - materials with high maintenance requirements

- The use of contrasting colors between roofs and walls is encouraged to further differentiate the planes of building masses.

- Accent colors and materials can bring out detailing to better articulate or give scale to a building. These include the colors of glazed tile, wood trim, tile roofing, paint, metal, etc. Accent colors at stairs, balconies, and perimeter walls are to be compatible with streetscape and perimeter walls.

- The entry monument theme shall be repeated throughout the SS&TP relative to color and materials.

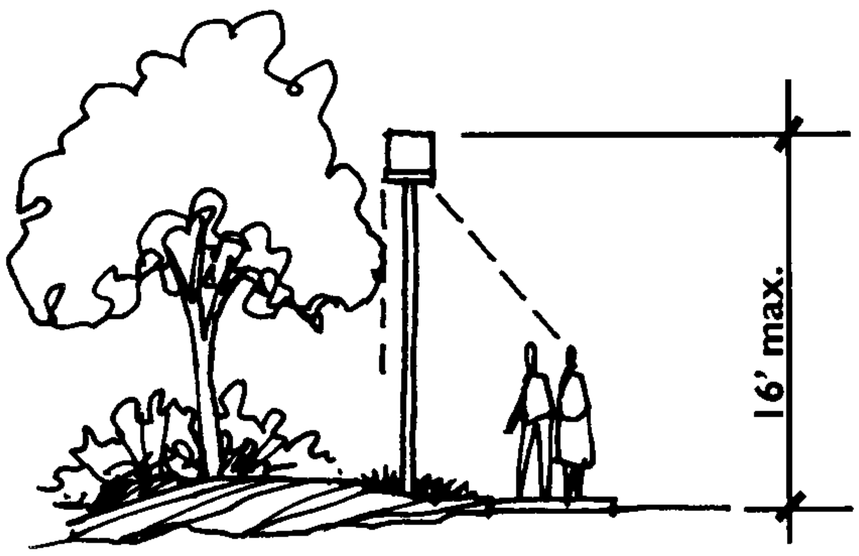
***Sustainability***

- Green architectural design is encouraged. The Park promotes the use of sustainable design principles, environmentally-respon-

sible building concepts, and earth friendly products.

***Plan Arrangement Opportunities***

- Open courtyard designs shall be employed in order to form transitions between parking areas and building facades. Building access and entries must be easily accessible from the surrounding buildings and should be visible from the street through open passages (such as garden courts).



Pedestrian

## LIGHTING

A consistent theme for the lighting fixtures within the streetscape and common areas of the Park will contribute significantly to the Park's overall aesthetic character. Safety and security should be the primary design consideration, as well as the daytime appearance of the light fixtures.

- Height standards for light fixtures are as follows:
  - Streetlights shall not exceed 30 feet
  - Parking area light fixtures shall not exceed 20 feet
  - Lighting fixtures for walkways and entry plazas shall not exceed 16 feet

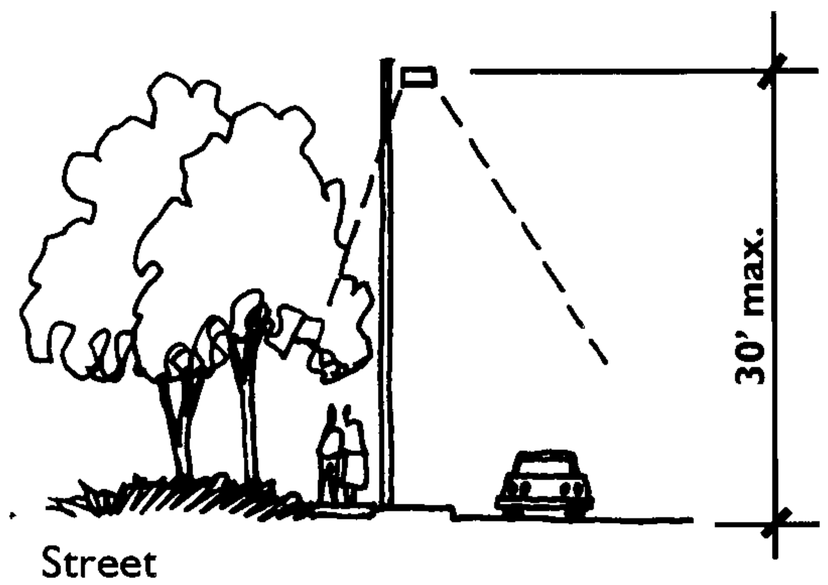
- Controlled, directional lighting should be used to highlight public spaces and walkways. The use of walkway level lighting, such as wall pocket lights of bollard lights, is encouraged to accent pedestrian areas.

- Fixture style and design should be compatible and consistent with the lighting design of other projects within the development.

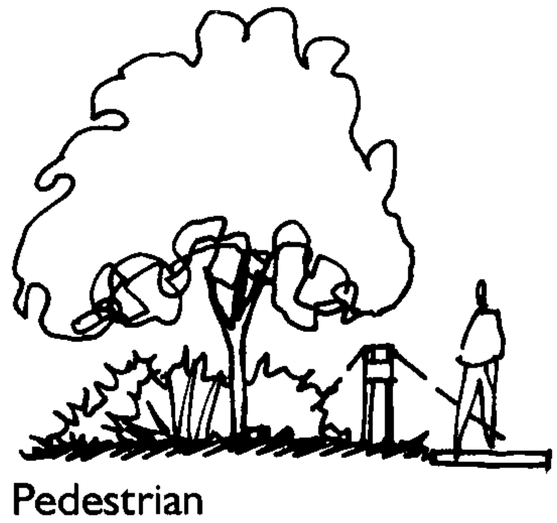
- The pattern of light pooling from each fixture shall avoid glare or reflection on adjacent properties, buildings, or roadways.

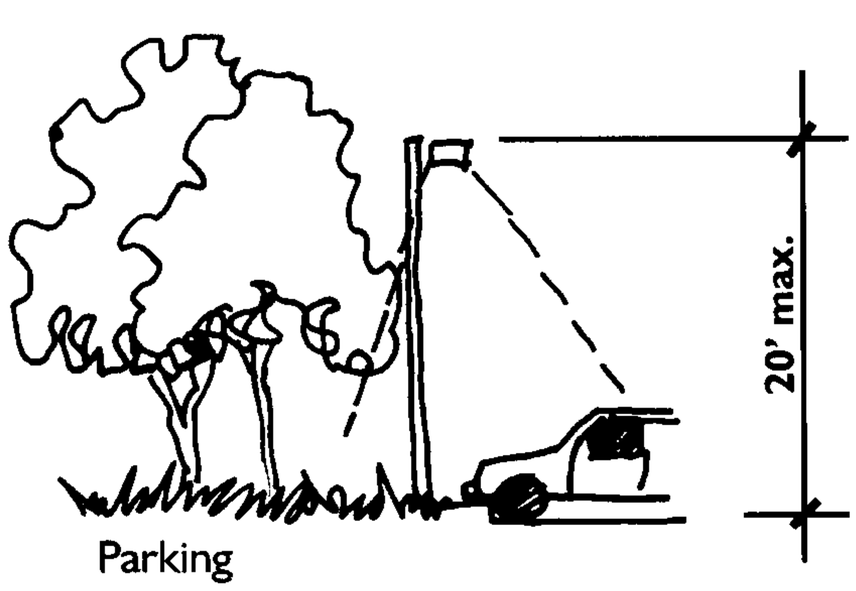
- Exterior lighting fixtures should relate stylistically to the architecture of the adjacent buildings.

- The use of spread lighting fixtures are encouraged to accent landscape and walkways



Street


Pedestrian



Parking

and the use of uplighting fixtures to highlight trees, walls and architectural features.

## SIGNAGE

The following signage criteria creates a sense of arrival to the development and establishes a quality visual impact.

- The Master Developer shall provide entry monument signs for the project to create a sense of arrival and to contribute to the unique identity of the project. These signs shall be within easements at locations described below, and shall be maintained by the Master Developer. Primary entry statements shall be located at Eubank Boulevard and Innovation Parkway (north), and at Eubank Boulevard and Progress Place. Secondary entry statements shall be located at the Eubank intersections of Opportunity Drive and Innovation Parkway (south).

- Individual sites are allowed one monument-style sign per street frontage. The sign shall not exceed 50 square feet in area, or 4 feet in height. Materials similar to those used at the primary project entries shall be used, although individual expression is allowed.

- Directional signs may be provided, at the discretion of the Master Developer, to direct visitors to particular businesses. Directional signs shall not exceed 20 square feet in area, or 4 feet in height.

- All signage at the project entries shall be coordinated in order to have the same appearance (height, size, color, material, text height and style, etc.).

- No sign may overhang a right-of-way or property line.

- No sign shall intrude upon any architectural features, including windows, columns, moldings or any decorative features.

- Building mounted signs shall consist of individual channelized letters. With the exception of logo images, no illuminated plastic panel signs are allowed.

- Building mounted signs shall not exceed an area of 6 percent of the façade to which it is attached. Maximum letter size shall not exceed 5 feet in height, and maximum logo size shall not exceed 5' x 5'.

- Signs which are directly spotlighted may be used provided there is no glare on the street or upon adjacent property or that the light does not distract motorists.

- Signs should identify only the name and business of the occupant or of those offering the premises for sale or lease.

- Prohibited signs include the following: those consisting of banners, pennants, ribbons, streamers, strings of light bulbs and spinners (except during holiday season or special thematic event); brashly colored signs with moving or flashing lights; signs which are animated in any manner; portable signs; off-premise signs referring to a business or merchant not doing business on the premise where the sign is displayed.

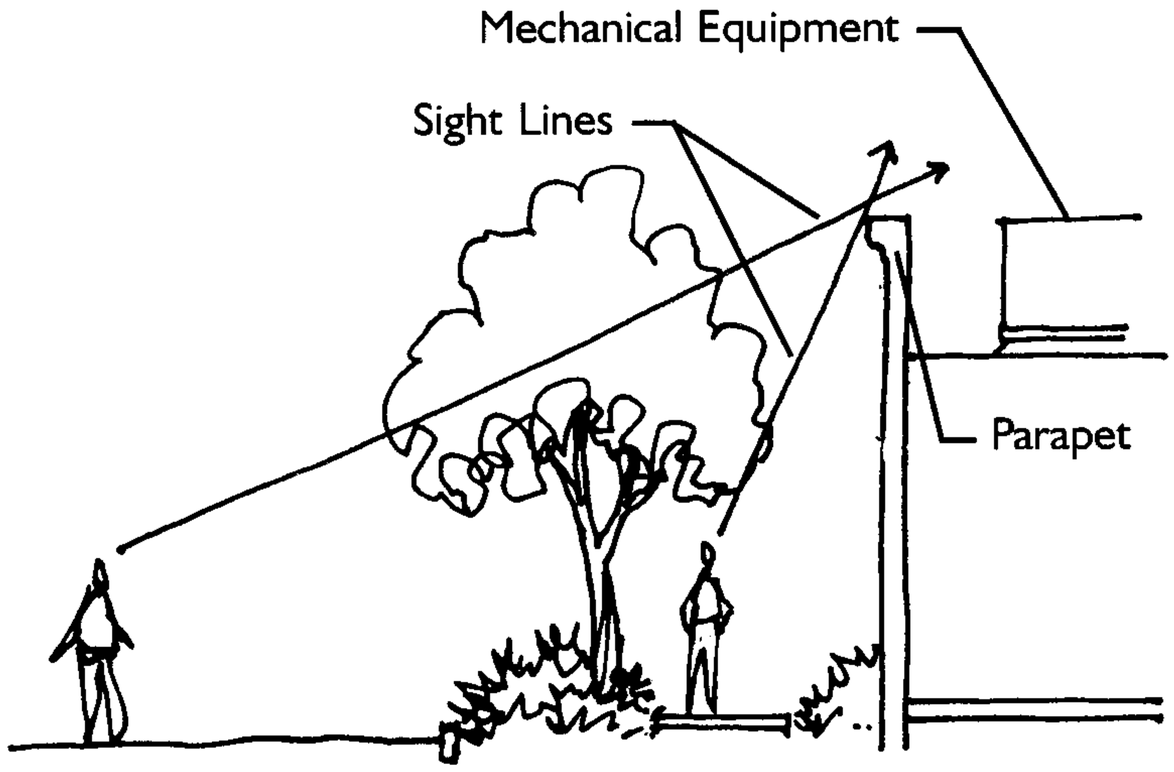
## SCREENING/BUFFERING

- Mechanical equipment and refuse enclosures, whether on roof areas or at street level, shall be fully screened from pedestrians or motorists. Screening shall be compatible with materials and design of the building.

- Loading areas shall be screened from public view by walls, trellises, or landscaping. Passenger loading areas do not require screening.

- The use of chain link, barbed wire, or wood fencing is not acceptable.

- Refuse enclosures shall be adjacent to the building and screened with walls of the same material as the building itself.



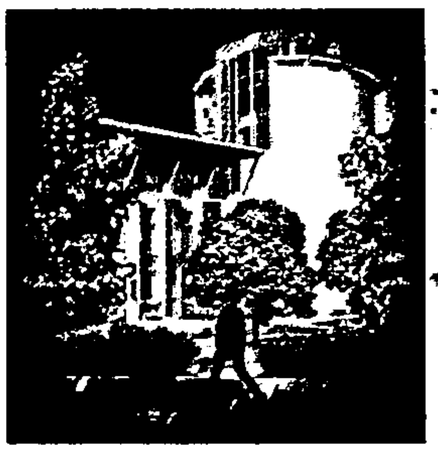

**SCREENED MECHANICAL**

## WIRELESS TELECOMMUNICATIONS FACILITIES

Wireless telecommunications facilities are allowed within the Park, however, the visual impact of these facilities should be minimized by architecturally integrating them with proposed buildings, structures, and landscaping. The following standards are consistent with the City Zoning Code. Where conflicts exist between these design guidelines and the Zoning Code, the more restrictive shall apply.

- The maximum height of a free-standing wireless telecommunications facility is 65 feet and the maximum height for a co-located facility is 75 feet.

- Roof-mounted wireless telecommunications facilities are prohibited unless integrated into an architectural element.



# 6. INFRASTRUCTURE & ENGINEERING

## DRAINAGE MASTER PLAN

***Previous Drainage Management Plans***

There are a number of existing drainage reports, master drainage plans, and drainage studies which address the drainage conditions within the SS&TP vicinity. These governing documents are as follows:

- The South Eubank Storm Drainage Analysis, (dated November 1995, prepared by Smith Engineering Company).

- Amendment #2 to the South Eubank Storm Drainage Analysis, (dated November 2, 1998, prepared by Smith Engineering Company)

- The Manzano Mesa Master Drainage Plan, (dated August 1996, prepared by Smith Engineering Company)

This Master Drainage Plan conforms to these plans.

***Existing Drainage Infrastructure***

The most important drainage feature for the SS&TP is the existing and planned large diameter South Eubank Storm Drain. Phase 1 of this storm drainage project, which runs from the Manzano Mesa Park Detention Pond to the Tijeras Arroyo, is complete. Phase 2 is currently under construction, and runs from the Manzano Mesa Park Detention Pond north up Elizabeth Street to ~~Central~~ Southern Ave. The large majority of SS&TP currently drains to this existing storm drain.

***Drainage From Existing Tracts***

All of the land within the SS&TP, with the exception of the approximately 40-acre State Land Office (SLO) lands holding the existing landfill, generally drains via surface runoff from east to west. Flows are conveyed across the tracts by natural sheet flow and shallow concentrated flows within existing natural swales. Again, with the exception of the above SLO tract, ~~none~~ except for (Ross) MH Park, South Pointe.

of the lands within the SS&TP are impacted by offsite drainage. Flows from the SS&TP lands drain to Eubank, where they are picked up by the Phase I South Eubank Storm Drain. For the far southern portion of the site, small amounts of drainage may cross the Eubank alignment and enter the base via sheet flow and shallow concentrated flows.

The existing South Pointe Mobile Home Park (MHP), located east of the SMM Partnership Tract A, currently drains to the southwest corner of the MHP and south across the SLO lands, directly to the Tijeras Arroyo in a unengineered fashion. There is no existing drainage downstream easement for this MHP drainage. This drainage runs to the southwest corner of the SLO tract, where flows join the offsite drainage from the MHP. The combined flows then drain directly to the Tijeras Arroyo.

The western half of the approximately 20-acre SLO tract located north of the existing PNM switching station is currently being developed by EMCORE. The drainage plan calls for the site to drain to a large pond on the south side of the site. The controlled discharge from the pond drains to a new storm drain to be constructed with the EMCORE project. The new storm drain will tie to the South Eubank Storm Drain and extend east to the edge of the EMCORE site. The eastern half of the tract drains to a small pond located adjacent to the EMCORE project. That pond also drains to the new storm drain.

***Proposed Conditions***

The significant proposed drainage management concepts and goals are as follows:

- Minimize or eliminate large, dedicated ponds that reduce buildable area

- Minimize expensive public and private storm drainage infrastructure

- Water harvesting within parking lot islands and other landscape areas are encouraged.

- Individual tracts will drain to the streets or public storm drains, to the greatest extent possible and/or practical.

- All development within the SS&TP will conform to this master plan's drainage requirements.

- Where the sites can not drain to the street, private ribbon channels, with easements, will be constructed to convey drainage to proposed public storm drains or to public streets.

- With the exception of Tract E-1 (Lots 1-8 of the Master Development Plan), most of the SS&TP has restricted allowable discharge rates. Peak flow rates will be mitigated using on-site detention ponds and control structures.

- Public storm drains will be constructed throughout the site such that all streets within the Park are restricted to the depth of street flow at the top of curb height and the energy grade line within the right-of-way.

The Master Plan identifies primary streets and potential lot configurations. The street system is anticipated to remain through out the project life, however, the lot lines shown should be construed only as conceptual, for reference and subject to change as individual developments arise.

Lots 1-8 have an allowable discharge of 167cfs in the 100yr storm. This will allow free discharge from that portion of the SS&TP provided that the developed impervious area (including public streets) does not exceed 90% of the total area. The Manzano Mesa Master Drainage Plan defines allowable discharge for this portion of the SS&TP.

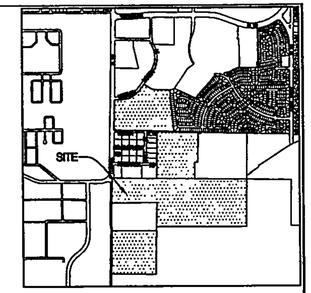
Lots 20, 21, 39 and 40 will follow the guidelines provided in Amendment #2 to the South Eubank Storm Drainage Analysis, which indicates that those areas may discharge 1.3cfs/acre to the South Eubank Storm Drain. Lots 20 and 21 will require onsite ponds that will drain to the proposed storm drain in Innovation Parkway. Similarly, Lots 39 and 40 will require onsite ponds that will drain to the proposed storm drain in Progress Place.

This Drainage Master Plan proposes to construct a new storm drain from the southwest corner of the existing MHP and south through the SS&TP (the SLO lands) directly to the Tijeras Arroyo. This new storm drain would accept flows from the MHP, as well as accept fully developed flows from Lots 23-29 and 33-34. The City has committed to pay for all or a significant portion of the MHP storm drain outfall. The MHP is required to construct a pond (on MHP property) in order to reduce the peak discharge to 56 cfs, per amendment #2. Alternatively, the MHP could contribute money to enlarge the new stormdrain outfall to the Tijeras Arroyo. A new outfall line, energy dissipation structure, and easements to the Tijeras Arroyo will be required. Phasing of the Park will allow deferral of this new line to Phase 2. This phase begins to develop the eastern SLO lands (Lots 22-36), and thus the storm line is not required until that time.

Allowable discharge rates for all of the remaining lands (Lots 9-19, 22, 30-32, and 35-38) within the Park are defined by Amendment #2 to the South Eubank Storm Drainage Analysis, with a minor modification. This plan proposes to modify Amendment #2 by allowing the MHP to have free discharge to the new storm drain (discharging MHP and site flows to the Tijeras Arroyo) described in the paragraph above. This modification has a number of advantages:

- No land within the Park will have to be encumbered for massive dedicated public ponding areas and instead, reduces the ponding requirements sufficiently to allow ponding within the developments (parking and driveway areas, landscaping areas, etc.).

- Lots 23-29 and 33-34 get free discharge, this is an advantage since ponding over the existing landfill areas has the potential to increase methane gas generation.




VICINITY MAP
L-21-Z, M-21-Z

LEGEND

- SANDIA SCIENCE AND TECHNOLOGY PARK BOUNDARY
- PROPOSED STORM DRAIN
- 5301 EXISTING CONTOURS
- EXISTING ELECTRICAL POLE
- EASEMENT
- EXISTING STORM DRAIN MANHOLE
- EXISTING ANCHOR
- EXISTING FIRE HYDRANT
- EXISTING FLAGPOLE
- EXISTING SIGNS
- EXISTING IRRIGATION BOX
- EXISTING PULLBOX
- EXISTING TRAFFIC BOX
- EXISTING UNKNOWN UTILITY
- EXISTING TRANSFORMER
- PROPOSED DROP INLET & PIPE
- PROPOSED SD MH
- EXISTING STORM DRAIN
- WATER BLOCK
- PHASE LINE
- DRAINAGE FLOW ARROWS

N

200 100 0 200
1"=200'

NOTES:
1. NEW STORM DRAIN LINES SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. EXACT PIPE SIZE AND EXTENT OF STORM DRAIN WILL BE REFINED WITH SUBSEQUENT SUBMITTALS
2. LOT LINES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

Master Drainage Plan

# Sandia Science and Technology Park

Prepared For:
Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

Prepared By:
CONSENSUS PLANNING, INC.
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Cubiam & Hu ton
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

- Lots 9-19, 22, 30-32, and 35-37 have a less restrictive allowable discharge rate, which will allow those lots to have smaller ponds than would otherwise be required.

This Drainage Master Plan provides a safe, innovative and economical solution to drainage management requirements of the SS&TP.

# TRAFFIC IMPACT / AIR QUALITY SUMMARY

***General***

The following section reviews and summarizes the key elements of traffic and transportation in SS&TP and vicinity. A detailed traffic impact study has been prepared and submitted to the City Transportation Development staff for review.

***History of Studies in Area***

The traffic and transportation issues associated with the build-out of SS&TP are significant, yet basic in understanding, primarily because this area has seen more than its share of recent traffic impact studies and the conclusions are very similar in each report. The larger area surrounding the SS&TP- bounded by Opportunity on the south, Eubank, Juan Tabo and Interstate 40 on the north- has been the recent and past subject of multiple traffic impact studies and air quality analyses. The list of studies begins with the Manzano Mesa Master Plan of the early 1990s for APS, includes Home Depot and CostCo commercial projects, and ends with the recent submittal of a study for the Apartment project on Eubank, just south of Southern Boulevard. The Manzano Mesa master plan set the stage for establishing and dedicating the necessary right-of-ways for much of the region, especially Southern and Eubank Boulevards.

Perhaps the most significant study, however, was the Gibson Corridor studies that were just recently prepared to support the funding and design of this future major east-west roadway. The road is planned to form a direct, high-speed interstate connection between Interstate 40 and Interstate 25. The road is not anticipated in the near future but is anticipated within 10 years.

***Adopted Long Range Major Street Plan***

The City/MRGCOG Major Street Plan identifies Eubank and Southern Boulevards as major arterials. However, there has been a proposed deletion of Eubank Boulevard, south of the existing base entry, from the Major Street Plan due to a recent proposal to eliminate the so-called Southeast Loop road (i.e., the extension of Eubank across the Base and Tijeras Arroyo).

***Impacts to Existing Street Network***

1. ***Eubank Boulevard***

   A review of the Regional Vicinity Map reveals the terminus nature of Eubank Boulevard into the SNL/Base facility. These two major employers and vehicular trip generators, especially when combined with the significant traffic volumes of the existing and proposed tenants of SS&TP, produce a dramatic impact on Eubank Boulevard. In its current four-lane, deteriorated condition, this arterial street is no match for the anticipated vehicular volumes produced over the life of SS&TP.

   Recognizing this fact from the wealth of information provided by previous studies and actual experiences, and as a partner in the development of SS&TP, the City of Albuquerque staff requested and obtained authorization from City Council to begin design of the required ultimate six-lane roadway. Authorization to seek State Legislature funding for the road improvements has been also been given and this request is before the Spring State Legislative 2001 session. Design efforts may begin sometime in Spring 2001 while construction may be complete in Spring-Summer 2002.

   It is anticipated that development at the SS&TP will precede this Eubank construction effort, but only moderately so given the normal timeframes for master plan approval, building and site design and approvals, and actual building construction.

   With this planned construction of Eubank's ultimate six-lane roadway, a major offsite hurdle is cleared for the SS&TP.

2. ***Southern Boulevard (Future Gibson Corridor)***

   Currently, Southern Boulevard, between Eubank and Juan Tabo, is a confused roadway. Due to

intermittent and separated development, this reach is mixed with old and new construction, pavement on the north side here and on the south side elsewhere. Practically all of the new recent construction is being constructed to ultimate six-lane configuration and materials to match its future designation as a major arterial corridor. Southern Boulevard, west of Eubank, is still a minor street and will remain so until Gibson comes through.

Improvements to this reach of Southern Boulevard (to provide its ultimate section) over the life of the SS&TP build-out, as funds are generated, is essential to maintaining adequate transportation network capacities in the area. A specific portion of the needed work on Southern is the reconfiguration of the Southern/Juan Tabo Boulevards intersection, in which Southern is given a "through" driving condition. Resignalization is also anticipated. To accomplish this reconfiguration, City assistance is needed to either purchase or condemn needed right-of-way in the northwest area of this intersection.

It is hoped that the SS&TP will give needed encouragement and incentive to the funding effort for the Gibson Corridor project, such that this project could potentially occur within 10 years. The completion of this project would bring many benefits, but not the least of which is greater access and needed traffic relief to the vicinity of the SS&TP.

***Other Roadway Considerations***

The traffic study analyzed multiple intersections in the vicinity. Many of these intersections are shown to have little capacity for additional traffic volumes without additional area-wide infrastructure construction, such as Southern Boulevard and future Gibson east-west connection. Note that the extension of Progress Place between Lots 36-37 and 39-40 on the Illustrative Master Plan is subject to acquisition of right-of-way or easement.

***Internal Circulation***

Although discussed in more detail in the Circulation section of this Master Development Plan, the traffic impact analysis reviewed internal street traffic volumes. The determination is then made that Innovation Parkway has adequate capacity as a two-lane facility. A raised, landscaped median is also part of that street's cross-section.

***Air Quality***

The consultants met with Air Quality/Environmental Health officials regarding the SS&TP Master Development Plan submittal. It was felt that there was no need for another new AQIS study in an area already well studied in recent projects. It was stated that individual sites and users may need to meet with the Environmental Health to discuss emission regulations.

## TRANSIT FACILITIES

Reliable public transportation is becoming an increasingly essential element of our community's overall transportation network as a means to combat traffic congestion and air quality deterioration. In many ways, SS&TP provides excellent opportunity for enhanced SunTran transit service to this region of Albuquerque (see Section 3: Master Plan Concept for discussion on Transportation Demand Management Programs, page 29).

- The immediate vicinity of the SS&TP holds many large employers. Besides SS&TP's eventual employment base, the SNL and KAFB have large work forces.

- These employees are concentrated or clustered, at the end of a major multi-lane City transportation corridor (Eubank Boulevard).

- SunTran already has a successful long-running transit line along Eubank Boulevard, with existing transit facilities in place.

However, large employment concentrations alone may be insufficient if ancillary uses, such as retail uses and restaurants, are not available to minimize the need for auto use during the day. The SS&TP strongly encourages development of such ancillary uses, as well as necessary pedestrian and bicycle facilities to minimize the auto dependence even further.

Effective promotion and encouragement of transit use via master planning includes:

- Mixed land uses
- Street landscaping and attractive transit stop design that screens those waiting for transit service from street traffic
- Strategic placement of transit stops that minimize user travel from building to transit stop (quarter-mile maximum is desirable)
- Site design that promotes access and connections to transit facilities

With these kinds of incentives to transit use, more employees will consider transit and individual employers in the Park will be more inclined to provide their own incentives and opportunities for use of public transportation to their employees.

***Current Service***

As stated previously, transit (bus) service and stops currently exist on Eubank from the Base to the Paseo del Norte and beyond. SunTran officials have indicated that today, this service is underutilized and therefore has capacity for additional ridership.

***Proposed Service***

Preliminary discussions with SunTran identify Innovation Parkway as the probable transit route, looping back onto Eubank after passing through the SS&TP. Concerns over actual versus anticipated ridership from the SS&TP employees suggest that SunTran will monitor increases in transit use and base service decisions on actual trends.

In the initial development(s) of Phase 1, it is probable that transit service to the SS&TP will only be provided from existing Eubank Boulevard facilities.

Transit facilities design will be based on the goals and concepts presented in the previous section.

## PNM TRANSMISSION FACILITIES

***Existing Service and Supply, and Constraints***

Electric power service for the near future development of SS&TP is immediately available from existing PNM facilities adjacent to SS&TP, although most of the existing multiple overhead transmission lines, crisscrossing primarily the southern portion of the SS&TP, are not available for direct connection. Generally, these existing facilities will be protected in place without modification.

Additionally, these existing lines and their easements significantly restrict land uses under and adjacent to these power lines. SS&TP will design the Master Plan to conform to the constraints presented. However, minor uses within the easements may be possible, such as drainage ponding, limited yard storage uses and parking. Individual developments will consider the opportunities that may be possible and coordinate with PNM. The Drainage Master Plan proposes drainage ponding under the large overhead lines in the south SLO tract, adjacent to and downstream of Lots 39 and 40.

***Proposed Utility Corridors***

As stated previously, all existing corridors and facilities will be protected and remain in place. Generally, new extensions of power, gas, communications and cable lines will be extended underground and looped through the site in 10-15 foot wide public utility easements located on the private side of the street right-of-lines. Due to the addition of fiber optic backbone utilities throughout the Park, slightly larger utility easements and/or additional easements may be required.

***Existing Switching Station***

The existing switching station, when constructed, was located far from existing homes and other development. However, with the advent of the SS&TP, this large unsightly facility must be screened in a reasonable, economical manner. SS&TP will work with PNM to develop perimeter screening of this facility.

## PREMIUM POWER GOALS: DISCUSSIONS WITH PNM

A series of meetings have been held between the SS&TP Project Team and the PNM to discuss current and future power needs and goals of the Park. There is a desire to provide a reliable quality power supply to the high-technology end-users of the Park. PNM is providing assistance to the SS&TP in identifying

ways to increase both the supply and quality of power to the Park.

***Future Additional Supply***

PNM is already planning an extension of the Four Hills Line to the SS&TP during 2001. This extension will bring a second radial line into the Park with a line capacity of 6-7 MW of load. If the current expansion of the EMCORE facility continues, and the anticipated growth at SS&TP occurs as planned, PNM will also be investigating the addition of a new substation in the vicinity of the Park. A detailed analysis of the need for a substation will be conducted in 2001, with construction possible in the 2002-2003 timeframe if warranted. A two transformer substation will support approximately 33 MW of load.

***Recommendations for Premium Quality Power at SS&TP***

It can be extremely expensive to provide a uniform level of premium power across the entire 219 acres of the SS&TP, and this level of quality would not be needed for typical office uses or commercial vendors such as banks or restaurants. High-technology industrial users do need reliable quality power supplies, and there are many ways to achieve that goal. Typically, the most cost effective means of enhancing power quality and reliability is to make an adjustment at the "tool level", i.e., within the manufacturing facility rather than at the substation.

PNM has provided some suggestions for those customers who need a reliability greater than 99.99% (manufacturing processes that cannot tolerate service sags or interruptions). Special utility equipment and/or some form of energy storage device is recommended in these instances, and may include:

- Undergrounding lines
- Installation of auto-throwover switches
- Dual feeds (redundancy)
- Super fast static transfer switches
- Installation of plant-sized energy storage devices

If the end-user has highly sensitive manufacturing processes, they should engage a reputable power quality specialist during the design phase of their project with special attention given to:

- Grounding
- Isolating critical equipment so that they would only have to power-condition part of their load, if they experience unacceptable levels of power quality from the utility
- Avoiding known power sensitive components, and buying equipment meeting the International Sematech specifications.
- Not installing distributed generation without consultation with the local utility.

***International Sematech Power Standards Recommendations***

In 1999, a multi-organizational research project was undertaken to determine the immunity of semiconductor equipment to voltage sag events. The project also looked at new global standards that have been adopted to define voltage sag immunity requirements for such equipment. Efforts of the project focused on three main areas: equipment testing, power quality workshops, and SEMI standards (SEMI is an international trade association representing semiconductor equipment and materials suppliers). Major findings from the above-described work are as follows:

- New global standards have been passed and published that considered the real electrical environment seen by semiconductor equipment.
- The result will be improved tool ride-through and equipment immunity for the semiconductor industry.
- Solutions are available through use of selective power conditioning and embedded designs to meet the standard.

Embedded solutions involve fixing the individual "weak links" components of a tool in order to increase the overall ride-through of the entire system. Embedded solutions are attractive, since they in theory do

not require add on power conditioning equipment, but instead involve using more robust or improved components in the tool design. This is consistent with the advice provided by PNM for power users in high-technology manufacturing environments.

Tips for achieving these imbedded solutions that meet SEMI standards are listed below:

- Tip 1: Wire load devices in a phase-to-phase configuration where possible.
- Tip 2: Avoid mismatched equipment voltages.
- Tip 3: Use universal input switching power supplies in every location possible.
- Tip 4: Avoid the use of AC powered "ice cube" general purpose relays.
- Tip 5: Do not use phase monitoring relays in the interlock circuit.
- Tip 6: Utilize a non-volatile memory.
- Tip 7: Do not overload DC power supplies.
- Tip 8: Use a targeted voltage conditioning approach.
- Tip 9: Use robust inverter drives.

PNM has offered to meet with potential end-users at the SS&TP to provide further assistance in meeting the reliability and quality power standards of today's sophisticated manufacturers.

## TELECOMMUNICATIONS - FIBER BACKBONE PROJECT

An important element in the success of the SS&TP is the planning and design of a fiber backbone project to support potential high technology businesses. A conceptual infrastructure route design is proposed (see Telecommunications Plan, page 59).

The network is designed with an access duct and 12 single mode fibers into each of the proposed lots shown on the Illustrative Master Plan (see page 21). Lot 15, at the end of Research Drive, was used as the Telecommunications Hub Facility for illustrative purposes. However, the location of the hub may change to another lot within the Park. The proposed design does not include duct/fiber on Research Drive, Britt Street, or Development Road, but does allow for the addition of facilities along these roads and for the future attachment of these lots. It is recommended that these existing roads be included into the final design. The budget impact will be minimal and the use of Research Road as a primary artery will provide a more robust architecture. The construction utilizing "direct bore" techniques would be very straightforward with minimal disruption to the area.

The proposed infrastructure is designed to be within the "greenbelt", an area within the lots, adjacent to the proposed and existing roads rather than within the roadways. The size of the infrastructure required for a fiber only backbone is optimal for several construction methods including ploughing which will be the most cost-effective.

The proposed design accommodates access to various other carriers and service providers including access to Sandia Labs. The design allows for a base level of redundancy and will accommodate more sophisticated redundancy as the need is identified. The route as proposed includes only a single access into each lot.

The "Telecommunications Hub Facility" is the primary access point for originating service onto the fiber backbone. Secondary Hub Facilities can be identified (and is strongly recommended as the network evolves). The "hub" facilities can be stand-alone buildings or can be a prepared space within a proposed building. As designed, services can be originated from any location attached to the network. This includes provisioning point to point dark fiber between any points on the network.

The basic requirements for this space are as follows:

***Telecommunications Hub Facility***

A telecommunications equipment room is a special-purpose room that provides space and maintains a suitable environment for the communications equipment. Equipment rooms contain active electronics,

entrance facilities, cross connect facilities, and building termination facilities and are designed and built to stringent requirements because of the cost, size and complexity of the equipment involved.

***General Requirements***

- Equipment room design and installation must comply with all local, state, and federal building codes

***Architectural Requirements***

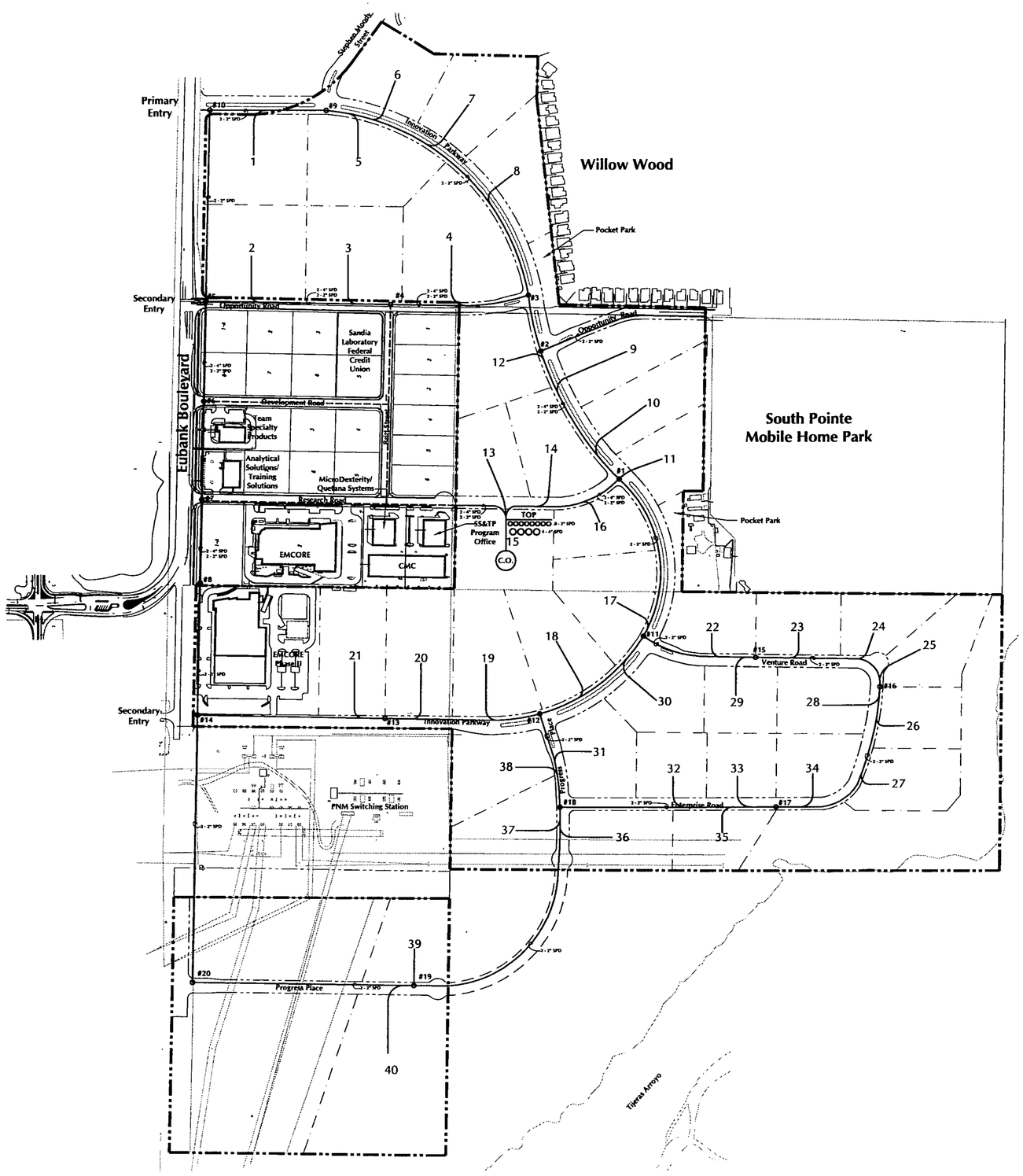
- Room must be at least 20' X 30' (irregular or lesser dimensions must be reviewed prior to construction)
- Finished ceiling height must be at least 9 AFF
- Ceiling protrusions must be placed to assure a minimum clear height of 8'-2"
- The rated distributed floor loading must be greater than 100 lbf/ft2
- Floors must be static free (use asphalt/linoleum tile or equivalent)
- Door to room must be at least 36" W x 80" H and must be installed with a lock
- Door to room must not have door sills or center posts
- Door must be placed towards the corner of the room and open outwards from room (or as permitted by code) if door cannot open outward, it must be removable

***Mechanical Requirements***

- The equipment room must be serviced off of the general buildings environmental systems or by stand-alone systems at the discretion of the builder. Minimum requirements would dictate that cool air be ducted into the room and would preferably maintain the following specifications 24 hours a day, 7 days a week:
- Relative humidity in the equipment room would be maintained with in the range of 30 and 55 percent
- Temperature in the room would be maintained between 64 and 75 degrees F.
- Ventilation in room must accomplish at least one air change per hour.
- Furnish and install a Viking TotalPac pre-action system for fire protection that ties in with the building's wet sprinkler system.

***Electrical Requirements***

- Provide a 200 amp, 208/120V, transient voltage surge suppression panelboard (TVSS) manufactured by Current Technologies, or others. This panelboard will exclusively service the active communications equipment. All lighting and convenience outlets must be fed from other distribution panelboards.
- Lighting in the equipment room must be provided and should allow for approximately 50 foot-candles of illumination.
- Locate lighting fixtures a minimum of 8'-2" AFF.
- Provide a minimum of two (2) 120V, 20 ampere duplex receptacle convenience outlets.
- Provide emergency lighting.
- Provide (number to be determined) PVC conduits with pull tape from the equipment room to the property line. Coordinate placement of conduits with the outside plant conduit system. Conduit must be installed a minimum of 24" below finished grade with electrical bends (no "plumbers" 90-degree bends) and must be labeled "For Communication Use Only" Conduit must be clean and free of debris and must be capped to prevent infiltration of water, mud, and rodents.
- See Telecommunications Bonding and Grounding below for additional requirements.
- A generator will likely be required. Adequate space should be allocated adjacent to the telecommunications room. Provide 1-4" conduit




## LEGEND

- C.O. — SS&TP Telecommunications Central Office
- Backbone Architecture / Single Plastic Duct (SPD) Routing
- 2 - 2" SPD / 2 - 4" SPD — Conduit Sizing
- #1 — Hand Holes (Splice Boxes)
- Recommended Route for Additional Conduit to Augment Existing Private Facilities

Notes:

1. All SPD routing and hand hole locations are conceptual.
2. As designed, each property shall be served by a single 2" conduit (SPD).
3. Additional access ducts may be added dependent upon need.
4. The Central Office (C.O.) shall serve as the Minimum Point of Entry (MPOE) for access to SS&TP private backbone.
5. The C.O. shown on Lot 15 is a conceptual location only. The actual C.O. may be installed in any location within the SS&TP subject to lot owner agreements.
6. Hand Holes shall be 2'Wide X 3'Long X 3'Deep splice boxes.
7. SS&TP backbone, as proposed, is in "greenbelt" adjacent to roadway.
8. SS&TP backbone, as proposed, provides for redundant routing.
9. Lot lines are illustrative. Actual fiber route may change depending on the final lot and road configuration.

### Conceptual Telecommunications Plan

# Sandia Science and Technology Park

**Prepared For:**

Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

**Prepared By:**

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SMPC

Scale 1" = 200'

100 0 200 400 North

January 25, 2001

from the telecommunications room to area demarced for the generator.

***Telecommunications Bonding and Grounding***

Telecommunications bonding and grounding is additional bonding and grounding installed specifically for communications systems. From a safety code standpoint, the NEC and ANSI/NFPA 780 already cover such bonding and grounding. However, these codes are established primarily for safety. There are many situations where these codes can be interpreted and/or implemented in different ways. Some of these ways may not be as suitable as others for equipment reliability and performance. Telecommunications bonding and grounding serves to minimize electrical surge effects and hazards, augments electrical bonding, and lowers the system ground reference potentials. This does not replace the requirements for electrical power grounding, but supplements them with additional bonding that generally follows communications pathways.

***Scope of Work***

- Provide an insulated Telecommunications Main Grounding Busbar (TMGB).

- Provide a 2/0 AWG braided insulated copper bonding conductor from the TMGB and bond directly to the electrical service ground.

***Products***

- The TMGB must be 1/4" thick by 4" tall by 20" long and must be wall mounted attached with wall mount brackets and insulators. Product should be similar to Newton Instrument Company model # B-6142

***Execution***

- Install TMGB and bond to the electrical service ground with a copper bonding conductor. The ground potential reference between the TMGB and the electrical service ground must be less than 0.1 ohm.

## UTILITIES

The SS&TP site is already well served by an existing utility system backbone infrastructure, representing gas, power (electric), communications, municipal water and sanitary sewer service. Extensions from this existing infrastructure are anticipated to serve the SS&TP (see Master Utility Plan, page 63). Primary utility corridors are within or adjacent to the proposed streets, although utility easements extending through tracts are also expected in several areas.

A water and sanitary sewer serviceability letter has been received from the City Utility Development Division that essentially requires utilities as proposed in the SS&TP Utility Master Plan.

***Sanitary Sewer***

Sanitary sewer service originates from the existing 21" interceptor line in Eubank. From this interceptor, 8" lines will be extended easterly into the site at various locations corresponding to proposed and existing street access points. One existing line reach extending from the Mobile Home Park to the Eubank interceptor, will be abandoned in place and rerouted to proposed street alignments, due to its current alignment in rear areas of the proposed lotting/tracts arrangement. Please refer to the Master Utility Plan exhibit for further description.

A water and sanitary sewer serviceability letter has been received from the City Utility Development Division that essentially requires that service requirement as proposed in our master plan.

All lines will be public, and owned by the City of Albuquerque.

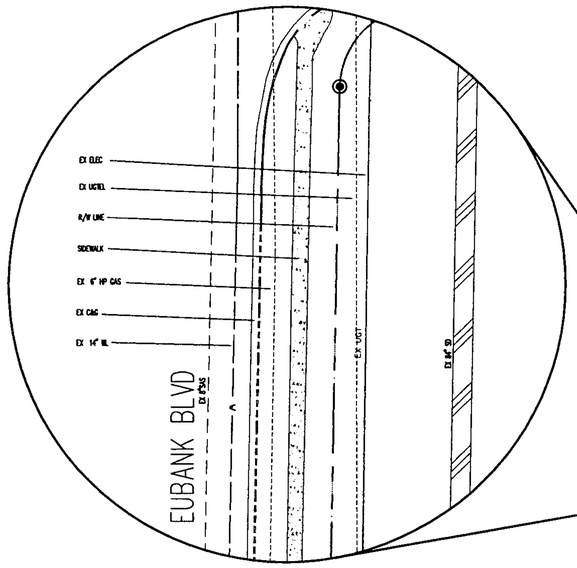
***Water Service***

Water service will be provided via looped extensions from existing City water lines in Eubank Boulevard (14" line) and Gibson Street (10" line). The site's location near and slightly beyond the bottom of a water zone (Zone 5E) ensures high system pressures, perhaps in the range of 100 psi or slightly greater. Typically, 8" and 10" water lines will be extended throughout the site, primarily in street right-of-ways, and looped to existing lines to provide greater flow volumes for fire protection and system redundancy. A short 16" extension is necessary in Eubank, south of the base entry, and extending to the Innovation Parkway intersection. An additional 10" water line extension in Stephen Moody, to the north perimeter of the SS&TP, is also necessary. This line will be extended by future projects along Stephen Moody.

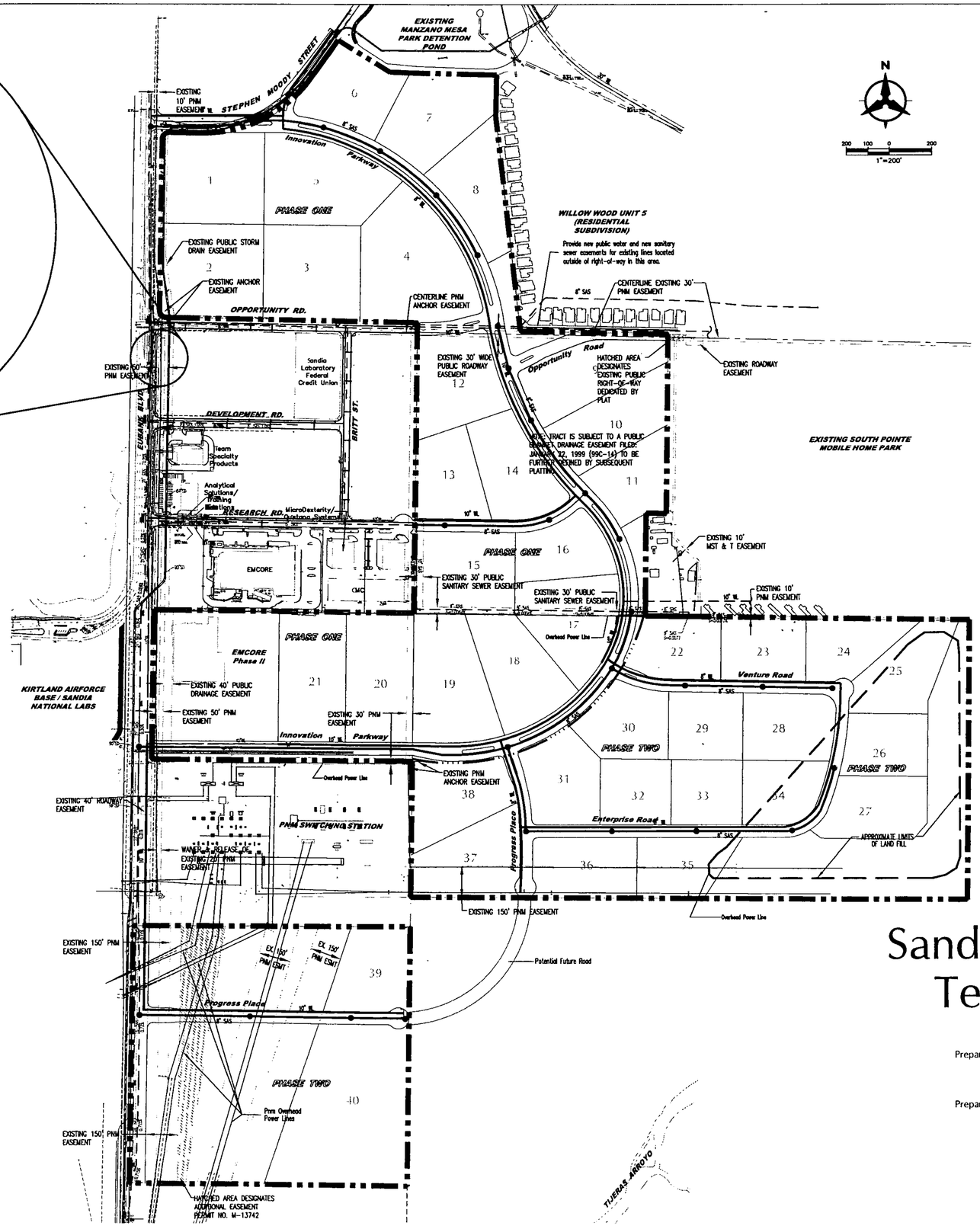
All lines will be public, and owned by the City of Albuquerque.

***Other Utilities***

The Eubank Boulevard right-of-way contains the other primary service facilities - existing gas lines and communications lines, including fiber optics, which will be extended into the project.




TYPICAL EUBANK UTILITIES
SCALE: 1" = 20'




NOTES:

1. New extensions of power, gas, communications and cable lines will be extended underground and looped through the site in 10'-15' wide public utility easements located on the private side of street right-of-way lines, and coordinated with PNM for detailed design requirements.

2. The Master Plan identifies primiary streets and potential lot configurations. The street system is anticipated to remain through out the project life, however, the shown lots should be construed only as conceptual, for reference and subject to change as individual development arises.

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Jan 23, 2001 - 11:24am

Master Utility Plan

# Sandia Science and Technology Park

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Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

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# 7. PHASING PLAN



# 7. PHASING PLAN

## DEVELOPMENT PHASING

Development, platting and construction phasing of the SS&TP is anticipated and planned. Two primary phases are identified in this Master Development Plan (see Phasing Plan, page 67). Phase 1 is the northern properties of SS&TP, comprising Lots 1-16, the EMCORE Phase 2 expansion (approved by separate plan) and Lots 17-21. This is a logical first phase because it lies closer to existing infrastructure than the remaining property and has fewer encumbrances.

Coincidently with the Phase 1 of the SS&TP Master Development Plan, the City will be pursuing funding, design and construction of Eubank Boulevard improvements.

Phase 2 is the southern lands of the SS&TP, comprising Lots 22-40. Issues regarding the existing landfill developability and funding for infrastructure extensions (or simply waiting on infrastructure to come to this phase over time) are the essential elements involved in identifying these lands as the second phase.

However, even within these two primary phases, development, platting and infrastructure construction will occur in a piecemeal, phased fashion, and generally in a north-to-south manner. Typically, potential site purchasers will identify a site for development that may or may not be adjacent to existing infrastructure and platted. If infrastructure is not available, then extensions will be required to provide just that necessary infrastructure. If platting of the selected land has not occurred, then platting to create a lot will be necessary. This will be repeated on a regular basis until the build-out of the SS&TP.

All infrastructure and platting will comply with this Master Development Plan.

## INFRASTRUCTURE FUNDING, CONSTRUCTION, and COST SHARING

The STPDC and the landowners have a preference for working with a Master Developer for the build-out of the Park due to the many advantages this provides for infrastructure funding, construction, and cost-sharing. If a Master Developer is agreed to by all parties, that Developer can manage the financing, construction, and equitable distribution of cost-shares for infrastructure accordingly. In addition, portions of the backbone infrastructure can be installed in advance, allowing for a more seamless process for the build-out of the Park. The Master Developer will build the infrastructure in accordance with the approved Master Development Plan, with payment of financial guarantees or construction of infrastructure occurring at the time of building permit (see Section on Expedited City Review and Approval Process, page 8).

However, since the Master Development Plan precedes the presence of a Master Developer, and since the Memorandum of Understanding for the Park anticipated infrastructure funding and cost-sharing if necessary, the following general summary has been prepared for a methodology that could be utilized to manage phased infrastructure occurring over many parcels owned by separate landowners. It is included here as an example only, actual agreements may differ so long as the goal of an equitable cost-share system is established.

Basic assumptions of this example program are that (1) all infrastructure in the SS&TP, within reasonable area limits and in reasonable amounts, benefits all the properties in the Park (i.e., there are simultaneous advantages to all owners for improvements anywhere within the Park boundaries); and (2) that all lands within the Park will have generally similar land values (except for the obvious differences based on loca-

tion, frontage, and infrastructure availability). It is suggested then that a reasonable basis for cost sharing is by the proposed Phases 1 and 2 area acreages and proportional shares of infrastructure requirements.

The infrastructure requirements and cost-sharing program would have to be administered by a coordinator either within the City of Albuquerque, within the STPDC, or within a landowner group. (Note that if a Master Developer is in place, all of the following steps will be replaced by an internal process to one entity.) An accounting ledger would be established by the coordinating entity to track credits, disbursements, and assessments. Based on the site selected by a new SS&TP tenant and on the requirements of the Infrastructure Master Plans in place, the following approximate guidelines could be used to set up a manageable program. (Example only, subject to revision)

1. All required infrastructure to serve that site (in accordance with City policies and adopted plans) would be identified, designed, constructed, and funded by the purchaser at the time of building permit.

2. Prior to design efforts beginning, the coordinating entities will confirm and agree to the infrastructure construction proposed. (The coordinator will have preliminary estimates of the infrastructure costs prepared for informational and budgetary purposes).

3. After receiving final actual construction costs (post-construction), the coordinator would revise the accounting ledger to credit the Purchaser with the amount fronted to install the infrastructure. Other benefitted properties within the SS&TP could then be assessed on a prorated, per acre basis for their proportionate share of the costs of the constructed infrastructure.

4. The benefitted properties are not required to reimburse the original Purchaser until they are developed, so costs are always deferred until the time of building permit.

5. Arrangements can be made to escrow or deposit excess reimbursements collected until further construction is required, and to protect against distributing funds inappropriately.

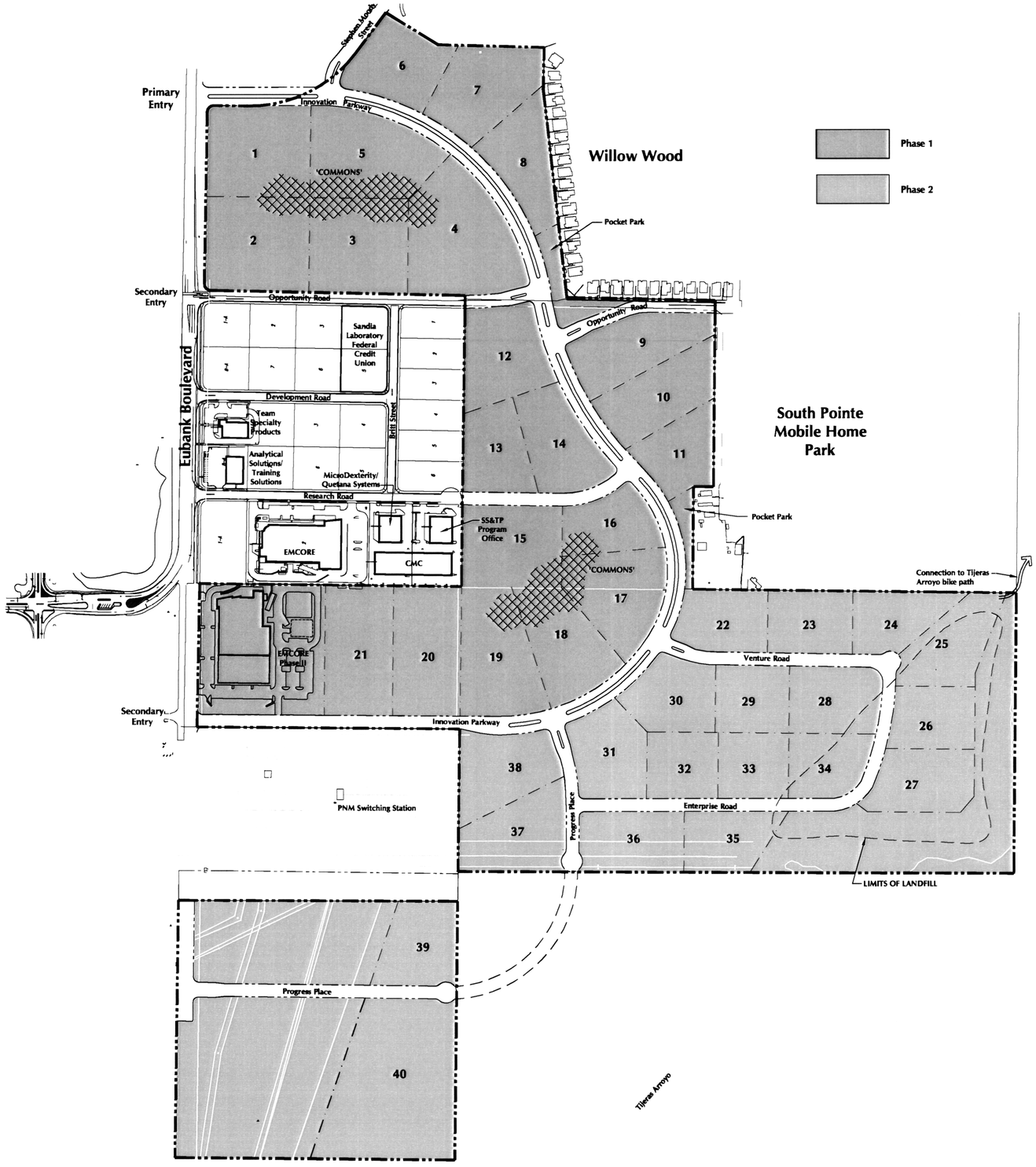
6. If a Purchaser ends up constructing less infrastructure than the total amount due for that lot's full buildout assessment, due to unique lot configuration or other reasons, then the Purchaser could pay the difference to the coordinator for other future infrastructure.

7. With each new transaction, the coordinator would need to update and revise the accounting ledger in order to maintain accuracy, current status, project history, and related items.

Required traffic mitigation contributions from SS&TP properties, once finalized through negotiations with the City, must be paid in lump sum amounts, at the time of building permit. These payments to the City would take the form of a modified Procedure "C" subdivision improvements agreement (no post-construction adjustments to contributions), and would be paid prior to obtaining a building permit. Generally, the approach to determine each tract's contribution is simply that the approved Phase 1 mitigation contribution shall be distributed to Phase 1 properties, prior to any property sales, on a per developable acre basis. The same approach applies to Phase 2.

The acreage for any method established for infrastructure cost-sharing in Phase 2 shall reflect appropriate consideration for usable versus unusable lands.

An agreed upon methodology for coordinating the infrastructure assessments (such as the example described above) shall be established with the consent of all parties to the MOU only if a Master Developer is not present subsequent to final approval of the Master Development Plan, and prior to the first building permit within the approved Park. If a Master Developer is present, the basic steps outlined in the Expedited City Review and Approval Process (page 8) shall be followed.




## Phasing Plan

# Sandia Science and Technology Park

**Prepared For:**

Science and Technology Park
Development Corporation
Albuquerque, New Mexico 87120

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SMPC

Scale 1" = 200'

100 0 200 400 North

January 25, 2001

# 8. APPENDICES

# APPENDIX A: MEMORANDUM OF UNDERSTANDING

This section includes the Memorandum of Understanding (MOU) between the City of Albuquerque; Albuquerque Public Schools; New Mexico State Land Office; Shaw, Mitchell, Mallory Limited Partnership; Sandia National Laboratories, and the Science and Technology Park Development Corporation.

# *Memorandum of Understanding*

# *for the*

# *Sandia Science and Technology Park*

Parties to this Agreement:

Albuquerque Public Schools
City of Albuquerque
New Mexico State Land Office
Sandia National Laboratories
Science and Technology Park Development Corporation
Shaw, Mitchell, and Mallory Limited Partnership

Executed: February 28, 2000

SANDIA SCIENCE &
TECHNOLOGY PARK

# EXECUTIVE SUMMARY
# Sandia Science and Technology Park
# Memorandum of Understanding

The Memorandum of Understanding is among landowners and parties interested in the planning and development of the Sandia Science and Technology Park (SS&TP). The SS&TP is a proposed research park located in direct proximity to Sandia National Laboratories, encouraging co-location of researchers in a congenial collaboration environment. Development of the SS&TP according to the terms of this agreement will: • maximize the financial return to participating landowners; • support Sandia's research and technology transfer missions; and • support the job creation efforts and the City's infill program.

## Description of the Parties, their Concerns, and their Agreements

***Albuquerque Public Schools*** – believes the SS&TP will maximize its financial return and will use proceeds from the sale, lease, or venture development of its land for a public purpose such as school site acquisition and/or school construction. This purpose cannot become secondary to overall goals of the SS&TP. APS seeks an equitable referral system for prospects and a fair mechanism for allocating infrastructure development costs.

***New Mexico State Land Office*** – believes that the linkage of the SS&TP to the planned Mesa del Sol development will be beneficial to the trust in which its land is held.

***Shaw, Mitchell and Mallory Limited Partnership*** - seeks to develop their tract pursuant to the purposes enumerated in this MOU, and subject to its Master Development Plan approved by the COA.

***U.S. Department of Energy*** – although not a signatory to the agreement at this time, DOE is supportive of the agreement and the SS&TP.

***Sandia National Laboratories*** – has agreed to appoint a champion of the Park at the level of Vice President, and will provide funding for staff for marketing and development of the Park through the Science and Technology Park Development Corporation.

***Science and Technology Park Development Corporation*** – a non-profit group formed by Technology Ventures Corporation with the explicit purpose of developing and marketing the SS&TP, will: actively recruit technology companies and refer them to landowners through an equitable referral system; facilitate the development of Park infrastructure; make best efforts to secure funding for a Master Development Plan.

***City of Albuquerque*** – a landowner by virtue of its publicly owned and managed rights-of-way, has a vested interest in the success of the SS&TP due to the Park's potential contribution to economic development and diversification, including the development of high technology clusters. The City agrees to institute an expedited, predictable, and fair approval process for all sites within the SS&TP once a Master Development Plan is approved.

***In addition, all landowners agree to the following:***

- To comply with a set of architectural and design standards.
- To participate in the SS&TP Marketing Plan and Referral Process wherein Sandia/STPDC will actively recruit its research partners and provide exclusive referrals to SS&TP landowners.
- To participate in the development of a master plan.
- To make their land available to prospects that fit the description for potential tenants.

## Description of Potential Tenants

- SNL technology partners who have entered into Cooperative Research and Development agreements or other agreements with Sandia for the furtherance of joint research;
- Critical suppliers to Sandia who provide services and materials in furtherance of Sandia's primary mission;
- Non-critical suppliers who provide services or materials to Sandia for its pursuits other than its primary mission; and
- All other companies who have or may potentially have a business association with or supply materials to Sandia or the companies listed above.

The term of this agreement is for one year, is binding on successors (within the authority of the public landowners to make such commitment), and allows for participation of owners of other, contiguous parcels of land.

**Memorandum of Understanding for the Sandia Science and Technology Park**

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# Memorandum of Understanding for the Sandia Science and Technology Park

## I. Background

### Introduction

The purpose of the Memorandum of Understanding (MOU) is to commemorate the interests, activities, and terms of agreement between the three landowners and the other interested parties for the planning, development, use and management of the Sandia Science and Technology Park (SS&TP) located in southeast Albuquerque, New Mexico. This MOU is viewed as an interim step towards achieving final development of the SS&TP.

### Description of the SS&TP Vision

The general vision for the SS&TP is a large campus-style technology center. The land comprising the SS&TP is owned by three landowners, who as of the date of this MOU have begun conversations to identify mutual needs and commitments, all with the interest of maximizing the real estate value and income potential of their property and enhancing Albuquerque's economic base. They have also discussed with representatives of the other interested parties, Sandia National Laboratories (SNL), City of Albuquerque (COA), the Department of Energy (DOE), and the Science and Technology Park Development Corporation (STPDC) the advantages of joining together to collaborate for the joint or individual development of each of their properties in furtherance of the SS&TP.

The parties are further committed to the development of the SS&TP with the understanding that its success will positively impact New Mexico's economy and more specifically its Central Region including Albuquerque. It is anticipated that technology-based companies will locate facilities within the SS&TP to jointly pursue commercial activities with SNL and the other area research institutions. The result will be new and better jobs for New Mexicans.

The development of the SS&TP serves a unique public purpose that is not replicated elsewhere in the Albuquerque Metropolitan Area. The unique role of the SS&TP is based on its location immediately adjacent to SNL, which is an advantage for commercialization of technology ventures sponsored by SNL. The SS&TP provides a site for the SNL technology partners to locate and expand their facilities in close proximity to SNL's specialized technology and highly trained staff. The development of the SS&TP meets several other public purpose goals, including:

- Strengthening the economic base of the community through the provision of new high technology jobs;
- Partnering with both public and private entities in a model relationship for future industrial park development;
- Fulfilling COA's goals with respect to infill development and steering new development to sites already within COA's service area;
- Providing opportunities to leverage federal dollars with local matching funds to achieve improved infrastructure in the area; and
- Enhancing SNL's role in partnering with the local community to diversify the economy through new private sector job creation opportunities.

The parties execute this MOU with the understanding that its terms will further the development of a dedicated project for the placement of buildings oriented to technology and development in a campus style environment that will primarily focus on attracting companies with the following business uses:

- SNL technology partners who have entered into Cooperative Research and Development Agreements (CRADAs) and other business agreements for the furtherance of joint research, including licensing agreements.

- Critical suppliers who provide services and materials in the support of the SNL primary national mission on behalf of the US Government.

- Non-critical suppliers who provide services and materials for the support of SNL in its pursuits other than those deemed in the interest of the primary national SNL mission as noted above.

- Other companies who have or may potentially have a business association with or supply materials or services to Sandia and the companies noted in this paragraph.

All parties recognize that Albuquerque Public Schools (APS), Department of Energy (DOE), City of Albuquerque (COA), and the New Mexico State Land Office (NMSLO), being public entities as well as landowners or potential landowners within the SS&TP, are subject to certain obligations to manage their properties in accordance with the applicable law. Descriptions of the interests of the involved parties are described in more detail below. It is recognized that both public and private entities are parties to this MOU, and each is governed by its own unique set of regulations and objectives affecting the level and type of participation allowed.

## II. Parties Involved in the SS&TP

### Albuquerque Public Schools (APS)

APS owns the largest tract of land within the SS&TP. On January 18, 1990, the City of Albuquerque approved the current zoning for the Manzano Mesa subdivision, a 480-acre tract of land east of Eubank Boulevard. The zoning for this land was subject to three conditions of approval relating to allowable uses within the employment areas of the site, and to platting requirements.

A description of the land subject to this MOU is attached hereto and incorporated herein as Attachment A. At this time, the land subject to the MOU is Tract E-1 of the Manzano Mesa subdivision, a 48.8766 acre size parcel, currently zoned "SU-1 for Limited IP Uses" and a parcel of land known as APS Vacant Land Parcel #4 containing 40 acres. Additional Manzano Mesa parcels adjacent to Eubank Boulevard (Tracts G-3, H, and I-1) shall be allowed to be added to the MOU property in the future if desired by APS, or may be developed separately.

Mr. Charles Atwood, the APS Director of Real Estate, articulated the following interests and concerns on behalf of APS and the use of such land for the purpose of the SS&TP:

- APS, through its governing Board of Education, hereinafter known as the Board, will consider the broad concept of the SS&TP. The Board understands and supports the concept of strategically leveraging SNL's ability to attract the local presence of technology-based companies as a benefit to the development of the Manzano Mesa subdivision.

- The APS Board has agreed to reserve Tracts E, G-3, and H Manzano Mesa, and a south parcel known as APS Vacant Land Parcel #4 from sale or marketing until December 31, 1999. The purpose of the reservation is to allow the parties to this MOU the opportunity and time to discuss, negotiate, and execute this MOU. However, only Tract E and APS Vacant Land Parcel #4 are included in the MOU at this time to allow APS the opportunity to evaluate the effectiveness of the agreement.

- The APS Board of Education enacted by Board action, effective for one year as of January 1, 1999, a moratorium reserving the noted land for one calendar year. The Board's collective intent is to allow for the SS&TP development. Should this MOU not be executed by the parties, prior to December 31, 1999, the Board will review the status of the development of the SS&TP, and then decide its future participation in the process.

- APS will support an effort to gain public funding (from City, State, and Federal programs) to build the needed infrastructure for the development of the SS&TP. APS has already provided significant infrastructure improvements in the area, and will support efforts by others to do the same.

- APS insists on establishing a time line and schedule for the planning and development of the SS&TP, referring to the Board's moratorium with an expiration of December 31, 1999. This will help the Board in justifying their participation in the SS&TP and this MOU . APS will not commit its land to the SS&TP if it does not accomplish the Board's goal to market and sell its property for the highest justifiable economic return. Proceeds from the sale, lease and/or venture development of the Manzano Mesa tracts is used for a public purpose such as school site acquisition and/or school construction. This is the Board's primary mission, which cannot become secondary to overall goals of the SS&TP.

- The APS tracts have acquired (through Subdivision Improvements Agreements and other contractual agreements), a substantial development advantage over other nearby tracts (particularly with regard to drainage) that shall not be diminished by its participation in the SS&TP.

- APS, being the largest landowner, requests that this MOU address the need for an equitable referral system to provide all MOU landowners an equitable opportunity to compete for agreements with parties seeking to build or lease in the SS&TP.

- APS also requests that SNL provide, within this MOU, a commitment to use its best efforts to get its partners to invest into the SS&TP and to help acquire other public funds for investment in SS&TP infrastructure. APS sees a significant financial risk by agreeing to limit the development of its land for the SS&TP, unless there is strong evidence by SNL, the other landowners, and the City of Albuquerque that they are also committed to the SS&TP.

APS has also emphasized its need to comply with state regulations and statutes governing the marketing and sale of its property.

**New Mexico State Land Office (NMSLO)**

The Commissioner of Public Lands for the State of New Mexico who is the executive officer of the NMSLO, manages the land described in Attachment A, which land is held in trust pursuant to the New Mexico Enabling Act and State Constitution. The Commissioner believes that development of the SS&TP, as anticipated herein, will serve the interests of the trust he represents. In particular, the Commissioner believes that the linkage of the SS&TP to the planned Mesa del Sol development south of the SNL lands and Kirtland Air Force Base (KAFB) will be very beneficial to the trust.

- The NMSLO has invested significant efforts to develop the Mesa del Sol property. The land that borders KAFB on its northern boundary is dedicated to industrial and manufacturing activities. Taking the larger view, the NMSLO sees the potential for a natural land use linkage between Mesa del Sol and the SS&TP.

- Between the SS&TP on the north, and Mesa del Sol on the South, lies KAFB, which is generally undeveloped and populated by several scientific and technological facilities, including the former DOE inhalation research laboratory now leased to the Lovelace Respiratory Research Institute (LRRI). As a southern point of entry to the Base, a secured entrance gate borders on the northern Mesa del Sol boundary with a road that provides a link to the KAFB and SNL facilities.

- The NMSLO supports SNL's ability to leverage its technology project base to bring its partners into the SS&TP. Given the limited size and potential higher property values within the SS&TP, Mesa del Sol provides a key opportunity for those partners seeking real estate for larger or additional industrial, administrative and manufacturing uses better suited outside the SS&TP.

- The NMSLO and SNL are presently finalizing a separate MOU which will commemorate and help effectuate the above.

**The Department of Energy (DOE)**

DOE, through its Albuquerque Operations Office Director of Property and Administrative Services Division, has offered the following in order to facilitate the SS&TP initiative:

- Along with the other parties to this Memorandum of Understanding, the DOE understands and supports the purpose of the SS&TP initiative being undertaken and has in fact provided some of the funding in order to assist in the promotion of the SS&TP.

- The DOE supports the initiative described in this MOU and will support development efforts by the parties to this MOU. The DOE will participate to the extent possible consistent with current DOE mission requirements, applicable policy, statutes, and regulations.

- The parties to this MOU acknowledge that DOE is currently pursuing plans to develop a new office building on its own land. The DOE is willing to share its current plans with the other parties to this MOU and further acknowledges that DOE's plans will support the purpose of the SS&TP and in fact may provide an advantage for the parties herein and may further the objectives of the SS&TP.

**The Shaw, Mitchell and Mallory Limited Partnership**

Shaw, Mitchell and Mallory Limited Partnership, Geneva Mitchell Managing General Partner (the "Mitchell Partnership"), is the owner of a tract described as Tract "A", Plat of Tracts "A" and "B", Lands of Shaw, Mitchell, Mallory Partnership, dated November 1998, and recorded on January 22, 1999 as Document No. 1999008790 in Book 99-C, page 14, Plat Records, Bernalillo County, New Mexico (the "Mitchell Tract"), which is under contract to Brown & Associates, Inc. (Ron Brown), and which tract is incorporated herein for use as part of the SS&TP. Mr. Bill Robertson of First Commercial Real Estate Services, Inc, is authorized agent. Brown & Associates submitted a Master Development Plan to the Development Services Division of the Planning Department for the City of Albuquerque.

- On January 21, 1999, the Environmental Planning Commission (EPC) voted to approve the Master Development Plan. In approving the requested development, the EPC enumerated certain standards and conditions that must be met as a minimum for any future development of the Mitchell Tract, referred to as the Sandia Technology Center.

- Through the efforts of Brown & Associates or otherwise, the Mitchell Partnership seeks to develop the Mitchell Tract pursuant to the purposes enumerated in this MOU, and subject to its Master Development Plan approved by the COA. The Mitchell Partnership supports the concept of using SNL's leverage to attract its partners to purchase or lease real estate within the planned SS&TP. As is the case with the other landowners, the Mitchell Partnership seeks a fair and equitable referral system for potential customers of its development.

- The Mitchell Partnership also agrees with the need to set minimum architectural and design standards for the development of the SS&TP. It further agrees that the landowners should agree at a minimum to a marketing and referral plan that provides a common vision and message for the development of the SS&TP.

APS wishes to note that some of the conditions of approval imposed on the Mitchell Tract by the City EPC are not desirable for imposition throughout the SS&TP, and specifically not desirable for the APS Manzano Mesa tracts. Therefore, the Mitchell Tract Master Development Plan

conditions are not accepted as the basis for design guidelines for the balance of the SS&TP, and will apply only to the Mitchell Tract.

**City of Albuquerque (COA)**

The City is a landowner within the SS&TP by virtue of its publicly owned and managed rights-of-way within the area. These rights-of-way are primarily comprised of roads and utility or drainage easements. The COA has a vested interest in the successful outcome of the SS&TP due to the role it plays on behalf of economic development, economic diversification, and development of high technology clusters that benefit the City's overall economic health.

- In return for the City's participation in this MOU, the City receives the following advantages: economic diversification and development, private sector partnerships with SNL and KAFB which protect the City's economy from the rise and fall of federal spending in the community, improved economic quality of life for Albuquerque citizens, more efficient use of in-fill land within the City's existing service area without the need for the costly extension of services, reduction in cross-City automobile use and concurrent improvements in air quality as a result of more residents living near their place of employment, increased property tax and gross receipts tax revenues resulting from construction and development of the SS&TP, and the opportunity to receive "matching funds" or grants/loans from the state and federal governments to help stretch their scarce infrastructure dollars.

**Sandia National Laboratories (SNL)**

Sandia National Laboratories represents a significant national investment in technological capability that spans the spectrum from people that are in demand around the globe for their expertise to world-class facilities that are not readily accessible to most research organizations. Cross-fertilization of ideas has long been known to be at the crux of a healthy and innovative research enterprise, and such cross-fertilization is enabled by physical proximity. Sandia, because of the concentration of its expertise and facilities, is the major attraction to technology companies to locate in the SS&TP. At all management levels, Sandia has committed to being a proactive proponent of the SS&TP, both within SNL, within the Albuquerque community, with its more than 300 research partners, and with companies nationwide that express an interest in working with Sandia.

**The Science and Technology Development Corporation (STPDC)**

The Science and Technology Park Development Corporation is a nonprofit group formed at the request of Sandia by Lockheed Martin's Technology Ventures Corporation with the explicit purpose of developing and marketing the Sandia Science and Technology Park. The STPDC will broaden the industrial base, foster creation of jobs in technology-related businesses and generate new sources of economic benefit within central New Mexico and the City of Albuquerque. The STPDC will manage the SS&TP with staff on loan from SNL.

STPDC seeks to collaborate with the MOU landowners to provide this location with the following characteristics:

- That the MOU landowners provide real estate for the development of the SS&TP, that conveys a quality, professional image suitable for a campus-style technology park.

- That the MOU landowners agree to minimum architectural and design standards to assist in the achievement of these characteristics.

- That the MOU landowners agree on criteria for tenants in the SS&TP.

## III. Memorandum of Understanding Terms of Agreement

**The STPDC requests the MOU landowners to agree to the following, and in the case of the public landowners, to the extent allowed by their respective authorities:**

- All the parties to this MOU shall mutually agree upon a set of architectural and design standards that comply with all national, state, and local laws as attached hereto and incorporated herein as Attachment B. These guidelines will serve for the interim until final standards are developed and agreed to as part of the development of the SS&TP master development plan envisioned by this MOU.

- That the MOU landowners agree to participate in the SS&TP marketing and referral plan as enumerated and incorporated herein as Attachments C & D.

- DOE personnel assert that DOE is currently in the process of obtaining approvals and funding for the construction of its new office building on a portion of the Eubank Tract, which adjoins the SS&TP. Plans for the remaining portion of the tract, after the building is complete, are yet to be determined. However, DOE personnel agree to consider the objectives identified in this MOU for future uses. Accordingly, DOE will participate to the extent possible under the appropriate legal authority, with the marketing and referral initiatives outlined in the MOU. DOE however shall not be considered a signatory to this MOU. Should DOE wish to, in the future, be considered as a party to the referral process as outlined in Attachment D to this MOU, DOE will seek admittance as specified within the terms of this MOU.

- It shall be only with the written unanimous consent of all signatories to this MOU, that any subsequent landowners or other interested parties be allowed to participate as a party to this MOU. Such participation is conditioned upon the requirement that there be no economic detriment to any such prior signatories. For purposes of receiving SNL landowner referrals pursuant to STPDC referral process as specified in this MOU, the subsequent included parties shall be considered for only those referrals occurring after the date of the written unanimous consent for their individual inclusion as a party to this MOU.

- Existing signatories are allowed to add additional parcels of land to the SS&TP provided they are contiguous to the SS&TP and subject to the other conditions of this MOU.

- That the MOU landowners, to the extent allowed by their respective authorities, agree to withhold the development and use of their real estate described in Attachment A for the use of the SS&TP as described in this MOU.

- That the MOU landowners will provide a representative to participate in the master development plan and the subdivision improvement agreement process and selection of a master developer as undertaken by STPDC. The MDP and SIA must be unanimously approved by all signatories to the MOU.

- In the interim period prior to completion of an SS&TP master development plan, the MOU landowners may jointly or independently pursue and transfer their real estate interest subject to this MOU to one party to function in the role of a prime developer for the landowners' property. Such developer shall agree to adhere to the terms and conditions of this MOU.

- That the MOU landowners agree to the following terms:

  - That the land uses by the SNL technology partners and critical suppliers, as defined herein, are preferred in the SS&TP pursuant to the marketing and referral plan attached hereto as Attachments C and D.

  - That participation in the SS&TP does not preclude the landowners from selling, leasing, or otherwise conveying their property to financially qualified buyers or users that have not been referred by STPDC, so long as such buyers or users comply with terms and uses of this agreement consistent with the vision of the SS&TP at page one and two of this MOU. In the case of competition between an STPDC referral and other buyers, the STPDC referral shall have preference provided it can financially and contractually perform within thirty (30) days of the other entity's offer. If the STPDC referral cannot perform in this timely manner, the landowner may proceed with conveyance or lease to others without opposition or interference from SNL or STPDC, consistent with the terms of this MOU.

**In consideration for agreeing to this MOU, STPDC agrees to the following:**

- To provide the Marketing Team participation as previously referred for the duration of this MOU or until the parties to this agreement transfer their interest in the real property subject to this MOU to a prime developer or developer's association of the SS&TP. It is envisioned that this developer or developer group shall assume the duties of the STPDC Marketing Team.

- To actively encourage companies to locate within the SS&TP by executing the marketing and referral plans enumerated in Attachments C & D.

- To make best efforts to recruit at least 3 tenants that are technology companies or others interested in developing technology with SNL to locate in the SS&TP.

- To provide exclusive referrals pursuant to the referral plan enumerated in Appendix D to only those MOU landowners who have agreed to the terms of this MOU as indicated by their signatures affixed to this MOU.

- To work with the Federal, State, and City government officials to assist in securing financing for SS&TP infrastructure improvements within the next four (4) years.

- To make best efforts to secure funding to provide an approved Master Development Plan and an accompanying Subdivision Improvement Agreement (SIA) for the entire SS&TP with a written commitment for an expedited approval process from the COA. To make best efforts to secure funding to provide an RFP for a Master Developer or a developer's group or association for the SS&TP, along with a selection/procurement process that includes representatives of all MOU landowners in the selection process. Moreover, to provide a methodology for accountability between STPDC and the MOU landowners such that questions or issues arising regarding effectiveness or implementation of any item within this MOU may be equitably and expeditiously resolved.

- Within 120 days of approval of this MOU, the STPDC will present to the MOU signatories for review and approval an action plan for implementation of the MOU.

**In consideration to agreeing to this MOU, SNL agrees to the following:**

- To provide a Vice President level "Champion" who will promote the park concept both within Sandia as well as to the outside world.

- To provide the funding necessary to support the "Marketing Team," which will be on loan to the STPDC.

- To commit to having an SNL presence within the SS&TP (office or research staff space within a building in the SS&TP to show commitment to the park).

- To actively encourage its partners to locate within the SS&TP by executing the marketing and referral plan enumerated in Attachment C and D.

**In consideration to agreeing to this MOU, the City of Albuquerque agrees to the following:**

- The COA will pursue an expedited land use and infrastructure approval process for the Sandia Science & Technology Park (SS&TP), using existing city ordinances.

- This process will provide a framework for overall approval of the land use and infrastructure requirements for the park, and an expedited process for the approval of site development and subdivision requests by implementing the following: The Development and Adoption of the SS&TP Master Development Plan (MDP) and SS&TP infrastructure requirements.

- The MDP will include over-all land use, design guidelines, transportation, utility, drainage and advanced telecommunication requirements for the SS&TP.

- The MDP and infrastructure necessary for the MDP development will be reviewed and approved by the City's Environmental Planning Commission (EPC) and the Development Review Board (DRB). After the initial approval by the EPC and the DRB, neither the MDP nor individual projects within the SS&TP will be reviewed by the DRB or EPC, unless major amendments are necessary. Administrative approval authority for all SS&TP site development requests will be assigned to the City Planning Department Director.

- The SS&TP MDP will include a pre-approved, infrastructure cost-sharing formula which assigns a fixed cost or fixed cost percentage for each parcel based upon its prorated share of on-site and off-site infrastructure. Payment of costs associated with the approved MDP and site specific infrastructure for a parcel will be deferred until the time of approval of a development request by the City's Planning Department Director.

- The COA will pursue the timely implementation of approved capital improvement projects (CIP) that support the SS&TP. As part of the MDP's approved infrastructure requirements the COA capital improvements in the vicinity of the SS&TP will be identified, and city commitments will be secured regarding the scheduling and construction of those improvements.

- The City of Albuquerque and other MOU parties will collaborate by sharing information, studies, maps or other information that is relevant to tracts of property participating in the agreement and where such data has been submitted to the City of Albuquerque and/or the County of Bernalillo for review and processing. In the case of proprietary information, it may be shared by the MOU parties at each MOU party's sole discretion.

**Time Frame for MOU:**
The term of this MOU shall commence upon signed acceptance by all of the parties as provided within this MOU, and shall be effective for one year thereafter. At the end of the initial term, this MOU will be automatically renewed for an additional twelve (12) month period unless, or until, one of the parties, in writing at least thirty (30) days prior to the expiration of the initial or renewal term notifies the other parties in writing of its intent to terminate the MOU.

**Termination:**
The parties to this MOU may, by mutual agreement, terminate this MOU prior to the term as set forth in this MOU. All rights, duties and obligations to the MOU will expire at that time.

**Binding of Successors of Property within the SS&TP**
All of the landowners, with the exception of DOE which has limited authority, within the SS&TP currently have the ability to sell or lease bulk tracts of land to any qualified buyer. During the interim period prior to an approved master development plan for the SS&TP being in place, and prior to a master developer or development association being in place, there is risk of land sales or leases to third parties that are not bound by this agreement. This chance for change in ownership is greater for the private landowners (who have carrying costs associated with holding their land) than it is for the public landowners. Assurances must be made that any agreement signed on behalf of land included within the SS&TP binds future owners of participating tracts as well as original signers of the MOU.

Parties wishing to participate later, subsequent to the execution of this MOU: provision should be made to allow such participation so long as there is no economic detriment to the current parties to this MOU.

**Effective Date of the MOU:**
The following conditions for the execution of the MOU are required for the commencement of this MOU:

- The signatures of all the parties to this MOU must be obtained within 30 days of the signature of the initial signing party.

- Should any party to this MOU refuse to sign this MOU within this 30-day execution period, this MOU shall be deemed void and non-binding on any of the parties, including those who may have previously signed the MOU.

- The term of this MOU shall begin upon the date of the final signature of all parties as described within this MOU, so long as such signing occurs within 30-day execution period.

**Entire Agreement**
This MOU contains the entire agreement of the parties and there are no other promises or conditions in any other agreement whether oral or written. This MOU supersedes any prior written or oral agreements between the parties.

**Amendment**
This MOU may be modified or amended, if the amendment is made in writing and signed by all parties to the MOU.

**Severability**
If any provisions of this MOU shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of the MOU is invalid or unenforceable, but that by limiting such provision it would be come valid or enforceable, then such provision shall be deemed to written, construed, and enforced as so limited.

**Waiver Of Contractual Right**
The failure of any party to this MOU, to enforce any provision of this MOU shall not be construed as a waiver or limitation of that party's right to subsequently enforce and compel strict compliance with every provision of the MOU.

**Applicable Law**
The laws of the State of New Mexico shall govern this MOU.

**Liability**
As between the parties, each party shall be solely responsible for any and all liability arising from personal injury, including death, or damage to property arising from the act or failure to act of the respective party or of its officials, agents, and employees pursuant to this MOU. The liability of each party shall be subject to the immunities and limitations of the Tort Claims Act, Sections 41-41-1 et seq. NMSA 1978, and of any amendments thereto.

**Hold Each Other Harmless**
The parties shall hold each other harmless and against any and all claims, actions, suits, or proceedings of any kind brought for or on account of any section or failure to act of the other party pursuant to this MOU, and subject to the provision of the above noted previous paragraph.

**Binding Effect - Appropriations**
The obligations of the parties to perform their respective duties under this MOU are subject to and conditional upon the appropriations by the governing bodies of each of the parties of funds necessary to permit each party to perform their duties.

**Equal Opportunity Compliance**
The parties to this MOU agree to abide by all federal and state laws and regulations pertaining to equal employment opportunity. In accordance with those laws and regulations, the parties to this MOU agree to assure that no person in the United States shall, on the grounds of race, color, national origin, sex, sexual preference, age or handicap, be excluded from participation in, be denied the benefits of or be otherwise subjected to discrimination in performance of this Agreement.

**Notices:**
**Send inquiries concerning this MOU to:**

| | | |
|---|---|---|
| **Albuquerque Public Schools -** | Chuck Atwood,<br>Real Estate Director<br>Albuquerque Public Schools<br>P.O. Box 25704<br>Albuquerque, NM 87125 | Phone: (505) 765-5950<br>Ext. 267<br>Fax: (505) 768-1583 |
| **New Mexico State Land Office -** | Harry Relkin<br>New Mexico State Land Office<br>P.O. Box 1148<br>Santa Fe, NM 87504-1148 | Phone: (505) 827-5760<br>Fax: (505) 827-5766 |
| **Shaw, Mitchell and Mallory Limited Partnership -** | Bill Robertson<br>Associate Broker<br>First Commercial Real Estate<br>6201 Uptown Boulevard NE<br>Suite 202<br>Albuquerque, NM 87110 | Phone: (505) 881-9810<br>Fax: (505) 881-9838 |
| **City of Albuquerque -** | Erik Pfeiffer<br>Director<br>Office of Economic Development<br>City of Albuquerque<br>P.O. Box 1293<br>Albuquerque, NM 87103 | Phone: (505) 768-3270<br>Fax: (505) 768-3280 |
| **Sandia National Laboratories -** | Lenny Martinez<br>Vice President, Defense<br>Programs Products and Services<br>Sandia National Laboratories<br>MS 0867<br>P.O. Box 5800<br>Albuquerque, NM 87185-0867 | Phone: (505) 845-8973<br>Fax: (505) 284-2464 |
| **Science and Technology Park Development Corporation -** | Jackie Kerby Moore<br>Program Manager<br>Science and Technology Park<br>Development Corporation<br>10520 Research Road SE<br>Albuquerque, NM 87123 | Phone: (505) 845-8107<br>Fax(505) 844-1389 |

**Signatures:**

- The parties to this MOU, by their signature, each attest that they have authority to enter into this MOU and agree to the terms and conditions within this MOU.
- The parties include representatives from COA; APS; NMSLO; Shaw, Mitchell and Mallory Limited Partnership; SNL; and STPDC.

By: _____ Date: 2/28/00
Jim Baca, Mayor
City of Albuquerque

By: _____ Date: 2/28/2000
Richard Toledo, President
Board of Education
Albuquerque Public Schools

By: _____ Date: 2/28/2000
Harry Relkin, Assistant Commissioner
New Mexico State Land Office

By: _____ Date: 2/28/00
Geneva Mitchell, Managing General Partner
Shaw, Mitchell and Mallory Limited Partnership

By: _____ Date: 2/28/00
Dan Hartley, Vice President
Sandia National Laboratories

By: _____ Date: 2/28
Randall B. Wilson, Officer
Science and Technology Park
Development Corporation

Attachment A. Description of the real estate subject to this MOU.

- Albuquerque Public Schools:

  1. APS Vacant land property No.4:
     SE1/4,NW1/4,Section 33, Township 10-North, Range 4-East, New Mexico Principal Meridian, State of New Mexico, County of Bernalillo, containing 40.0 acres.

  2. Tract E, Replat for Tracts A through J, Manzano Mesa Subdivision, City of Albuquerque—Bernalillo County, New Mexico, Folio 112, Volume 91-C, filed June 5, 1991, Records of Bernalillo County, New Mexico containing 48.8766 acres.

- New Mexico State Land Office:

  1. Parcel 1, a 35 acre parcel located in the NW ¼ NW ¼ of Section 33, Township 10 North, Range 4 East.

  2. Parcel 2, a 20 acre parcel located in the N ½ SW ¼ NW ¼ of Section 33, Township 10 North Range 4 East.

  3. Parcel 3, a 40 acre parcel located in the SW ¼ NE ¼ of Section 33, Township 10 North, Range 4 East.

- Shaw, Mitchell, and Mallory Limited Partnership

  1. Tract lettered "A" of the LANDS OF SHAW, MITCHELL, MALLORY PARTNERSHIP, Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the plat of tracts "A" and "B" thereof, filed in the Office of the County Clerk of Bernalillo County, New Mexico, on January 22, 1999, in Plat Book 99C, folio 14.

  2. The acreage of this parcel is approximately 35.2742 acres

Attachment B. Description of the SS&TP design guidelines for the terms of this MOU.

The attached design guidelines are incorporated into this MOU, with the following exceptions:

- Design Guideline #16 – Deleted; and therefore not in effect.

# DESIGN GUIDELINES - CRITERIA

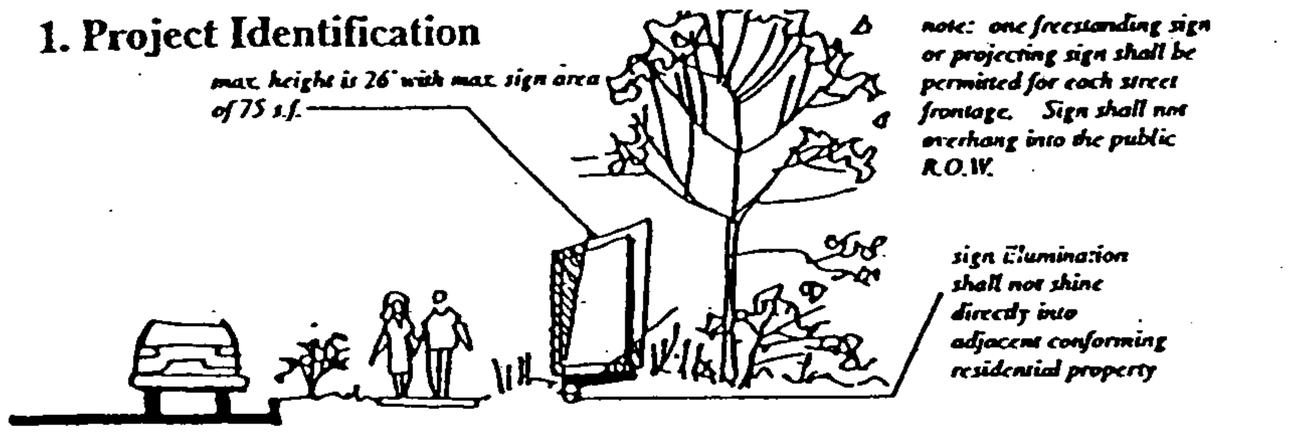
**The purpose of Design Criteria is to provide a framework to ensure a character quality and visual appearance to the site and surrounding neighborhoods. These criteria address the issues of setbacks, screening, lighting, signage, landscape and drainage, creating a desirable visual image for the Sandia Technical Center. These standards are to be used as a supplement to the City of Albuquerque Comprehensive City Zoning Code and other pertinent City ordinances.**

**All buildings and structures within the site shall comply with all applicable City of Albuquerque zoning and building requirements as well as other local applicable codes.**

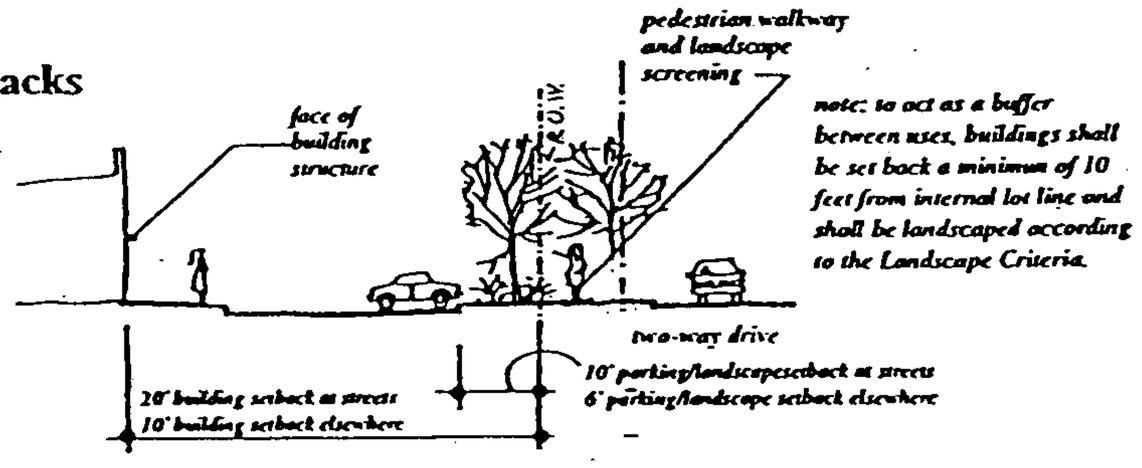
## Internal Streets and Intersections

**Internal intersections are treated consistently creating a strong visual impact and project identity and provide access to other parcels. The interior roadways shall be improved by the developer and dedicated to the City of Albuquerque. Private drives are those which provide access within the tracts and are not dedicated to the City.**

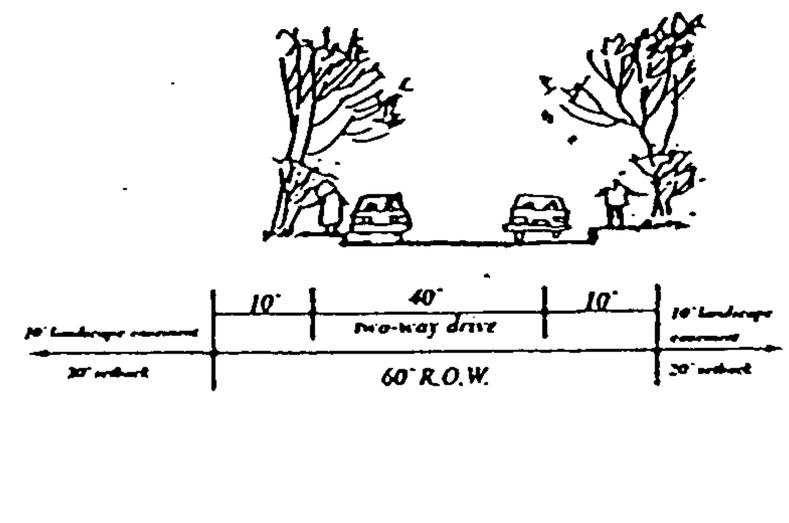
### 1. Project Identification



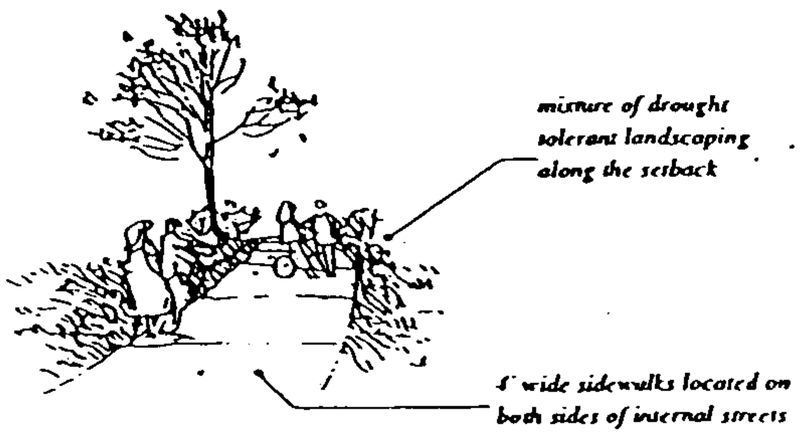

### 2. Setbacks




### 3. Internal Streets

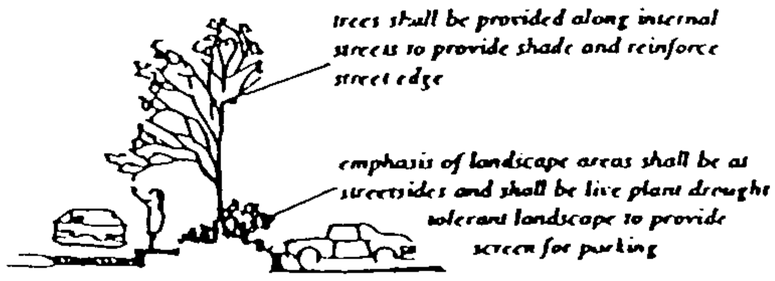



### 4. Pedestrian Connection




### 5. Landscaping

*note: intersections shall be coordinated to be similarly landscaped in order to unify the development*

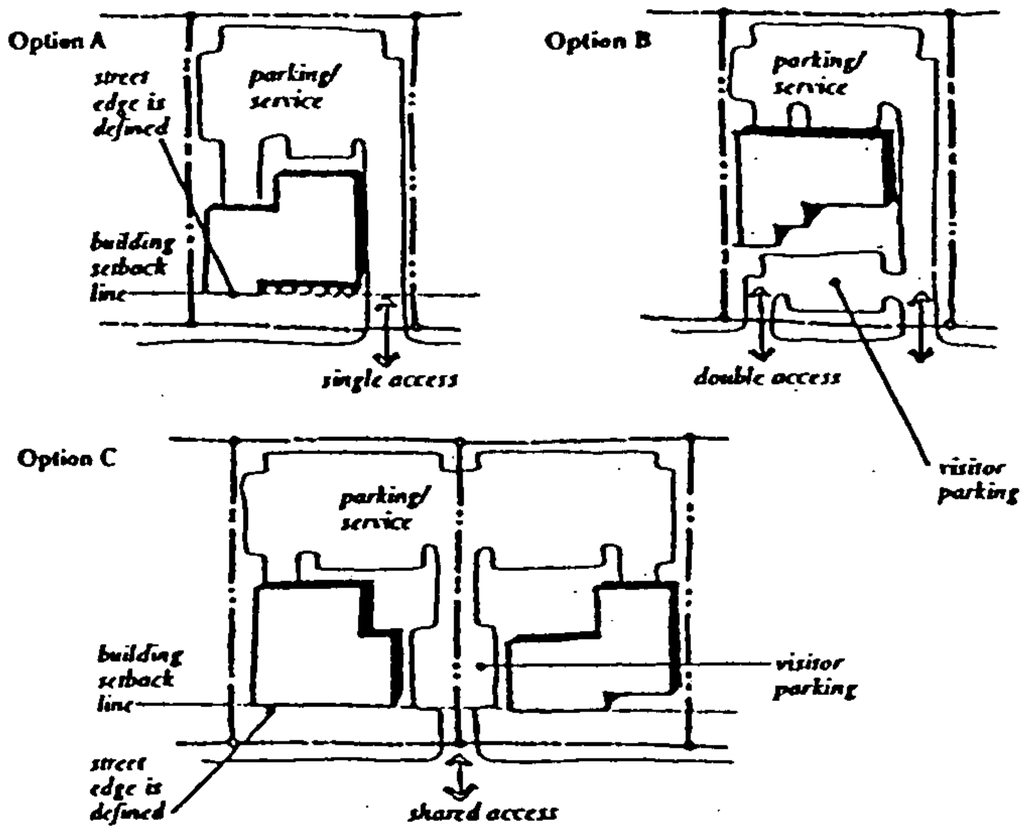


# Site Design

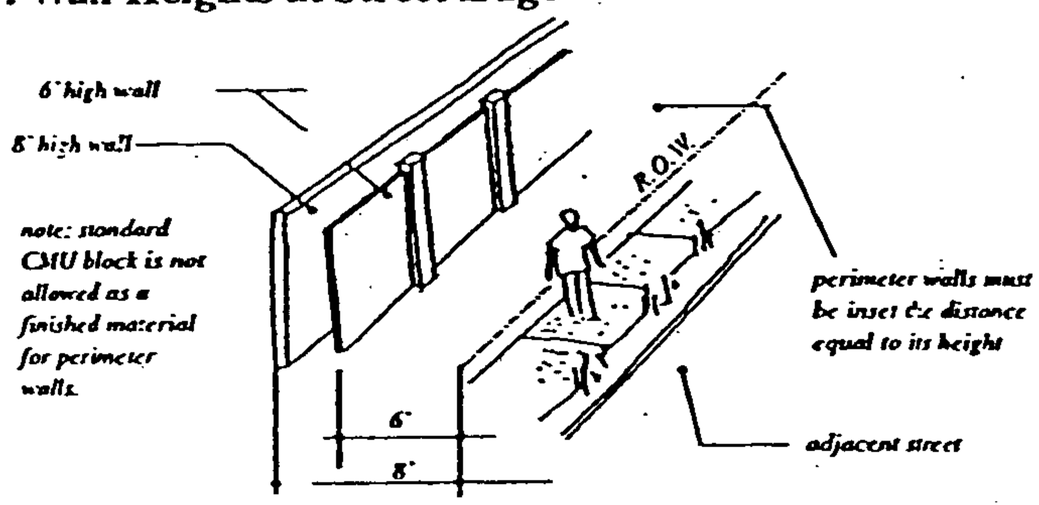
Site development plans for building permits shall incorporate the design criteria in order to achieve the desired character and integration of the site. Building setbacks as well as landscape setbacks have been identified and help to reduce the visual impact of a building on adjacent neighborhoods. The overall land use concept maintains office/warehouse use as permissible on lot sizes of at least an acre.

## 6. Site Layout Concepts

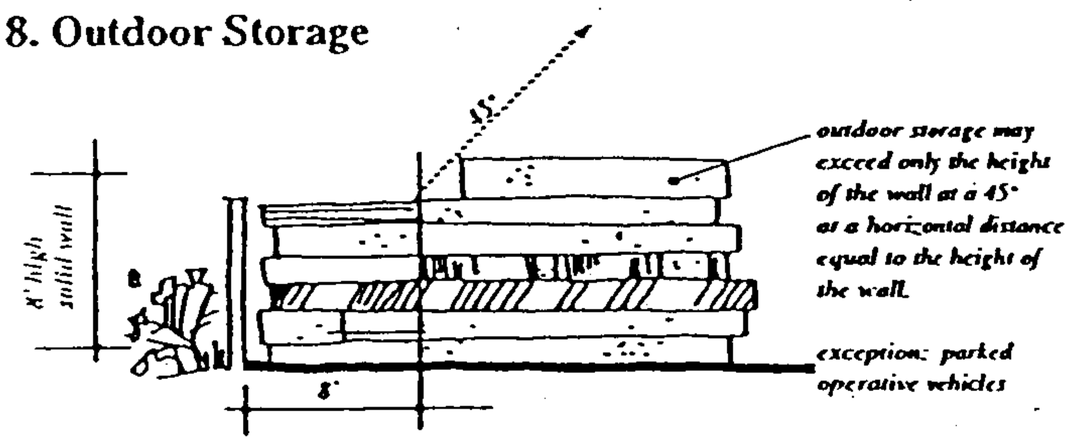
*The following options are recommended for building/site layout. Building footprints are encouraged at the building setback line to give definition to the street and complex while parking at the back of the lots are visually screened.*



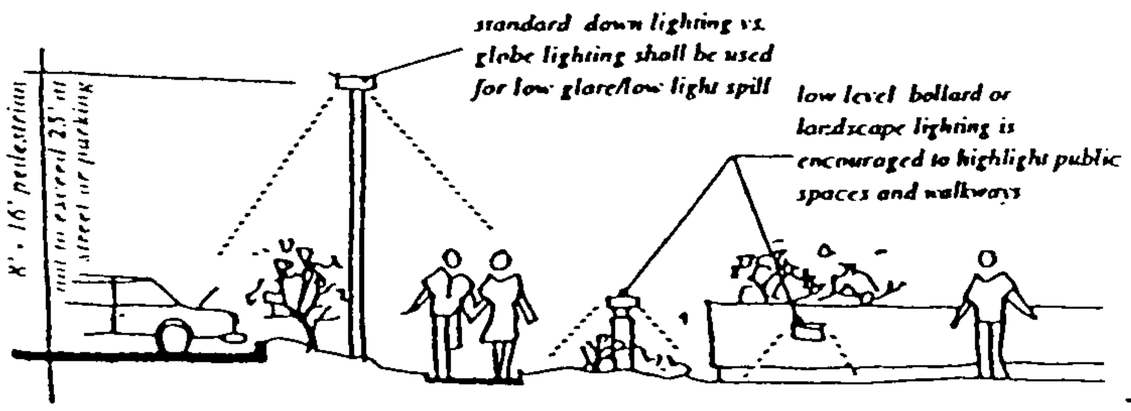

## 7. Wall Heights at Street Edge




## 8. Outdoor Storage



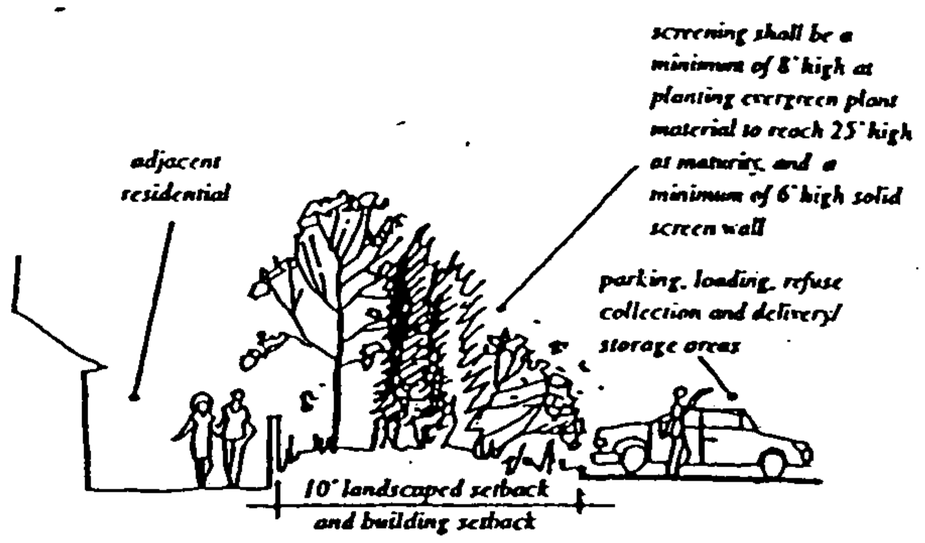

## 9. Site Lighting




## 10. Landscaping

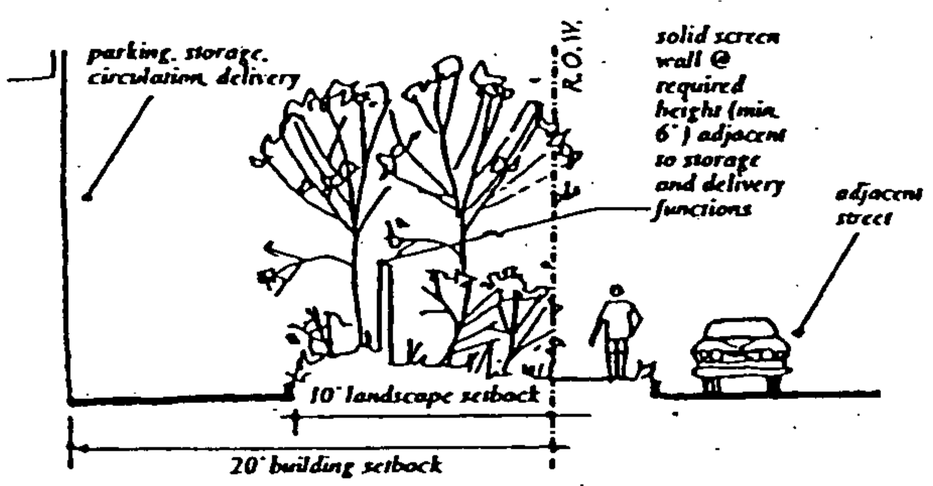
*This development is designed to include landscaping as a unifying system. Drought tolerant landscape shall be used, not only for minimizing water use, but to relate to the desert environment of New Mexico. A mixture of drought tolerant species and lawns can be combined at landscaped areas. Live plant materials shall be used extensively - gravel, colored rock, bark and similar materials are generally not acceptable as groundcover. An irrigation system is to be designed as part of the landscaping and should avoid overspraying roadways, buildings and walls.*

## 11. Screening at Residential Edge

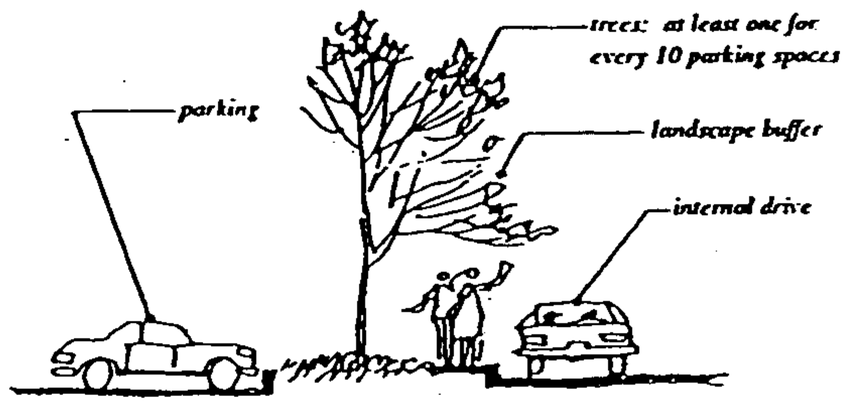



*note: the use of barbed or concertina wire is not permitted where visible such as on the top or outside of fences or walls. Security measures should be from the use of appropriate (i.e. pyracantha) plantings*

## 12. Screening at Street Edge

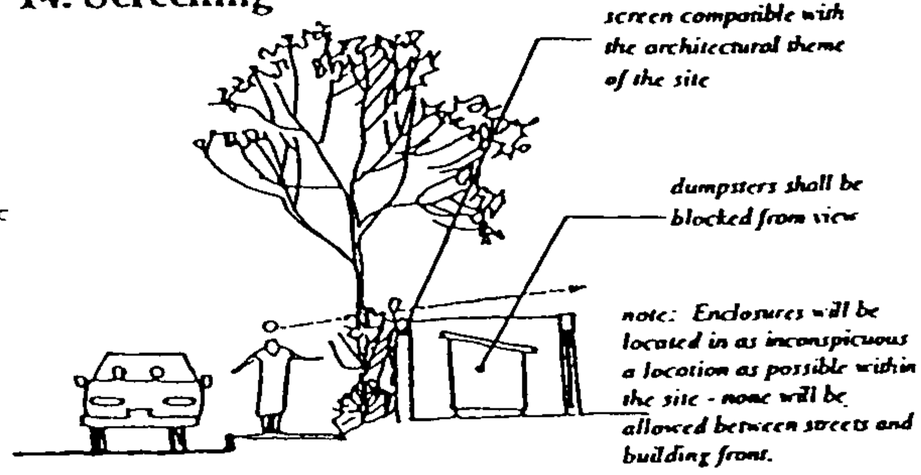



## 13. Off-Street Parking




*note: one parking space for each three employees on the largest shift or one space for 1,000 sf of net leasable area, whichever is greater (one bicycle parking space is required for every 20 spaces required for automobiles).*

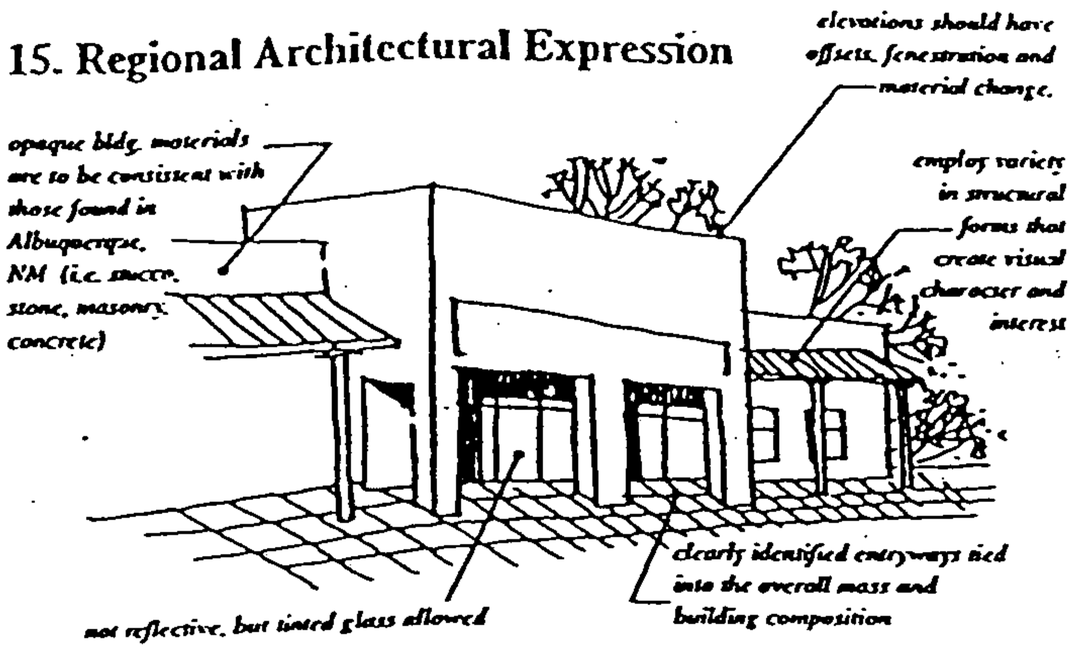
## 14. Screening



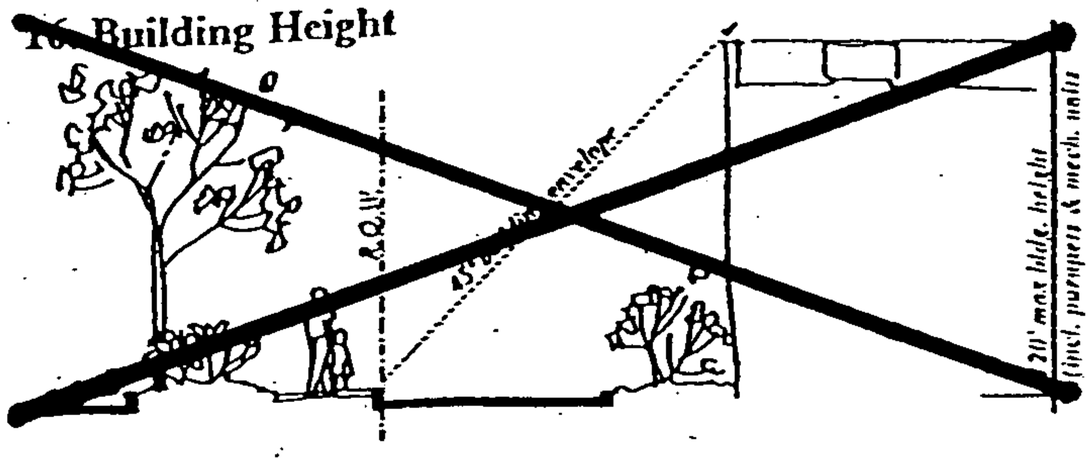
## Architectural Expression

Building layouts shall provide continuity for the development and compatibility with adjacent buildings and streets. These controls are important to prevent any building from not fitting in with the design of the overall complex. All building design and exterior building treatments shall be architecturally compatible within individual site development buildings and between buildings on separate sites. In this regard, the first project approved and developed will establish the architectural design direction for all subsequent buildings. This is not to imply that all buildings be identical, but should be designed to promote architectural harmony and compatibility in the development. Buildings should have a regional expression, integrating building height, massing and color.

## 15. Regional Architectural Expression



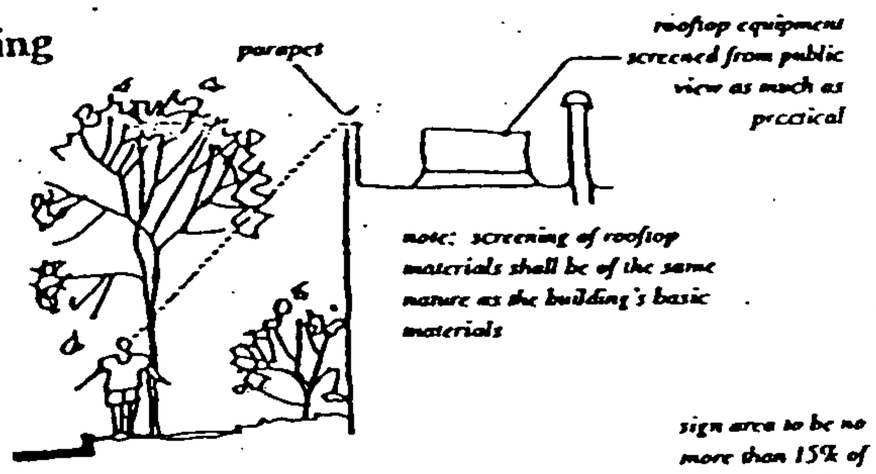

## 16. Building Height



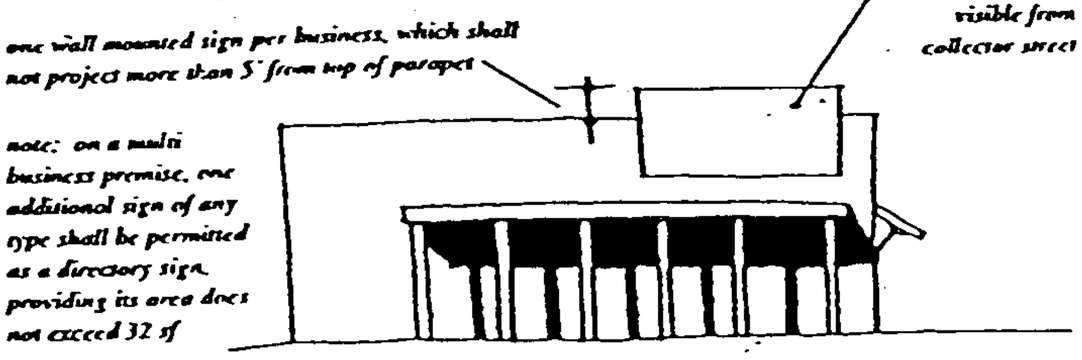

Design Guideline #16 - Deleted; and therefore not in effect.

As per MOU Attachment B, page 16

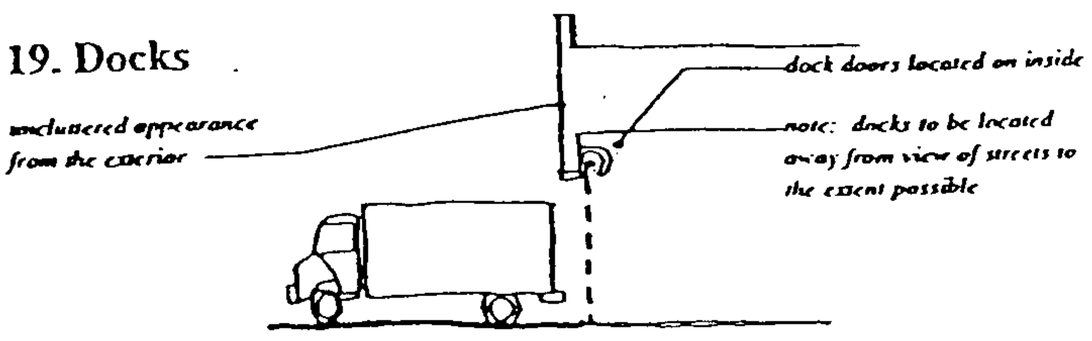
## 17. Screening




## 18. Building Signage Opportunities




## 19. Docks




Drawings are conceptual in nature and set forth the design criteria for illustrative purposes only and are not to be taken literally.

# STPDC Year 2000 Marketing Plan

The STPDC has an established and integrated marketing plan to actively and aggressively bring the Sandia Science and Technology Park (SS&TP) to national attention as a premier research park, and to identify and recruit tenants that are consistent with the vision of the Park.

## Briefings

Briefings encompass prepared materials to respond to requests for information, tours, personal meetings with representatives of organizations that fit the Park's vision for its tenants, and proactive marketing of specific offerings. Briefings target the following four groups:

- **Requested by Prospects**. The STPDC is committed to honoring every request from prospective tenants for information about the Park, including providing prepared briefing packages, in-person briefings, and tours of the site as appropriate.
- **Sandia Technical Partners**. Sandia has about 300 formal R&D partners. The staff of the STPDC will market the Park to all of those partners. In addition, as soon as there is a multi-tenant building available in the Park, the STPDC staff will formally and explicitly market this building to partners, both through general mailings and through follow-up with specific partners that have indicated particular interest in such a building.
- **Industry VIPs**. In a targeted and focused effort, Sandia Vice Presidents and Directors meeting with potential research partners as well as with decision-makers from existing research partner organizations will continue to reinforce the benefits of location in the Park. Technology Ventures Corporation also meets frequently with technology companies and will describe the benefits of the Park and offer to arrange a briefing for interested individuals. It is anticipated that at least ten briefings will be made in 2000 to specific industry VIPs through referrals from Sandia and TVC.
- **AED Prospects**. The STPDC will work with Albuquerque Economic Development to identify and brief potential tenants on the benefits of location in the Park. In 2000 it is anticipated that the partnership between STPDC and AED will result in at least four briefings to targeted prospective tenants for the Park.

## Conference

Sandia has earmarked sufficient funding to provide major support for a conference in 2000. The conference will serve to increase the visibility of the Park as an important means of enabling technology transfer.

## National/Local Media Coverage

Research parks cater to organizations with very specific needs. Those needs can be met only by the best and the brightest in a given field. Sandia brings physical proximity to the best and the brightest to Park tenants. It is critical, however, to the success of the SS&T Park that national awareness of the Park as a location for first-rate research and fluid technology transfer be raised to a level that organizations interested in locating in a research park automatically think of it. The STPDC will continue to bring national and local attention to the Park, in particular targeting the most respected and prominent organizations that carry particular importance within the research community.

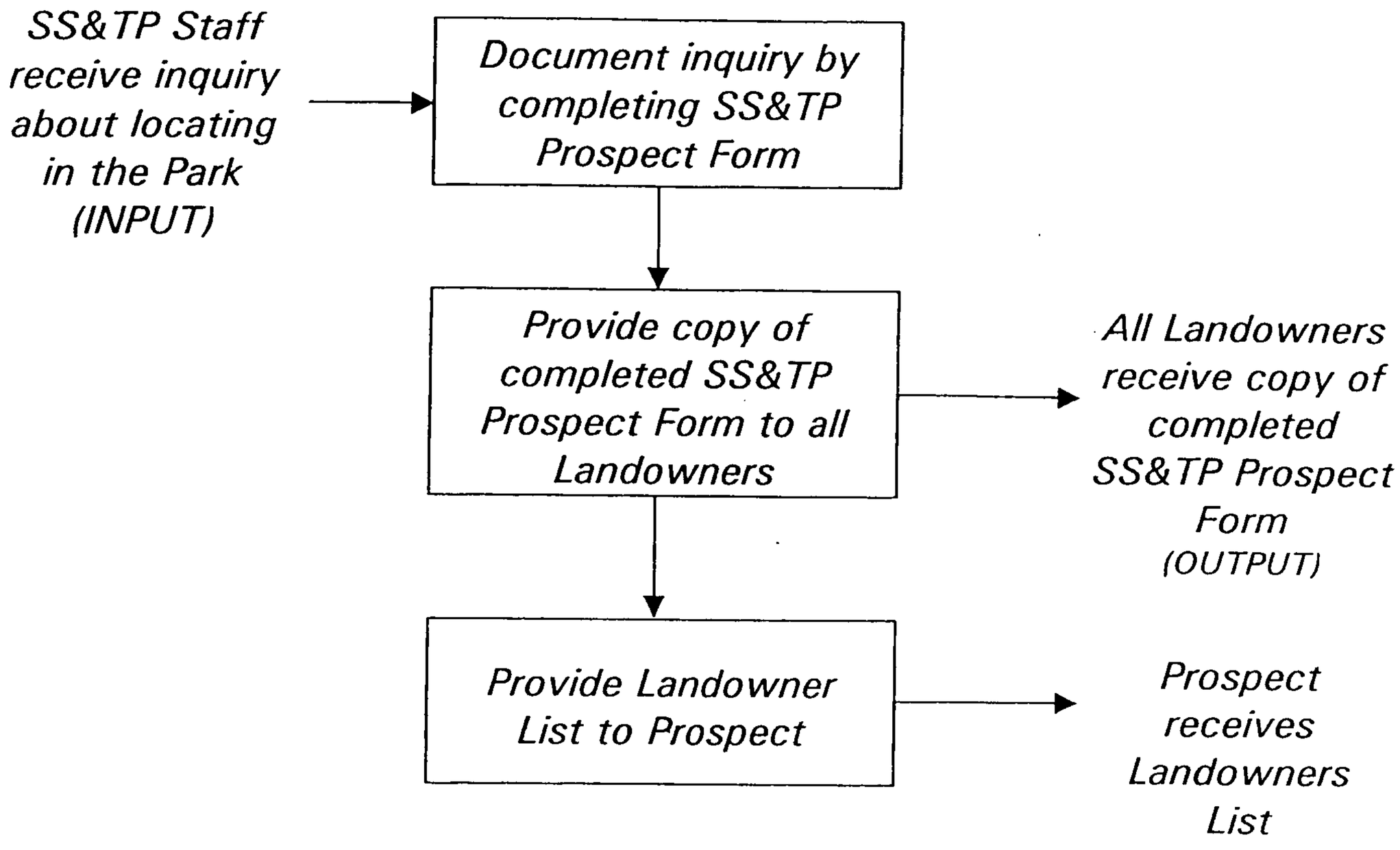
## Trade Shows

This element of the overall marketing plan is used in a focused and deliberate way to maximize the potential for raising the general awareness of the nation about the Park, and for attracting potential tenants for the Park. In 2000, STPDC staff will attend three trade shows: one on microelectronics, one on robotics, and the New Mexico Technology Showcase.

Attachment D - Description of the Referral Plan to be implemented by the STPDC marketing Team

# Referral Process
## Sandia Science and Technology Park (SS&TP)

The following process will be used by the SS&TP staff when receiving an inquiry from a prospect about locating in the SS&TP:




*The use of this Referral Process will ensure that:*

- *All inquiries from Prospects are documented on the SS&TP Prospect Form.*
- *All Landowners will receive completed SS&TP Prospect Forms from all inquiries.*
- *Prospects will receive a list of Landowners and ways to contact them.*
- *Note: Landowners follow up with Prospects as they choose. Prospects follow up with Landowners as they choose.*

# APPENDIX B: GENERAL PLANT PALETTE

## Trees

| | |
|---|---|
| Cercis occidentalis | Western Redbud |
| Chilopsis linearis | Desert Willow |
| Crataegus crusgalli 'Inermis' | Hawthorn |
| Cupressocyparis leylandii | Leyland Cypress |
| Fraxinus oxycarpa spp. | Ash spp. |
| Fraxinus velutina spp. | Ash spp. |
| Gleditsia triacanthos inermis | Honey Locust |
| Koelreuteria paniculata | Golden Raintree |
| Malus spp. | Crabapple |
| Pistachia chinensis | Chinese Pistache |
| Platanus wrightii | Arizona Sycamore |
| Populus acuminata | Lanceleaf Cottonwood |
| Populus fremontii | Cottonwood |
| Prosopis glandulosa | Honey Mesquite |
| Robinia x ambigua | Idaho Locust |
| Robinia neomexicana | Rose Locust |
| Robinia pseudoacacia | Black Locust |
| Pinus edulis | Pinon Pine |
| Pinus flexilis | Limber Pine |
| Pinus nigra | Austrian Pine |
| Pinus sylvestris | Scotch Pine |
| Pyrus calleryana | Ornamental Pear |
| Thuja spp. | Arborvitae |

## Shrubs

| | |
|---|---|
| Amorpha fruticosa | False Indigo |
| Arctostaphylos uva-ursi | Kinnikinnick |
| Artemisia spp. | Sage |
| Artiplex canescens | Fourwing Saltbush |
| Baccharis salicina | Desert Broom |
| Berberis spp. | Barberry |
| Berberis thunbergii | Barberry |
| Buddleia davidii nanhoensis | Butterflybush |
| Caesalpinia gilliesii | Bird of Paradise |
| Caryopteris clandonensis | Blue Mist Spirea |
| Ceratoides lanata | Winterfat |
| Chamaebatiaria millefolium | Fernbush |
| Chaenomeles japonica | Flowering Quince |
| Chrysothamnus nauseosus | Chamisa |
| Cornus alba | Dogwood |
| Cornus stolonifera | Redtwig Dogwood |
| Cotoneaster spp. | Cotoneaster |
| Cowania mexicana | Cliffrose |
| Cytisus scoparius | Scotch Broom |
| Dasylirion wheeleri | Sotol |
| Elaeagnus pungens | Silverberry |

| | |
|---|---|
| Ephedra viridis | Mormon Tea |
| Ericameria laricifolia | Turpentine Bush |
| Euonymus alata 'Compacta' | Burning Bush |
| Fallugia paradoxa | Apache Plume |
| Forestieri neomexicana | New Mexico Olive |
| Genista hispanica | Spanish Broom |
| Genista tinctoria | Summer Broom |
| Hesperaloe parviflora | Red Yucca |
| Hibiscus syriacus | Rose of Sharon |
| Juniperus spp. | Juniper |
| Lagerstroemia indica | Crape Myrtle |
| Ligustrum japonicum | Waxleaf Privet |
| Mahonia aquifolium 'Compacta' | Oregon Grape |
| Mahonia repens | Creeping Oregon Grape |
| Nandina domestica | Nandina |
| Nolina microcarpa | Beargrass |
| Nolina texana | Beargrass |
| Opuntia spp. | Cholla |
| Photinia fraseri | Photinia |
| Potentilla fruticosa | Shrubby Cinquefoil |
| Prunus besseyi | Western Sand Cherry |
| Prunus x cistena | Dwarf Plum |
| Psorothanmus scoparia | Broom Dalea |
| Raphiolepis indica | India Hawthorn |
| Rhus spp. | Sumac |
| Ribes aureum | Golden Currant |
| Rosa rugosa | Rugosa Rose |
| Rosa woodsii | Woods Rose |
| Rosmarinus officinalis | Rosemary |
| Salvia greggii | Cherry Sage |
| Santolina chamaecyparissus | Lavender Cotton |
| Spartium junceum | Spanish Broom |
| Spiraea spp. | Spirea |
| Syringa vulgaris | Common Lilac |
| Vauquelinia californica | Arizona Rosewood |
| Vitex agnus-castus | Chaste Tree |
| Yucca baccata | Datil |
| Yucca glauca | Soapweed |

## Ground Covers and Perennials

| | |
|---|---|
| Achillea millefolium | Yarrow |
| Agave parryi | Century Plant |
| Artemisia frigida | Fringed Sage |
| Artemisia ludoviciana | Prairie Sage |
| Baccharis Starn 'Thompson' | Thompson Coyotebush |
| Cerastium tomentosum | Snow-in-Summer |
| Chrysanthemum maximum | Shasta Daisy |
| Cosmos bipinnatus | Cosmos |
| Cotoneaster dammeri spp. | Cotoneaster |

| | |
|---|---|
| Delosperma cooperi | Purple Iceplant |
| Delosperma nubigenum | Yellow Iceplant |
| Dyssodia acerosa | Wild Marigold |
| Echinacea purpurea | Purple Coneflower |
| Eschscholzia californica | California Poppy |
| Gaillardia x grandiflora | Gallardia |
| Helianthus annuus | Sunflower |
| Helianthus maximilliaia | Maximillian Sunflower |
| Hemerocallis hybrids | Daylilies |
| Iris hybrids | Bearded Iris |
| Juniperus horizontalis spp. | Juniper |
| Kniphofia uvaria | Red Hot Poker |
| Liatris punctata | Gayfeather |
| Linum perenne | Blue Flax |
| Lobelia cardinalis | Cardinal Flower |
| Lupinus spp. | Lupine |
| Mahonia repens | Creeping Mahonia |
| Mirabilis multiflora | Four O'Clock |
| Oenothera sp. | Evening Primrose |
| Papaver nuducale | Iceland Poppy |
| Penstemon spp. | Penstemon |
| Perovskia atriplicifolia | Russian Sage |
| Psilostrophe tagetina | Paperflower |
| Ratibida columnifera | Coneflower |
| Rudbeckia hirta | Black-eyed Susan |
| Salvia azurea grandiflora | Blue Sage |
| Salvia greggii | Autumn Sage |
| Santolina chamaecyparissus | Lavender Cotton |
| Senecio longiflora | Silver Groundsel |
| Solidago hybrids | Goldenrod |
| Sphaeralcea coccinea | Scarlet Globemallow |
| Teucrium chamaedrys | Trailing Germander |
| Thymus serphyllum | Creeping Thyme |
| Verbena bipinnatifida | Fern Verbena |
| Verbena rigida | Purple Verbena |
| Zauschneria californica | Hummingbird Plant |
| Zinnia grandiflora | Desert Zinnia |

## Vines

| | |
|---|---|
| Campsis radicans | Trumpet Vine |
| Euonymus fortunei | Wintercreeper |
| Parthenocissus inserta | Woodbine |
| Parthenocissus quinquefolia | Virginia Creeper |
| Parthenocissus tricuspidata | Boston Ivy |
| Rosa banksiae | Lady Bank's Rose |
| Wisteria sinensis | Wisteria |

**Turf/Ornamental Grasses**

| | |
|---|---|
| Agropyron smithii | Western Wheatgrass |
| Bouteloua curtipendula | Sideoats Grama |
| Bouteloua gracilis | Blue Grama |
| Buchloe dactyloides | Buffalograss |
| Festuca ovina glauca | Blue Festuca |
| Helictotrichon sempervirens | Blue Avena |
| Hilaria jamesii | Galleta |
| Pennisetum aloeecuroides | Hardy Fountain Grass |
| Poa pratensis | Kentucky Bluegrass |
| Sporobolus cryptandrus | Sand Dropseed |
| Sporobolus wrightii | Giant Sacaton |

**SANDIA SCIENCE &**
**TECHNOLOGY PARK**
Program Office
10520 Research Road SE
Albuquerque, NM 87123
(505) 845-8107

rerecorded to correct effective date

# TERMINATION AND RELEASE OF LEASEHOLD EASEMENTS

#654881

M21 / D007A

The City of Albuquerque, a New Mexico municipal corporation whose address is P.O. Box 1293, Albuquerque, New Mexico 87103 ("City"), for valuable consideration, the receipt and sufficiency of which are hereby acknowledged, hereby agrees to the release and termination of that certain document entitled "Grant of Leasehold Easements to City of Albuquerque" dated as of May 24, 2001, and recorded in the real property records of the Office of the County Clerk of Bernalillo County, New Mexico, as Document No. 2001060172, on May 25, 2001, in Book A-19, at Page 8578, and to the release and termination of the leasehold easements granted to the City therein.

This document may be executed in duplicate originals, and each such duplicate original shall be deemed to be an original of this document.

IN WITNESS WHEREOF, this instrument is executed by the City to be effective as of November 14, 2001.

APPROVED BY:

City Engineer

11-9-01
Date

CITY OF ALBUQUERQUE

By:
Name: FRED J. AGUIRRE
Title: City Engineer
Date: 11-9-01

APPROVED BY:

EMCORE CORPORATION

By:
Name: Larry W Kapitan
Title: VP Manufacturing
Date: 11/14/01

release & GRANT OF LEASEHOLD EASEMENTS

APPROVED BY:

COMMISSIONER OF PUBLIC LANDS
OF THE STATE OF NEW MEXICO

Ray Powell, M.S., D.V.M.

2001135851
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Page: 1 of 2
11/16/2001 11:22A
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Mary Herrera Bern. Co. REL R 9.00

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Mary Herrera Bern. Co. REL R 9.00

**ACKNOW**

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5586985
Page: 2 of 2
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Bk-A27 Pg-4067
Mary Herrera Bern. Co. REL R 9.00

STATE OF NEW MEXICO )
) ss.
COUNTY OF BERNALILLO )

This instrument was acknowledged before me on November 9, 2001, by Fred J. Aguirre as City Engineer of the City of Albuquerque, a New Mexico municipal corporation.

Gloria D. Saavedra
Notary Public

My commission expires: 11-15-2003

STATE OF NEW MEXICO )
) ss.
COUNTY OF Bernalillo )

This instrument was acknowledged before me on November 14th, 2001, by Deana M. Smith as Executive Assistant of Emcore Corporation, a New Jersey corporation. (Vice President, Manufacturing and Larry Kapitan

Deana M. Smith
Notary Public

My commission expires: April 3rd, 2005

OFFICIAL SEAL
DEANA M. SMITH
Notary Public
State of New Mexico
My Commission Expires 4/02/05

STATE OF NEW MEXICO )
) ss.
COUNTY OF Bernalillo )

This instrument was acknowledged before me on November 13, 2001, by Ray Powell, M.S., D.V.M., as Commissioner of Public Lands of the State of New Mexico.

Notary Public

My commission expires: 2/18/02

Term &Release – LEA (9/19/2001)

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Page: 2 of 2
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Mary Herrera Bern. Co. REL R 9.00

1300

# GRANT OF LEASEHOLD EASEMENTS TO CITY OF ALBUQUERQUE

= 654881

Emcore Corporation, a New Jersey corporation whose address is 394 Elizabeth Avenue, Somerset, New Jersey 08873 ("Emcore"), as of the 24th day of May, 2001, hereby grants to the City of Albuquerque, New Mexico (the "City") two leasehold easements within certain real property located in Bernalillo County, New Mexico, as more particularly described by metes and bounds in Exhibit A (the "Leasehold Easement Property") for the purposes set forth herein.

## RECITALS

A. The Commissioner of Public Lands for the State of New Mexico (the "Commissioner"), through the New Mexico State Land Office, administers a land trust (the "Trust") established by the Enabling Act for New Mexico (Act of June 20, 1910, 36 Statutes at Large 557, Chapter 310).

B. The assets of the Trust (the "Trust Lands") are owned by the State of New Mexico.

C. Emcore is the lessee of certain Trust Lands, including the Leasehold Easement Property, that are described in that certain Business Ground Lease between Emcore and the Commissioner, Lease No. BL-1520 (the "Lease") for a period of fifty (50) years.

D. The City requires Emcore to grant two leasehold easements within the Leasehold Easement Property to the City in order to obtain necessary building permits and approvals to build improvements on the Trust Lands covered by the Lease.

E. Emcore desires to grant such easements to the City in order to obtain necessary building permits and development approvals.

F. The Commissioner approves Emcore's grant of such easements to the City to the extent of Emcore's interest in the Leasehold Easement Property and subject to the terms and conditions of the Lease.

## DEDICATION

1. Emcore hereby grants to the City two leasehold easements within the Leasehold Easement Property, as more particularly described by metes and bounds on Exhibit A, for the construction, installation, maintenance, repair, modification, replacement and operation of public water, sewer, drainage, road and utilities for so long as the Lease remains in effect, including any extensions or renewals thereof.

2. This grant is limited to Emcore's interest in the Leasehold Easement Property pursuant to the Lease and is subject to the terms and conditions of the Lease.

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Page: 1 of 4
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Mary Herrera Bern. Co. EASE R 13.00

3. This instrument shall not be effective unless approved by the City Engineer and the Commissioner as shown in the signature blocks below.

4. This instrument shall be binding on Emcore, the City and the Commissioner and their respective successors and assigns.

IN WITNESS WHEREOF, this instrument was executed by Emcore to be effective as of the date set forth in the first paragraph.

APPROVED BY:

City Engineer

May 24, 2001
Dated

5/24/01

EMCORE CORPORATION

By: _____

Name: Robert Bryan

Title: Vice President

APPROVED BY:

COMMISSIONER OF PUBLIC LANDS
STATE OF NEW MEXICO

Ray Powell, M.S., D.V.M.

Date 5/17/01

STATE OF New Mexico )
) ss.
COUNTY OF Bernalillo )

This instrument was acknowledged before me on 5-24-01, 2001, by ~~Penny S. Sojka~~ RS as ~~Executive Assistant~~ RS of Emcore Corporation, a New Jersey corporation. Division Vice President

Robert P. Bryan

Penny S. Sojka
Notary Public

My commission expires:

March 23, 2005

Mary Herrera Bern. Co. EASE R 13.00
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Page: 2 of 4
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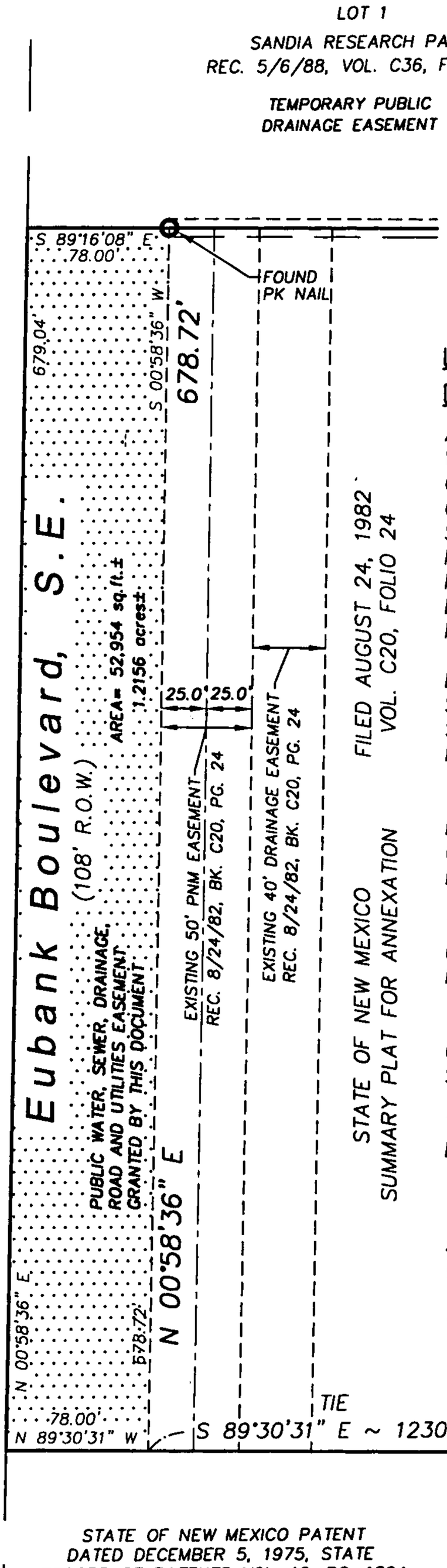
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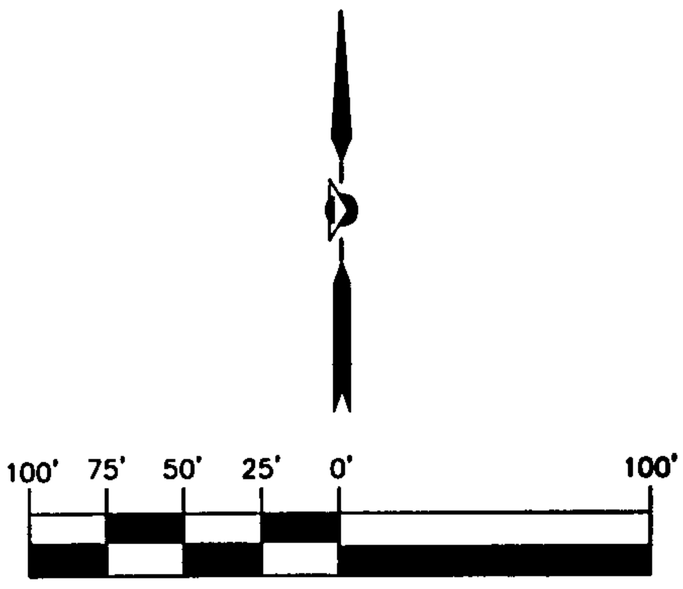
# EXHIBIT A

SHEET 1 OF 2

PRECISION SURVEYS, INC.

8414-D JEFFERSON ST., N.E. PHONE 505 856 5700
ALBUQUERQUE, NEW MEXICO 87113 FAX 505 856 7900




( IN FEET )
1 inch = 100 ft.

## LEGAL DESCRIPTION – PUBLIC WATER, SEWER, DRAINAGE, ROAD AND UTILITIES EASEMENT

A PUBLIC WATER, SEWER, DRAINAGE, ROAD AND UTILITIES EASEMENT LYING WITHIN EUBANK BOULEVARD, S.E., WITHIN THE APPROXIMATE WEST ONE-HALF (W 1/2) OF THE NORTH ONE-HALF (N 1/2) OF THE SOUTHWEST ONE-QUARTER (SW 1/4) OF THE NORTHWEST ONE-QUARTER (NW 1/4) OF SECTION 33, TOWNSHIP 10 NORTH, RANGE 4 EAST, NEW MEXICO PRINCIPAL MERIDIAN, AS THE SAME IS SHOWN AND DESIGNATED ON THE "SUMMARY PLAT OF ANNEXATION" FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON AUGUST 24, 1982, IN VOLUME C20, FOLIO 24, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID EASEMENT, LYING ON THE SOUTH BOUNDARY LINE OF SAID TRACT, FROM WHENCE A TIE TO THE SOUTHEAST CORNER BEARS S 89°30'31" E, A DISTANCE OF 1230.02' FEET;

THENCE FROM SAID BEGINNING POINT, ALONG SAID BOUNDARY LINE, N 89°30'31" W, A DISTANCE OF 78.00 FEET TO THE SOUTHWEST CORNER OF SAID EASEMENT, ALSO BEING THE SOUTHWEST CORNER OF SAID TRACT, LYING ON THE EAST RIGHT OF WAY LINE OF EUBANK BOULEVARD, S.E.;

THENCE ALONG SAID RIGHT OF WAY LINE N 00°58'36" E, A DISTANCE OF 679.04' TO THE NORTHWEST CORNER OF SAID EASEMENT, ALSO BEING THE NORTHWEST CORNER OF SAID TRACT;

THENCE LEAVING SAID RIGHT OF WAY LINE S 89°16'08" E, A DISTANCE OF 78.00 FEET TO THE NORTHEAST CORNER OF SAID EASEMENT, LYING ON SAID EAST RIGHT OF WAY LINE, MARKED BY A FOUND PK NAIL;

THENCE S 00°58'36" W, A DISTANCE OF 678.72 FEET TO THE POINT OF BEGINNING, CONTAINING 1.2156 ACRES (52,954 SQUARE FEET) MORE OR LESS.

## NOTE:

EASEMENTS AS SHOWN ON ANNEXATION PLAT (08/24/82, C20-24) THE STATE OF NEW MEXICO LAND OFFICE NEVER SIGNED ON THE PLAT. THE LEGALITY OF THESE EASEMENTS IS IN QUESTION.

## SURVEYOR'S CERTIFICATE

I, LARRY W. MEDRANO LICENSED UNDER THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THIS EASEMENT SURVEY WAS PREPARED BY ME OR UNDER MY DIRECTION FROM NOTES OF AN ACTUAL FIELD SURVEY, AND THE SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

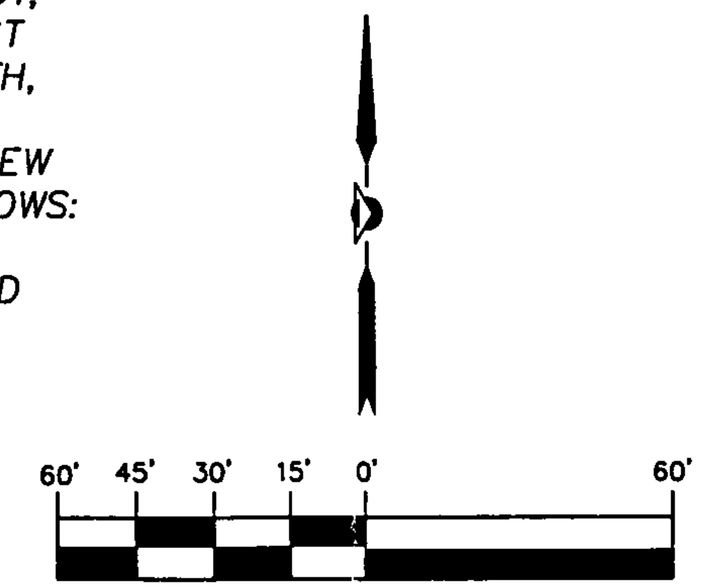
3/26/2001
LARRY W. MEDRANO DATE
N.M.L.S. NO. 11993

LARRY W. MEDRANO
NEW MEXICO
11993
REGISTERED PROFESSIONAL SURVEYOR

008107EX

# EXHIBIT A

SHEET 2 OF 2




( IN FEET )
1 inch = 60 ft.

STATE OF NEW MEXICO
SUMMARY PLAT FOR ANNEXATION

FILED AUGUST 24, 1982
VOL. C20, FOLIO 24

## LEGAL DESCRIPTION – PUBLIC WATER, SEWER, ROAD, DRAINAGE AND UTILITIES EASEMENT

A PUBLIC WATER, SEWER, ROAD, DRAINAGE AND UTILITIES EASEMENT LYING WITHIN AN UNDESIGNATED TRACT, WITHIN THE APPROXIMATE WEST ONE-HALF (W 1/2) OF THE NORTH ONE-HALF (N 1/2) OF THE SOUTHWEST ONE-QUARTER (SW 1/4) OF THE NORTHWEST ONE-QUARTER (NW 1/4) OF SECTION 33, TOWNSHIP 10 NORTH, RANGE 4 EAST, NEW MEXICO PRINCIPAL MERIDIAN, AS THE SAME IS SHOWN AND DESIGNATED ON THE "SUMMARY PLAT OF ANNEXATION" FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON AUGUST 24, 1982, IN VOLUME C20, FOLIO 24, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID EASEMENT, LYING ON THE SOUTH BOUNDARY LINE OF SAID TRACT, FROM WHENCE A TIE TO THE SOUTHWEST CORNER BEARS N 89°30'38" W, A DISTANCE OF 78.00 FEET;

THENCE FROM SAID BEGINNING POINT, LEAVING SAID BOUNDARY LINE N 00°58'36" E, A DISTANCE OF 95.00 FEET TO THE NORTHWEST CORNER OF SAID EASEMENT;

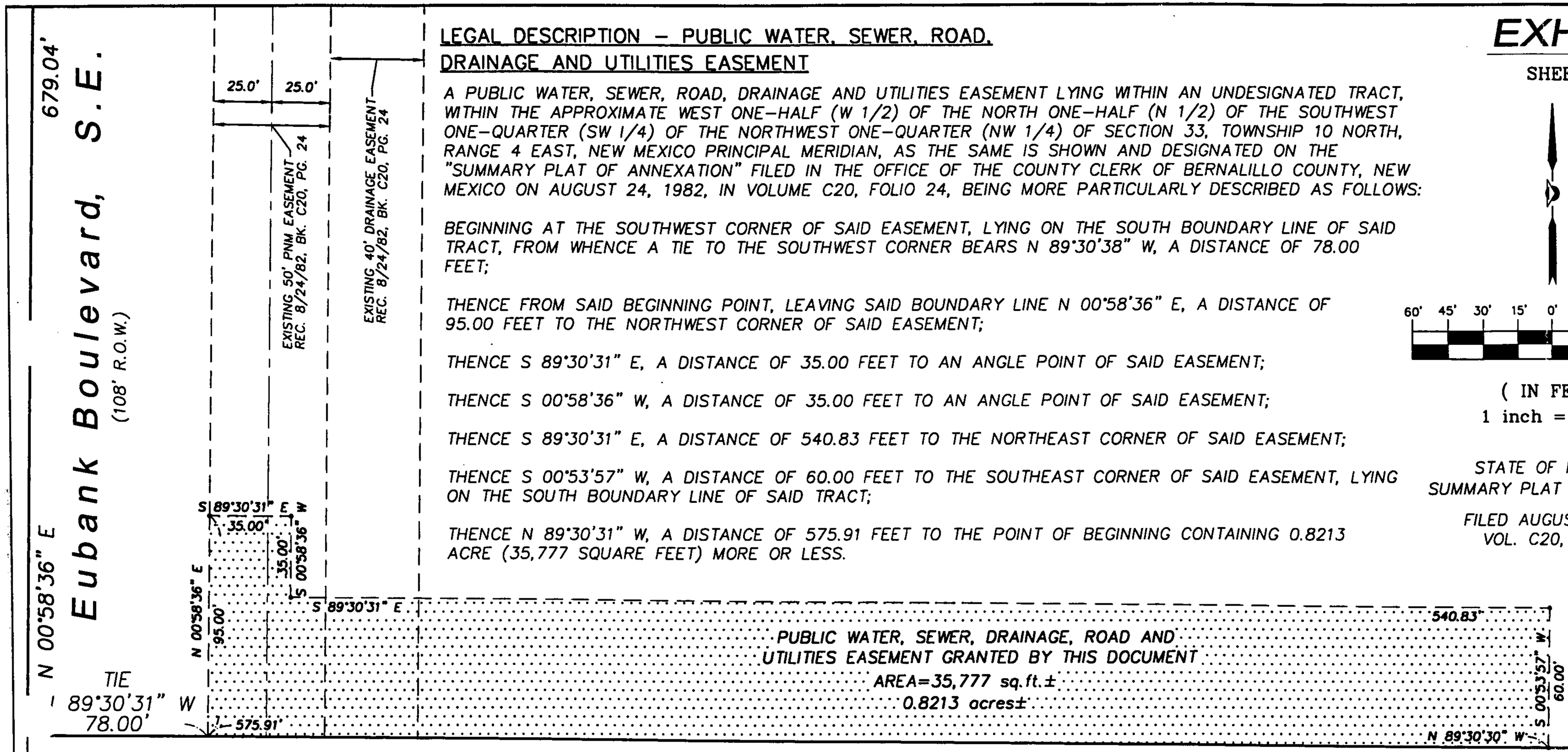
THENCE S 89°30'31" E, A DISTANCE OF 35.00 FEET TO AN ANGLE POINT OF SAID EASEMENT;

THENCE S 00°58'36" W, A DISTANCE OF 35.00 FEET TO AN ANGLE POINT OF SAID EASEMENT;

THENCE S 89°30'31" E, A DISTANCE OF 540.83 FEET TO THE NORTHEAST CORNER OF SAID EASEMENT;

THENCE S 00°53'57" W, A DISTANCE OF 60.00 FEET TO THE SOUTHEAST CORNER OF SAID EASEMENT, LYING ON THE SOUTH BOUNDARY LINE OF SAID TRACT;

THENCE N 89°30'31" W, A DISTANCE OF 575.91 FEET TO THE POINT OF BEGINNING CONTAINING 0.8213 ACRE (35,777 SQUARE FEET) MORE OR LESS.




STATE OF NEW MEXICO PATENT
DATED DECEMBER 5, 1975, STATE
RECORD OF PATENTS VOL. 10, PG. 1804

PUBLIC SERVICE COMPANY OF NEW MEXICO
SWITCHING STATION
QUITCLAIM DEED SHEPHARD TO PNM
(04/07/1954, D275-241)

**NOTE:**
EASEMENTS AS SHOWN ON ANNEXATION PLAT (08/24/82, C20-24) THE STATE OF NEW MEXICO LAND OFFICE NEVER SIGNED ON THE PLAT. THE LEGALITY OF THESE EASEMENTS MAY BE IN QUESTION.

## SURVEYOR'S CERTIFICATE

I, LARRY W. MEDRANO LICENSED UNDER THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THIS EASEMENT SURVEY WAS PREPARED BY ME OR UNDER MY DIRECTION FROM NOTES OF AN ACTUAL FIELD SURVEY, AND THE SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

3/26/2001
LARRY W. MEDRANO — DATE
N.M.L.S. NO. 11993

LARRY W. MEDRANO
NEW MEXICO
11993
REGISTERED PROFESSIONAL SURVEYOR


PRECISION SURVEYS, INC.
8414-D JEFFERSON ST., N.E. PHONE 505 856 5700
ALBUQUERQUE, NEW MEXICO 87113 FAX 505 856 7900


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Mary Herrera Bern. Co. EASE