# CITY OF ALBUQUERQUE

## CITY COUNCIL

6/20/91

INTER-OFFICE MEMORANDUM: REF. 12133-3

TO: Louis Saavedra, Mayor

FROM: Bea Gutierrez, Director of Council Services

SUBJECT: TRANSMITTAL OF LEGISLATION

Attached is Bill No. R-397, Awarding Construction Contract - Part 1 Master Sanitary Sewer - SAD 223 - [MCC, Inc.] (Armijo) which was passed by the Council on June 17, 1991, by a vote of 8 FOR AND 1 ABSTAIN.

Yes: 8
Abstain: Yntema

In accordance with the provisions of the City Charter your action is respectfully requested.

BG/dir
Attachment
06/17/91

25X

City of Albuquerque

# City Council

## Enrolling & Engrossing Certificate

**Bill No:** R-397, Awarding Construction Contract - Part 1
Master Sanitary Sewer - SAD 223 - (MCC, Inc.)

**Sponsored by:** Alan B. Armijo
Councillor, District 1

**Certified by:** Doreen Romero
Doreen Romero
Council Secretary

ALBUQUERQUE
NEW MEXICO
1706

**Date:** 6/17/91

25X

Do Not Publish
104-1991

# CITY OF ALBUQUERQUE

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Yes: 8
Abstain: Yntema

In accordance with the provisions of the City Charter your action is respectfully requested.

BG/dlr
Attachment
06/17/91

RECEIVED
JUN 20 1991
MAYOR/CAO
OFFICE

1991 JUN 24 AM 8 27
RECEIVED
ALBUQUERQUE CITY CLERK

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CITY of ALBUQUERQUE
NINTH COUNCIL

COUNCIL BILL NO. R-397 ENACTMENT NO. 104-1991

SPONSORED BY: Alan B. Armijo

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RESOLUTION

AWARDING CONSTRUCTION CONTRACT FOR SPECIAL ASSESSMENT DISTRICT NO. 223, PART I, MASTER SANITARY SEWER TO MCC, INC.

WHEREAS, the City Council on June 13, 1991 by Resolution authorized the City Clerk to advertise for bids for the construction of the improvements comprising Special Assessment District No. 233; and

WHEREAS, the City Clerk did advertise for Part I construction bids in accordance with State Statutes and the City Purchasing Ordinance; and

WHEREAS, on June 4, 1991 at 1:30 p.m. the City Clerk opened all bids which had been received from five bidders; and

WHEREAS, the result was that MCC, Inc. had submitted a low bid of $515,210.03 for the construction of the improvements comprising Special Assessment District No. 223, Part I, Master Sanitary Sewer; and

WHEREAS, Easterling & Associates, Inc. the Consulting Engineer and the Director, Public Works Department have recommended award of the construction contract to MCC, Inc.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

Section 1. That the contract for the construction of the improvements comprising Special Assessment District No. 223, Part I be and hereby is awarded to MCC, Inc.

Section 2. That said construction work shall be performed in accordance with the plans, specifications and contract documents prepared by the Consulting Engineer, accepted by the City Council and filed with the City Clerk.

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Section 3. That the officers of the City be and hereby are authorized to take whatever action as may be necessary and appropriate to carry out the provisions of this Resolution.

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PASSED AND ADOPTED THIS 17th DAY OF June, 1991.

BY A VOTE OF 8 FOR AND 1 ABSTAIN.

Yes: 8
Abstain: Yntema

Michael Brasher

Michael Brasher, President
City Council

APPROVED THIS 21ST DAY OF JUNE, 1991

Louis E. Saavedra, Mayor
City of Albuquerque

ATTEST:

City Clerk

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# CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE June 6, 1991 REF. NO._____

TO: Michael Brasher, President, City Council

FROM: Louis E. Saavedra, Mayor

SUBJECT: SPECIAL ASSESSMENT DISTRICT NO. 223-PART I MASTER SANITARY SEWER - AWARD OF CONSTRUCTION CONTRACT (CITY COUNCIL DISTRICT #1)

Submitted herewith for your consideration and that of the City Council is a resolution awarding the construction contract for Special Assessment District No. 223, Part I Master Sanitary Sewer to MCC, Inc. at the low bid of $515,210.03.

Construction of the Master Sanitary Sewer will not require any City funds.

This resolution is forwarded to the Council for immediate action on June 17, 1991.

RECOMMENDED BY:

Robert Gurule, Director
Public Works Department

REVIEWED BY THE LEGAL DEPARTMENT:

Malcolm W. deVesty
Assistant City Attorney

RECOMMENDED BY:

Arthur A. Blumenfeld
Chief Administrative Officer

LRL/tal/WP+125495
Attachment

# FISCAL IMPACT ANALYSIS

TITLE: Award Resolution
SAD-223 Part I
Master Sanitary Sewer

R-_____ O-_____
FUND: SAD
DEPT: Public Works

[X] No measurable fiscal impact is anticipated, i.e., no impact on fund balance over and above existing appropriations.

[ ] (If Applicable) The estimated fiscal impact (defined as impact over and above existing appropriations) of this legislation is as follows:

| | CURRENT YEAR* | NEXT YEAR* |
|---|---|---|
| Base Salary/Wages | $ | $ |
| Fringe Benefits at _____% | | |
| Subtotal Personnel | | |
| Operating Expenses | | |
| Property | | |
| Total | $ | $ |
| [ ] Estimated revenues not affected | | |
| [ ] Estimated revenue impact | $ | $ |

* These estimates do not include any adjustment for inflation.
* Range if not easily quantifible.

| | | |
|---|---|---|
| Number of Positions | | |

COMMENTS:

COMMENTS ON NON-MONETARY IMPACTS TO COMMUNITY/CITY GOVERNMENT: City policy requires Council approval of award of construction contracts for Special Assessment Districts. This Master Sanitary Sewer will be owned and maintained by New Mexico Utilities.

PREPARED BY: [signature]
FISCAL ANALYST

APPROVED: [signature] 6-7-91
DIRECTOR (date)

REVIEWED BY: [signature]
EXECUTIVE BUDGET ANALYST

REVIEWED BY:
BUDGET OFFICER (date)

no LOMR

FINAL VERSION

# CITY of ALBUQUERQUE
# NINTH COUNCIL

COUNCIL BILL NO. F/S R-354 ENACTMENT NO. _____

SPONSORED BY: Alan B. Armijo, by request

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**RESOLUTION**

RELATING TO THE PROPOSED ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223; ACCEPTING PRELIMINARY PLANS, ESTIMATES OF COSTS, ASSESSMENT PLAT WITH ADDENDUM AND ENGINEER'S REPORT AS TO THE METHODS USED IN DETERMINING BENEFITS WITH RESPECT THERETO; MAKING A PROVISIONAL ORDER THAT CERTAIN STREET AND ASSOCIATED STORM DRAINAGE IMPROVEMENTS, WATER IMPROVEMENTS, AND SANITARY SEWER IMPROVEMENTS, ALL WITHIN THE PROPOSED DISTRICT, SHALL BE CONSTRUCTED; AND DIRECTING THAT NOTICE OF A HEARING ON THE PROVISIONAL ORDER BE GIVEN.

WHEREAS, the City Council (the "Council") of the City of Albuquerque (the "City"), in the County of Bernalillo and State of New Mexico, has directed Easterling & Associates, Inc. (the "Engineers"), professional engineers duly licensed under the laws of the State of New Mexico, to prepare, submit, and file with the City Clerk of the City (the "City Clerk"), (I) preliminary plans showing, typical sections of, the type of materials to be used and the approximate thickness and width of the material for the contemplated street improvements (the "Street Improvements"), the type of material to be used, the approximate diameter or diameters of any trunk lines, mains or laterals for the contemplated water, sanitary sewer and storm drainage improvements (the "Water Improvements," "Sanitary Sewer Improvements," and "Storm Drainage Improvements," respectively) and a general description of other major components of the foregoing types of improvements in the proposed district (collectively, the "Improvements"); (II) estimates of the cost of grading, graveling, paving, draining, curbing, guttering, sidewalking, street lighting, and otherwise constructing the Street Improvements

and of constructing, installing, adjusting, and otherwise completing the Water Improvements, Sanitary Sewer Improvements, and Storm Drainage Improvements; (III) an assessment plat showing the area to be included in the proposed district; and an addendum to the assessment plat, showing the amount of maximum benefit estimated to accrue to each tract or parcel of land in the proposed district, including an engineer's report on the method used in determining benefits, all pursuant to Sections 3-33-1 through 3-33-43, NMSA, 1978, as amended and supplemented; and

WHEREAS, the Council is of the opinion that, in the general interest of the City and in the specific interest of the property within the proposed district, the addition of the Improvements is necessary and should be made in the proposed district as so directed and that the Improvements should be as hereinafter set forth; and

WHEREAS, the Engineers have filed at the office of the City Clerk, in connection with the Improvements and with the proposed Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") the following:

I. Preliminary plans (the "Preliminary Plans") showing typical sections of the type or types of material to be used and the approximate thickness and width of the material for the Street Improvements; and the type of material to be used and the approximate diameter or diameters of all trunk lines, distribution lines, service lines, connection lines, mains and laterals for the Water, Sanitary Sewer, and Storm Drainage Improvements; and a general description of any other major component of each of the foregoing Improvements.

II. An estimate (the "Estimate") of the total cost of constructing the Improvements; said estimate being made in a lump sum or by unit prices including, without limiting the generality of the foregoing, advertising, tax reimbursement, capital improvement, expansion, construction period interest, reserve fund, financing, appraising, engineering, printing, and any other such expenses, as in the judgment of the Engineers, are necessary to the completion of the Improvements and the payment of the costs thereof.

III. An assessment plat (the "Assessment Plat") showing the area to be included within the District.

IV. An addendum to the Assessment Plat (the "Addendum") including an

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Engineer's Report (the "Engineer's Report") as to the method of determining benefits, showing the tracts or parcels of land to be assessed, and the amount of maximum benefit estimated to accrue to each tract or parcel of land in the District (as hereinafter more fully explained); the method of allocating the benefits being calculated on a front foot, service unit, or an area basis, an equitable adjustment having been made for assessments levied against any irregular lots or lands, so that assessments according to benefit are to be equal and uniform, such basis of assessment heretofore having been designated by the Council and the total estimated maximum benefit being listed upon a determination of the value of the Improvements as a whole to each tract or parcel of land in the District; and

WHEREAS, the Council has examined the Preliminary Plans, Estimates,Assessment Plat with the Addendum and the Engineer's Report so filed with the City Clerk and has found and does hereby declare the same to be satisfactory in all respects.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

Section 1. The Council hereby accepts the Preliminary Plans, Estimates, Assessment Plat with the Addendum and the Engineer's Report.

Section 2. The Council hereby provisionally orders that the Improvements shall be constructed, at an estimated cost of $15,774,417.52 including engineering, financing, legal, and all necessary incidental expenses, as more particularly hereinafter set forth, as described in the Preliminary Plans hereby accepted, reference to which is hereby made and which are available for public examination at the office of the City Clerk.

Section 3. That of the estimated total cost of $15,774,417.52 it is estimated that $3,412,746.44 will be defrayed from sources other than special assessments and $12,361,671.08 will be assessed against the tracts or parcels of land in the District as hereinafter provided. For assessments based on a front foot basis, the amount of frontage of any particular tract or parcel of land specifically benefitted by the improvements will be computed by determining the distance along the boundaries of such tract or parcel which abut any street, right-of-way, easement, or any combination thereof, in which and through which a particular improvement is being placed, and the amount to be assessed will be apportioned to each such

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tract or parcel in proportion to the amount of footage of each such tract or parcel to the total amount of footage of all benefitted tracts or parcels. For assessments based on a service unit basis, an equal share of the amount to be assessed will be apportioned to each of the parcels specifically benefitted by the improvements. For assessments based on an area basis, the amount of area of any tract or parcel of land specifically benefitted by the improvement will be computed by determining the acreage of such tract or parcel, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of area of each such tract or parcel to the total amount of area of all benefitted tracts or parcels. For assessments based on a contribution basis, the amount of contribution of any tract or parcel of land specifically benefitted by the improvements will be determined from master plans, management plans, or engineering analysis, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of contribution of each such tract or parcel to the total amount of contribution of all benefitted tracts or parcels. The estimated cost to be assessed and the basis of assessment for each type of improvement is as follows:

A. For Street Improvements, the estimated total assessments are $5,887,378.76. The assessments for street and intersection improvements will be levied either on a front foot or area basis against those tracts or parcels of land in the District that abut the streets being improved and that are specifically benefitted by the street and intersection improvements.

B. For Water Improvements, the estimated total assessments are $1,874,304.94. The assessments will be levied on a front foot, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Water Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

C. For Sanitary Sewer Improvements, the estimated total assessments are $841,355.38. The assessments will be levied on a contribution, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Sanitary Sewer Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

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D. For Storm Drainage Improvements, the estimated total assessments are $3,758,632.01. Assessments will be levied against those tracts or parcels of land situated wholly or partially within the drainage basins in which and through which the associated Storm Drainage Improvements and Street Improvements are being placed. Assessments will be levied equally against each tract or parcel of land on a contribution, area, front foot, or service unit basis to each of those tracts or parcels or land contributing to the total basin flow and for the flood protection received by and the elimination of potential flooding of the access to each tract or parcel of land due to the construction of the associated Storm Drainage Improvements and Street Improvements and the diversion of drainage flow by the platted street system.

The methods of levying the assessments set forth in Paragraph A through D of this Section have heretofore and hereby are determined by the Council to be equitable and proportionate to the benefits received. An equitable adjustment will be made for the assessments levied against any irregular lots or lands and made for any tract or parcel not specifically benefitted by any of the Improvements, so that assessments according to benefits are equal and uniform.

Section 4. The area comprising the District shall be designated "Albuquerque, New Mexico, Special Assessment District No. 223."

Section 5. On Monday, the third of June, 1991, at 6:00 p.m., at the Council Chambers in the City/County Government Center, One Civic Plaza, NW, in the City of Albuquerque, New Mexico, the owners of the property to be assessed or any other persons interested therein may file a written protest or objection and may appear before the Council and be heard as to the advisability of making the Improvements, as to the estimated costs thereof, as to the manner of payment therefor and as to the estimated maximum benefit to each individual tract or parcel of land within the District. Not more than thirty days nor less than ten days before the day of the hearing, the City Clerk, Deputy City Clerk, or the Engineers are hereby directed to and shall mail notices, stating the time and place of the hearing on this provisional order to the owners of the tracts or parcels of land being assessed for the Improvements. The notice shall be mailed to the last known address of each such property owner. The names and addresses of such property owners are to be obtained from the records of the County Assessor or

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from other sources as the City Clerk or the Engineers deem reliable. Proof of such mailing shall be made by affidavit of the City Clerk or the Engineers, such proof to be filed with the City Clerk, provided that failure to mail such notice or notices shall not invalidate any of the proceedings hereunder. The time and place of the hearing on this provisional order shall also be given by publication in a newspaper, which maintains an office in and is of general circulation within the City, once each week for three consecutive weeks, the last publication to be at least one week prior to the date of the hearing. Such service by publication shall be verified by the affidavit of the publisher and filed with the City Clerk. The published notice shall be in substantially the following form:

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(FORM OF NOTICE)

NOTICE OF HEARING ON CERTAIN STREET, SANITARY SEWER, WATER AND STORM DRAINAGE IMPROVEMENTS, AND PROPOSED ASSESSMENTS WITHIN THE PROPOSED ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223

NOTICE IS HEREBY GIVEN to the property owners within the proposed Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") and to all interested persons that:

I. The City Council (the "Council") of the City of Albuquerque (the "City"), New Mexico, has provisionally ordered that the following streets and parts thereof shall be graded, graveled, paved, drained, curbed, guttered, sidewalked, and otherwise improved (the "Street Improvements"); and that there be constructed, installed, and otherwise improved water lines (the "Water Improvements"), sanitary sewers (the "Sanitary Sewer Improvements"), and, associated with the Street Improvements, storm drainage improvements (the "Storm Drainage Improvements") (collectively, the "Improvements") in and along the following streets and areas and parts thereof as designated:

<u>STREET IMPROVEMENTS</u>

Alameda Boulevard, NW - from Coors Bypass, NW, east to the connection with existing Alameda Boulevard, NW. (64 feet wide arterial paving, 14-foot wide continuous left turn lane, 10-foot wide paved shoulders).

Coors Bypass, NW - from Coors Boulevard, NW, north to Rio Rancho Boulevard, NW. (105.25 feet wide back-to-back of curb, arterial paving, 28-foot wide raised median, street lights, traffic signals, and 6-foot wide sidewalk east side only between Corrales Road, NW, and Seven Bar Loop, NW; west side only between Seven Bar Loop, NW, and Ellison Drive, NW; west side only from approximately 520 feet north of Ellison Drive, NW, to approximately 1,130 feet north of Ellison Drive, NW.)

Corrales Road, NW - from Coors Bypass, NW, north to approximately 1,100 LF south of Seven Bar Loop, NW. (76 feet wide arterial paving, 28-foot wide raised median, 10-foot wide paved shoulder, traffic signal, 6-foot wide sidewalk west side only.)

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Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW. (67.25 feet wide back to back of curb, arterial paving, 16-foot wide continuous left turn lane.)

Ellison Drive, NW - From Coors Bypass, NW, east to Alameda Boulevard, NW. (105.25 feet wide back to back of curb, arterial paving, 52-foot wide raised median, traffic signals, and telephone relocation.)

Seven Bar Loop, NW - from Coors Bypass, NW, east to Corrales Road, NW. (67.25 feet wide back-to-back of curb, arterial paving, 16-foot wide continuous left turn lane, traffic signals, gas transmission main relocation, and 6-foot wide sidewalk south side only from Coors Bypass, NW, to approximately 300 feet west of Corrales Road, NW, and north side only from approximately 980 feet west of Corrales Road, NW, to approximately 900 feet west of Corrales Road, NW.)

SANITARY SEWER IMPROVEMENTS

Coors Bypass, NW - from the end of the existing main, located approximately 1,300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (24-inch and 8-inch diameter sanitary sewer).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (12-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from Cottonwood Drive east to Alameda Boulevard, NW (24-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from approximately 280 feet west of Coors Bypass, NW, east to Coors Bypass, NW, (18-inch diameter sanitary sewer).

Seven Bar Loop, NW - from the connection with the existing sanitary sewer main, located approximately 225 feet west of Coors Bypass, NW, east to Coors Bypass, NW (8-inch diameter sanitary sewer).

Seven Bar Loop, NW - from approximately 700 feet west of Corrales Road, NW, east to the connection with the existing sanitary sewer main approximately 530 feet west of Corrales Road, NW (8-inch diameter sanitary sewer).

Seven Bar Ranch Tract G-2 - within a public utility easement along the east boundary from Ellison Drive, NW, to approximately 950 feet south of Ellison Drive, NW (24-inch diameter sanitary sewer).

WATER IMPROVEMENTS

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Alameda Boulevard, NW - from Coors Bypass, NW, east to approximately 200 feet east of Coors Bypass, NW (12-inch diameter water main).

Coors Bypass, NW - from the connection with the existing 20-inch diameter water main, located approximately 1,300 feet south of Seven Bar Loop, NW, north to Rio Rancho Boulevard, NW (12-inch diameter water main).

Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW (12-inch diameter water main).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (10-inch, 8-inch, and 6-inch diameter water mains).

Ellison Drive, NW - from Coors Bypass, NW, east to Alameda Boulevard, NW (12-inch diameter water main).

Rio Rancho Boulevard, NW (NM 528) - from Coors Bypass, NW, north to the connection with the existing 12-inch water main on the east side of Seven Bar Channel (12-inch diameter water main and pressure reducing valve).

Seven Bar Loop, NW - from Coors, Bypass, NW, east to the connection with the existing water main located approximately 1,000 feet west of Corrales Road, NW (12-inch diameter water main).

<u>STORM DRAINAGE IMPROVEMENTS</u>

Coors Bypass, NW - from approximately 300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (30-inch through 18-inch diameter storm drain).

Corrales Main Canal - from Ellison Drive, NW, north to the Cabezon Channel (54-inch diameter storm drain).

Corrales Road, NW - from Seven Bar Loop, NW, south to the drainage outfall to the Seven Bar Ranch Tract 14 detention basin located approximately 350 feet south of Seven Bar Loop, NW (24-inch diameter storm drain).

Cottonwood Drive, NW - from approximately 700 feet south of Ellison Drive, NW, north to Ellison Drive, NW (18-inch through 30-inch diameter storm drain).

Cottonwood Mall Site (Seven Bar Ranch Tract H-1) - within public drainage easements to serve proposed subdivision tracts under multiple ownerships (60-inch through 18-inch diameter storm drains and detention basins).

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Ellison Drive, NW - from 160 feet west of Coors Bypass, NW, east to the Corrales Main Canal (24-inch and 18-inch diameter storm drains).

Seven Bar Loop, NW - from approximately 200 feet west of Corrales Road, NW, east to Corrales Road, NW (24-inch and 18-inch diameter storm drain).

Seven Bar Ranch Tract C-3 - along the east boundary from Alameda Boulevard, NW, north to the Cabezon Channel, within proposed drainage easement (concrete-lined channel).

Seven Bar Ranch Tract N-2B - at the southwest corner of Coors Bypass, NW, and Ellison Drive, NW, within existing drainage easement (regional storm drainage detention basin).

Seven Bar Ranch Tract 14 - east of Corrales Road, NW, within proposed drainage easement (existing Coors Boulevard) at Seven Bar Loop, NW (regional storm drainage detention basin).

II. Except as more particularly shown on the plans in the office of the City Clerk, the Improvements substantially consists of and include the following:

A. Street Improvements

(1) The pavement width in feet including curb and gutter, measured back of curb to back of curb, is indicated after the above description of each street, or part thereof, as the case may be. The type of pavement section to be used is indicated in the plans. The Street Improvements shall include all necessary grading, shaping, draining, street lighting, and all other work incidental to such paving. The pavement is to be centered in each street right-of-way, except as indicated on the plans.

(2) Curbs and gutters will be constructed adjacent to the edge of the pavement and will be made of concrete. The work will include all necessary excavation, filling, grading, inlets, driveway approaches, and other work necessary and incidental to such improvements; the combined curb and gutter being 31-1/2 inches in width, and at the back of curb 14 inches in height; the curb being 5-1/2 inches thick at the top; and the gutter being 7-1/2 inches thick at the point of contact with the pavement. Median curbs shall be extruded asphalt being 8 inches wide at the bottom and 8 inches high. Mountable Curb shall be 31-1/2 inches wide, 10 inches thick at the back, and 6-3/4 inches thick at the point of contact with the pavement. Mountable Curb Estate Type shall be 31-1/2 inches wide, 10

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inches high at the back, and 7-1/2 inches thick at the point of contact with the pavement.

(3) Sidewalks shall be made of concrete, and the work will include all necessary excavation, filling, grading, and other work necessary and incidental to such improvements. The width of the sidewalk is indicated on he plans. Sidewalks shall be 4 inches in thickness, 72 inches in width, and be constructed parallel with the curb and gutter, except where otherwise indicated on the plans.

B. Water Improvements

The Water Improvements shall include excavation, trenching, pipe laying, and backfilling for constructing new water mains and appurtenances; removal and replacement of any pavement and other obstacles; service extensions shall be polyethylene pipe, cast iron pipe, or ductile iron pipe. All appurtenances and incidentals required or necessary to the foregoing improvements will be included in the Water Improvements.

C. Sanitary Sewer Improvements

The Sanitary Sewer Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of any paving and other obstacles; collection lines will be 8-inch diameter pipe except as noted otherwise on the plans; manholes will be installed at street intersections or as required. Collection lines shall be aligned as shown on the plans.

D. Storm Drainage Improvements

The Storm Drainage Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of paving and other obstacles; collection lines being 18-inch through 60-inch diameter reinforced concrete pipe; manholes and catch basins are to be installed in the street and gutter lines; and special inlet structures and outfall structures and crossings as indicated on the plans. Storm drains shall be installed within the street right-of-way or public easements, as indicated on the plans.

III. The estimated total cost of the improvements, including engineering, legal, financing, and all necessary and incidental expenses is $15,774,417.52 of which it is estimated that $3,412,746.44 will be defrayed from sources other than special assessments, and $12,361,671.08 will be assessed against those tracts or parcels of

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land in the District as hereinafter provided. For assessments based on a front foot basis, the amount of frontage of any particular tract or parcel of land specifically benefitted by the improvements will be computed by determining the distance along the boundaries of such tract or parcel which abut any street, right-of-way, easement, or any combination thereof, in which and through which a particular improvement is being placed, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of footage of each such tract or parcel to the total amount of footage of all benefitted tracts or parcels. For assessments based on a service unit basis, an equal share of the amount to be assessed will be apportioned to each of the parcels specifically benefitted by the improvements. For assessments based on an area basis, the amount of area of any tract or parcel of land specifically benefitted by the improvement will be computed by determining the acreage of such tract or parcel, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of area of each such tract or parcel to the total amount of area of all benefitted tracts or parcels. For assessments based on a contribution basis, the amount of contribution of any tract or parcel of land specifically benefitted by the improvements will be determined from master plans, management plans, or engineering analysis, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of contribution of each such tract or parcel to the total amount of contribution of all benefitted tracts or parcels. The estimated cost to be assessed and the basis of assessment for each type of improvement is as follows:

A. Street Improvements: The estimated total assessments are $5,887,378.76. The assessments for street and intersection improvements will be levied either on a front foot or area basis against those tracts or parcels of land in the District that abut of the streets being improved and that are specifically benefitted by the street and intersection improvements.

B. Water Improvements: The estimated total assessments are $1,874,304.94. The assessments will be levied on a front foot, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Water Improvements shall be placed and also assessed against the tracts of land in the District that are specifically



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benefitted by the availability of service.

C. Sanitary Sewer Improvements: The estimated total assessments are $841,355.38. The assessments will be levied on either a contribution, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Sanitary Sewer Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

D. Storm Drainage Improvements: The estimated total assessments are $3,758,632.01. Assessments will be levied against those tracts or parcels of land situated wholly or partially within the drainage basins in which and through which the associated Storm Drainage Improvements and Street Improvements are being placed. Assessments will be levied equally against each tract or parcel of land on a contribution, area, front foot, or service unit basis to each of those tracts or parcels or land contributing to the total basin flow and for the flood protection received by, and the elimination of potential flooding of the access to each tract or parcel of land due to the construction of the associated Storm Drainage Improvements and Street Improvements and the diversion of drainage flow by the platted street system.

The methods of levying assessments set forth in Paragraph A through D of this Section have heretofore and hereby are determined by the Council to be equitable and proportionate to the benefit. An equitable adjustment will be made for assessments levied against any irregular lots or lands and made for any tract or parcel not specifically benefitted by any of the Improvements, so that assessments according to benefits are equal and uniform.

IV. All persons interested are hereby advised that the preliminary plans showing typical sections of the type of materials to be used, the approximate thickness and width of the material for the contemplated Street Improvements, the type of materials to be used and the diameter of any trunk lines, mains, laterals, or service connections for the contemplated Water Improvements, Sanitary Sewer Improvements, and Storm Drainage Improvements; and a general description of other major components of the Improvements; an assessment plat and addendum showing the area and the description of the property to be assessed and the total maximum benefit estimated to accrue to those tracts or parcels of land in the

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District, said estimate of benefits being computed on the basis set forth herein; and an estimate of the total cost of constructing each of the Improvements, said estimate being made in a lump sum or by unit prices including without limiting the generality of the foregoing, the advertising, appraising, tax reimbursement, capital improvement, expansion, construction period interest, reserve fund, financing, engineering, printing, and any such expenses as in the judgment of Easterling & Associates, Inc. (the "Engineer"), professional engineers duly licensed under the laws of the State of New Mexico, are necessary for the completion of construction of the Improvements and the payment of the costs thereof, are on file in the office of the City Clerk and may be inspected by any property owner or any other interested person during regular office hours. Any interested person may also ascertain in the office of the City Clerk a description of the property to be assessed and the maximum amount of benefit estimated to be conferred on those tracts or parcels of land. Reference is hereby made to such for further detail.

On Monday, the third of June 1991, at 6:00 p.m., at the Council Chamber in the City/County Government Center, One Civic Plaza, NW, in the City of Albuquerque, New Mexico, the owners of the property to be assessed or any other person interested therein may file a written protest or objection and may appear before the Council and may be heard as to the advisability of making the Improvements, as to the estimated cost thereof, as to the manner of payment therefor, and as to the estimated maximum benefit to each individual tract or parcel of land. Any person desiring to appear before the Council and be heard, shall be asked to register with the Clerk of the Council prior to consideration of matters pertaining to such hearing.

Although any property owner or interested person may make a written protest or objection during such hearing, the City Clerk requests that any property owner or interested person wishing to make protest or objection, make such protest or objection in writing at the office of the City Clerk before the time set forth for such hearing. Any person filing a written protest or objection, as aforesaid, shall have the right within thirty days after the City Council has concluded the hearing, has determined the advisability of constructing the Improvements, has determined the type and character of the Improvements, and has created the District, to commence an action or suit in any court or competent

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jurisdiction to correct or set aside such determination, but thereafter all action or suits attacking the validity of the proceedings and the amount of the benefit shall be perpetually barred.

After such hearing, the Council shall determine the advisability of constructing the Improvements. If the Council determines that constructing the Improvements is advisable, the Council shall create the District and shall proceed to advertise for bids for the doing of the work therefore and shall enter into a contact with the responsible bidder making the lowest bid for the doing of such work and the furnishing of all necessary materials, all in accordance with Sections 3-33-1 through 3-33-43 NMSA 1978, as amended and supplemented.

By order of the City Council of the City of Albuquerque, New Mexico, dated this ____ day of _____, 1991.

_____

City Clerk

Advertised:

Protest:

Mail Notice:

(END OF FORM OF NOTICE)

Section 6. If any section, paragraph, clause, or provision of this resolution shall for any reason be held to be invalid or unenforceable, the invalidity of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this resolution.

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PASSED AND ADOPTED THIS 6th DAY OF May, 1991.

BY A VOTE OF 8 FOR AND 0 AGAINST.

Yes: 8
Excused: Gallegos

Michael Brasher, President
City Council

APPROVED THIS _____ DAY OF _____, 1991

Louis E. Saavedra, Mayor
City of Albuquerque

ATTEST:

City Clerk

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# CITY OF ALBUQUERQUE
# PUBLIC WORKS DEPARTMENT

ENGINEERING GROUP

April 1, 1991

INTER-OFFICE CORRESPONDENCE

TO: Michael Brasher, President, City Council

FROM: Louis E. Saavedra, Mayor

SUBJECT: SPECIAL ASSESSMENT DISTRICT NO. 223 - RESOLUTION NO. 2 (CITY COUNCIL DISTRICT #1)

Submitted herewith for your consideration and that of the City Council is Resolution No. 2 for Special Assessment District No. 223. By this resolution, the Council would give tentative approval of the preliminary plans, plats, estimated maximum benefits roll and Engineer's report prepared for the District by the Consulting Engineers, Easterling & Associates, Inc., and would set a date and time for the Protest Hearing.

Special Assessment District No. 223, as proposed, will consist of needed infrastructure improvements to four streets and Cottonwood Mall in the Seven Bar Ranch Sector Plan Development area of Albuquerque's West Mesa. The streets being improved are Coors Bypass, Seven Bar Loop Rd., Ellison Dr., and Cottonwood Dr.

Partial funding of the District was approved by the City Council in R-192 in the following amounts:

| | Account No. | Amount |
|---|---|---|
| Street Bond | 7360580 | $866,240 |
| Storm Bond | 7361240 | $229,301 |

This resolution is forwarded to the City Council for Introduction on April 15, 1991.

RECOMMENDED BY:

Robert E. Gurule, Director
Public Works Department

REVIEWED BY:

Victoria Sedillo Perea
CIP Official

RECOMMENDED BY:

Arthur A. Blumenfeld
Chief Administrative Officer

REVIEWED BY THE LEGAL DEPARTMENT:

Malcolm W. deVesty
Assistant City Attorney

LD: WP-125392

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FINANCE AND GOVERNMENT OPERATIONS COMMITTEE
OF THE
CITY COUNCIL

April 22, 1991

FINANCE AND GOVERNMENT OPERATIONS COMMITTEE REPORT ON:

Bill No. R-354, Accepting Preliminary Plans - SAD 223 (Armijo)

MEMBERS PRESENT:

Richard J. Chapman, Chairman
Michael Brasher
Vincent E. Griego
Herb Hughes

OTHERS PRESENT:

Lee Lunsford, Public Works Department
Louis Colombo, Budget & Systems Coordinator
Carlos Palacios, Legislative Budget Analyst
Doreen Romero, Council Secretary

MEMBER EXCUSED:

Steve D. Gallegos

Lee Lunsford explained that Bill No. R-354 is resolution #2 in the process for approving SAD 223. He stated that it gives Council approval for preliminary plans for street, sanitary sewer, and storm sewer improvements to four streets in the Seven Bar Plan Development area. He noted that Bill No. R-354 was introduced to the Council with several blanks in the legislation because of a strict schedule and deadlines that must be met. He stated that an amendment to fill in the blank spaces will be submitted to the Council at the next meeting at which it is discussed.

Councillor Chapman moved that the Committee recommend that Bill No. R-354 DO PASS. Seconded. The motion carried by a vote of 4 FOR AND 0 AGAINST.

Yes: 4
Excused: Gallegos

Councillor Brasher moved that Bill No. R-354 be acted on at the meeting at which it is reported. Seconded. The motion carried by a vote of 4 FOR AND 0 AGAINST.

Yes: 4
Excused: Gallegos

dir
6292-2

File R-354

SAD NO. 223

# ANTICIPATED CITY COUNCIL SCHEDULE

**Revised 22 April 1991**

| DATE | ACTION |
|---|---|
| 23 JAN 91 | Resolution 1 - Introduction to Council |
| 04 FEB 91 | Resolution 1 - Council Final Action |
| 15 APR 91 | Resolution 2 - Introduction |
| 22 APR 91 | Resolution 2 - Finance Committee, Immediate Action |
| 06 MAY 91 | Resolution 2 - Council Final Action |
| 03 JUN 91 | Protest Hearing |
| 17 JUN 91 | Resolution 3 - Introduction/Immediate Action<br>Part 1 Improvements Award Resolution<br>- Introduction/Immediate Action |
| 15 JUL 91 | Part 2 Improvements Award Resolution<br>- Introduction/Immediate Action |
| 04 SEP 91 | Resolution 4 - Introduction/Immediate Action |
| 07 OCT 91 | Assessment Hearing |
| 21 OCT 91 | Resolution 5 - Introduction/Immediate Action<br>Parts 3 & 4 Improvements Award Resolution<br>- Introduction/Immediate Action<br>Bond Ordinance - Introduction/Immediate Action<br>Assessing Ordinance - Introduction/Immediate Action<br>Street Fund Ordinance - Introduction/Immediate Action |

Do not Publish

# CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO 8:25

5/21/91 REF. NO 74-1991

INTER-OFFICE CORRESPONDENCE

TO: Louis E. Saavedra, Mayor

FROM: Bea Gutierrez, Director of Council Services

SUBJECT: TRANSMITTAL OF LEGISLATION

Attached is Bill No. R-354, Accepting Preliminary Plans - SAD 223 (Armijo), which passed at the Council meeting of May 6, 1991, by a vote of 8 FOR AND 0 AGAINST.

Yes: 8
Excused: Gallegos

In accordance with the provisions of the City Charter, your action is respectfully requested.

RECEIVED MAY 21 1991 MAYOR/CAO OFFICE

BG/ymv
3666-2
attachment
5/8/91

# CITY of ALBUQUERQUE
# NINTH COUNCIL

COUNCIL BILL NO. F/S R-354 ENACTMENT NO. 74-1991

SPONSORED BY: Alan B. Armijo, by request

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## RESOLUTION

RELATING TO THE PROPOSED ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223; ACCEPTING PRELIMINARY PLANS, ESTIMATES OF COSTS, ASSESSMENT PLAT WITH ADDENDUM AND ENGINEER'S REPORT AS TO THE METHODS USED IN DETERMINING BENEFITS WITH RESPECT THERETO; MAKING A PROVISIONAL ORDER THAT CERTAIN STREET AND ASSOCIATED STORM DRAINAGE IMPROVEMENTS, WATER IMPROVEMENTS, AND SANITARY SEWER IMPROVEMENTS, ALL WITHIN THE PROPOSED DISTRICT, SHALL BE CONSTRUCTED; AND DIRECTING THAT NOTICE OF A HEARING ON THE PROVISIONAL ORDER BE GIVEN.

WHEREAS, the City Council (the "Council") of the City of Albuquerque (the "City"), in the County of Bernalillo and State of New Mexico, has directed Easterling & Associates, Inc. (the "Engineers"), professional engineers duly licensed under the laws of the State of New Mexico, to prepare, submit, and file with the City Clerk of the City (the "City Clerk"), (I) preliminary plans showing, typical sections of, the type of materials to be used and the approximate thickness and width of the material for the contemplated street improvements (the "Street Improvements"), the type of material to be used, the approximate diameter or diameters of any trunk lines, mains or laterals for the contemplated water, sanitary sewer and storm drainage improvements (the "Water Improvements," "Sanitary Sewer Improvements," and "Storm Drainage Improvements," respectively) and a general description of other major components of the foregoing types of improvements in the proposed district (collectively, the "Improvements"); (II) estimates of the cost of grading, graveling, paving, draining, curbing, guttering, sidewalking, street lighting, and otherwise constructing the Street Improvements

and of constructing, installing, adjusting, and otherwise completing the Water Improvements, Sanitary Sewer Improvements, and Storm Drainage Improvements; (III) an assessment plat showing the area to be included in the proposed district; and an addendum to the assessment plat, showing the amount of maximum benefit estimated to accrue to each tract or parcel of land in the proposed district, including an engineer's report on the method used in determining benefits, all pursuant to Sections 3-33-1 through 3-33-43, NMSA, 1978, as amended and supplemented; and

WHEREAS, the Council is of the opinion that, in the general interest of the City and in the specific interest of the property within the proposed district, the addition of the Improvements is necessary and should be made in the proposed district as so directed and that the Improvements should be as hereinafter set forth; and

WHEREAS, the Engineers have filed at the office of the City Clerk, in connection with the Improvements and with the proposed Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") the following:

I. Preliminary plans (the "Preliminary Plans") showing typical sections of the type or types of material to be used and the approximate thickness and width of the material for the Street Improvements; and the type of material to be used and the approximate diameter or diameters of all trunk lines, distribution lines, service lines, connection lines, mains and laterals for the Water, Sanitary Sewer, and Storm Drainage Improvements; and a general description of any other major component of each of the foregoing Improvements.

II. An estimate (the "Estimate") of the total cost of constructing the Improvements; said estimate being made in a lump sum or by unit prices including, without limiting the generality of the foregoing, advertising, tax reimbursement, capital improvement, expansion, construction period interest, reserve fund, financing, appraising, engineering, printing, and any other such expenses, as in the judgment of the Engineers, are necessary to the completion of the Improvements and the payment of the costs thereof.

III. An assessment plat (the "Assessment Plat") showing the area to be included within the District.

IV. An addendum to the Assessment Plat (the "Addendum") including an



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Engineer's Report (the "Engineer's Report") as to the method of determining benefits, showing the tracts or parcels of land to be assessed, and the amount of maximum benefit estimated to accrue to each tract or parcel of land in the District (as hereinafter more fully explained); the method of allocating the benefits being calculated on a front foot, service unit, or an area basis, an equitable adjustment having been made for assessments levied against any irregular lots or lands, so that assessments according to benefit are to be equal and uniform, such basis of assessment heretofore having been designated by the Council and the total estimated maximum benefit being listed upon a determination of the value of the Improvements as a whole to each tract or parcel of land in the District; and

WHEREAS, the Council has examined the Preliminary Plans, Estimates,Assessment Plat with the Addendum and the Engineer's Report so filed with the City Clerk and has found and does hereby declare the same to be satisfactory in all respects.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

Section 1. The Council hereby accepts the Preliminary Plans, Estimates, Assessment Plat with the Addendum and the Engineer's Report.

Section 2. The Council hereby provisionally orders that the Improvements shall be constructed, at an estimated cost of $15,774,417.52 including engineering, financing, legal, and all necessary incidental expenses, as more particularly hereinafter set forth, as described in the Preliminary Plans hereby accepted, reference to which is hereby made and which are available for public examination at the office of the City Clerk.

Section 3. That of the estimated total cost of $15,774,417.52 it is estimated that $3,412,746.44 will be defrayed from sources other than special assessments and $12,361,671.08 will be assessed against the tracts or parcels of land in the District as hereinafter provided. For assessments based on a front foot basis, the amount of frontage of any particular tract or parcel of land specifically benefitted by the improvements will be computed by determining the distance along the boundaries of such tract or parcel which abut any street, right-of-way, easement, or any combination thereof, in which and through which a particular improvement is being placed, and the amount to be assessed will be apportioned to each such

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tract or parcel in proportion to the amount of footage of each such tract or parcel to the total amount of footage of all benefitted tracts or parcels. For assessments based on a service unit basis, an equal share of the amount to be assessed will be apportioned to each of the parcels specifically benefitted by the improvements. For assessments based on an area basis, the amount of area of any tract or parcel of land specifically benefitted by the improvement will be computed by determining the acreage of such tract or parcel, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of area of each such tract or parcel to the total amount of area of all benefitted tracts or parcels. For assessments based on a contribution basis, the amount of contribution of any tract or parcel of land specifically benefitted by the improvements will be determined from master plans, management plans, or engineering analysis, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of contribution of each such tract or parcel to the total amount of contribution of all benefitted tracts or parcels. The estimated cost to be assessed and the basis of assessment for each type of improvement is as follows:

A. For Street Improvements, the estimated total assessments are $5,887,378.76. The assessments for street and intersection improvements will be levied either on a front foot or area basis against those tracts or parcels of land in the District that abut the streets being improved and that are specifically benefitted by the street and intersection improvements.

B. For Water Improvements, the estimated total assessments are $1,874,304.94. The assessments will be levied on a front foot, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Water Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

C. For Sanitary Sewer Improvements, the estimated total assessments are $841,355.38. The assessments will be levied on a contribution, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Sanitary Sewer Improvements shall be

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D. For Storm Drainage Improvements, the estimated total assessments are $3,758,632.01. Assessments will be levied against those tracts or parcels of land situated wholly or partially within the drainage basins in which and through which the associated Storm Drainage Improvements and Street Improvements are being placed. Assessments will be levied equally against each tract or parcel of land on a contribution, area, front foot, or service unit basis to each of those tracts or parcels or land contributing to the total basin flow and for the flood protection received by and the elimination of potential flooding of the access to each tract or parcel of land due to the construction of the associated Storm Drainage Improvements and Street Improvements and the diversion of drainage flow by the platted street system.

The methods of levying the assessments set forth in Paragraph A through D of this Section have heretofore and hereby are determined by the Council to be equitable and proportionate to the benefits received. An equitable adjustment will be made for the assessments levied against any irregular lots or lands and made for any tract or parcel not specifically benefitted by any of the Improvements, so that assessments according to benefits are equal and uniform.

Section 4. The area comprising the District shall be designated "Albuquerque, New Mexico, Special Assessment District No. 223."

Section 5. On Monday, the third of June, 1991, at 6:00 p.m., at the Council Chambers in the City/County Government Center, One Civic Plaza, NW, in the City of Albuquerque, New Mexico, the owners of the property to be assessed or any other persons interested therein may file a written protest or objection and may appear before the Council and be heard as to the advisability of making the Improvements, as to the estimated costs thereof, as to the manner of payment therefor and as to the estimated maximum benefit to each individual tract or parcel of land within the District. Not more than thirty days nor less than ten days before the day of the hearing, the City Clerk, Deputy City Clerk, or the Engineers are hereby directed to and shall mail notices, stating the time and place of the hearing on this provisional order to the owners of the tracts or parcels of land being assessed for the Improvements. The notice shall be mailed to the last

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from other sources as the City Clerk or the Engineers deem reliable. Proof of such mailing shall be made by affidavit of the City Clerk or the Engineers, such proof to be filed with the City Clerk, provided that failure to mail such notice or notices shall not invalidate any of the proceedings hereunder. The time and place of the hearing on this provisional order shall also be given by publication in a newspaper, which maintains an office in and is of general circulation within the City, once each week for three consecutive weeks, the last publication to be at least one week prior to the date of the hearing. Such service by publication shall be verified by the affidavit of the publisher and filed with the City Clerk. The published notice shall be in substantially the following form:

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(FORM OF NOTICE)

NOTICE OF HEARING ON CERTAIN STREET, SANITARY SEWER, WATER AND STORM DRAINAGE IMPROVEMENTS, AND PROPOSED ASSESSMENTS WITHIN THE PROPOSED ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223

NOTICE IS HEREBY GIVEN to the property owners within the proposed Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") and to all interested persons that:

I. The City Council (the "Council") of the City of Albuquerque (the "City"), New Mexico, has provisionally ordered that the following streets and parts thereof shall be graded, graveled, paved, drained, curbed, guttered, sidewalked, and otherwise improved (the "Street Improvements"); and that there be constructed, installed, and otherwise improved water lines (the "Water Improvements"), sanitary sewers (the "Sanitary Sewer Improvements"), and, associated with the Street Improvements, storm drainage improvements (the "Storm Drainage Improvements") (collectively, the "Improvements") in and along the following streets and areas and parts thereof as designated:

<u>STREET IMPROVEMENTS</u>

Alameda Boulevard, NW - from Coors Bypass, NW, east to the connection with existing Alameda Boulevard, NW. (64 feet wide arterial paving, 14-foot wide continuous left turn lane, 10-foot wide paved shoulders).

Coors Bypass, NW - from Coors Boulevard, NW, north to Rio Rancho Boulevard, NW. (105.25 feet wide back-to-back of curb, arterial paving, 28-foot wide raised median, street lights, traffic signals, and 6-foot wide sidewalk east side only between Corrales Road, NW, and Seven Bar Loop, NW; west side only between Seven Bar Loop, NW, and Ellison Drive, NW; west side only from approximately 520 feet north of Ellison Drive, NW, to approximately 1,130 feet north of Ellison Drive, NW.)

Corrales Road, NW - from Coors Bypass, NW, north to approximately

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Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW. (67.25 feet wide back to back of curb, arterial paving, 16-foot wide continuous left turn lane.)

Ellison Drive, NW - From Coors Bypass, NW, east to Alameda Boulevard, NW. (105.25 feet wide back to back of curb, arterial paving, 52-foot wide raised median, traffic signals, and telephone relocation.)

Seven Bar Loop, NW - from Coors Bypass, NW, east to Corrales Road, NW. (67.25 feet wide back-to-back of curb, arterial paving, 16-foot wide continuous left turn lane, traffic signals, gas transmission main relocation, and 6-foot wide sidewalk south side only from Coors Bypass, NW, to approximately 300 feet west of Corrales Road, NW, and north side only from approximately 980 feet west of Corrales Road, NW, to approximately 900 feet west of Corrales Road, NW.)

SANITARY SEWER IMPROVEMENTS

Coors Bypass, NW - from the end of the existing main, located approximately 1,300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (24-inch and 8-inch diameter sanitary sewer).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (12-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from Cottonwood Drive east to Alameda Boulevard, NW (24-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from approximately 280 feet west of Coors Bypass, NW, east to Coors Bypass, NW, (18-inch diameter sanitary sewer).

Seven Bar Loop, NW - from the connection with the existing sanitary sewer main, located approximately 225 feet west of Coors Bypass, NW, east to Coors Bypass, NW (8-inch diameter sanitary sewer).

Seven Bar Loop, NW - from approximately 700 feet west of Corrales Road, NW, east to the connection with the existing sanitary sewer main approximately 530 feet west of Corrales Road, NW (8-inch diameter sanitary sewer).

Seven Bar Ranch Tract G-2 - within a public utility easement along the east boundary from Ellison Drive, NW, to approximately 950 feet south of Ellison

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Alameda Boulevard, NW - from Coors Bypass, NW, east to approximately 200 feet east of Coors Bypass, NW (12-inch diameter water main).

Coors Bypass, NW - from the connection with the existing 20-inch diameter water main, located approximately 1,300 feet south of Seven Bar Loop, NW, north to Rio Rancho Boulevard, NW (12-inch diameter water main).

Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW (12-inch diameter water main).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (10-inch, 8-inch, and 6-inch diameter water mains).

Ellison Drive, NW - from Coors Bypass, NW, east to Alameda Boulevard, NW (12-inch diameter water main).

Rio Rancho Boulevard, NW (NM 528) - from Coors Bypass, NW, north to the connection with the existing 12-inch water main on the east side of Seven Bar Channel (12-inch diameter water main and pressure reducing valve).

Seven Bar Loop, NW - from Coors, Bypass, NW, east to the connection with the existing water main located approximately 1,000 feet west of Corrales Road, NW (12-inch diameter water main).

<u>STORM DRAINAGE IMPROVEMENTS</u>

Coors Bypass, NW - from approximately 300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (30-inch through 18-inch diameter storm drain).

Corrales Main Canal - from Ellison Drive, NW, north to the Cabezon Channel (54-inch diameter storm drain).

Corrales Road, NW - from Seven Bar Loop, NW, south to the drainage outfall to the Seven Bar Ranch Tract 14 detention basin located approximately 350 feet south of Seven Bar Loop, NW (24-inch diameter storm drain).

Cottonwood Drive, NW - from approximately 700 feet south of Ellison Drive, NW, north to Ellison Drive, NW (18-inch through 30-inch diameter storm drain).

Cottonwood Mall Site (Seven Bar Ranch Tract H-1) - within public

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Ellison Drive, NW - from 160 feet west of Coors Bypass, NW, east to the Corrales Main Canal (24-inch and 18-inch diameter storm drains).

Seven Bar Loop, NW - from approximately 200 feet west of Corrales Road, NW, east to Corrales Road, NW (24-inch and 18-inch diameter storm drain).

Seven Bar Ranch Tract C-3 - along the east boundary from Alameda Boulevard, NW, north to the Cabezon Channel, within proposed drainage easement (concrete-lined channel).

Seven Bar Ranch Tract N-2B - at the southwest corner of Coors Bypass, NW, and Ellison Drive, NW, within existing drainage easement (regional storm drainage detention basin).

Seven Bar Ranch Tract 14 - east of Corrales Road, NW, within proposed drainage easement (existing Coors Boulevard) at Seven Bar Loop, NW (regional storm drainage detention basin).

II. Except as more particularly shown on the plans in the office of the City Clerk, the Improvements substantially consists of and include the following:

A. Street Improvements

(1) The pavement width in feet including curb and gutter, measured back of curb to back of curb, is indicated after the above description of each street, or part thereof, as the case may be. The type of pavement section to be used is indicated in the plans. The Street Improvements shall include all necessary grading, shaping, draining, street lighting, and all other work incidental to such paving. The pavement is to be centered in each street right-of-way, except as indicated on the plans.

(2) Curbs and gutters will be constructed adjacent to the edge of the pavement and will be made of concrete. The work will include all necessary excavation, filling, grading, inlets, driveway approaches, and other work necessary and incidental to such improvements; the combined curb and gutter being 31-1/2 inches in width, and at the back of curb 14 inches in height; the curb being 5-1/2 inches thick at the top; and the gutter being 7-1/2 inches thick at the point of contact with the pavement. Median curbs shall be extruded asphalt being 8 inches wide at the bottom and 8 inches high. Mountable Curb shall be 31-1/2 inches

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inches high at the back, and 7-1/2 inches thick at the point of contact with the pavement.

(3) Sidewalks shall be made of concrete, and the work will include all necessary excavation, filling, grading, and other work necessary and incidental to such improvements. The width of the sidewalk is indicated on he plans. Sidewalks shall be 4 inches in thickness, 72 inches in width, and be constructed parallel with the curb and gutter, except where otherwise indicated on the plans.

B. Water Improvements

The Water Improvements shall include excavation, trenching, pipe laying, and backfilling for constructing new water mains and appurtenances; removal and replacement of any pavement and other obstacles; service extensions shall be polyethylene pipe, cast iron pipe, or ductile iron pipe. All appurtenances and incidentals required or necessary to the foregoing improvements will be included in the Water Improvements.

C. Sanitary Sewer Improvements

The Sanitary Sewer Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of any paving and other obstacles; collection lines will be 8-inch diameter pipe except as noted otherwise on the plans; manholes will be installed at street intersections or as required. Collection lines shall be aligned as shown on the plans.

D. Storm Drainage Improvements

The Storm Drainage Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of paving and other obstacles; collection lines being 18-inch through 60-inch diameter reinforced concrete pipe; manholes and catch basins are to be installed in the street and gutter lines; and special inlet structures and outfall structures and crossings as indicated on the plans. Storm drains shall be installed within the street right-of-way or public easements, as indicated on the plans.

III. The estimated total cost of the Improvements, including engineering, legal, financing, and all necessary and incidental expenses is $15,774,417.57, of which is

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land in the District as hereinafter provided. For assessments based on a front foot basis, the amount of frontage of any particular tract or parcel of land specifically benefitted by the improvements will be computed by determining the distance along the boundaries of such tract or parcel which abut any street, right-of-way, easement, or any combination thereof, in which and through which a particular improvement is being placed, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of footage of each such tract or parcel to the total amount of footage of all benefitted tracts or parcels. For assessments based on a service unit basis, an equal share of the amount to be assessed will be apportioned to each of the parcels specifically benefitted by the improvements. For assessments based on an area basis, the amount of area of any tract or parcel of land specifically benefitted by the improvement will be computed by determining the acreage of such tract or parcel, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of area of each such tract or parcel to the total amount of area of all benefitted tracts or parcels. For assessments based on a contribution basis, the amount of contribution of any tract or parcel of land specifically benefitted by the improvements will be determined from master plans, management plans, or engineering analysis, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of contribution of each such tract or parcel to the total amount of contribution of all benefitted tracts or parcels. The estimated cost to be assessed and the basis of assessment for each type of improvement is as follows:

A. Street Improvements: The estimated total assessments are $5,887,378.76. The assessments for street and intersection improvements will be levied either on a front foot or area basis against those tracts or parcels of land in the District that abut of the streets being improved and that are specifically benefitted by the street and intersection improvements.

B. Water Improvements: The estimated total assessments are $1,874,304.94. The assessments will be levied on a front foot, area, or service unit

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benefitted by the availability of service.

C. Sanitary Sewer Improvements: The estimated total assessments are $841,355.38. The assessments will be levied on either a contribution, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Sanitary Sewer Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

D. Storm Drainage Improvements: The estimated total assessments are $3,758,632.01. Assessments will be levied against those tracts or parcels of land situated wholly or partially within the drainage basins in which and through which the associated Storm Drainage Improvements and Street Improvements are being placed. Assessments will be levied equally against each tract or parcel of land on a contribution, area, front foot, or service unit basis to each of those tracts or parcels or land contributing to the total basin flow and for the flood protection received by, and the elimination of potential flooding of the access to each tract or parcel of land due to the construction of the associated Storm Drainage Improvements and Street Improvements and the diversion of drainage flow by the platted street system.

The methods of levying assessments set forth in Paragraph A through D of this Section have heretofore and hereby are determined by the Council to be equitable and proportionate to the benefit. An equitable adjustment will be made for assessments levied against any irregular lots or lands and made for any tract or parcel not specifically benefitted by any of the Improvements, so that assessments according to benefits are equal and uniform.

IV. All persons interested are hereby advised that the preliminary plans showing typical sections of the type of materials to be used, the approximate thickness and width of the material for the contemplated Street Improvements, the type of materials to be used and the diameter of any trunk lines, mains, laterals, or service connections for the contemplated Water Improvements, Sanitary Sewer Improvements, and Storm Drainage Improvements; and a general description of other major components of the Improvements; an assessment plat and addendum

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District, said estimate of benefits being computed on the basis set forth herein; and an estimate of the total cost of constructing each of the Improvements, said estimate being made in a lump sum or by unit prices including without limiting the generality of the foregoing, the advertising, appraising, tax reimbursement, capital improvement, expansion, construction period interest, reserve fund, financing, engineering, printing, and any such expenses as in the judgment of Easterling & Associates, Inc. (the "Engineer"), professional engineers duly licensed under the laws of the State of New Mexico, are necessary for the completion of construction of the Improvements and the payment of the costs thereof, are on file in the office of the City Clerk and may be inspected by any property owner or any other interested person during regular office hours. Any interested person may also ascertain in the office of the City Clerk a description of the property to be assessed and the maximum amount of benefit estimated to be conferred on those tracts or parcels of land. Reference is hereby made to such for further detail.

On Monday, the third of June 1991, at 6:00 p.m., at the Council Chamber in the City/County Government Center, One Civic Plaza, NW, in the City of Albuquerque, New Mexico, the owners of the property to be assessed or any other person interested therein may file a written protest or objection and may appear before the Council and may be heard as to the advisability of making the Improvements, as to the estimated cost thereof, as to the manner of payment therefor, and as to the estimated maximum benefit to each individual tract or parcel of land. Any person desiring to appear before the Council and be heard, shall be asked to register with the Clerk of the Council prior to consideration of matters pertaining to such hearing.

Although any property owner or interested person may make a written protest or objection during such hearing, the City Clerk requests that any property owner or interested person wishing to make protest or objection, make such protest or objection in writing at the office of the City Clerk before the time set forth for such hearing. Any person filing a written protest or objection, as aforesaid, shall have the right within thirty days after the City Council has concluded the hearing, has determined the advisability of constructing the

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jurisdiction to correct or set aside such determination, but thereafter all action or suits attacking the validity of the proceedings and the amount of the benefit shall be perpetually barred.

After such hearing, the Council shall determine the advisability of constructing the Improvements. If the Council determines that constructing the Improvements is advisable, the Council shall create the District and shall proceed to advertise for bids for the doing of the work therefore and shall enter into a contact with the responsible bidder making the lowest bid for the doing of such work and the furnishing of all necessary materials, all in accordance with Sections 3-33-1 through 3-33-45 NMSA 1978, as amended and supplemented.

By order of the City Council of the City of Albuquerque, New Mexico, dated this ____ day of _____, ____, 1991.

_____

City Clerk

Advertised:

Protest:

Mail Notice:

(END OF FORM OF NOTICE)

Section 6. If any section, paragraph, clause, or provision of this resolution shall for any reason be held to be invalid or unenforceable, the invalidity of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this resolution.

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PASSED AND ADOPTED THIS 6th DAY OF May, 1991.

BY A VOTE OF 8 FOR AND 0 AGAINST.

Yes: 8
Excused: Gallegos

Michael Brasher

Michael Brasher, President
City Council

APPROVED THIS 28th DAY OF May, 1991

Louis E. Saavedra, Mayor
City of Albuquerque

ATTEST:

City Clerk

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# CITY OF ALBUQUERQUE
# PUBLIC WORKS DEPARTMENT

ENGINEERING GROUP

April 1, 1991

INTER-OFFICE CORRESPONDENCE

TO: Michael Brasher, President, City Council

FROM: Louis E. Saavedra, Mayor

SUBJECT: SPECIAL ASSESSMENT DISTRICT NO. 223 - RESOLUTION NO. 2 (CITY COUNCIL DISTRICT #1)

Submitted herewith for your consideration and that of the City Council is Resolution No. 2 for Special Assessment District No. 223. By this resolution, the Council would give tentative approval of the preliminary plans, plats, estimated maximum benefits roll and Engineer's report prepared for the District by the Consulting Engineers, Easterling & Associates, Inc., and would set a date and time for the Protest Hearing.

Special Assessment District No. 223, as proposed, will consist of needed infrastructure improvements to four streets and Cottonwood Mall in the Seven Bar Ranch Sector Plan Development area of Albuquerque's West Mesa. The streets being improved are Coors Bypass, Seven Bar Loop Rd., Ellison Dr., and Cottonwood Dr.

Partial funding of the District was approved by the City Council in R-192 in the following amounts:

| | Account No. | Amount |
|---|---|---|
| Street Bond | 7360580 | $866,240 |
| Storm Bond | 7361240 | $229,301 |

This resolution is forwarded to the City Council for Introduction on April 15, 1991.

RECOMMENDED BY:

Robert E. Gurule, Director
Public Works Department

REVIEWED BY:

Victoria Sedillo Perea
CIP Official

RECOMMENDED BY:

Arthur A. Blumenfeld
Chief Administrative Officer

REVIEWED BY THE LEGAL DEPARTMENT:

Malcolm W. deVesty
Assistant City Attorney

LL/tsl/WP+125392

NO: LamR
cc

CITY OF ALBUQUERQUE

CITY COUNCIL

6/20/91

INTER-OFFICE MEMORANDUM: REF. 3666-2

TO: Louis E. Saavedra, Mayor

FROM: Beatrice Gutierrez, Director of Council Services

SUBJECT: TRANSMITTAL OF LEGISLATION

Attached is Bill No. R-396, SAD 223 - Resolution 3 (Armijo), which passed at the Council meeting of June 17, 1991, by a vote of 8 FOR AND 1 ABSTAIN.

Yes: 8
Abstain: Yntema

In accordance with the provisions of the City Charter, your action is respectfully requested.

BG/ymv
3666-2
attachment
6/19/91

25X

City of Albuquerque

# City Council

## Enrolling & Engrossing Certificate

Bill No: R-396, SAD 223 - Resolution 3

Sponsored by: Alan B. Armijo, Councillor
District 1

Certified by: M. Yvonne Vega
M. Yvonne Vega
Council Secretary

ALBUQUERQUE
NEW MEXICO
1706

Date: 6/19/91

myv

Pmot Publish

105-1991

CITY OF ALBUQUERQUE

CITY COUNCIL

6/20/91

INTER-OFFICE MEMORANDUM:

REF. 3666-2

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FROM: Beatrice Gutierrez, Director of Council Services

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BG/ymv
3666-2
attachment
6/19/91

RECEIVED
JUN 20 1991
MAYOR/CAO
OFFICE

RECEIVED
JUN 24 8 27
ALBUQUERQUE CITY CLERK

CITY of ALBUQUERQUE
NINTH COUNCIL

COUNCIL BILL NO. R-396 ENACTMENT NO. 105-1991

SPONSORED BY: Alan D. Armijo/dg

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RESOLUTION

RELATING TO AND CREATING ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223; DETERMINING THE ADVISABILITY OF CONSTRUCTING, AND THE TYPE AND CHARACTER OF, CERTAIN STREETS AND ASSOCIATED STORM DRAINAGE, SANITARY SEWER, AND WATER IMPROVEMENTS THEREIN AND DIRECTING THE CITY CLERK TO CALL FOR SEALED BIDS ON SUCH IMPROVEMENTS.

WHEREAS, by Resolution No. 74-1991, adopted and approved on May 6, 1991 (the "Resolution"), the City Council (the "Council") of the City of Albuquerque (the "City"), in the County of Bernalillo and State of New Mexico, provisionally ordered the grading, graveling, paving, sidewalking, curbing, guttering, draining, and otherwise completing of certain streets and parts thereof (the "Street Improvements") and the construction, installing, and otherwise improving of certain sanitary sewer lines (the "Sanitary Sewer Improvements") water lines (the "Water Improvements"), and storm drainage improvements (the "Storm Drainage Improvements"), in the proposed district (collectively, the "Improvements"), all pursuant to and in conformity with Sections 3-33-1 through 3-33-43, NMSA 1978, as amended and supplemented; and

WHEREAS, the area provisionally ordered to be improved by the Resolution and the benefitted property to be assessed to defray the cost of the Improvements is designated "Albuquerque, New Mexico, Special Assessment District No. 223" (the "District"); and

WHEREAS, the Resolution set a time and place at which the owners of the property to be assessed, or any other interested persons, could appear before the Council and be heard as to the propriety and advisability of making the Improvements, as to the estimated cost thereof, as to the manner of payment

therefor, and as to the estimated maximum benefit to each individual tract or parcel of land within the District, to-wit, on Monday the 3rd day of June 1991, at 6:00 o'clock p.m. at the City/County Government Center in the City; and

WHEREAS, in accordance with the laws of the State of New Mexico, not more than thirty days nor less than ten days before the day of the protest hearing, written notice of the time and place of the protest hearing was given to the owners of property within the District; such notice being served by mailing a copy of the notice to each of such property owners at his last known address and further notice being given by publication one each week for three consecutive weeks in a newspaper which maintains an office, and is of general circulation in the City, the last publication having been at least one week prior to the day of the protest hearing; and

WHEREAS, at the protest hearing all owners of property to be assessed within the District and all interested persons so desiring were permitted to file a written protest, objection or to appear before the Council and be heard as to the propriety and advisability of making the Improvements, as to the estimated cost thereof, as to the manner of payment therefor, and as to the estimated maximum benefit to each individual tract or parcel of land within the District; and

WHEREAS, the Council has now considered such written protests and objections made at the protest hearing, as to the propriety and advisability of making the Improvements, as to the costs thereof, as to the manner of payment therefor, and as to the estimated maximum benefit to each individual tract or parcel of land within the District, and the Council finds that, except as noted in Section 2 below, the written protests and such objections made at the protest hearing are without merit and finds that the same should be overruled and denied.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE, NEW MEXICO:

Section 1. That all action heretofore taken (not inconsistent with the provisions of this Resolution) by the City and the officers of the City directed toward the construction of the Improvements within the District and toward provisionally ordering the Improvements, be and the same hereby is ratified, approved and confirmed.

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Section 2. That the Council has determined, and does hereby determine, that the protests and objections filed or otherwise made in connection with the District are without merit and that the same be, and hereby are, overruled and finally passed on by the Council, except as follows:

A. Because the properties identified as Items 1, 2, 3, 4, 5, 16, and 17 will require substantial future off-site infrastructure improvements in addition to the improvements to be constructed by the District, and because the schedules for development of each of the properties are expected to be variable and to occur generally over a longer period of time, the Estimated Maximum Benefits shall be modified as follows:

(I) For Item No. 1, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $436,100.00.

(II) For Item No. 2, the Estimated Maximum Benefit shall be reduced from $270,000.00 to $243,900.00.

(III) For Item No. 3, the Estimated Maximum Benefit shall be increased from $570,000.00 to $645,800.00.

(IV) For Item No. 4, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $51,000.00.

(V) For Item No. 5, the Estimated Maximum Benefit shall be reduced from $170,000.00 to $99,400.00.

(VI) For Item No. 16, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $57,000.00.

(VIII) For Item No. 17, the Estimated Maximum Benefit shall be increased from $630,000.000 to $989,700.00.

B. Because the geotechnical investigation report prepared for the District recommends stronger and more stable pavement sections for some of the Street Improvements, the preliminary plans for and the descriptions of the Street Improvements shall be modified to reflect necessary pavement section revisions.

Section 3. That the Council, except as modified in Section 2 of this Resolution, has approved and does hereby approve the estimated maximum benefit roll filed with the City Clerk on May 6, 1991, has determined and does hereby determine that it is proper and advisable to construct the Improvements in and along all of the following streets, rights-of-way, and parts thereof, as

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provisionally ordered (except to the extent inconsistent herewith), and does hereby order that all of the Improvements at the following locations be constructed within the District (except where noted to the contrary) and assessments levied therefor.

SPECIAL ASSESSMENT DISTRICT NO. 223

STREET IMPROVEMENTS

Alameda Boulevard, NW - from Coors Bypass, NW, east to the connection with existing Alameda Boulevard, NW (64 feet wide arterial paving, 14-foot wide continuous left turn lane, 10-foot wide paved shoulders).

Coors Bypass, NW - from Coors Boulevard, NW, north to Rio Rancho Boulevard, NW (105.25 feet wide back-to-back of curb, arterial paving, 28-foot wide raised median, street lights, traffic signals, and 6-foot wide sidewalk east side only between Corrales Road, NW, and Seven Bar Loop, NW; west side only between Seven Bar Loop, NW, and Ellison Drive, NW; west side only from approximately 520 feet north of Ellison Drive, NW, to approximately 1,130 feet north of Ellison Drive, NW).

Corrales Road, NW - from Coors Bypass, NW, north to approximately 1,100 LF south of Seven Bar Loop, NW (76 feet wide arterial paving, 28-foot wide raised median, 10-foot wide paved shoulder, traffic signal, 6-foot wide sidewalk west side only).

Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW (67.25 feet wide back to back of curb, arterial paving, 16-foot wide continuous left turn lane).

Ellison Drive, NW - from Coors Bypass, NW, east to Alameda Boulevard, NW (105.25 feet wide back to back of curb, arterial paving, 52-foot wide raised median, traffic signals, and telephone relocation).

Seven Bar Loop, NW - from Coors Bypass, NW, east to Corrales Road, NW (67.25 feet wide back-to-back of curb, arterial paving, 16-foot wide continuous left turn lane, traffic signals, gas transmission main relocation, and 6-foot wide sidewalk south side only from Coors Bypass, NW, to approximately 300 feet west of Corrales Road, NW, and north side only from approximately 980 feet west of Corrales Road, NW, to approximately 900 feet west of Corrales Road, NW).

SANITARY SEWER IMPROVEMENTS

Coors Bypass, NW - from the end of the existing main, located

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approximately 1,300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (24-inch and 8-inch diameter sanitary sewer).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (12-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from Cottonwood Drive east to Alameda Boulevard, NW (24-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from approximately 280 feet west of Coors Bypass, NW, east to Coors Bypass, NW (18-inch diameter sanitary sewer).

Seven Bar Loop, NW - from the connection with the existing sanitary sewer main, located approximately 225 feet west of Coors Bypass, NW, east to Coors Bypass, NW (8-inch diameter sanitary sewer).

Seven Bar Loop, NW - from approximately 700 feet west of Corrales Road, NW, east to the connection with the existing sanitary sewer main approximately 530 feet west of Corrales Road, NW (8-inch diameter sanitary sewer).

Seven Bar Ranch Tract G-2 - within a public utility easement along the east boundary from Ellison Drive, NW, to approximately 950 feet south of Ellison Drive, NW (24-inch diameter sanitary sewer).

WATER IMPROVEMENTS

Alameda Boulevard, NW - from Coors Bypass, NW, east to approximately 200 feet east of Coors Bypass, NW (12-inch diameter water main).

Coors Bypass, NW - from the connection with the existing 20-inch diameter water main, located approximately 1,300 feet south of Seven Bar Loop, NW, north to Rio Rancho Boulevard, NW (12-inch diameter water main).

Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW (12-inch diameter water main).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (10-inch, 8-inch, and 6-inch diameter water mains).

Ellison Drive, NW - from Coors Bypass, NW, east to Alameda Boulevard, NW (12-inch diameter water main).

Rio Rancho Boulevard, NW (NM 528) - from Coors Bypass, NW, north to the connection with the existing 12-inch water main on the east side of Seven Bar

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Char el (12-inch diameter water main and pressure reducing valve).

Seven Bar Loop, NW - from Coors Bypass, NW, east to the connection with the existing water main located approximately 1,000 feet west of Corrales Road, NW (12-inch diameter water main).

STORM DRAINAGE IMPROVEMENTS

Coors Bypass, NW - from approximately 300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (30-inch through 18-inch diameter storm drain).

Corrales Main Canal - from Ellison Drive, NW, north to the Cabezon Channel (54-inch diameter storm drain).

Corrales Road, NW - from Seven Bar Loop, NW, south to the drainage outfall to the Seven Bar Ranch Tract 14 detention basin located approximately 350 feet south of Seven Bar Loop, NW (24-inch diameter storm drain).

Cottonwood Drive, NW - from approximately 700 feet south of Ellison Drive, NW, north to Ellison Drive, NW (18-inch through 30-inch diameter storm drain).

Cottonwood Mall Site (Seven Bar Ranch Tract H-1) - within public drainage easements to serve proposed subdivision tracts under multiple ownerships (60-inch through 18-inch diameter storm drains and detention basins).

Ellison Drive, NW - from 160 feet west of Coors Bypass, NW, east to the Corrales Main Canal (24-inch and 18-inch diameter storm drains).

Seven Bar Loop, NW - from approximately 200 feet west of Corrales Road, NW, east to Corrales Road, NW (24-inch and 18-inch diameter storm drain).

Seven Bar Ranch Tract C-3 - along the east boundary from Alameda Boulevard, NW, north to the Cabezon Channel, within proposed drainage easement (concrete-lined channel).

Seven Bar Ranch Tract N-2B - at the southwest corner of Coors Bypass, NW, and Ellison Drive, NW, within existing drainage easement (regional storm drainage detention basin).

Seven Bar Ranch Tract 14 - east of Corrales Road, NW, within proposed drainage easement (existing Coors Boulevard) at Seven Bar Loop, NW (regional storm drainage detention basin).

Section 4. The Council does hereby determine that all Water

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Improvements, Storm Drainage Improvements, Sanitary Sewer Improvements, and Street Improvements which are not specified in Section 3 of this Resolution shall be deleted from the District.

Section 5. The Council does hereby determine that the type and character of the Improvements shall be substantially as follows:

A. Street Improvements

(1) The pavement width in feet including curb and gutter, measured back of curb to back of curb, is indicated after the above description of each street, or part thereof, as the case may be. The Street Improvements shall include all necessary grading, shaping, draining, street lighting, and all other work incidental to such paving. The pavement is to be centered in each street right-of-way, except as indicated on the plans.

(2) Curbs and gutters will be constructed adjacent to the edge of the pavement and will be made of concrete. The work will include all necessary excavation, filling, grading, inlets, driveway approaches, and other work necessary and incidental to such improvements; the combined curb and gutter being 31-1/2 inches in width, and at the back of curb 14 inches in height; the curb being 5-1/2 inches thick at the top; and the gutter being 7-1/2 inches thick at the point of contact with the pavement. Median curbs shall be extruded asphalt being 8 inches wide at the bottom and 8 inches high. Mountable Curb shall be 31-1/2 inches wide, 10 inches thick at the back, and 6-3/4 inches thick at the point of contact with the pavement. Mountable Curb Estate Type shall be 31-1/2 inches wide, 10 inches high at the back, and 7-1/2 inches thick at the point of contact with the pavement.

(3) Sidewalks shall be made of concrete, and the work will include all necessary excavation, filling, grading, and other work necessary and incidental to such improvements. The width of the sidewalk is indicated on the plans. Sidewalks shall be 4 inches in thickness, 72 inches in width, and be constructed parallel with the curb and gutter, except where otherwise indicated on the plans.

B. Water Improvements

The Water Improvements shall include excavation, trenching, pipe laying, and backfilling, for constructing new water mains and appurtenances; removal and replacement of any pavement and other obstacles; service extensions

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shall be polyethylene pipe, cast iron pipe, or ductile iron pipe. All appurtenances and incidentals required or necessary to the foregoing improvements will be included in the Water Improvements.

C. Sanitary Sewer Improvements

The Sanitary Sewer Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of any paving and other obstacles; collection lines will be 8-inch diameter pipe except as noted otherwise on the plans; manholes will be installed at street intersections or as required. Collection lines shall be aligned as shown on the plans.

D. Storm Drainage Improvements

The Storm Drainage Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of paving and other obstacles; collection lines being 18-inch through 60-inch diameter reinforced concrete pipe; manholes and catch basins are to be installed in the street and gutter lines; and special inlet structures and outfall structures and crossings as indicated on the plans. Storm drains shall be installed within the street right-of-way or public easements, as indicated on the plans.

Section 6. The estimated total cost of the Improvements, including engineering, legal, financing, and all necessary and incidental expenses is $15,774,417.52 of which it is estimated that $3,412,746.44 will be defrayed from sources other than special assessments, and $12,361,671.08 will be assessed against those tracts or parcels of land in the District as hereinafter provided. For assessments based on a front foot basis, the amount of frontage of any particular tract or parcel of land specifically benefitted by the improvements will be computed by determining the distance along the boundaries of such tract or parcel which abut any street, right-of-way, easement, or any combination thereof, in which and through which a particular improvement is being placed, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of footage of each such tract or parcel to the total amount of footage of all benefitted tracts or parcels. For assessments based on a service unit basis, an equal share of the amount to be assessed will be apportioned to each of the parcels specifically benefitted by the improvements. For assessments based on an area basis, the amount of area of any tract or parcel of land

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specifically benefitted by the improvement will be computed by determining the acreage of such tract or parcel, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of area of each such tract or parcel to the total amount of area of all benefitted tracts or parcels. For assessments based on a contribution basis, the amount of contribution of any tract or parcel of land specifically benefitted by the improvements will be determined from master plans, management plans, or engineering analysis, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of contribution of each such tract or parcel to the total amount of contribution of all benefitted tracts or parcels. The estimated cost to be assessed and the basis of assessment for each type of improvement is as follows:

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B. Water Improvements: The estimated total assessments are $1,874,304.94. The assessments will be levied on a front foot, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Water Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

C. Sanitary Sewer Improvements: The estimated total assessments are $841,355.38. The assessments will be levied on either a contribution, area, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Sanitary Sewer Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

D. Storm Drainage Improvements: The estimated total assessments are $3,758,632.01. Assessments will be levied against those tracts or parcels of land situated wholly or partially within the drainage basins in which and through which the associated Storm Drainage Improvements and Street Improvements are being placed. Assessments will be levied equally against each tract or parcel of



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land on a contribution, area, front foot, or service unit basis to each of those tracts or parcels or land contributing to the total basin flow and for the flood protection received by, and the elimination of potential flooding of the access to each tract or parcel of land due to the construction of the associated Storm Drainage Improvements and Street Improvements and the diversion of drainage flow by the platted street system.

Section 7. That there be, and there hereby is created and established the City of Albuquerque Special Assessment District No. 223 for the purpose of constructing the Improvements, all as herein set forth, and of assessing the cost thereof to the property benefitted thereby.

Section 8. That any person who filed, and did not withdraw, a written protest or objection protesting the construction of the Improvements pursuant to Section 3-33-13 NMSA 1978 shall have the right, within thirty days from the adoption and approval of this Resolution, to commence an action or suit in any court of competent jurisdiction to correct or set aside the determination of the Council set forth in this resolution, but thereafter all actions or suits attacking the validity of the proceedings and the amounts of benefits to be derived from the Improvements shall be perpetually barred.

Section 9. That Easterling & Associates, Inc. (The "Engineers"), professional engineers duly licensed under the laws of the State of New Mexico, who are employed by the City in connection with the Improvements, be and they hereby are ordered and directed to modify the preliminary plans, specifications, proposed contract documents, assessments plat, addendum to the assessment plan, estimates of cost, and other relevant documents in connection with the District to conform to any modification herein ordered and directed in the provisions of this Resolution.

Section 10. That the City Clerk of the City (the "Clerk") is hereby authorized and directed, upon modification, if any, being made to the instruments designated in Section 9 of this Resolution, and a set of said instruments being filed in the office of the Clerk, to advertise for bids for doing the work of constructing the Improvements by publication of a notice to contractors at least once each week for two consecutive weeks by insertions in the Albuquerque Journal and Albuquerque Tribune, newspapers which maintain an office, and are of general



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circulation, in the City and the County of Bernalillo, the first of such publications to be made at least 10 days before the date for opening of bids, all pursuant to Sections 3-33-19 and 13-1-102, NMSA 1978, as amended and supplemented, and Section 5-8-9(G) of the Revised Ordinances of Albuquerque, New Mexico, 1974, as amended and supplemented.

Section 11. That the City Clerk is hereby authorized and directed to record in appropriate form the estimated maximum benefit roll in the records of the Bernalillo County Clerk to give constructive notice of the pendency of the District to any owner, purchaser or encumbrancer of all tracts or parcels included in the District as provided by Section 3-33-11 NMSA 1978, as amended and supplemented.

Section 12. That the officers of the City be and they hereby are, authorized and directed to take all action necessary or appropriate to effectuate the provisions of this Resolution.

Section 13. That all resolutions, or parts thereof, in conflict with the provisions of this Resolution are hereby repealed. This repealer shall not be constructed to revive any resolution, or part thereof, heretobefore repealed.

Section 14. If any section, paragraph, clause, or provision of this Resolution shall for any reason be held to be invalid or unenforceable, the validity of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Resolution.

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PASSED AND ADOPTED THIS 17th DAY OF June, 1991.

BY A VOTE OF 8 FOR AND 1 ABSTAIN.

Yes: 8
Abstain: Yntema

Michael Brasher

Michael Brasher, President
City Council

APPROVED THIS 21st DAY OF JUNE, 1991

Louis E. Saavedra, Mayor
City of Albuquerque

ATTEST:

City Clerk

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ORIGINAL

# CITY of ALBUQUERQUE
# NINTH COUNCIL

COUNCIL BILL NO. R-354 ENACTMENT NO. _____

SPONSORED BY: Alan B Armijo

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RESOLUTION

RELATING TO THE PROPOSED ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223; ACCEPTING PRELIMINARY PLANS, ESTIMATES OF COSTS, ASSESSMENT PLAT WITH ADDENDUM AND ENGINEER'S REPORT AS TO THE METHODS USED IN DETERMINING BENEFITS WITH RESPECT THERETO; MAKING A PROVISIONAL ORDER THAT CERTAIN STREET, SANITARY SEWER, STORM DRAINAGE, AND WATER IMPROVEMENTS, ALL WITHIN THE PROPOSED DISTRICT, SHALL BE CONSTRUCTED; AND DIRECTING THAT NOTICE OF A HEARING ON THE PROVISIONAL ORDER BE GIVEN.

WHEREAS, the City Council (the "Council") of the City of Albuquerque (the "City"), in the County of Bernalillo and State of New Mexico, has directed Easterling & Associates, Inc. (the "Engineers"), professional engineers duly licensed under the laws of the State of New Mexico, to prepare, submit, and file with the City Clerk of the City (the "City Clerk"), (I) preliminary plans showing, typical sections of, the type of materials to be used and the approximate thickness and width of the material for the contemplated street improvements (the "Street Improvements"), the type of material to be used, the approximate diameter or diameters of any trunk lines, mains or laterals for the contemplated water, sanitary sewer and storm drainage improvements (the "Water Improvements," "Sanitary Sewer Improvements," and "Drainage Improvements," respectively) and a general description of other major components of the foregoing types of improvements, all within the City (collectively, the "Improvements"); (II) estimates of the cost of grading, graveling, paving, draining, curbing, guttering, sidewalking, street lighting, and otherwise constructing the Street Improvements and of constructing, installing, adjusting, and otherwise completing the Water Improvements, Sanitary

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Sewer Improvements, and Storm Drainage Improvements; (III) an assessment plat showing the area to be included in the proposed District; and an addendum to the assessment plat. showing the amount of maximum benefit estimated to accrue to each tract or parcel of land in the proposed district, including an engineer's report on the method used in determining benefits, all pursuant to Sections 3-33-1 through 3-33-43, NMSA, 1978, as amended and supplemented; and

WHEREAS, the Council is of the opinion that, in the general interest of the City and in the specific interest of the property within the proposed district, the addition of the Improvements is necessary and should be made in the proposed district as so directed and that the Improvements should be as hereinafter set forth; and

WHEREAS, the Engineers have filed at the office of the City Clerk, in connection with the Improvements and with the proposed Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") the following:

I. Preliminary plans (the "Preliminary Plans") showing typical sections of the type or types of material to be used and the approximate thickness and width of the material for the Street Improvements; and the type of material to be used and the approximate diameter or diameters of all trunk lines, distribution lines, service lines, connection lines, mains and laterals for the Water, Sanitary Sewer, and Storm Drainage Improvements; and a general description of any other major component of each of the foregoing Improvements.

II. An estimate (the "Estimate") of the total cost of constructing the Improvements; said estimate being made in a lump sum or by unit prices including, without limiting the generality of the foregoing, advertising, appraising, engineering, printing, and any other such expenses, as in the judgment of the Engineers, are necessary to the completion of the Improvements and the payment of the costs thereof.

III. An assessment plat (the "Assessment Plat") showing the area to be included within the District.

IV. An addendum to the Assessment Plat (the "Addendum") including an Engineer's Report (the "Engineer's Report") as to the method of determining benefits, showing the tracts or parcels of land to be assessed, and the amount of maximum benefit estimated to accrue to each tract or parcel of land in the District

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(as hereinafter more fully explained); the method of allocating the benefits being calculated on a front foot, service unit, or an area basis, an equitable adjustment having been made for assessments levied against any irregular lots or lands, so that assessments according to benefit are to be equal and uniform, such basis of assessment heretofore having been designated by the Council and the estimated maximum benefit being separately listed for each of the Improvements, i.e., Street Improvements, Water Improvements, Sanitary Sewer Improvements, and Storm Drainage Improvements; and

WHEREAS, the Council has examined the Preliminary Plans, Estimates,Assessment Plat with the Addendum and the Engineer's Report so filed with the City Clerk and has found and does hereby declare the same to be satisfactory in all respects.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

Section 1. The Council hereby accepts the Preliminary Plans, Estimates, Assessment Plat with the Addendum and the Engineer's Report.

Section 2. The Council hereby provisionally orders that the Improvements shall be constructed, at an estimated cost of $_____ including engineering, legal, and all necessary incidental expenses, as more particularly hereinafter set forth, as described in the Preliminary Plans hereby accepted, reference to which is hereby made and which are available for public examination at the office of the City Clerk.

Section 3. That of the estimated total cost of $_____ it is estimated that $_____ will be defrayed from sources other than special assessments and $_____ will be assessed against the tracts or parcels of land in the District as hereinafter provided. For assessments based on a front foot basis, the amount of frontage of any particular tract or parcel of land specifically benefitted by the improvements will be computed by determining the distance along the boundaries of such tract or parcel which abut any street, right-of-way, easement, or any combination thereof, in which and through which a particular improvement is being placed, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of footage of each such tract or parcel to the total amount of footage of all benefitted tracts or parcels. For assessments based

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on a service unit basis, an equal share of the amount to be assessed will be apportioned to each of the parcels specifically benefitted by the improvements. For assessments based on an area basis, the amount of area of any tract or parcel of land specifically benefitted by the improvement will be computed by determining the acreage of such tract or parcel, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of area of each such tract or parcel to the total amount of area of all benefitted tracts or parcels. For assessments based on a contribution basis, the amount of contribution of any tract or parcel of land specifically benefitted by the improvements will be determined from master plans, management plans, or engineering analysis, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of contribution of each such tract or parcel to the total amount of contribution of all benefitted tracts or parcels. The estimated cost to be assessed and the basis of assessment for each type of improvement is as follows:

A. For Street Improvements, the estimated total assessments are $_____. The assessments will be levied either on a front foot or area basis against those tracts or parcels of land abutting that portion of the streets being improved. The assessments for improving intersections will be levied on a service unit basis against those tracts or parcels of land abutting that portion of any street which is within one-half of the distance to the next intersection from an intersection which is being improved and which is formed in part or whole by said street or, where the intersecting street dead ends without intersecting another street against those tracts or parcels abutting that portion of the street extending from the intersection.

B. For Water Improvements, the estimated total assessments are $_____. The assessments will be levied on a front foot or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Water Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

C. For Sanitary Sewer Improvements, the estimated total assessments are $_____. The assessments will be levied on a front foot, contribution, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Sanitary Sewer

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Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

D. For Storm Drainage Improvements, the estimated total assessments are $_____. Assessments will be levied against those tracts or parcels of land situated wholly or partially within the drainage basin in which and through which the Drainage Improvements and Street Improvements are being placed. Assessments will be levied equally against each tract or parcel of land on a contribution or service unit basis to each of those tracts or parcels or land contributing to the total basin flow and for the flood protection received by and the elimination of potential flooding of the access to each tract or parcel of land due to the construction of the Storm Drainage Improvements and the diversion of drainage flow by the platted street system.

The methods of levying the assessments set forth in Paragraph A through D of this Section have heretofore and hereby are determined by the Council to be equitable and proportionate to the benefits received. An equitable adjustment will be made for the assessments levied against any irregular lots or lands and made for any tract or parcel not specifically benefitted by any of the Improvements, so that assessments according to benefits are equal and uniform.

Section 4. The area comprising the District shall be designated "Albuquerque, New Mexico, Special Assessment District No. 223."

Section 5. On Monday, the _____, at _____ p.m., at the Council Chambers in the City/County Government Center, One Civic Plaza, NW, in the City of Albuquerque, New Mexico, the owners of the property to be assessed or any other persons interested therein may file a written protest or objection and may appear before the Council and be heard as to the advisability of making the Improvements, as to the estimated costs thereof, as to the manner of payment therefore and as to the amount to be assessed against the individual tracts or parcels of land within the District. Not more than thirty days nor less than ten days before the day of the hearing, the City Clerk, Deputy City Clerk, or the Engineers are hereby directed to and shall mail notices, stating the time and place of the hearing on this provisional order to the owners of the tracts or parcels of land being assessed for the Improvements. The notice shall be mailed to the last known address of each such property owner. The names and addresses of such

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property owners are to be obtained from the records of the County Assessor or from other sources as the City Clerk or the Engineers deem reliable. Proof of such mailing shall be made by affidavit of the City Clerk or the Engineers, such proof to be filed with the City Clerk, provided that failure to mail such notice or notices shall not invalidate any of the proceedings hereunder. The time and place of the hearing on this provisional order shall also be given by publication in a newspaper, which maintains an office in and is of general circulation within the City, once each week for three consecutive weeks, the last publication to be at least one week prior to the date of the hearing. Such service by publication shall be verified by the affidavit of the publisher and filed with the City Clerk. The published notice shall be in substantially the following form:

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(FORM OF NOTICE)

NOTICE OF HEARING ON CERTAIN STREET, SANITARY SEWER, WATER AND STORM DRAINAGE IMPROVEMENTS, AND PROPOSED ASSESSMENTS WITHIN THE PROPOSED ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223

NOTICE IS HEREBY GIVEN to the property owners within the proposed Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") and to all interested persons that:

I. The City Council (the "Council") of the City of Albuquerque (the "City"), New Mexico, has provisionally ordered that the following streets and parts thereof shall be graded, graveled, paved, drained, curbed, guttered, sidewalked, and otherwise improved (the "Street Improvements"); and that there be constructed, installed, and otherwise improved water lines (the "Water Improvements"), sanitary sewers (the "Sanitary Sewer Improvements"), and storm drainage improvements (the "Storm Drainage Improvements"), to be constructed, installed, improved, and otherwise acquired (collectively, the "Improvements") in and along the following streets and areas and parts thereof as designated:

<u>STREET IMPROVEMENTS</u>

Alameda Boulevard, NW - from Coors Bypass, NW, east to the connection with existing Alameda Boulevard, NW. (64 feet wide arterial paving, 14-foot wide continuous left turn lane, 10-foot wide paved shoulders).

Coors Bypass, NW - from Coors Boulevard, NW, north to Rio Rancho Boulevard, NW. (105.25 feet wide back-to-back of curb, arterial paving, 28-foot wide raised median, street lights, traffic signals, and 6-foot wide sidewalk east side only between Corrales Road, NW, and Seven Bar Loop, NW; west side only between Seven Bar Loop, NW, and Ellison Drive, NW; west side only from approximately 520 feet north of Ellison Drive, NW, to approximately 1,130 feet north of Ellison Drive, NW.)

Corrales Road, NW - from Coors Bypass, NW, north to approximately 1,100 LF south of Seven Bar Loop, NW. (76 feet wide arterial paving, 28-foot wide raised median, 10-foot wide paved shoulder, traffic signal, 6-foot wide sidewalk west side only.)

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Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW. (67.25 feet wide back to back of curb, arterial paving, 16-foot wide continuous left turn lane.)

Ellison Drive, NW - From Coors Bypass, NW, east to Alameda Boulevard, NW. (105.25 feet wide back to back of curb, arterial paving, 52-foot wide raised median, traffic signals, and telephone relocation.)

Seven Bar Loop, NW - from Coors Bypass, NW, east to Corrales Road, NW. (67.25 feet wide back-to-back of curb, arterial paving, 16-foot wide continuous left turn lane, traffic signals, gas transmission main relocation, and 6-foot wide sidewalk south side only from Coors Bypass, NW, to approximately 300 feet west of Corrales Road, NW, and north side only from approximately 980 feet west of Corrales Road, NW, to approximately 900 feet west of Corrales Road, NW.)

SANITARY SEWER IMPROVEMENTS

Coors Bypass, NW - from the end of the existing main, located approximately 1,300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (24-inch and 8-inch diameter sanitary sewer).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (12-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from Cottonwood Drive east to Alameda Boulevard, NW (24-inch and 8-inch diameter sanitary sewer).

Ellison Drive, NW - from approximately 280 feet west of Coors Bypass, NW, east to Coors Bypass, NW, (18-inch diameter sanitary sewer).

Seven Bar Loop, NW - from the connection with the existing sanitary sewer main, located approximately 225 feet west of Coors Bypass, NW, east to Coors Bypass, NW (8-inch diameter sanitary sewer).

Seven Bar Loop, NW - from approximately 700 feet west of Corrales Road, NW, east to the connection with the existing sanitary sewer main approximately 530 feet west of Corrales Road, NW (8-inch diameter sanitary sewer).

Seven Bar Ranch Tract G-2 - within a public utility easement along the east boundary from Ellison Drive, NW, to approximately 950 feet south of Ellison Drive, NW (24-inch diameter sanitary sewer).

WATER IMPROVEMENTS

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Alameda Boulevard, NW - from Coors Bypass, NW, east to approximately 200 feet east of Coors Bypass, NW (12-inch diameter water main).

Coors Bypass, NW - from the connection with the existing 20-inch diameter water main, located approximately 1,300 feet south of Seven Bar Loop, NW, north to Rio Rancho Boulevard, NW (12-inch diameter water main).

Cottonwood Drive, NW - from Seven Bar Loop, NW, north to Ellison Drive, NW (12-inch diameter water main).

Cottonwood Mall Site - within public utility easements to serve proposed subdivision tracts under multiple ownerships (10-inch, 8-inch, and 6-inch diameter water mains).

Ellison Drive, NW - from Coors Bypass, NW, east to Alameda Boulevard, NW (12-inch diameter water main).

Rio Rancho Boulevard, NW (NM 528) - from Coors Bypass, NW, north to the connection with the existing 12-inch water main on the east side of Seven Bar Channel (12-inch diameter water main and pressure reducing valve).

Seven Bar Loop, NW - from Coors, Bypass, NW, east to the connection with the existing water main located approximately 1,000 feet west of Corrales Road, NW (12-inch diameter water main).

<u>STORM DRAINAGE IMPROVEMENTS</u>

Coors Bypass, NW - from approximately 300 feet south of Seven Bar Loop, NW, north to approximately 1,200 feet north of Ellison Drive, NW (30-inch through 18-inch diameter storm drain).

Corrales Main Canal - from Ellison Drive, NW, north to the Cabezon Channel (54-inch diameter storm drain).

Corrales Road, NW - from Seven Bar Loop, NW, south to the drainage outfall to the Seven Bar Ranch Tract 14 detention basin located approximately 350 feet south of Seven Bar Loop, NW (24-inch diameter storm drain).

Cottonwood Drive, NW - from approximately 700 feet south of Ellison Drive, NW, north to Ellison Drive, NW (18 inch through 30-inch diameter storm drain).

Cottonwood Mall Site (Seven Bar Ranch Tract H-1) - within public drainage easements to serve proposed subdivision tracts under multiple ownerships (60-inch through 18-inch diameter storm drains and detention basins).

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Ellison Drive, NW - from 160 feet west of Coors Bypass, NW, east to the Corrales Main Canal (24-inch and 18-inch diameter storm drains).

Seven Bar Loop, NW - from approximately 200 feet west of Corrales Road, NW, east to Corrales Road, NW (24-inch and 18-inch diameter storm drain).

Seven Bar Ranch Tract C-3 - along the east boundary from Alameda Boulevard, NW, north to the Cabezon Channel, within proposed drainage easement (concrete-lined channel).

Seven Bar Ranch Tract N-2B - at the southwest corner of Coors Bypass, NW, and Ellison Drive, NW, within existing drainage easement (regional storm drainage detention basin).

Seven Bar Ranch Tract 14 - east of Corrales Road, NW, within proposed drainage easement (existing Coors Boulevard) at Seven Bar Loop, NW (regional storm drainage detention basin).

II. Except as more particularly shown on the plans in the office of the City Clerk, the Improvements substantially consists of and include the following:

A. Street Improvements

(1) The pavement width in feet including curb and gutter, measured back of curb to back of curb, is indicated after the above description of each street, or part thereof, as the case may be. The type of pavement section to be used is indicated in the plans. The Street Improvements shall include all necessary grading, shaping, draining, street lighting, and all other work incidental to such paving. The pavement is to be centered in each street right-of-way, except as indicated on the plans.

(2) Curbs and gutters will be constructed adjacent to the edge of the pavement and will be made of concrete. The work will include all necessary excavation, filling, grading, inlets, driveway approaches, and other work necessary and incidental to such improvements; the combined curb and gutter being 31-1/2 inches in width, and at the back of curb 14 inches in height; the curb being 5-1/2 inches thick at the top; and the gutter being 7-1/2 inches thick at the point of contact with the pavement. Median curbs shall be extruded asphalt being 8 inches wide at the bottom and 8 inches high. Mountable Curb shall be 31-1/2 inches wide, 10 inches thick at the back, and 6-3/4 inches thick at the point of contact with the pavement. Mountable Curb Estate Type shall be 31-1/2 inches wide, 10

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inches high at the back, and 7-1/2 inches thick at the point of contact with the pavement.

(3) Sidewalks shall be made of concrete, and the work will include all necessary excavation, filling, grading, and other work necessary and incidental to such improvements. The width of the sidewalk is indicated on he plans. Sidewalks shall be 4 inches in thickness, 72 inches in width, and be constructed parallel with the curb and gutter, except where otherwise indicated on the plans.

B. Water Improvements

The Water Improvements shall include excavation, trenching, pipe laying, and backfilling for constructing new water mains and appurtenances; removal and replacement of any pavement and other obstacles; service extensions shall be polyethylene pipe, cast iron pipe, or ductile iron pipe. All appurtenances and incidentals required or necessary to the foregoing improvements will be included in the Water Improvements.

C. Sanitary Sewer Improvements

The Sanitary Sewer Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of any paving and other obstacles; collection lines will be 8-inch diameter pipe except as noted otherwise on the plans; manholes will be installed at street intersections or as required. Collection lines shall be aligned as shown on the plans.

D. Storm Drainage Improvements

The Drainage Improvements shall include excavation, trenching, pipe laying, and backfilling; removal and replacement of paving and other obstacles; collection lines being 18-inch through 60-inch diameter reinforced concrete pipe; manholes and catch basins are to be installed in the street and gutter lines; and special inlet structures and outfall structures and crossings as indicated on the plans. Storm drains shall be installed within the street right-of-way or public easements, as indicated on the plans.

III. The estimated total cost of the Improvements, including engineering, legal, and all necessary and incidental expenses is $_____ of which it is estimated that $_____ will be defrayed from sources other than special assessments, and $_____ will be assessed against those tracts or parcels of land in the District

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as hereinafter provided. For assessments based on a front foot basis, the amount of frontage of any particular tract or parcel of land specifically benefitted by the improvements will be computed by determining the distance along the boundaries of such tract or parcel which abut any street, right-of-way, easement, or any combination thereof, in which and through which a particular improvement is being placed, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of footage of each such tract or parcel to the total amount of footage of all benefitted tracts or parcels. For assessments based on a service unit basis, an equal share of the amount to be assessed will be apportioned to each of the parcels specifically benefitted by the improvements. For assessments based on an area basis, the amount of area of any tract or parcel of land specifically benefitted by the improvement will be computed by determining the acreage of such tract or parcel, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of area of each such tract or parcel to the total amount of area of all benefitted tracts or parcels. For assessments based on a contribution basis, the amount of contribution of any tract or parcel of land specifically benefitted by the improvements will be determined from master plans, management plans, or engineering analysis, and the amount to be assessed will be apportioned to each such tract or parcel in proportion to the amount of contribution of each such tract or parcel to the total amount of contribution of all benefitted tracts or parcels. The estimated cost to be assessed and the basis of assessment for each type of improvement is as follows:

A. Street Improvements: The estimated total assessments are $____. The assessments will be levied either on a front foot or area basis against those tracts or parcels of land abutting that portion of the streets being improved. The assessment for improving intersections will be levied on a service unit basis against those tracts or parcels of land abutting that portion of any street which is within one-half of the distance to the next intersection from an intersection which is being improved and which is formed in part or whole by said street or, where the intersecting street dead ends without intersecting another street, against those tracts or parcels abutting that portion of the street extending from the intersection.

B. Water Improvements: The estimated total assessments are $____. The assessments will be levied on a front foot or service unit basis against

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those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Water Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

C. Sanitary Sewer Improvements: The estimated total assessments are $_____. The assessments will be levied on either a front foot, contribution, or service unit basis against those tracts or parcels of land abutting the streets, rights-of-way, or easements in which and through which the Sanitary Sewer Improvements shall be placed and also assessed against the tracts of land in the District that are specifically benefitted by the availability of service.

D. Storm Drainage Improvements: The estimated total assessments are $_____. Assessments will be levied against those tracts or parcels of land situated wholly or partially within the drainage basin in which and through which the Drainage Improvements and Street Improvements are being placed. Assessments will be levied equally against each tract or parcel of land on a contribution or service unit basis to each of those tracts or parcels or land contributing to the total basin flow and for the flood protection received by, and the elimination of potential flooding of the access to each tract or parcel of land due to the construction of the Storm Drainage Improvements and the diversion of drainage flow by the platted street system.

The methods of levying assessments set forth in Paragraph A through D of this Section have heretofore and hereby are determined by the Council to be equitable and proportionate to the benefit. An equitable adjustment will be made for assessments levied against any irregular lots or lands and made for any tract or parcel not specifically benefitted by any of the Improvements, so that assessments according to benefits are equal and uniform.

IV. All persons interested are hereby advised that the preliminary plans showing typical sections of the type of materials to be used, the approximate thickness and width of the material for the contemplated Street Improvements, the type of materials to be used and the diameter of any trunk lines, mains, laterals, or service connections for the contemplated Water Improvements, Sanitary Sewer Improvements, and Storm Drainage Improvements; and a general description of other major components of the Improvements; an assessment plat and addendum

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showing the area and the description of the property to be assessed and the maximum benefit estimated to accrue to those tracts or parcels of land in the District, said estimate of benefits being computed on the basis set forth herein; and an estimate of the total cost of constructing each of the Improvements, said estimate being made in a lump sum or by unit prices including without limiting the generality of the foregoing, the advertising, appraising, engineering, printing, and any such expenses as in the judgment of Easterling & Associates, Inc. (the "Engineer"), professional engineers duly licensed under the laws of the State of New Mexico, are necessary for the completion of construction of the Improvements and the payment of the costs thereof, are on file in the office of the City Clerk and may be inspected by any property owner or any other interested person during regular office hours. Any interested person may also ascertain in the office of the City Clerk a description of the property to be assessed and the maximum amount of benefit estimated to be conferred on those tracts or parcels of land. Reference is hereby made to such for further detail.

On Monday, the _____, at the hours of _____ p.m., at the Council Chamber in the City/County Government Center, One Civic Plaza, NW, in the City of Albuquerque, New Mexico, the owners of the property to be assessed or any other person interested therein may file a written protest or objection and may appear before the Council and may be heard as to the advisability of making the Improvements, as to the estimated cost thereof, as to the manner of payment therefore, and as to the amount thereof to be assessed against individual tracts or parcels of land. Any person desiring to appear before the Council and be heard, shall be asked to register with the Clerk of the Council prior to consideration of matters pertaining to such hearing.

Although any property owner or interested person may make a written protest or objection during such hearing, the City Clerk requests that any property owner or interested person wishing to make protest or objection, make such protest or objection in writing at the office of the City Clerk before the time set forth for such hearing. Any person filing a written protest or objection, as aforesaid, shall have the right within thirty days after the City Council has concluded the hearing, has determined the advisability of constructing the Improvements, has determined the type and character of the Improvements, and

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has created the District, to commence an action or suit in any court or competent jurisdiction to correct or set aside such determination, but thereafter all action or suits attacking the validity of the proceedings and the amount of the benefit shall be perpetually barred.

After such hearing, the Council shall determine the advisability of constructing the Improvements. If the Council determines that constructing the Improvements is advisable, the Council shall create the District and shall proceed to advertise for bids for the doing of the work therefore and shall enter into a contact with the responsible bidder making the lowest bid for the doing of such work and the furnishing of all necessary materials, all in accordance with Sections 3-33-1 through 3-33-43 NMSA 1978, as amended and supplemented.

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# CITY OF ALBUQUERQUE
# PUBLIC WORKS DEPARTMENT

April 1, 1991

INTER-OFFICE CORRESPONDENCE

ENGINEERING GROUP

TO: Michael Brasher, President, City Council

FROM: Louis E. Saavedra, Mayor

SUBJECT: SPECIAL ASSESSMENT DISTRICT NO. 223 - RESOLUTION NO. 2 (CITY COUNCIL DISTRICT #1)

Submitted herewith for your consideration and that of the City Council is Resolution No. 2 for Special Assessment District No. 223. By this resolution, the Council would give tentative approval of the preliminary plans, plats, estimated maximum benefits roll and Engineer's report prepared for the District by the Consulting Engineers, Easterling & Associates, Inc., and would set a date and time for the Protest Hearing.

Special Assessment District No. 223, as proposed, will consist of needed infrastructure improvements to four streets and Cottonwood Mall in the Seven Bar Ranch Sector Plan Development area of Albuquerque's West Mesa. The streets being improved are Coors Bypass, Seven Bar Loop Rd., Ellison Dr., and Cottonwood Dr.

Partial funding of the District was approved by the City Council in R-192 in the following amounts:

| | Account No. | Amount |
|---|---|---|
| Street Bond | 7360580 | $866,240 |
| Storm Bond | 7361240 | $229,301 |

This resolution is forwarded to the City Council for Introduction on April 15, 1991.

RECOMMENDED BY:

Robert E. Gurule, Director
Public Works Department

REVIEWED BY:

Victoria Sedillo Perea
CIP Official

RECOMMENDED BY:

Arthur A. Blumenfeld
Chief Administrative Officer

REVIEWED BY THE LEGAL DEPARTMENT:

Malcolm W. deVeaty
Assistant City Attorney

LL/tsl/WP+125392

25x

# CITY OF ALBUQUERQUE
## City Council

MAYOR'S OFFICE
95 JAN 10 AM 10:27

INTEROFFICE MEMORANDUM 1/10/95 REF. 14-1995

TO: Martin J. Chavez, Mayor

FROM: Mark S. Sanchez, Director of Council Services

SUBJECT: Transmittal of Legislation

Transmitted herewith is Bill No. R-168, Awarding Construction Contract for Special Assessment District 223, Parts 2, 3 and 4 - SAD 223 (Armijo) which was passed at the Council meeting of January 4, 1995, by a vote of 9 FOR AND 0 AGAINST.

In accordance with the provisions of the City Charter, your action is respectfully requested.

1995 JAN 17 PM 4:35
CITY CLERK

MSS:dj
Attachment
01/05/95

# CITY of ALBUQUERQUE
# ELEVENTH COUNCIL

COUNCIL BILL NO. R-168 ENACTMENT NO. 14-1995

SPONSORED BY: Alan B. Armijo

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RESOLUTION

AWARDING THE CONSTRUCTION CONTRACT FOR SPECIAL ASSESSMENT DISTRICT 223 PART 2 IMPROVEMENTS TO MCC, INC. AND PARTS 3 AND 4 IMPROVEMENTS TO ALBUQUERQUE UNDERGROUND, INC.

WHEREAS, the City Council on June 17, 1991 by Resolution authorized the City Clerk to advertise for bids for the construction of the improvements comprising Special Assessment District No. 223; and

WHEREAS, the City Clerk did advertise for construction bids as directed in accordance with State Statutes and the City Purchasing Ordinance; and

WHEREAS, on October 4, 1994, at 1:30 p.m., the City Clerk opened all bids which were received from six bidders for the construction of Part 2 Improvements and the result was that MCC, Inc. had submitted a low bid of $1,572,351.64 for the construction of Special Assessment District No. 223 Part 2 Improvements; and

WHEREAS, on October 11, 1994, at 1:30 p.m. the City Clerk opened all bids which were received from four bidders for the construction of Parts 3 and 4 Improvements and the result was that Albuquerque Underground, Inc. had submitted a low bid of $11,538,620.64 for the construction of Special Assessment District No. 223 Parts 3 and 4 Improvements; and

WHEREAS, Easterling & Associates, Inc. the Consulting Engineer and the Director, Public Works Department have recommended award of the Part 2 improvements construction contract to MCC, Inc. and award of the Parts 3 and 4 improvements construction contract to Albuquerque Underground, Inc.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

Section 1. That the contract for the construction of Special Assessment District No. 223 Part 2 improvements be and is hereby awarded to MCC, Inc.

Section 2. That the Contract for the construction of Special Assessment District No. 223 Parts 3 and 4 improvements be and is hereby awarded to Albuquerque Underground, Inc.

Section 3. That said construction work for Special Assessment District No. 223 Parts 2, 3 and 4 be performed in accordance with the plans, specifications and contract documents prepared by the Consulting Engineer, accepted by the City Council and filed with the City Clerk.

Section 4. That the officers of the City be and hereby are authorized to take whatever action as may be necessary and appropriate to carry out the provisions of this Resolution.

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PASSED AND ADOPTED THIS 4th DAY OF JANUARY, 1995.

BY A VOTE OF 9 FOR AND 0 AGAINST.

Vincent E. Griego, President
City Council

APPROVED THIS 17th DAY OF January, 1995.

Martin J. Chavez, Mayor
City of Albuquerque

ATTEST:

City Clerk

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# CITY OF ALBUQUERQUE

## CITY COUNCIL

INTER-OFFICE MEMORANDUM: July 23, 1991 REF. 12133-3

TO: Louis Saavedra, Mayor

FROM: Bea Gutierrez, Director of Council Services

SUBJECT: TRANSMITTAL OF LEGISLATION

Attached is Bill No. R-404, Amending Resolution No. 105-1991 - SAD 223 (Gallegos) which was passed by the Council on July 15, 1991, by a vote of 7 FOR AND 0 AGAINST.

Yes: 7
Excused: Armijo, Yntema

In accordance with the provisions of the City Charter your action is respectfully requested.

BG/dir
Attachment
07/17/91

City of Albuquerque

# City Council

## Enrolling & Engrossing Certificate

**Bill No:** R-404, Amending Resolution No. 105-1991 - SAD 223

**Sponsored by:** Steve D. Gallegos
Councillor, District 3

**Certified by:** Doreen Romero
Doreen Romero
Council Secretary

ALBUQUERQUE
NEW MEXICO
1706

**Date:** 7/19/91

Do Not Publish
117-1991

# CITY OF ALBUQUERQUE

## CITY COUNCIL

1991 JUL 24 AM 11:26
RECEIVED
ALBUQUERQUE CITY CLERK
REF. 12133-3

INTER-OFFICE MEMORANDUM: July 23, 1991

TO: Louis Saavedra, Mayor

FROM: Bea Gutierrez, Director of Council Services

SUBJECT: TRANSMITTAL OF LEGISLATION

Attached is Bill No. R-404, Amending Resolution No. 105-1991 - SAD 223 (Gallegos) which was passed by the Council on July 15, 1991, by a vote of 7 FOR AND 0 AGAINST.

Yes: 7
Excused: Armijo, Yntema

In accordance with the provisions of the City Charter your action is respectfully requested.

BG/dir
Attachment
07/17/91

RECEIVED
JUL 23 1991
MAYOR/CAO
OFFICE

# CITY of ALBUQUERQUE
## NINTH COUNCIL

COUNCIL BILL NO. R-404 ENACTMENT NO. 117-1991

SPONSORED BY: Steve D Gallegos

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RESOLUTION

RELATING TO ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223; AMENDING RESOLUTION NO. 105-1991 ADOPTED BY THE CITY COUNCIL ON JUNE 17, 1991.

WHEREAS, the City Council (the "Council") of the City of Albuquerque (the "City"), in the County of Bernalillo and State of New Mexico, has heretofore, pursuant to the requisite preliminary proceedings provided for and provisionally ordered the grading, graveling, paving, sidewalking, curbing, guttering, draining, and otherwise completing of certain streets and parts thereof (the "Street Improvements") and the construction, installing, and otherwise improving of certain sanitary sewer lines (the "Sanitary Sewer Improvements"), water lines (the "Water Improvements"), and storm drainage improvements (the "Storm Drainage Improvements"), in Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") (collectively, the "Improvements"), all pursuant to and in conformity with Sections 3-33-1 through 3-33-43, NMSA 1978, as amended and supplemented; and

WHEREAS, by Resolution No. 105-1991 adopted by the Council on June 17, 1991 ("Resolution No. 105-1991"), the Council finally passed on all protests and objections questioning the propriety and advisability of constructing the Improvements, as to the estimated cost

thereof, as to the manner of payment therefor and as to the estimated maximum benefit to each individual tract or parcel of the land within the District, created the District, determined to proceed with the Improvements and directed the City Clerk of the City to advertise for bids as required by law for doing the work of constructing the Improvements; and

WHEREAS, the Council has been advised that Resolution No. 105-1991 must be amended to correct certain errors pertaining to the estimated maximum benefit to accrue to certain tracts or parcels of land within the District which were discovered upon re-evaluation of the appraisals related to the District.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE, NEW MEXICO:

Section 1. That all action heretofore taken (not inconsistent with the provisions of this Resolution) by the City and the officers of the City directed toward the construction of the Improvements within the District and toward provisionally ordering the Improvements, be and the same hereby is ratified, approved and confirmed.

Section 2. That subparagraph A of Section 2 of Resolution No. 105-1991 be and hereby is amended in its entirety to read as follows:

A. Because the properties identified as Items 1, 2, 3, 4, 5, 16 and 17 will require future in-tract and off-site infrastructure improvements in addition to the improvements to be constructed by the District, and because development assumptions have been adjusted to more accurately reflect anticipated development conditions, and because of the community/public development required for a portion of the property identified as Item 7, and in consideration of the

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primarily indirect and uniform benefits expected to accrue to the ABQ Development residential property within the District, the Estimated Maximum Benefits shall be modified as follows:

(I) For Item No. 1, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $214,014.66.

(II) For Item No. 2, the Estimated Maximum Benefit shall be reduced from $270,000.00 to $121,657.13.

(III) For Item No. 3, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $213,664.64.

(IV) For Item No. 4, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $97,282.53.

(V) For Item No. 5, the Estimated Maximum Benefit shall be reduced from $170,000.00 to $74,335.63.

(VI) For Item No. 7, the Estimated Maximum Benefit shall be reduced from $950,000.00 to $185,000.00.

(VII) For Item No. 16, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $94,113.37.

(VIII) For Item No. 17, the Estimated Maximum Benefit shall be reduced from $630,000.00 to $334,932.03.

Section 3. That, except as specifically amended herein, Resolution No. 105-1991, shall be and remain in full force and effect as adopted on June 17, 1991.

Section 4. That the officers of the City be and they hereby are, authorized and directed to take all action necessary or appropriate to effectuate the provisions of this Resolution.

Section 5. That all resolutions, or parts thereof, in conflict with the provisions of this Resolution are hereby repealed. This repealer shall not be constructed to revive any resolution, or part thereof, heretobefore repealed.

Section 6. If any section, paragraph, clause, or

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provision of this Resolution shall for any reason be held to be invalid or unenforceable, the invalidity of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Resolution.

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PASSED AND ADOPTED THIS 15th DAY OF July, 1991.

BY A VOTE OF 7 FOR AND 0 AGAINST.

Yes: 7
Excused: Armijo, Yntema

Michael Brasher

Michael Brasher, President
City Council

APPROVED THIS 23 DAY OF July, 1991

Louis E. Saavedra, Mayor
City of Albuquerque

ATTEST:

Karen Aanes

City Clerk

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Final Version

**CITY of ALBUQUERQUE**
**NINTH COUNCIL**

COUNCIL BILL NO. R-404 ENACTMENT NO. _____

SPONSORED BY: Steve D Gallegos

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RESOLUTION

RELATING TO ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223; AMENDING RESOLUTION NO. 105-1991 ADOPTED BY THE CITY COUNCIL ON JUNE 17, 1991.

WHEREAS, the City Council (the "Council") of the City of Albuquerque (the "City"), in the County of Bernalillo and State of New Mexico, has heretofore, pursuant to the requisite preliminary proceedings provided for and provisionally ordered the grading, graveling, paving, sidewalking, curbing, guttering, draining, and otherwise completing of certain streets and parts thereof (the "Street Improvements") and the construction, installing, and otherwise improving of certain sanitary sewer lines (the "Sanitary Sewer Improvements"), water lines (the "Water Improvements"), and storm drainage improvements (the "Storm Drainage Improvements"), in Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") (collectively, the "Improvements"), all pursuant to and in conformity with Sections 3-33-1 through 3-33-43, NMSA 1978, as amended and supplemented; and

WHEREAS, by Resolution No. 105-1991 adopted by the Council on June 17, 1991 ("Resolution No. 105-1991"), the Council finally passed on all protests and objections questioning the propriety and advisability of constructing the Improvements, as to the estimated cost

thereof, as to the manner of payment therefor and as to the estimated maximum benefit to each individual tract or parcel of the land within the District, created the District, determined to proceed with the Improvements and directed the City Clerk of the City to advertise for bids as required by law for doing the work of constructing the Improvements; and

WHEREAS, the Council has been advised that Resolution No. 105-1991 must be amended to correct certain errors pertaining to the estimated maximum benefit to accrue to certain tracts or parcels of land within the District which were discovered upon re-evaluation of the appraisals related to the District.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE, NEW MEXICO:

Section 1. That all action heretofore taken (not inconsistent with the provisions of this Resolution) by the City and the officers of the City directed toward the construction of the Improvements within the District and toward provisionally ordering the Improvements, be and the same hereby is ratified, approved and confirmed.

Section 2. That subparagraph A of Section 2 of Resolution No. 105-1991 be and hereby is amended in its entirety to read as follows:

A. Because the properties identified as Items 1, 2, 3, 4, 5, 16 and 17 will require future in-tract and off-site infrastructure improvements in addition to the improvements to be constructed by the District, and because development assumptions have been adjusted to more accurately reflect anticipated development conditions, and because of the community/public development required for a portion of the property identified as Item 7, and in consideration of the

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primarily indirect and uniform benefits expected to accrue to the ABQ Development residential property within the District, the Estimated Maximum Benefits shall be modified as follows:

(I) For Item No. 1, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $214,014.66.

(II) For Item No. 2, the Estimated Maximum Benefit shall be reduced from $270,000.00 to $121,657.13.

(III) For Item No. 3, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $213,664.64.

(IV) For Item No. 4, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $97,282.53.

(V) For Item No. 5, the Estimated Maximum Benefit shall be reduced from $170,000.00 to $74,335.63.

(VI) For Item No. 7, the Estimated Maximum Benefit shall be reduced from $950,000.00 to $185,000.00.

(VII) For Item No. 16, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $94,113.37.

(VIII) For Item No. 17, the Estimated Maximum Benefit shall be reduced from $630,000.00 to $334,932.03.

Section 3. That, except as specifically amended herein, Resolution No. 105-1991, shall be and remain in full force and effect as adopted on June 17, 1991.

Section 4. That the officers of the City be and they hereby are, authorized and directed to take all action necessary or appropriate to effectuate the provisions of this Resolution.

Section 5. That all resolutions, or parts thereof, in conflict with the provisions of this Resolution are hereby repealed. This repealer shall not be constructed to revive any resolution, or part thereof, heretobefore repealed.

Section 6. If any section, paragraph, clause, or

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provision of this Resolution shall for any reason be held to be invalid or unenforceable, the invalidity of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Resolution.

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PASSED AND ADOPTED THIS 15th DAY OF July, 1991.

BY A VOTE OF 7 FOR AND 0 AGAINST.

Yes: 7
Excused: Armijo, Yntema

Michael Bresher, President
City Council

APPROVED THIS _____ DAY OF _____, 1991

Louis E. Saavedra, Mayor
City of Albuquerque

ATTEST:

City Clerk

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# FISCAL IMPACT ANALYSIS

TITLE: Amendment to Enactment No. 105-1991, Resolution No. 3 SAD-223

R-_____ O-_____

FUND: SAD

DEPT: Public Works

[X] No measurable fiscal impact is anticipated, i.e., no impact on fund balance over and above existing appropriations.

[ ] (If Applicable) The estimated fiscal impact (defined as impact over and above existing appropriations) of this legislation is as follows:

| | CURRENT YEAR* | NEXT YEAR* |
|---|---|---|
| Base Salary/Wages | $ | $ |
| Fringe Benefits at _____% | | |
| Subtotal Personnel | | |
| Operating Expenses | | |
| Property | | |
| Total | $ | $ |
| [ ] Estimated revenues not affected | | |
| [ ] Estimated revenue impact | $ | $ |

* These estimates do not include any adjustment for inflation.
* Range if not easily quantifible.

| | | |
|---|---|---|
| Number of Positions | | |

COMMENTS:

There was no fiscal impact with the original resolution and this amendment does not add any fiscal impact.

COMMENTS ON NON-MONETARY IMPACTS TO COMMUNITY/CITY GOVERNMENT:

PREPARED BY: [signature] 7/12/91
FISCAL ANALYST

APPROVED: [signature] 7-12-91
DIRECTOR (date)

REVIEWED BY: [signature] 7-12-91
EXECUTIVE BUDGET ANALYST

REVIEWED BY: [signature] 7-12-91
BUDGET OFFICER (date)

# CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE July 12, 1991 REF. NO._____

Michael Brasher, President, City Council

TO: Louis E. Saavedra, Mayor

FROM: AMENDMENT OF ENACTMENT NO. 105-1991, RESOLUTION NO. 3, SPECIAL ASSESSMENT DISTRICT NO. 223 (CITY COUNCIL DISTRICT #1).

SUBJECT:

Submitted herewith for your consideration and that of the City Council is a resolution amending Section 2 of the subject legislation. This amendment lowers the Estimated Maximum Benefits for various ABQ Development Corp. properties that are under the control of the Resolution Trust Corporation (the RTC). These adjusted Estimated Maximum Benefits were developed by the City's Consulting Appraiser and agreed to by ABQ Development Corp. It is anticipated that RTC approval will be obtained by early August 1991.

The total Estimated Maximum Benefits for their residential properties were reduced from $2,522,900 to $1,150,000, which is below their estimated assessments of $1,238,000. However, the Estimated Maximum Benefits for their commercial properties, which was reduced from $950,000 to $185,000 is well above the estimated assessment of $88,900.

This resolution is forwarded to the Council for introduction and immediate action on July 15, 1991.

RECOMMENDED BY:

Robert Gurule, Director
Public Works Department

REVIEWED BY THE LEGAL DEPARTMENT:

Malcolm W. deVesty
Assistant City Attorney

RECOMMENDED BY:

Arthur A. Blumenfeld
Chief Administrative Officer

LL/cr
Doc.#WPTPD716

original

**CITY of ALBUQUERQUE**
**NINTH COUNCIL**

COUNCIL BILL NO. R-404 ENACTMENT NO. _____

SPONSORED BY: Steve D Gallegos

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RESOLUTION

RELATING TO ALBUQUERQUE, NEW MEXICO, SPECIAL ASSESSMENT DISTRICT NO. 223; AMENDING RESOLUTION NO. 105-1991 ADOPTED BY THE CITY COUNCIL ON JUNE 17, 1991.

WHEREAS, the City Council (the "Council") of the City of Albuquerque (the "City"), in the County of Bernalillo and State of New Mexico, has heretofore, pursuant to the requisite preliminary proceedings provided for and provisionally ordered the grading, graveling, paving, sidewalking, curbing, guttering, draining, and otherwise completing of certain streets and parts thereof (the "Street Improvements") and the construction, installing, and otherwise improving of certain sanitary sewer lines (the "Sanitary Sewer Improvements"), water lines (the "Water Improvements"), and storm drainage improvements (the "Storm Drainage Improvements"), in Albuquerque, New Mexico, Special Assessment District No. 223 (the "District") (collectively, the "Improvements"), all pursuant to and in conformity with Sections 3-33-1 through 3-33-43, NMSA 1978, as amended and supplemented; and

WHEREAS, by Resolution No. 105-1991 adopted by the Council on June 17, 1991 ("Resolution No. 105-1991"), the Council finally passed on all protests and objections questioning the propriety and advisability of constructing the Improvements, as to the estimated cost

thereof, as to the manner of payment therefor and as to the estimated maximum benefit to each individual tract or parcel of the land within the District, created the District, determined to proceed with the Improvements and directed the City Clerk of the City to advertise for bids as required by law for doing the work of constructing the Improvements; and

WHEREAS, the Council has been advised that Resolution No. 105-1991 must be amended to correct certain errors pertaining to the estimated maximum benefit to accrue to certain tracts or parcels of land within the District which were discovered upon re-evaluation of the appraisals related to the District.

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE, NEW MEXICO:

Section 1. That all action heretofore taken (not inconsistent with the provisions of this Resolution) by the City and the officers of the City directed toward the construction of the Improvements within the District and toward provisionally ordering the Improvements, be and the same hereby is ratified, approved and confirmed.

Section 2. That subparagraph A of Section 2 of Resolution No. 105-1991 be and hereby is amended in its entirety to read as follows:

A. Because the properties identified as Items 1, 2, 3, 4, 5, 16 and 17 will require future in-tract and off-site infrastructure improvements in addition to the improvements to be constructed by the District, and because development assumptions have been adjusted to more accurately reflect anticipated development conditions, and because of the community/public development required for a portion of the property identified as Item 7, and in consideration of the

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primarily indirect and uniform benefits expected to accrue to the ABQ Development residential property within the District, the Estimated Maximum Benefits shall be modified as follows:

(I) For Item No. 1, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $214,014.66.

(II) For Item No. 2, the Estimated Maximum Benefit shall be reduced from $270,000.00 to $121,657.13.

(III) For Item No. 3, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $213,664.64.

(IV) For Item No. 4, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $97,282.53.

(V) For Item No. 5, the Estimated Maximum Benefit shall be reduced from $170,000.00 to $74,335.63.

(VI) For Item No. 7, the Estimated Maximum Benefit shall be reduced from $950,000.00 to $185,000.00.

(VII) For Item No. 16, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $94,113.37.

(VIII) For Item No. 17, the Estimated Maximum Benefit shall be reduced from $630,000.00 to $334,932.03.

Section 3. That, except as specifically amended herein, Resolution No. 105-1991, shall be and remain in full force and effect as adopted on June 17, 1991.

Section 4. That the officers of the City be and they hereby are, authorized and directed to take all action necessary or appropriate to effectuate the provisions of this Resolution.

Section 5. That all resolutions, or parts thereof, in conflict with the provisions of this Resolution are hereby repealed. This repealer shall not be constructed to revive any resolution, or part thereof, heretobefore repealed.

Section 6. If any section, paragraph, clause, or

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provision of this Resolution shall for any reason be held to be invalid or unenforceable, the invalidity of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Resolution.

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# FISCAL IMPACT ANALYSIS

TITLE: Amendment to Enactment No. 105-1991, Resolution No. 3 SAD-223

R-_____ O-_____

FUND: SAD

DEPT: Public Works

[X] No measurable fiscal impact is anticipated, i.e., no impact on fund balance over and above existing appropriations.

[ ] (If Applicable) The estimated fiscal impact (defined as impact over and above existing appropriations) of this legislation is as follows:

| | CURRENT YEAR* | NEXT YEAR* |
|---|---|---|
| Base Salary/Wages | $ | $ |
| Fringe Benefits at _____% | | |
| Subtotal Personnel | | |
| Operating Expenses | | |
| Property | | |
| Total | $ | $ |
| [ ] Estimated revenues not affected | | |
| [ ] Estimated revenue impact | $ | $ |

* These estimates do not include any adjustment for inflation.
* Range if not easily quantifible.

| | | |
|---|---|---|
| Number of Positions | | |

COMMENTS:

There was no fiscal impact with the original resolution and this amendment does not add any fiscal impact.

COMMENTS ON NON-MONETARY IMPACTS TO COMMUNITY/CITY GOVERNMENT:

PREPARED BY: [signature] 7/12/91
FISCAL ANALYST

APPROVED: [signature] 7-12-91
DIRECTOR (date)

REVIEWED BY: [signature] 7-12-91
EXECUTIVE BUDGET ANALYST

REVIEWED BY: [signature] 7-12-91
BUDGET OFFICER (date)

# CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE July 12, 1991 REF. NO._____

TO: Michael Brasher, President, City Council
Louis E. Saavedra, Mayor

FROM: AMENDMENT OF ENACTMENT NO. 105-1991, RESOLUTION NO. 3, SPECIAL ASSESSMENT DISTRICT NO. 223 (CITY COUNCIL DISTRICT #1).

SUBJECT:

Submitted herewith for your consideration and that of the City Council is a resolution amending Section 2 of the subject legislation. This amendment lowers the Estimated Maximum Benefits for various ABQ Development Corp. properties that are under the control of the Resolution Trust Corporation (the RTC). These adjusted Estimated Maximum Benefits were developed by the City's Consulting Appraiser and agreed to by ABQ Development Corp. It is anticipated that RTC approval will be obtained by early August 1991.

The total Estimated Maximum Benefits for their residential properties were reduced from $2,522,900 to $1,150,000, which is below their estimated assessments of $1,238,000. However, the Estimated Maximum Benefits for their commercial properties, which was reduced from $950,000 to $185,000 is well above the estimated assessment of $88,900.

This resolution is forwarded to the Council for introduction and immediate action on July 15, 1991.

RECOMMENDED BY:

Robert Gurule, Director
Public Works Department

REVIEWED BY THE LEGAL DEPARTMENT:

Malcolm W. deVesty
Assistant City Attorney

RECOMMENDED BY:

Arthur A. Blumenfeld
Chief Administrative Officer

LL/cr
Doc.#WPTPD716

0000 0000 1093

CITY OF ALBUQUERQUE
NEW MEXICO

# SPECIAL ASSESSMENT DISTRICT NO. 223
# TABULATION OF PROTESTS
# ADDENDUM NO. 1

JULY 11, 1991

*EASTERLING & ASSOCIATES, INC.*
CONSULTING ENGINEERS
10131 COORS ROAD, NW, SUITE H-7
ALBUQUERQUE, NEW MEXICO 87114

CITY OF ALBUQUERQUE
NEW MEXICO

# SPECIAL ASSESSMENT DISTRICT NO. 223
# TABULATION OF PROTESTS
# ADDENDUM NO. 1
# JULY 11, 1991

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| 3. REVIEW OF ADDITIONAL PROTESTS | 1 |
| 3.1 ABQ Development Corporation | 1 |

APPENDICES

APPENDIX A-1 - Tabulation of Protests, Addendum No. 1, July 11, 1991
APPENDIX A-2 - Brown, Chudleigh, Schuler & Associates
Letter Dated July 8, 1991, with Enclosures
APPENDIX A-3 - Brown, Chudleigh, Schuler & Associates
Letter Dated July 11, 1991
APPENDIX A-4 - Benefit Allocation Items 1, 2, 3, 4, 5, 16 and 17
APPENDIX A-5 - Assessment Allocation Items 1, 2, 3, 4, 5, 16 and 17




25X

**CITY OF ALBUQUERQUE**
**NEW MEXICO**

**SPECIAL ASSESSMENT DISTRICT NO. 223**
**TABULATION OF PROTESTS**
**ADDENDUM NO. 1**
**JULY 11, 1991**

## 1. GENERAL

This Addendum No. 1 shall be incorporated into the Special Assessment District No. 223 Tabulation of Protests dated June, 1991. Except as described in this Addendum No. 1, the original Tabulation of Protests dated June, 1991, shall remain unchanged. This Addendum No. 1 is hereby made a part of the Tabulation of Protests to the same extent as if included in the original document.

The purpose of this addendum is to correct erroneous assumptions in the original Tabulation of Protests and to respond to subsequent comments and concerns voiced by ABQ Development regarding Estimated Maximum Benefit determinations and the Estimated Assessment determinations for Items 1, 2, 3, 4, 5, 7, 16 and 17.

## 2. TABULATION OF PROTESTS

The Tabulation of Protests - Addendum No. 1, July 11, 1991, included in Appendix A-1 supersedes the original Tabulation of Protests dated June 14, 1991.

## 3. REVIEW OF ADDITIONAL PROTESTS

| | Property Owner | Property Item No. | Property Description |
|---|---|---|---|
| 3.1 | ABQ Development Corporation<br>c/o Resolution Trust Corporation<br>Bank of America Action Center<br>3900 Vassar Drive N.E.<br>Albuquerque, NM 87107 | 1 | Tract B-9G, Seven Bar Ranch |
| | | 2 | Tract B-9H, Seven Bar Ranch |
| | | 3 | Tract B-9J, Seven Bar Ranch |
| | | 4 | Tract B-9E, Seven Bar Ranch |
| | | 5 | Tract B-9F, Seven Bar Ranch |
| | | 7 | Tract B-9D, Seven Bar Ranch |
| | | 16 | Tract N-2A-2, Seven Bar Ranch |
| | | 17 | Tract N-2A-1, Seven Bar Ranch |



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SUMMARY OF ADDITIONAL PROTESTS:

Estimated Maximum Benefit determinations are based on erroneous information. Discounted cash flow analyses for residential properties do not reflect costs for future intract infrastructure. Development costs are inaccurate. The valuation for Item 7, Tract B-9D, Seven Bar Ranch should be decreased because the Seven Bar Ranch Sector Development Plan requires that a portion of the property be developed for community activities or for public use. The improvements proposed in the District provide relatively uniform indirect benefits to most of the ABQ Development property within the District, and benefits and assessments should be spread more evenly over the properties.

RESPONSE TO ADDITIONAL PROTESTS:

The Estimated Maximum Benefits for Items 1, 2, 3, 4, 5, 7, 16 and 17 have been revised in response to the additional protests. The discounted cash flow analysis for the residential properties (Items 1, 2, 3, 4, 5, 16 and 17) has been revised to include costs for future intract infrastructure. Times for absorption, estimated development costs, market values, type of development and inflation were also revised as discussed and agreed to with ABQ Development. The residential properties have been re-evaluated in mass because of the close proximity and the single ownership. This approach results in conservatively low valuations because sequential rather than simultaneous tract development is assumed and the resulting absorption period is longer. A discussion of the re-evaluation process and the value allocated to the property are presented in the Brown, Chudleigh, Schuler & Associates letter dated July 8, 1991. A copy of the letter is included in Appendix A-2 for reference. This letter supersedes the Brown, Chudleigh, Schuler & Associates letter dated June 12, 1991, included as Appendix 4 in the original Tabulation of Protests. The Estimated Maximum Benefit for Item 7 was adjusted to reflect the lower valuation of the property resulting from the Sector Plan requirement that a portion of the property be developed for community/public use. A summary of the re-evaluation is presented in the Brown, Chudleigh, Schuler & Associates letter dated July 11, 1991 which is included in Appendix A-3 for reference.

In response to comments regarding the indirect and uniform nature of benefits, the Estimated Maximum Benefits and Estimated Assessments have been re-allocated to Items 1, 2, 3, 4, 5, 16 and 17 on a net acreage (area) basis. The revised Benefit and Assessment Allocations are included in Appendix A-4 and A-5 respectively.



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RECOMMENDATIONS:

The following recommendations supersede those included in the Review of Protests for ABQ Development Corporation in the original Tabulation of Protests.

Because the properties identified as Items 1, 2, 3, 4, 5, 16, and 17 will require future intract and off-site infrastructure in addition to the improvements to be constructed by the District, and because development assumptions have been adjusted to more accurately reflect anticipated development conditions, and because of the community/public development required for a portion of the property identified as Item 7, and in consideration of the primarily indirect and uniform benefits expected to accrue to the ABQ Development residential property within the District, the Estimated Maximum Benefits and Estimated Assessments shall be modified as follows:

1. For Item No. 1, the Estimated Maximum Benefit shall be decreased from $436,100.00 to $214,014.66 and the Estimated Assessment shall be increased from $56,000.67 to $230,438.56. The Actual Assessment shall not exceed the Estimated Maximum Benefit.

2. For Item No. 2, the Estimated Maximum Benefit shall be decreased from $243,900.00 to $121,657.13 and the Estimated Assessment shall be increased from $41,135.97 to $130,993.34. The Actual Assessment shall not exceed the Estimated Maximum Benefit.

3. For Item No. 3, the Estimated Maximum Benefit shall be decreased from $645,800.00 to $213,664.64 and the Estimated Assessment shall be decreased from $581,962.33 to $230,061.68. The Actual Assessment shall not exceed the Estimated Maximum Benefit.

4. For Item No. 4, the Estimated Maximum Benefit shall be increased from $51,000.00 to $97,282.53 and the Estimated Assessment shall be increased from $50,472.96 to $104,748.18. The Actual Assessment shall not exceed the Estimated Maximum Benefit.

5. For Item No. 5, the Estimated Maximum Benefit shall be decreased from $99,400.00 to $74,335.63 and the Estimated Assessment shall be increased from $40,085.74 to $80,040.29. The Actual Assessment shall not exceed the Estimated Maximum Benefit.



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6. For Item No. 7, the Estimated Maximum Benefit shall be decreased from $950,000.00 to $185,000.00 and the Estimated Assessment shall remain $87,934.86. The Actual Assessment shall not exceed the Estimated Maximum Benefit.

7. For Item No. 16, the Estimated Maximum Benefit shall be increased from $57,000.00 to $94,113.37 and the Estimated Assessment shall be increased from $97,973.99 to $101,335.82. The Actual Assessment shall not exceed the Estimated Maximum Benefit.

8. For Item No. 17, the Estimated Maximum Benefit shall be decreased from $989,700.00 to $334,932.03 and the Estimated Assessment shall be decreased from $370,621.59 to $360,635.37. The Actual Assessment shall not exceed the Estimated Maximum Benefit.



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# APPENDIX A-1

TABULATION OF PROTESTS
ADDENDUM NO. 1
JULY 11, 1991

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# CITY OF ALBUQUERQUE SPECIAL ASSESSMENT DISTRICT NO.223
## TABULATION OF PROTESTS - ADDENDUM NO. 1

JULY 11, 1991

| PROPERTY OWNERS BY SUPPORT / PROTEST CATAGORY | NUMBER OF PROPERTIES | PERCENT OF TOTAL PROPERTIES | PROPERTY NET AREA | PERCENT OF TOTAL PROPERTY NET AREA | ESTIMATED ASSESSMENTS | PERCENT OF TOTAL ESTIMATED ASSESSMENTS |
|---|---|---|---|---|---|---|
| **STRONG SUPPORT FOR DISTRICT (WITH PROTESTS / CONCERNS)** | | | | | | |
| ALBUQUERQUE MALL COMPANY LIMITED PARTNERSHIP | 16 | 43.24% | 90.03 | 17.50% | $7,087,494.97 | 44.93% |
| SEVEN BAR LAND AND CATTLE COMPANY | 5 | 13.51% | 116.60 | 22.66% | $3,131,868.43 | 19.85% |
| ALBERT J. BLACK AND MARY J. BLACK REVOCABLE TRUST OR THEIR SUCCESSORS | 2 | 5.41% | 11.18 | 2.17% | $241,905.33 | 1.53% |
| SUBTOTALS | 23 | 62.16% | 217.81 | 42.34% | $10,461,268.73 | 66.32% |
| **MODERATE SUPPORT FOR DISTRICT (WITH PROTESTS / CONCERNS)** | | | | | | |
| ABQ DEVELOPMENT CORPORATION | 8 | 21.62% | 207.02 | 40.24% | $1,237,934.86 | 7.85% |
| SUBTOTALS | 8 | 21.62% | 207.02 | 40.24% | $1,237,934.86 | 7.85% |
| **OPPOSITION TO DISTRICT** | | | | | | |
| ALBUQUERQUE BOARD OF EDUCATION | 2 | 5.41% | 45.68 | 8.88% | $110,000.00 | 0.70% |
| CORRALES ASSOCIATES, LTD. | 1 | 2.70% | 8.30 | 1.61% | $60,000.00 | 0.38% |
| SUBTOTALS | 3 | 8.11% | 53.98 | 10.49% | $170,000.00 | 1.08% |
| **NON-RESPONSIVE** | | | | | | |
| CITY OF ALBUQUERQUE | 1 | 2.70% | 6.86 | 1.33% | $3,828,008.18 | 24.27% |
| NORTH COORS GROUP | 2 | 5.41% | 28.79 | 5.60% | $77,207.76 | 0.49% |
| SUBTOTALS | 3 | 8.11% | 35.65 | 6.93% | $3,905,215.94 | 24.76% |
| TOTALS | 37 | 100.00% | 514.46 | 100.00% | $15,774,417.53 | 100.00% |

NOTES: 1. CITY OF ALBUQUERQUE ESTIMATED ASSESSMENTS INCLUDE ASSESSED AND UNASSESSED COSTS.
2. PROPERTY ESTIMATED ASSESSMENTS SHOWN DO NOT INCLUDE AMOUNTS IN EXCESS OF ESTIMATED MAXIMUM BENEFITS.



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# APPENDIX A-2

BROWN, CHUDLEIGH, SCHULER & ASSOCIATES
LETTER DATED JULY 8, 1991, WITH ENCLOSURES

**BROWN, CHUDLEIGH, SCHULER & ASSOCIATES**
REAL ESTATE APPRAISALS-MARKET STUDIES

LAWRENCE E. BROWN, MAI (1942-1990)
WALTER H. CHUDLEIGH III, MAI
GREGORY S. SCHULER
MARK E. DIMARCO
SUSAN R. STANLEY
DEAN A. MEYERS
MARGARET GARRINGTON
ANDREW E. ALTPORT
ROBERT E. GROWER

PARK CITY OFFICE:
1500 E. Kearns Blvd.
Suite C-204
Park City, Utah 84060
Telephone (801) 649-5906

July 8, 1991

Easterling and Associates, Inc.
10131 Coors Road, N.W.
Suite H-7
Albuquerque, NM 87114

Attn: Mr. R.P. Bohannan, P.E.

Re: SAD No. 223- Parcels 1,2,3,4,5,16 & 17
Albuquerque, New Mexico

Gentlemen:

In response to your request we have re-appraised the above referenced parcels. The updated analysis includes the new information provided by Easterling Associates with regard to development costs and CIP fees for the properties and input from the property owners. The market value of a fee interest in the parcels has been estimated under two premises. The first valuation assumes that the infrastructure improvements which are scheduled to be installed as part of the special assessment district are not in place. It can be considered an "as is" valuation of the property. The second premise assumes that the SAD improvements are in place and that no assessments or other charges are due. As a result of our appraisal and analysis, the opinion has been formed that the market values of the properties, subject to the enclosed limiting conditions, as of March 1, 1991, are as follows:

Premise 1 "As is"

**NINE HUNDRED THOUSAND DOLLARS**

**($900,000)**

Premise 2 "Assuming Completion of the SAD"

**TWO MILLION FIFTY THOUSAND DOLLARS**

**($2,050,000)**

APPENDIX A-2.1



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A brief discussion of the valuation process is presented on the following pages. Please refer to our full narrative report dated April 29, 1991 for details with regard to the subject parcels, definition of market value, demographic data, comparables, and limiting conditions and assumptions.

Valuation Methodology

The subject parcels range in size from approximately 13 to 58 acres, and total 199.7612 acres. Given the common ownership of the parcels and the fact that they are in close proximity and would compete with each other, we have staged development as though they were one 200 ± acre development. This will result in a more conservative valuation, inasmuch as it will include the negative impact on value resulting from an extended absorption period.

The current zoning regulations permit a mixture of single and multi-family development on the parcels, and we have allocated 75% of the land to single family development and 25% to multi-family development. Based on conversations with the property owners and Easterling Associates, the appropriate densities are four units per "net" acre for single family and 20 units per acre for multi-family. This results in a total of 500 single family lots and 1,000 multi-family units. It is anticipated that the lots would be sold to developers who would differentiate the design and pricing of the homes to appeal to a broad market.

The value of the single family lots is estimated at $25,000 each, if sold in bulk to home builders, and the multi-family land at $3,500 per unit, based on comparable sales data. The weighted average value for the 1,500 total units is calculated at $10,622. The sale of the lots is assumed to commence in the



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third year under Premise 1, assuming a two year planning and construction period for the SAD improvements and the off-site improvements for the subject parcels. We have estimated a seven year sell-out, or absorption period, based on an analysis of historic absorption and projections for the future. This is equal to an average of 214 units per year, including multi-family and single family.

The estimated off-site construction costs of approximately $4,700,000, as provided by Easterling and Associates have been included in our discounted cash flow analysis, as well as "in-tract" development costs of $10,000 per single family lot. Deductions are also made for taxes, sales commissions and marketing, legal fees, general administrative and overhead, interest, and developer's profit in arriving at a value for the entire project. In the case of the Premise I, or "as is" valuation, the estimated costs which would have been provided by the SAD are also included. This assumes that a private developer would be required to construct the same infrastructure as is planned for the SAD, and that he could complete the construction within the same budget parameters. It is noted that the purchase of the property "as is" assuming no SAD is considerably more risky than the purchase assuming that the SAD improvements are in place. The purchaser would have to obtain city approvals for the project and would face additional construction cost overrun risk as well as market risk, and the risk that the city might require additional street improvements, traffic lights, etc. The cost of providing the city mandated infrastructure improvements, which will be provided by the SAD, is estimated at $928,200 under Premise 1. This is considered to be an optimistic, or "best case" estimate, inasmuch as the city could require ABQ Development to pay for more than its pro rata share of the infrastructure costs if it were to proceed with the development of its 200 acres separate from the SAD. It also assumes that New Mexico Utilities will grant a 100% credit against the normal CIP fees for the construction of the major water and sewer lines. The estimated value of the parcels under Premise I, as indicated on the enclosed printouts, totals $900,577, which is rounded to $900,000.

APPENDIX A-2.3

Premise 2 incorporates the same basic assumptions as Premise 1 in terms of pricing, in-tract costs, and infrastructure costs. The sale of the parcels is assumed to start in the second year, inasmuch as it is assumed that the SAD infrastructure work is already completed. The attached discounted cash flow printouts indicate an aggregate value for the subject property of $2,048,392, which is rounded to $2,050,000, under Premise 2. The difference between the two figures, or the "benefit" resulting from the SAD is calculated at $1,150,000 dollars.

The cash flow analyses generally assume underlying inflation rates of 4% per year commencing in the second year. Marketing expenses are projected at 6% of gross sales revenue; developer's overhead at 1.5% of gross revenue, and developer's profit at 10% to 11% of gross sales revenue. The cash flow is discounted at 15% per annum to reflect the time value of money and to account for the projected delay in receiving funds due to the extended absorption period.

Please feel free to contact us if you have any questions, or if we can be of further assistance.

Respectfully Submitted

BROWN, CHUDLEIGH, SCHULER & ASSOCIATES

Walter H. Chudleigh III, MAI
WHC:mrc

APPENDIX A-2.4

## Addenda

### Discounted Cash Flow Analysis- Premise 1 "As Is"

APPENDIX A-2.5

# APPENDIX A-2.6

DISCOUNTED CASH FLOW- Land Residual-"As Is" - Parcels 1, 2, 3, 4, 5, 16 & 17 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| | --- | --- | --- | --- | --- | --- | --- |
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 214 | 214 | 214 | 214 | 214 |
| Cumulative Completed | 0 | 0 | 214 | 428 | 642 | 856 | 1,070 |
| Total Closed | 0 | 0 | 214 | 214 | 214 | 214 | 214 |
| Cumulative Closed | 0 | 0 | 214 | 428 | 642 | 856 | 1,070 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $10,662 | $11,088 | $11,532 | $11,993 | $12,473 | $12,972 | $13,491 |
| Sales Income-Residential | 0 | 0 | 2,467,826 | 2,566,539 | 2,669,201 | 2,775,969 | 2,887,007 |
| Other Income | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Loan Draw | 1,106,799 | 1,757,249 | 3,268,474 | 1,795,133 | 1,760,781 | 3,516,200 | 1,843,387 |
| | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| Total Revenue | 1,106,799 | 1,757,249 | 5,736,300 | 4,361,672 | 4,429,982 | 6,292,169 | 4,730,395 |
| Development Costs | | | | | | | |
| Offsite Costs- | | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Severs | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SAD Costs | 928,200 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Infrastructure | 0 | 1,481,000 | 1,601,850 | 0 | 0 | 1,801,843 | 0 |
| In-tract Infrastructure | 0 | 0 | 1,081,600 | 1,124,864 | 1,169,859 | 1,216,653 | 1,265,319 |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | | |
| Architect/Engineering | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Legal & Closing | 0 | 0 | 11,373 | 12,036 | 12,517 | 13,018 | 13,539 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes- Acreage | 75,000 | 75,000 | 64,300 | 53,600 | 42,900 | 32,200 | 21,500 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 123,391 | 128,327 | 133,460 | 138,798 | 144,350 |
| Interest/Finance Charges | 71,064 | 168,714 | 353,225 | 443,771 | 369,510 | 281,133 | 366,164 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 32,535 | 32,535 | 32,535 | 32,535 | 32,535 | 32,535 | 32,535 |
| | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| Total Costs | 1,106,799 | 1,757,249 | 3,268,474 | 1,795,133 | 1,760,781 | 3,516,200 | 1,843,387 |
| Loan Draw | 1,106,799 | 1,757,249 | 3,268,474 | 1,795,133 | 1,760,781 | 3,516,200 | 1,843,387 |
| Loan Repayment | 0 | 0 | 2,406,130 | 2,502,376 | 2,602,471 | 2,706,569 | 2,814,832 |
| Loan Balance | 1,606,799 | 3,364,067 | 4,226,390 | 3,519,148 | 2,677,458 | 3,487,089 | 2,515,644 |
| Cash Flow | 0 | 0 | 61,696 | 64,163 | 66,730 | 69,399 | 72,175 |
| Less Developer's Profit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash Flow to Property | 0 | 0 | 61,696 | 64,163 | 66,730 | 69,399 | 72,175 |
| Cumulative CF | 0 | 0 | 61,696 | 125,859 | 192,589 | 261,988 | 334,164 |
| Disc Cash Flow | 0 | 0 | 40,546 | 36,686 | 33,177 | 30,003 | 27,133 |
| Cumulative DCF | 0 | 0 | 40,546 | 77,232 | 110,428 | 140,431 | 167,565 |

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DISCOUNTED CASH FLOW- Land Residual-"As Is"- Parcels 1, 2, 3, 4, 5, 16 & 17 Page 2

| Year | 8 | 9 |
|---|---|---|
| | --- | --- |
| % Onsites Completed | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% |
| Units Completed (Land) | 214 | 216 |
| Cumulative Completed | 1,284 | 1,500 |
| Total Closed | 214 | 216 |
| Cumulative Closed | 1,284 | 1,500 |
| Current Inventory | 0 | 0 |
| Ave Price/Unit-Land | $14,030 | $14,592 |
| Sales Income-Residential | 3,002,488 | 3,151,770 |
| Other Income | 0 | 0 |
| Loan Draw | 471,682 | 211,193 |
| | ------ | ------ |
| Total Revenue | 3,474,170 | 3,362,964 |
| Development Costs | | |
| Offsite Costs- | | |
| Grading | $0 | $0 |
| Blasting | 0 | 0 |
| Sewers | 0 | 0 |
| SAD Costs | 0 | 0 |
| Utilities | 0 | 0 |
| Base Infrastructure | 0 | 0 |
| In-tract Infrastructure | 0 | 0 |
| Base unit | 0 | 0 |
| Appliances/options | 0 | 0 |
| Clubhouse & amenities | 0 | 0 |
| Soft Costs: | | |
| Architect/Engineering | 0 | 0 |
| Legal & Closing | 16,080 | 16,781 |
| Taxes -Finished lots | 0 | 0 |
| Taxes- Acreage | 10,800 | 0 |
| Promotion | 0 | 0 |
| Marketing/Commissions | 150,124 | 157,589 |
| Interest/Finance Charges | 264,143 | 6,290 |
| Sewer Assessment | 0 | 0 |
| Developer's Overhead | 32,535 | 32,535 |
| | ------ | ------ |
| Total Costs | 471,682 | 211,193 |
| Loan Draw | 471,682 | 211,193 |
| Loan Repayment | 2,927,425 | 271,096 |
| Loan Balance | 59,901 | 0 |
| Cash Flow | 75,062 | 2,880,676 |
| Less Developer's Profit | 0 | 2,147,288 |
| Cash Flow to Property | 75,062 | 733,388 |
| Cumulative CF | 409,226 | 1,142,614 |
| Disc Cash Flow | 26,538 | 208,475 |
| Cumulative DCF | 192,103 | 400,577 |

APPENDIX A-2.7

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcels 1, 2, 3, 4, 5, 16 & 17 ("As Is-Without SAD")

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $400,577 |
| Original Loan Balance | 500,000 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | 0 |
| Total Estimated Residual Land Value | 900,577 |
| Residual Land Value/Unit | 600 |
| Residual Value/Gross Acre | 4,508 |
| Residual Value/SF Land | $0.10 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $19,520,800 | $13,014 | 100.00% |
| Total Intract Infrast. | 5,858,294 | 3,906 | 30.01% |
| Total SAD Improvement Costs | 928,200 | 619 | 4.75% |
| Total Offsite Infrastructure | 4,884,713 | 3,256 | 25.02% |
| Total Architect/Engineer | 0 | 0 | 0.00% |
| Total Legal & Closing | 91,545 | 61 | 0.47% |
| Total Tax & Insurance | 375,300 | 250 | 1.92% |
| Total Interest/Financing | 2,323,996 | 1,549 | 11.91% |
| Total Marketing & Promo | 976,040 | 651 | 5.00% |
| Total Developer's Overhead | 292,812 | 195 | 1.50% |
| TOTAL COSTS | 15,730,898 | 10,487 | 80.59% |
| Total Developer's Profit | 2,147,288 | 1,432 | 11.00% |
| Residual Land Value | 900,577 | 600 | 4.61% |
| Totals | 18,778,763 | 12,519 | 96.20% |



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ABQ Land Parameters "As Is"

| | |
|---|---|
| Assumptions and Parameters: | 1 |
| MF Units | 1,000 |
| SFR Lots | 500 |
| SFR Lot Retail Value | $25,000 |
| MF Land value/unit | $3,500 |
| Weighted ave price/unit | $10,662 |
| Total No. of Units | 1,500 |
| Ave SF/Unit Living Area | 0 |
| Ave Gross SF/Unit | 0 |
| Gross Acres | 199.761 |
| LF Roads required | 0 |
| LF Road/lot | 0 |
| Ave Base Price/Unit | 10,662 |
| Current adj price | 10,662 |
| Price escal betwn phases | 0.000% |
| Ann disc rate | 15.00% |
| Periodic disc rate | 15.000% |
| Total Periods til sellout | 9 |
| Marketing | 5.00% |
| Intract Infrastrusture | 5,000,000 |
| Legal & Close/Unit | 50 |
| Base tax/qrt raw lots | 50 |
| Tax/inc finished lots/yr | 50 |
| Int Rate | 10.50% |
| Loan Fee (Points)$ | 0 |
| Loan Paydown % | 97.50% |
| Arch/eng/lot | 0 |
| Base Infrastructure | 4,443,000 |
| Periodic int rate | 10.500% |
| Beginning Balance | 500,000 |
| Offsites/lot- total | 0 |
| Developers OH | 1.50% |
| Developers Profit | 11.00% |

APPENDIX A-2.9

Discounted Cash Flow Analysis- Premise 2 "Assuming Completion of SAD"

APPENDIX A-2.10

DISCOUNTED CASH FLOW- Land Residual-"with SAD" - Parcels 1, 2, 3, 4, 5, 16 & 17 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 300 | 300 | 300 | 300 | 300 |
| Cumulative Completed | 0 | 300 | 600 | 900 | 1,200 | 1,500 |
| Total Closed | 0 | 300 | 300 | 300 | 300 | 300 |
| Cumulative Closed | 0 | 300 | 600 | 900 | 1,200 | 1,500 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $10,662 | $11,088 | $11,532 | $11,993 | $12,473 | $12,972 |
| Sales Income- Residential | 0 | 3,326,509 | 3,459,569 | 3,597,952 | 3,741,870 | 3,891,565 |
| Other Income | 0 | 0 | 0 | 0 | 0 | 0 |
| Loan Draw | 172,544 | 3,171,851 | 3,330,801 | 1,772,545 | 3,496,987 | 296,786 |
| Total Revenue | 172,544 | 6,498,360 | 6,790,371 | 5,370,497 | 7,238,857 | 4,188,331 |
| Development Costs | | | | | | |
| Offsite Costs- | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 | 0 |
| SAD Costs | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 |
| Base Infrastructure | 0 | 1,481,000 | 1,601,850 | 0 | 1,732,561 | 0 |
| In-tract Infrastructure | 0 | 1,300,000 | 1,352,000 | 1,406,080 | 1,462,323 | 0 |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | |
| Architect/Engineering | 0 | 0 | 0 | 0 | 0 | 0 |
| Legal & Closing | 0 | 15,600 | 16,224 | 16,873 | 17,548 | 18,250 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes- Acreage | 75,000 | 60,000 | 45,000 | 30,000 | 15,000 | 0 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 199,591 | 207,574 | 215,877 | 224,512 | 233,493 |
| Interest/Finance Charges | 52,500 | 70,617 | 63,110 | 58,671 | 0 | 0 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 45,044 | 45,044 | 45,044 | 45,044 | 45,044 | 45,044 |
| Total Costs | 172,544 | 3,171,851 | 3,330,801 | 1,772,545 | 3,496,987 | 296,786 |
| Loan Draw | 172,544 | 3,171,851 | 3,330,801 | 1,772,545 | 3,496,987 | 296,786 |
| Loan Repayment | 0 | 3,243,346 | 3,373,080 | 2,331,315 | 3,496,987 | 296,786 |
| Loan Balance | 672,544 | 601,049 | 558,770 | 0 | 0 | 0 |
| Cash Flow | 0 | 83,163 | 86,489 | 1,266,637 | 244,883 | 3,594,759 |
| Less Developer's Profit | 0 | 0 | 0 | 1,266,637 | 244,883 | 290,225 |
| Cash Flow to Property | 0 | 83,163 | 86,489 | 0 | 0 | 3,304,534 |
| Cumulative CF | 0 | 83,163 | 169,652 | 169,652 | 169,652 | 3,474,186 |
| Disc Cash Flow | 0 | 62,883 | 56,868 | 0 | 0 | 1,428,661 |
| Cumulative DCF | 0 | 62,883 | 119,751 | 119,751 | 119,751 | 1,548,392 |

APPENDIX A-2.11

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SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcels 1, 2, 3, 4, 5, 16 & 17 ("with SAD")

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $1,548,392 |
| Original Loan Balance | 500,000 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | 0 |
| Total Estimated Residual Land Value | 2,048,392 |
| Residual Land Value/Unit | 1,366 |
| Residual Value/Gross Acre | 10,854 |
| Residual Value/SF Land | $0.24 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $18,017,445 | $12,012 | 100.00% |
| Total Intract Infrast. | 5,520,403 | 3,680 | 30.64% |
| Total SAD Improvement Costs | 0 | 0 | 0.00% |
| Total Offsite Infrastrusture | 4,815,410 | 3,210 | 26.73% |
| Total Architect/Engineer | 0 | 0 | 0.00% |
| Total Legal & Closing | 84,495 | 56 | 0.47% |
| Total Tax & Insurance | 225,000 | 150 | 1.25% |
| Total Interest/Financing | 244,898 | 163 | 1.36% |
| Total Marketing & Promo | 1,081,047 | 721 | 6.00% |
| Total Developer's Overhead | 270,262 | 180 | 1.50% |
| TOTAL COSTS | 12,241,514 | 8,161 | 67.94% |
| Total Developer's Profit | 1,801,744 | 1,201 | 10.00% |
| Residual Land Value | 2,048,392 | 1,366 | 11.37% |
| Totals | 16,091,651 | 10,728 | 89.31% |

APPENDIX A-2.12

ABC Land Parameters - "with BAD Completed"

| | |
|---|---|
| Assumptions and Parameters: | 1 |
| MF Units | 1,000 |
| SFR Lots | 500 |
| SFR Lot Retail Value | $25,000 |
| MF Land value/unit | $3,500 |
| Weighted ave price/unit | $10,662 |
| Total No. of Units | 1,500 |
| Ave SF/Unit Living Area | 0 |
| Ave Gross SF/Unit | 0 |
| Gross Acres | 199.761 |
| LF Roads required | 0 |
| LF Road/lot | 0 |
| Ave Base Price/Unit | 10,662 |
| Current adj price | 10,662 |
| Price escal betwn phases | 0.000% |
| Ann disc rate | 15.00% |
| Periodic disc rate | 15.000% |
| Total Periods til sellout | 6 |
| Marketing | 6.00% |
| Intract Infrastructure | 5,000,000 |
| Legal & Close/Unit | 50 |
| Base tax/qrt raw lots | 50 |
| Tax/inc finished lots/yr | 50 |
| Int Rate | 10.50% |
| Loan fee (Points)$ | 0 |
| Loan Paydown % | 97.50% |
| Arch/eng/lot | 0 |
| Sewer assmt/lot | 0 |
| Periodic int rate | 10.500% |
| Beginning Balance | 500,000 |
| Offsites/lot- total | 0 |
| Developers OH | 1.50% |
| Developers Profit | 10.00% |

APPENDIX A-2.15

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# APPENDIX A-3

## BROWN, CHUDLEIGH, SCHULER & ASSOCIATES
## LETTER DATED JULY 11, 1991

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BROWN, CHUDLEIGH, SCHULER, AND ASSOCIATES
REAL ESTATE APPRAISALS — MARKET STUDIES

LAWRENCE E. BROWN (1942-1980)
FORMER MEMBER
APPRAISAL INSTITUTE
AMERICAN SOCIETY OF REAL ESTATE COUNSELORS
WALTER H. CHUDLEIGH, III
MEMBER
APPRAISAL INSTITUTE
GREGORY S. SCHULER
MARGARET GARRINGTON
DEAN A. MYERS
MARK B. DIMARCO
GARY M. EDWARDS
ALISON HUBER
WAYNE TURNER
ANDREW E. ALTPORT
COLETTE J. JONES
SUSAN SHANLEY
ROBERT E. GROWER

714 CARDLEY AVENUE, SUITE 100
MEDFORD, OREGON 97504-6124
TELEPHONE (503) 772-8588
FACSIMILE (503) 773-8314

July 11, 1991

Mr. R.P. Bohannan, P.E.
EASTERLING & ASSOCIATES, INC.
10131 Coors Road, N.W.
Suite H-7
Albuquerque, New Mexico 87114

Reference: SAD No. 223 Parcel B-90

Dear Mr. Bohannan:

In response to your request, we have reappraised the above referenced parcel in order to report our opinion of the market value of a fee interest in the property under two valuation premises. The revised valuation takes into consideration additional information with regard to engineering costs provided by Easterling & Associates.

The first premise ("as-is") assumes the infrastructure improvements scheduled to be installed as part of the special assessment district are not in place. The second premise assumes the SAD improvements are in place and no assessment fees are due. Based on sale comparables, it is our opinion the market data supports a value under Premise 1 of $3.00 per square foot. This results in a total value of $950,000 for the 7.2712-acre parcel.

The value for the portion of the parcel (approximately 3.64 acres) reserved for municipal type uses by zoning is also valued at $3.00 per square foot under Premise 2. The commercially zoned portion of the site has an estimated "retail" value under Premise 2 of $6.00 per square foot, or $950,000. The cost of additional infrastructure work mandated by the City, including work required to finish Ellison Road, must be deducted from the "retail" value. This results in a total value for the parcel under Premise 2 of $1,135,000.

SALT LAKE CITY AREA OFFICE: 1800 E. KEARNS • PARK CITY, UTAH 84060 • (801) 649-8808
SAN FRANCISCO AREA OFFICE: 100 SOUTH ELLSWORTH, NINTH FLOOR • SAN MATEO, CALIFORNIA 94401-3990 • (415) 579-0772
LOS ANGELES AREA OFFICE: 3838 CARSON STREET, SUITE 310 • TORRANCE, CALIFORNIA 90503-6704 • (213) 540-4788
NORTHEAST OFFICE: 535 LONG WHARF DRIVE, SUITE 9H • NEW HAVEN, CONNECTICUT 06511-4951 • (203) 624-8466



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As a result of our appraisal and analysis, the opinion has been formed that the data supports market values for the subject property, as of March 1, 1991, as follows:

Premise 1 - "As-Is"

NINE HUNDRED FIFTY THOUSAND DOLLARS

($950,000)

Premise 2

ONE MILLION ONE HUNDRED THIRTY-FIVE THOUSAND DOLLARS

($1,135,000)

It should be noted that the above Premise 1 valuation assumes that ABQ would only have to incur costs for it pro rata share of the base infrastructure work. In the event the City rules that ABQ would have to fund all the improvements, the above valuation would not be relevant. Please refer to our full narrative report dated April 29, 1991, for details regarding the subject property, definition of market value, demographic data, comparables, and limiting conditions, certification, and assumptions.

Respectfully submitted,

BROWN, CHUDLEIGH, SCHULER,
AND ASSOCIATES

Walter H Chudleigh

WALTER H. CHUDLEIGH, III, MAI

WHC:ts



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# APPENDIX A-4

## BENEFIT ALLOCATION
## ITEMS 1, 2, 3, 4, 5, 16 AND 17

CITY OF ALBUQUERQUE SAD 223

BENEFIT ALLOCATION

07/09/91

BENEFIT ALLOCATION
FILE:ABQBEN01

EASTERLING & ASSOCIATES,INC.
10131 COORS RD. NW, SUITE H-7/8
ALBUQUERQUE, NM 87114
(505) 898-8021

DESCRIPTION: ALLOCATE ESTIMATED MAXIMUN BENEFITS FOR ITEMS 1,2,3,4,5,16, AND 17 ON A SQUARE FOOT BASIS

BENEFIT TO BE ALLOCATED: $1,150,000.00

| ITEM NO. | TRACT ID | CONTRIBUTION TO TOTAL (NET AC.) | FRACTIONAL PORTION OF TOTAL | PROPORTIONATE SHARE OF BENEFIT FILE:ABQBEN01 |
|---|---|---|---|---|
| 1. | B-9G | 37.1755 | 0.1861 | $214,014.66 |
| 2. | B-9H | 21.1325 | 0.1058 | $121,657.13 |
| 3. | B-9J | 37.1147 | 0.1858 | $213,664.64 |
| 4. | B-9E | 16.8985 | 0.0846 | $97,282.53 |
| 5. | B-9F | 12.9125 | 0.0646 | $74,335.63 |
| 6. | B-10 | 0.0000 | 0.0000 | $0.00 |
| 7. | B-9D | 0.0000 | 0.0000 | $0.00 |
| 8. | O-1A-1 | 0.0000 | 0.0000 | $0.00 |
| 9. | O-2A-1 | 0.0000 | 0.0000 | $0.00 |
| 10. | G-2A | 0.0000 | 0.0000 | $0.00 |
| 11. | G-1A | 0.0000 | 0.0000 | $0.00 |
| 12. | M-1 | 0.0000 | 0.0000 | $0.00 |
| 13. | N-2B-1 | 0.0000 | 0.0000 | $0.00 |
| 14. | CIBOLA TR 1 | 0.0000 | 0.0000 | $0.00 |
| 15. | CIBOLA TR 2 | 0.0000 | 0.0000 | $0.00 |
| 16. | N-2A-2 | 16.3430 | 0.0818 | $94,113.37 |
| 17. | N-2A-1 | 58.1795 | 0.2912 | $334,932.03 |
| 18. | MM-1 | 0.0000 | 0.0000 | $0.00 |
| 19. | COOPER TRACT | 0.0000 | 0.0000 | $0.00 |
| 20. | ALAMEDA WEST TR E | 0.0000 | 0.0000 | $0.00 |
| 21. | QUESTA DEL RIO LOT 11A | 0.0000 | 0.0000 | $0.00 |
| 22. | COTTONWOOD MALL | 0.0000 | 0.0000 | $0.00 |
| COA | CITY OF ALBUQUERQUE | 0.0000 | 0.0000 | $0.00 |
| NMUI | NEW MEXICO UTILITIES, INC. | 0.0000 | 0.0000 | $0.00 |
| | OTHER | 0.0000 | 0.0000 | $0.00 |
| | TOTALS | 199.7612 | 1.0000 | $1,150,000.00 |

# APPENDIX A-5

## ASSESSMENT ALLOCATION
## ITEMS 1, 2, 3, 4, 5, 16 AND 17

CITY OF ALBUQUERQUE SAD 223

ASSESSMENT ALLOCATION

07/09/91

ASSESSMENT ALLOCATION
FILE:ABQASS01

EASTERLING & ASSOCIATES,INC.
10131 COORS RD. NW, SUITE H-7/8
ALBUQUERQUE, NM 87114
(505) 898-8021

DESCRIPTION: ALLOCATE ESTIMATED ASSESSMENTS FOR ITEMS 1,2,3,4,5,16, AND 17 ON A SQUARE FOOT BASIS

ASSESSMENT TO BE ALLOCATED: $1,238,253.25

| ITEM NO. | TRACT ID | CONTRIBUTION TO TOTAL (NET AC.) | FRACTIONAL PORTION OF TOTAL | PROPORTIONATE SHARE OF ASSMNT FILE:ABQASS01 |
|---|---|---|---|---|
| 1. | B-9G | 37.1755 | 0.1861 | $230,438.56 |
| 2. | B-9H | 21.1325 | 0.1058 | $130,993.34 |
| 3. | B-9J | 37.1147 | 0.1858 | $230,061.68 |
| 4. | B-9F | 16.8985 | 0.0846 | $104,748.18 |
| 5. | B-9: | 12.9125 | 0.0646 | $80,040.29 |
| 6. | B-10 | 0.0000 | 0.0000 | $0.00 |
| 7. | B-9D | 0.0000 | 0.0000 | $0.00 |
| 8. | O-1A-1 | 0.0000 | 0.0000 | $0.00 |
| 9. | O-2A-1 | 0.0000 | 0.0000 | $0.00 |
| 10. | G-2A | 0.0000 | 0.0000 | $0.00 |
| 11. | G-1A | 0.0000 | 0.0000 | $0.00 |
| 12. | M-1 | 0.0000 | 0.0000 | $0.00 |
| 13. | N-2B-1 | 0.0000 | 0.0000 | $0.00 |
| 14. | CIBOLA TR 1 | 0.0000 | 0.0000 | $0.00 |
| 15. | CIBOLA TR 2 | 0.0000 | 0.0000 | $0.00 |
| 16. | N-2A-2 | 16.3480 | 0.0818 | $101,336.82 |
| 17. | N-2A-1 | 58.1725 | 0.2912 | $360,635.37 |
| 18. | MM-1 | 0.0000 | 0.0000 | $0.00 |
| 19. | COOPER TRACT | 0.0000 | 0.0000 | $0.00 |
| 20. | ALAMEDA WEST TR E | 0.0000 | 0.0000 | $0.00 |
| 21. | QUESTA DEL RIO LOT 11A | 0.0000 | 0.0000 | $0.00 |
| 22. | COTTONWOOD MALL | 0.0000 | 0.0000 | $0.00 |
| COA | CITY OF ALBUQUERQUE | 0.0000 | 0.0000 | $0.00 |
| NMUI | NEW MEXICO UTILITIES, INC. | 0.0000 | 0.0000 | $0.00 |
| | OTHER | 0.0000 | 0.0000 | $0.00 |
| | TOTALS | 199.7612 | 1.0000 | $1,238,253.25 |

APPENDIX A-5

# CITY of ALBUQUERQUE
# NINTH COUNCIL

COUNCIL BILL NO. R-287 ENACTMENT NO. 23-1991

SPONSORED BY: Alan B. Armijo

Underscored Material-New
[Bracketed Material]-Deletion

RESOLUTION

RELATING TO THE PROPOSED ALBUQUERQUE, NEW MEXICO SPECIAL ASSESSMENT DISTRICT NO. 223, DIRECTING EASTERLING & ASSOCIATES, INC., TO PREPARE, SUBMIT AND FILE WITH THE CITY CLERK CERTAIN PRELIMINARY PLANS, ESTIMATES OF COSTS, AND ASSESSMENT PLATS WITH ADDENDUM, ALL IN CONNECTION THEREWITH.

WHEREAS, the City Council (the "Council") of the City of Albuquerque (the "City") is of the opinion that, in the general interest of the City and specifically property within the proposed district, it is necessary that certain streets, and parts thereof including, but not limited to, paving, curbs and gutter (the "Street Improvements"), certain storm drainage facilities (the "Drainage Improvements"), certain sanitary sewers (the "Sanitary Sewer Improvements"), certain waterlines (the "Water Improvements"), and certain dry utility improvements (the "Dry Utility Improvements"), be constructed, installed, improved and otherwise acquired, (collectively, the "Improvements"); and

WHEREAS, for the purpose of designation and identification, it is desirable that the Improvements be known and identified as "Albuquerque, New Mexico Special Assessment District No. 223" (the "District").

BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

Section 1. That Easterling & Associates, Inc. (the "Engineers"), professional engineers duly licensed under the laws of the State of New Mexico, are hereby directed to prepare, submit and file with the City Clerk the following:

A. Preliminary plans for the contemplated Improvements showing:

(1) For each type of curb, gutter, sidewalk, median and street, a typical section of the proposed improvement, the type of material to be used and

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-file-

**CITY OF ALBUQUERQUE**
**NEW MEXICO**

# SPECIAL ASSESSMENT DISTRICT NO. 223
# TABULATION OF PROTESTS

**JUNE 1991**

***EASTERLING & ASSOCIATES, INC.***
**CONSULTING ENGINEERS**
**10131 COORS ROAD, NW, SUITE H-7**
**ALBUQUERQUE, NEW MEXICO 87114**

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CITY OF ALBUQUERQUE
NEW MEXICO

# SPECIAL ASSESSMENT DISTRICT NO. 223
# TABULATION OF PROTESTS

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APPENDICES

APPENDIX 1 - Copies of Initial Support Letters
APPENDIX 2 - Copies of Current Protest Letters
APPENDIX 3 - Protest Property Plan
APPENDIX 4 - Brown, Chudleigh, Schuler & Associates Letter Dated June 12, 1991, with Enclosures


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**CITY OF ALBUQUERQUE**
**NEW MEXICO**

**SPECIAL ASSESSMENT DISTRICT NO. 223**
**TABULATION OF PROTESTS**

## GENERAL

The construction of Seven Bar Ranch infrastructure improvements through a Special Assessment District was initially suggested in the Seven Bar Ranch Sector Development Plan, April 1985 Revision. The SAD process allows the City and property owners to coordinate and finance the design and construction of major infrastructure improvements to the benefit of all parties. ABQ Development Corporation assembled an informal proposal for the SAD in November 1989. The formation of SAD No. 223 was formally requested by Melvin Simon & Associates, Inc., in June 1990, to construct the infrastructure improvements needed in connection with the development of the proposed Cottonwood Mall. Letters received from all of the property owners within SAD No. 223 expressed general support for the District based on preliminary cost estimates. Copies of these initial support letters are included in Appendix 1.

At or before the June 3, 1991, Protest Hearing, protest letters were received from six of the eight property owners. Of the six property owners who submitted protest letters, four expressed general support for the District with specific protests or concerns, one protested responsibility for additional infrastructure costs, and one opposed the creation of the District. Copies of the current protest letters are included in Appendix 2. No oral protests were made at the public Protest Hearing held June 3, 1991.

The Tabulation of Protests is shown on page 2. The Review of Protests begins on page 3. Because there are relatively few property owners in the District, and because most of the protests are not tract specific, the Review of Protests is organized by property owner rather than by item number. Complete legal descriptions for the properties are included in the Estimated Maximum Benefit Roll.

# CITY OF ALBUQUERQUE SPECIAL ASSESSMENT DISTRICT NO.223

## TABULATION OF PROTESTS

JUNE 14,1991

| PROPERTY OWNERS BY SUPPORT / PROTEST CATAGORY | NUMBER OF PROPERTIES | PERCENT OF TOTAL PROPERTIES | PROPERTY NET AREA | PERCENT OF TOTAL PROPERTY NET AREA | ESTIMATED ASSESSMENTS | PERCENT OF TOTAL ESTIMATED ASSESSMENTS |
|---|---|---|---|---|---|---|
| **STRONG SUPPORT FOR DISTRICT ( WITH PROTESTS / CONCERNS )** | | | | | | |
| ALBUQUERQUE MALL COMPANY LIMITED PARTNERSHIP | 16 | 43.24% | 90.03 | 17.50% | $7,087,494.97 | 44.93% |
| SEVEN BAR LAND AND CATTLE COMPANY | 5 | 13.51% | 116.60 | 22.66% | $3,131,866.43 | 19.85% |
| ALBERT J. BLACK AND MARY J. BLACK REVOCABLE TRUST OR THEIR SUCCESSORS | 2 | 5.41% | 11.18 | 2.17% | $241,905.33 | 1.53% |
| SUBTOTALS | 23 | 62.16% | 217.81 | 42.34% | $10,461,266.73 | 66.32% |
| **MODERATE SUPPORT FOR DISTRICT ( WITH PROTESTS / CONCERNS )** | | | | | | |
| ABQ DEVELOPMENT CORPORATION | 8 | 21.62% | 207.02 | 40.24% | $1,285,214.12 | 8.15% |
| SUBTOTALS | 8 | 21.62% | 207.02 | 40.24% | $1,285,214.12 | 8.15% |
| **OPPOSITION TO DISTRICT** | | | | | | |
| ALBUQUERQUE BOARD OF EDUCATION | 2 | 5.41% | 45.68 | 8.88% | $110,000.00 | 0.70% |
| CORRALES ASSOCIATES, LTD. | 1 | 2.70% | 8.30 | 1.61% | $60,000.00 | 0.38% |
| SUBTOTALS | 3 | 8.11% | 53.98 | 10.49% | $170,000.00 | 1.08% |
| **NON-RESPONSIVE** | | | | | | |
| CITY OF ALBUQUERQUE | 1 | 2.70% | 6.86 | 1.33% | $3,780,728.92 | 23.97% |
| NORTH COORS GROUP | 2 | 5.41% | 28.79 | 5.60% | $77,207.78 | 0.49% |
| SUBTOTALS | 3 | 8.11% | 35.65 | 6.93% | $3,857,936.68 | 24.46% |
| TOTALS | 37 | 100.00% | 514.46 | 100.00% | $15,774,417.53 | 100.00% |

NOTES: 1. CITY OF ALBUQUERQUE ESTIMATED ASSESSMENTS INCLUDE ASSESSED AND UNASSESSED COSTS.
2. PROPERTY ESTIMATED ASSESSMENTS SHOWN DO NOT INCLUDE AMOUNTS IN EXCESS OF ESTIMATED MAXIMUM BENEFITS.

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## 3. REVIEW OF PROTESTS

| Property Owner | Property Item No. | Property Description |
|---|---|---|
| 3.1 ABQ Development Corporation<br>c/o Resolution Trust Company<br>ABQ Accounting Center<br>P.O. Box 25000<br>Albuquerque, NM 87125 | 1 | Tract B-9G, Seven Bar Ranch |
| | 2 | Tract B-9H, Seven Bar Ranch |
| | 3 | Tract B-9J, Seven Bar Ranch |
| | 4 | Tract B-9E, Seven Bar Ranch |
| | 5 | Tract B-9F, Seven Bar Ranch |
| | 7 | Tract B-9D, Seven Bar Ranch |
| | 16 | Tract N-2A-2, Seven Bar Ranch |
| | 17 | Tract N-2A-1, Seven Bar Ranch |

SUMMARY OF PROTEST:

Property owner expresses support for the concept of the Special Assessment District but protests specific items as follows: Estimated Maximum Benefits calculated using erroneous and inflated assumptions. Estimated Assessments exceed preliminary estimates by 54%. Storm drainage assessments completely disregard protection and access benefits and benefit from land reclamation from flood areas. The SAD does not consider funds which owner previously spent on engineering related to SAD improvements. Owner advises that the Resolution Trust Corporation (RTC) as receiver for ABQ Federal Savings Bank holds the first mortgage on the property and has only consented to allowing an assessment of $861,761.00 to have priority over its first mortgage (The current total of Estimated Assessments for the ABQ Development property is $1,326,188.11).

RESPONSE:

The Estimated Maximum Benefits have been revised in response to the protest. Assumptions regarding costs for future off-site infrastructure improvements have been corrected, and the estimated time for absorption of the properties has been revised in consideration of the protest. The properties were initially valued in mass because of the close proximity and the single ownership. The properties have now been appraised individually assuming staged development. A discussion of the valuation process and the values allocated to the individual parcels are presented in the Brown, Chudleigh, Schuler & Associates letter dated June 12, 1991. A copy of the letter is included in Appendix 4 for reference.

Estimated Assessments have increased substantially for the City and nearly all properties within the District. The increased Estimated Assessments are the result of higher cost estimates for the proposed improvements and the addition of finance costs not included in previous conceptual estimates. A full accounting of

the increase in estimated infrastructure costs was presented at the public information morning meeting held April 24, 1991, and included in the information package distributed at the meeting or mailed to all property owners. The additional costs associated with the financing of the SAD were presented at the afternoon meeting on April 24, 1991.

The Storm Drainage Assessment methods consider protection and access benefits as well as contribution benefits. The way in which the contribution based assessment allocation is applied takes both contribution and protection benefits into account. In a strict contribution based allocation, assessments would be made only for improvements downstream of the point of discharge based on the incremental contribution. The drainage assessment allocation used for SAD No. 223 is based on contribution without regard to the point of discharge. As a result, properties in the downstream portion of the watershed which receive protection benefits from upstream drainage improvements are assessed a portion of the cost of the upstream improvements. The protection benefit consideration is inherent in the contribution based allocation method. The estimated assessments for storm drainage costs also recognize access benefits. The estimated cost for the portion of the storm drainage system required to keep proposed streets accessible during storms is assessed to the City and properties on a front foot basis similar to the assessments for street improvements. As a result, properties are assessed for street storm drainage costs in proportion to their frontage and corresponding access benefit.

The Federal Emergency Management Agency (FEMA) flood hazard maps for the SAD area show flood areas on some of the properties within the SAD. The construction of the existing AMAFCA Skyview Channel along the northwest boundary at the SAD effectively eliminated previous downstream flood areas within the SAD. All that remains to officially eliminate the flood area designation from the FEMA flood hazard maps is to prepare a Letter of Map Revision and to process the revision through FEMA. The reclamation of land from flood areas is the result of existing improvements, not the improvements proposed within the District.

The City of Albuquerque has affirmed that engineering fees paid by property owners for engineering services on District related improvements prior to the formation of the District are not reimbursable through the District. Easterling & Associates, Inc., as SAD No. 223 consulting engineer, and Bohannan-Huston, Inc., as subconsultant, have committed to refund to ABQ Development any fees collected from the City for work previously performed for ABQ Development less

costs for items such as taxes, professional liability insurance, and efforts required to modify the plans for use in the District.

RECOMMENDATIONS:
Because the properties identified as Items 1, 2, 3, 4, 5, 16, and 17 will require substantial future off-site infrastructure improvements in addition to the improvements to be constructed by the District, and because the schedules for development of each of the properties are expected to be variable and to occur generally over a longer period of time, the Estimated Maximum Benefits shall be modified as follows:

1. For Item No. 1, the Estimated Maximum Benefit shall be reduced from $570,000.00 to $436,100.00.

2. For Item No. 2, the Estimated Maximum Benefit shall be reduced from $270,000.00 to $243,900.00.

3. For Item No. 3, the Estimated Maximum Benefit shall be increased from $570,000.00 to $645,800.00.

4. For Item No. 4, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $51,000.00.

5. For Item No. 5, the Estimated Maximum Benefit shall be reduced from $170,000.00 to $99,400.00.

6. For Item No. 16, the Estimated Maximum Benefit shall be reduced from $220,000.00 to $57,000.00.

7. For Item No. 17, the Estimated Maximum Benefit shall be increased from $630,000.000 to $989,700.00.

The Estimated Maximum Benefit for Item No. 7 should not be revised.

The Estimated Assessments should not be revised.



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| Property Owner | Property Item No. | Property Description |
|---|---|---|
| 3.2 Albuquerque Board of Education<br>Property Management Office<br>P.O. Box 25704<br>Albuquerque, NM 87125 | 14<br>15 | Tract 1, Cibola High School<br>Tract 2, Cibola High School |

SUMMARY OF PROTEST:

Property owner believes that Estimated Maximum Benefit and Estimated Assessment determinations disregard storm drainage improvements recently constructed to serve Cibola High School. Protests creation of SAD No. 223 and inclusion of Cibola High School in SAD No. 223.

RESPONSE:

Cibola High School is located on the property identified as Item No. 14. Interim drainage retention pond improvements were recently constructed by the School District on abutting City of Albuquerque property identified as Item No. 13. The interim drainage improvements were required to bring the Cibola High School site into interim compliance with the City Drainage Ordinance until permanent drainage detention pond improvements and a storm drain outfall are constructed. The Seven Bar Ranch Drainage Management Plan requires that all properties within the Plan area provide on-site detention ponding to control runoff discharge rates, and the City Drainage Ordinance requires that developed properties control runoff discharges so as not to exceed the capacity of downstream drainage facilities. Due to the limited capacity of downstream facilities, all properties within the watershed will be required to provide on-site detention ponding to control runoff discharges and to contribute to the construction of needed storm drain outfall improvements. The drainage covenant between the City of Albuquerque and the School District provides that "nothing in the agreement shall be constructed to relieve the Owner, its heirs, assigns, and successors from an assessment against Owners Property for improvements to the property under a duly authorized and approved Special Assessment District."

The Estimated Maximum Benefit and Estimated Assessment are for storm drainage improvements only. The drainage improvements within the District benefit the Cibola High School site by providing permanent drainage detention ponding and outfall storm drain facilities as required by the City Drainage Ordinance. The Estimate Maximum Benefit is based primarily on the benefit



25×10

derived by the School District because required "on-site" detention ponding for Cibola High School will be accomplished "off-site" by the proposed improvements. Therefore, the school site will not be encumbered by an on-site drainage detention pond. The Estimated Assessment recognizes the value of the interim drainage improvements constructed by the School District. The drainage assessment for the school site is based on the assumption that the school site has provided required detention ponding to reduce runoff discharges. The assumed lower discharge or contribution results in a substantially lower assessment than the actual higher free discharge contribution condition.

RECOMMENDATION:

The Estimated Maximum Benefit and Estimated Assessment should not be revised, and the school site should not be removed from the District.



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| Property Owner | Property Item No. | Property Description |
|---|---|---|
| 3.3 Albuquerque Mall Company Limited Partnership P.O. Box 7033 Indianapolis, IN 46207 | 22 thru 37 | Tract H-1-A Seven Bar Ranch (Cottonwood Mall) |

SUMMARY OF PROTEST:

Property owner expresses strong support for the district and does not protest the estimated maximum benefits, but has specific concerns outlined as follows:

1. Fee calculations based on construction costs including gross receipts tax result in fee on tax and double taxation.

2. City Incidental Fees should not be a function of the construction cost if fee is to be annual and based on remaining principal balance.

3. Costs associated with bank letter of credit should be included as part of the City Process Fee, not a separate cost. Fee should reduce as risk declines.

4. Assessment allocation for high pressure gas line relocation should be revised so that more assessment is allocated to the City for areas where additional relocation results from City requirements for alignment.

5. Costs for telephone line relocations should be considered overall street improvement costs and assessed proportionally to all properties in the District.

6. Believes there is excessive use of high cost items such as textured and colored concrete. Attempt should be made to reduce costs.

7. Alignment of the Cabezon Channel Watershed storm drain should be analyzed to determine if more cost efficient alignment is possible.

RESPONSE:

1. The estimated fees for construction observation, construction staking, and construction testing were based on estimated construction costs which included gross receipts tax. This results in fees on tax. In addition, gross



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receipts tax on these fees results in tax on tax. Actual fees will be negotiated between the City and Easterling & Associates, Inc. Fees will be based on construction costs excluding gross receipts tax. Therefore, the fee on tax and tax on tax discrepancy will be corrected and not reflected in Actual Assessments.

2.,3. The proposed financing structure of SAD No. 223 is the subject of continuing discussions between the City of Albuquerque, the bond underwriter, the bond attorney, and SAD No. 223 property owners. The financing structure of SAD No. 223 will affect actual assessment amounts but is not considered to have a significant impact on the scope of the proposed improvements, the estimated Maximum Benefit Determinations, or the establishment of the SAD. There is ample time to resolve assessment related protests prior to the assessment hearing which will follow Resolution No. 4 in the SAD process.

4. The assessment allocations for the relocation of the gas lines are fair and equitable. Relocation of the gas lines is required to allow for development of the Cottonwood Mall Site and the construction of Seven Bar Loop Road. The cost for the portion of the relocation required for property development is assessed to the respective property. The cost for the portion of the relocation required for street construction is assessed to properties abutting the street on a front foot basis. The cost for the additional length of relocation resulting from City alignment requirements is allocated to the City.

5. The assessment allocations for the relocation of existing telephone lines are fair and equitable. The telephone line relocations are required to re-align the facilities with the platted street alignments thereby minimizing encumbrance on abutting properties and undesirable alignments within street right-of-way areas. The telephone line relocations will result in a direct benefit to specific properties and a general benefit to properties abutting the street corridor. The assessment allocation recognizes these benefits and should not be revised.

6. The textured and colored concrete referenced in the protest is proposed for portions of raised medians and islands in proposed streets. The hard surfacing is normally placed in narrow median areas and at the ends of medians to reduce maintenance. The proposed textured and colored concrete is less expensive than brick surfacing and more aesthetically pleasing than bituminous (asphalt) median paving. The use of "high cost"



25×10

items will be reviewed during final design to reduce costs where possible and prudent to do so.

7. The originally proposed alignment for the storm drain outfall within the Cabezon Channel watershed was determined to be unacceptable for two main reasons. It did not provide a drainage outfall for properties identified as Item No. 10 and Item No. 11 and the eastern most segment of proposed Ellison Drive as subsequently required by AMAFCA. In addition, it severed the properties identified as Item No. 8 and Item No. 9 and would have resulted in severe grading and drainage constraints upon development of the properties. The currently proposed revised alignment will allow the storm drain outfall to serve all properties within the watershed as required by AMAFCA and will avoid severance of any and all properties. We believe the proposed alignment is the best and most cost efficient solution which meets all of the design criteria.

RECOMMENDATIONS:

The Estimated Maximum Benefit and Estimated Assessment should not be revised. The financing structure for SAD No. 223 should be finalized prior to determination of Actual Assessments.



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| | Property Owner | Property Item No. | Property Description |
|---|---|---|---|
| 3.4 | Seven Bar Land & Cattle Company | 8 | Tract O-1A, Seven Bar Ranch |
| | 10200 Corrales Rd., NW, Unit E-3 | 9 | Tract O-2A, Seven Bar Ranch |
| | Albuquerque, NM 87048 | 11 | Tract G-1A, Seven Bar Ranch |
| | | 12 | Tract M-1, Seven Bar Ranch |
| | | 18 | Tract MM-1, Seven Bar Ranch |

SUMMARY OF PROTEST:

Property owner is in general concurrence with Estimated Maximum Benefits and Estimated Assessments but has specific objections to the proposed financing of SAD No. 223. Objects to City Incidental Fees estimated at 1.5% of estimated construction costs and believes City Incidental Fees should be much lower for a large SAD with relatively few participants. Objects to City Credit Enhancement Fee in the amount of 150 basis points annually on the outstanding principal balance. Believes that in consideration of the proposed Letter of Credit Fee, Debt Service Reserve Fund, and Annual Surplus Fund, the proposed City Credit Enhancement Fee should not exceed 50 basis points if it can be justified at all.

RESPONSE:

The proposed financing structure of SAD No. 223 is the subject of continuing discussions between the City of Albuquerque, the bond underwriter, the bond attorney, and SAD No. 223 property owners. The financing structure of SAD No. 223 will affect actual assessment amounts but is not considered to have a significant impact on the scope of the proposed improvements, the estimated Maximum Benefit Determinations, or the establishment of the SAD. There is ample time to resolve assessment related protests prior to the assessment hearing which will follow Resolution No. 4 in the SAD process.

RECOMMENDATIONS:

The Estimated Maximum Benefits and Estimated Assessments should not be revised. The financing structure for SAD No. 223 should be finalized prior to determination of Actual Assessments.

| | Property Owner | Property Item No. | Property Description |
|---|---|---|---|
| 3.5 | Albert J. and Mary J. Black | 9 | Tract O-2A, Seven Bar Ranch |
| | Revocable Trust or their Successors | 10 | Tract G-2A, Seven Bar Ranch |
| | 10200 Corrales Rd., NW, Unit E-3 | 11 | Tract G-1A, Seven Bar Ranch |
| | Albuquerque, NM 87048 | 21 | Tract 11-A, Questa del Rio |

SUMMARY OF PROTEST:

Property owner is in general concurrence with Estimated Maximum Benefits and Estimated Assessments but has specific objections to the proposed financing of SAD No. 223. Objects to City Incidental Fees estimated at 1.5% of estimated construction costs and believes City Incidental Fees should be much lower for a large SAD with relatively few participants. Objects to City Credit Enhancement Fee in the amount of 150 basis points annually on the outstanding principal balance. Believes that in consideration of the proposed Letter of Credit Fee, Debt Service Reserve Fund, and Annual Surplus Fund, the proposed City Credit Enhancement Fee should not exceed 50 basis points if it can be justified at all.

RESPONSE:

The proposed financing structure of SAD No. 223 is the subject of continuing discussions between the City of Albuquerque, the bond underwriter, the bond attorney, and SAD No. 223 property owners. The financing structure of SAD No. 223 will affect actual assessment amounts but is not considered to have a significant impact on the scope of the proposed improvements, the estimated Maximum Benefit Determinations, or the establishment of the SAD. There is ample time to resolve assessment related protests prior to the assessment hearing which will follow Resolution No. 4 in the SAD process.

RECOMMENDATIONS:

The Estimated Maximum Benefits and Estimated Assessments should not be revised. The financing structure for SAD No. 223 should be finalized prior to determination of Actual Assessments.

| Property Owner | Property Item No. | Property Description |
|---|---|---|
| 3.6 Corrales Associates, Ltd.<br>299 South Park Avenue<br>Tucson, AZ 85718 | 6 | Tract B-10, Seven Bar Ranch<br>(Corrales Pointe Apartments) |

SUMMARY OF PROTEST:

Property owner protests responsibility for additional costs associated with the infrastructure improvements proposed in SAD No. 223. Believes that the bond previously posted for Coors Bypass street improvements covered costs for all future infrastructure improvements.

RESPONSE:

Property Item No. 6 is the site of the Corrales Pointe Apartments. At the time of development, a bond was posted for future Coors Bypass street improvement requirements. The City of Albuquerque exercised its option to collect on the bond prior to expiration of the bond in 1990. Accordingly, the City is responsible for Coors Bypass street improvements abutting the property. It is the opinion of the City of Albuquerque Legal Department that the bond covered only Coors Bypass street improvements and did not cover future storm drainage, sanitary sewer, or water improvements.

At the present time, water service to the property is provided by a single eight-inch diameter waterline stub. The existing water service is not looped. The water improvements proposed within the SAD will benefit the property by providing a looped water system with improved dependability and fire fighting capacity.

At the present time, the sewer service to the property is provided by a privately owned and maintained pump station and force main which discharges to the existing gravity sewer in Cibola Loop Road. The sanitary sewer improvements proposed within the SAD will benefit the property by allowing the pump station and force main to be retired, eliminate the associated operation and maintenance expenses, and provide a dependable gravity sewer system outfall for the property.

At the present time, the property drains directly to Coors Bypass and to a small interim drainage retention pond located on abutting property near the southeast corner of the Corrales Pointe Apartments site. The storm drainage improvements proposed within the SAD will provide a permanent storm drain outfall for the

property in accordance with the City Drainage Ordinance and the Seven Bar Ranch Drainage Management Plan requirements.

RECOMMENDATIONS:

The Estimated Maximum Benefit and Estimated Assessments should not be revised.

# APPENDIX 1

## COPIES OF INITIAL SUPPORT LETTERS

# APPENDIX 1

# SIMON

MELVIN SIMON & ASSOCIATES, INC.

EASTERLING & ASSOC. INC
RECEIVED
JUN 25 1990

June 20, 1990

The Honorable Louis Saavedra
Mayor, City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

Dear Mayor Saavedra:

**Special Assessment District**
**Seven Bar Ranch/Cottonwood Mall**

This letter serves as our formal request to the City of Albuquerque to assist in creating a special assessment district (SAD) for the purpose of constructing public improvements within the Seven Bar Ranch on Albuquerque's west side. The infrastructure is necessary to complete development of our planned regional mall and subsequent residential and commercial developments, as well as to promote the overall continued growth of the area.

We and other participating landowners have worked closely with City staff over the past several months to develop parameters for this SAD. The specific improvements requested are identified in a booklet, The Seven Bar Ranch Special Assessment District/Preliminary Estimate of Assessment Costs, prepared by Easterling & Associates, Inc. and submitted to officials within the city's Public Works and Finance Departments. The primary improvements include the construction of the Coors Bypass and nearby network roads along with related street improvements, e.g. signalization, street lighting, landscaping, etc. and the construction of water, sanitary sewer, storm drainage and other dry utilities. It is our understanding that the SAD will be financed through the issuance of general obligation municipal bonds with a term of 20 years.

The time frame for establishing this SAD is critical. In order to meet our scheduled mall opening of October 1992, the construction of the infrastructure must be under way no later than May 1991, necessitating the completion of the SAD process and the sale of bonds by this coming spring. With continued cooperation from the City, this time schedule can be met. However, the process needs to start immediately with consent from the City Council to move forward. Therefore, we are requesting placement on the City Council agenda at the City's earliest convenience to discuss and approve the formation of this SAD.

Cottonwood Mall is a development project of major economic proportion which will provide many benefits to the community. We anticipate the full support and cooperation of all area property owners and SAD participants with respect to this request. We look forward to working with the City to make our plans a reality.

Appendix 1.1

12121 WILSHIRE BOULEVARD SUITE #521 LOS ANGELES, CALIFORNIA 90025 TEL: (213) 207-8111

25X

Please do not hesitate to contact me directly or our local consultant, Jack Denish, should you ever have any questions or require additional information.

Sincerely,

Terri Van Vliet

Terri Van Vliet
Assistant Vice President
Development

TVV:p

cc: Members of City Council
Alan Armijo
Michael Brasher
Richard Chapman
Steve Gallegos
Vincent Griego
Pauline Gubbels
Herb Hughes
Tim Kline
Hess Yntema

City of Albuquerque
Art Blumenfeld
Bob Gurule
Tom Hoover
Lee Lunsford
Walt Nickerson

SAD Participants
ABQ Development
A.J. & Mary Jane Black
Alameda West Center
Albuquerque Public Schools
Corrales Pointe Apartments
7-Bar Land & Cattle Co.

Appendix 1.2

Resolution Trust Corporation
Office of Legislative Affairs
Washington, DC 20434-0001

October 13, 1990

Honorable Pete V. Domenici
United States Senate
Washington, D.C. 20510

Dear Senator Domenici:

Thank you for your letter on behalf of Mr. John F. Black of Seven Bar Ranch. Mr. Black has proposed the participation by ABQ Federal Savings Bank in a Special Assessment District for business-related improvements in the Seven Bar area. Please accept our apologies for the delay in responding to you.

After receiving supporting reports, budgets, and a recent property appraisal, ABQ Development Corporation presented to its Board of Directors a proposal recommending participation in the Special Assessment District. The Board of Directors approved the proposal on August 17, 1990, and the RTC Credit Review Committee gave its approval to the proposal on August 30, 1990.

We hope that this information is of assistance to you. If you have any questions, please let me know.

Sincerely,

Loren T. Hooper
Deputy Director

Appendix 1.3

PETE V. DOMENICI
NEW MEXICO

COMMITTEES:
BUDGET,
APPROPRIATIONS
ENERGY AND NATURAL RESOURCES
AGING

# United States Senate

WASHINGTON, D.C. 20510

October 25, 1990

Mr. John F. Black
3615 Rio Rancho Boulevard, NW
Apartment 203-B
Albuquerque, New Mexico 87048

Dear John:

Enclosed please find a copy of the response that I have received from the RTC regarding the ABQ Bank decision. I hope the information provided will be helpful and useful to you. Please don't hesitate to contact me again if I can be of further help.

My warmest personal regards.

Sincerely,

Pete V. Domenici
United States Senator

PVD/acc
Enclosure

11-5-90

Terri,
Cancel your lunch w/ Mel or Herb Simon
Write Senator Domenici a "thank you" note please.
John Black

Appendix 1

# LAS COLINAS
Realty and Development Co.

June 25, 1990

RECEIVED

JUN 27 1990

PWD/ENGINEERING GROUP

Mr. Lee Lunsford, S.A.D. Engineer
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Re: Seven Bar Ranch - Proposed Special Assessment District

Dear Lee:

Please find enclosed copies of participation letters from Seven Bar Land & Cattle Company and Alameda West, Ltd. (owners of Alameda West Shopping Center), for your information.

We expect to have a letter from the Trust of Albert J. and Mary Jane Black as well as a letter from Corrales Associates, Ltd. (owners of Corrales Pointe Apartments) in the near future.

We are still working with ABQ Development to obtain their cooperation and expect to have it very soon also.

Please contact me at your convenience with any questions you may have.

Sincerely,

Greg L. Foltz
President

Appendix 1.5

3615 Rio Rancho Blvd. N.W. Suite 203 / Albuquerque, N.M. 87048 / (505) 897-7227

25x

# Seven Bar Ranch

June 12, 1990

Mr. Art Blumenfeld
Chief Administrative Officer
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Proposed Seven Bar Ranch Special Assessment District

Dear Mr. Blumenfeld:

We have reviewed revised preliminary estimate of Assessment Costs dated May 31, 1990 prepared by Easterling & Associates for the proposed Seven Bar Ranch Special Assessment District. Seven Bar Land & Cattle Company is supportive of the proposed SAD and intends to participate in it for Tracts M, MM, O-1A, & O-2A.

We, Seven Bar Land & Cattle Company, intend to join in petitioning the City to develop the Seven Bar Ranch SAD. The allocations presently set out in the preliminary estimate seem reasonable. If the allocations change, Seven Bar Land & Cattle Company reserves the right to protest should its assessments increase significantly.

We feel that development of the Cottonwood Mall and construction of the Coors Bypass Road will be a significant stimulus to the City of Albuquerque in terms of construction related and permanent employment, as well as tax dollars. Seven Bar Land & Cattle Company appreciates the City's assistance in support of this substantial economic development project for the West Side and City of Albuquerque.

Sincerely,

John F. Black
Managing Partner
Seven Bar Land & Cattle Company

cc: Lee Lunsford, S.A.D. Engineer

Appendix 1.6

3615 Rio Rancho Blvd. N.W. Suite 203B / Albuquerque, N.M. 87048 / (505) 897-7227

June 12, 1990

Mr. Art Blumenfeld
Chief Administrative Officer
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Proposed Seven Bar Ranch Special Assessment District

Dear Mr. Blumenfeld:

We have reviewed revised preliminary estimate of Assessment Costs dated May 31, 1990 prepared by Easterling & Associates for the proposed Seven Bar Ranch Special Assessment District. Alameda West, Ltd. is supportive of the proposed SAD and intends to participate in it for Alameda West Shopping Center.

We, Alameda West, Ltd., intend to join in petitioning the City to develop the Seven Bar Ranch SAD. The allocations presently set out in the preliminary estimate seem reasonable. If the allocations change, Alameda West, Ltd. reserves the right to protest should its assessments increase significantly.

We feel that development of the Cottonwood Mall and construction of the Coors Bypass Road will be a significant stimulus to the City of Albuquerque in terms of construction related and permanent employment, as well as tax dollars. Alameda West, Ltd. appreciates the City's assistance in support of this substantial economic development project for the West Side and City of Albuquerque.

Sincerely,
Alameda West, Ltd.

John F. Black
Managing Partner

cc: Lo Lunsford, S.A.D., Engineer

Appendix 1.7

June 12, 1990

RECEIVED

JUN 2 8 1990

PWD/ENGINEERING GROUP

Mr. Art Blumenfeld
Chief Administrative Officer
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Proposed Seven Bar Ranch Special Assessment District

Dear Mr. Blumenfeld:

We have reviewed revised preliminary estimate of Assessment Costs dated May 31, 1990 prepared by Easterling & Associates for the proposed Seven Bar Ranch Special Assessment District. A. J. Black and Mary Jane Black Revocable Trust is supportive of the proposed SAD and intends to participate in it for Tracts G-1 and G-2.

We, A. J. Black and Mary Jane Black Revocable Trust, intend to join in petitioning the City to develop the Seven Bar Ranch SAD. The allocations presently set out in the preliminary estimate seem reasonable. If the allocations change, A. J. Black and Mary Jane Black Revocable Trust reserves the right to protest should its assessments increase significantly.

We feel that development of the Cottonwood Mall and construction of the Coors Bypass Road will be a significant stimulus to the City of Albuquerque in terms of construction related and permanent employment, as well as tax dollars. A. J. Black and Mary Jane Black Revocable Trust appreciates the City's assistance in support of this substantial economic development project for the West Side and City of Albuquerque.

Sincerely,
A. J. Black and Mary Jane Black
Revocable Trust

Mary Jane Black

Mary Jane Black, Co-Trustee

A. Rolfe Black

A. Rolfe Black, Successor Co-Trustee

cc: Lee Lunsford, S.A.D. Engineer

Appendix 1.8

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# ALBUQUERQUE PUBLIC SCHOOLS
## DEPARTMENT OF FACILITIES PLANNING AND CONSTRUCTION
915 OAK STREET, S.E.
P. O. BOX 25704
ALBUQUERQUE, NEW MEXICO 87125-0704
(505) 242-5865

DR. JACK BOBROFF
SUPERINTENDENT

RICHARD TOLEDO
ASSISTANT SUPERINTENDENT
FACILITIES PLANNING AND OPERATIONS
GERARD R. BROWN
INTERIM DIRECTOR



RECEIVED
JUL 0 2 1990
PWD/ENGINEERING GROUP


June 27, 1990

Mr. Lee Lunsford, P.E.
Special Assessment District Engineer
Public Works Department
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: CIBOLA HIGH SCHOOL/SEVEN BAR RANCH SAD

Dear Mr. Lunsford:

On the afternoon of June 13, 1990, a meeting was held in the office of Mr. Fred Aguirre, City Hydrologist, Public Works Department. In attendance at that meeting were Mr. Charles M. Easterling, Easterling & Associates; Mr. Fred J. Aguirre, City Hydrologist; Mr. Jeffrey G. Mortensen, Jeff Mortensen & Associates; and myself. The purpose of the meeting was to discuss the proposed Seven Bar Ranch Special Assessment District and its impacts and benefits as they might relate to the existing Cibola High School facility. In principal, the Albuquerque Public Schools does not oppose a fair assessment for downstream storm drainage improvements, but at this time reserves its right to review and comment on the estimated maximum benefits once they are prepared.

At present, the Albuquerque Public Schools is constructing classroom additions at the Cibola High School site. In conjunction with that construction, the Albuquerque Public Schools has implemented a Drainage Master Plan for the site and has attempted to integrate that Master Plan with the Seven Bar Drainage Management Plan prepared by Easterling & Associates. This plan has been submitted to the Hydrology Section for review and approval with the plan being approved "in concept". Upon obtaining approval of the Master Plan concept, our consultant, Jeff Mortensen & Associates, has undertaken to prepare construction plans to address the construction of private storm drainage improvements on the Cibola High School site as well as the adjacent parcel to the east, Tract N-2B. A portion of this parcel has already been




An Equal Opportunity Employer



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dedicated as a public drainage easement by the underlying property owner, ABQ Development. The Albuquerque Public Schools proposes to construct interim drainage improvements within said drainage easement and has endeavored to make those improvements compatible with the Seven Bar Drainage Management Plan. In view of this, the Albuquerque Public Schools would like to reserve the option to build their equitable share of the permanent improvements to serve on an interim basis and to be given full credit for "in-kind" participation in the future Special Assessment District.

Please accept this notification of intent relative to the proposed Special Assessment District. If you should have any questions or comments concerning this proposal relative to participation, or any other aspect of the ongoing APS project, please do not hesitate to call.

Sincerely,

Gerard R. Brown, AIA
Interim Director

GRB/est
cc Richard Toledo
Charles Atwood
Jeffrey G. Mortensen
Fred J. Aguirre
Charles M. Easterling

Appendix 1.10

plan
PLAN CORPORATION
299 NORTH PARK AVENUE
TUCSON • ARIZONA

plan
MANAGEMENT CORPORATION

RECEIVED
JUL 5 1990
MAYOR/CAO OFFICE

July 2, 1990

Mr. Art Blumenfeld
Chief Administrative Officer
City Of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: PROPOSED BAR RANCH SPECIAL ASSESSMENT DISTRICT

Dear Mr. Blumenfeld:

We have reviewed the revised preliminary estimate of Assessment Costs dated May 31, 1990 prepared by Easterling & Associates for the proposed Seven Bar Ranch Special Assessment District. Corrales Associates Ltd. is supportive of the proposed SAD., as demonstrated by our letter of credit pledge prior to commencement of construction of Corrales Apartments several years ago.

It is our understanding that the City has called the letter of Credit from the previous landowners, Ramcor Ltd., thereby eliminating any responsibility that Corrales Associates, Ltd. may have for construction related to the Coors ByPass. If that is in fact the case, we, Corrales Associates, Ltd., intend to join in petitioning the City to develop the Seven Bar Ranch SAD. If allocations change Corrales Associates, Ltd. reserves the right to protest should its assessments increase.

We feel that development of the Cottonwood Mall and construction of the Coors ByPass Road will be a significant stimulus to the City of Albuquerque in terms of construction related and permanent employment, as well as tax dollars. Corrales Associates, Ltd. appreciates the City's assistance in support of the substantial economic development project for the West Side and City of Albuquerque.

Sincerely,
CORRALES ASSOCIATES, LTD.

Ron W. Schwabe
General Partner

RECEIVED
JUL 5 1990
MAYOR/CAO OFFICE

Appendix 1.11

ENTRADA POINTE

CORRALES

SIERRA Pointe APARTMENTS

# APPENDIX 2

## COPIES OF CURRENT PROTEST LETTERS

25X

# APPENDIX 2

ABQ Development

ABQ Development Corporation
625 Silver SW
Suite 200
PO Box 25625
Albuquerque NM 87125
Tel 505 242 3330

May 30, 1991

HAND DELIVERED

City Clerk
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Re: SAD # 223
Items Numbered: 1, 2, 3, 4, 5, 7, 16, & 17

Dear Sir or Madam:

ABQ Development Corporation hereby registers its protest regarding the manner in which the "Estimated Benefits" and "Estimated Assessments" were calculated. Specifically, our concerns are as follows:

1. Estimated Benefits: This amount is the estimated difference between the current value of the property and the future value of the property when the SAD improvements are completed. The future value of the property is calculated using erroneous and inflated assumptions. The appraiser estimated the costs to bring the parcels to a "marketable" state at $500,000. In addition, he has estimated the absorption of the multifamily units at 400 per year starting immediately. The additional costs are actually estimated to be $4,705,600 and the current absorption within the Seven Bar Sector Plan area of multifamily units has averaged less than 100 units per year. Since the value of the property with the SAD improvements completed is based on a discounted cash flow, if the actual costs and actual absorption figures are used, the Estimated Benefits would be greatly reduced.

2. Estimated Assessments: When ABQ Development was approached regarding the Special Assessment District for the Seven Bar area, the estimated assessments totalled $861,761. We were told these estimates were conservative and could expect the actual assessment to be much lower; however, our actual assessments total $1,326,188 which is an increase of 54%.

A specific concern is with the Storm Drainage Assessment. The assessment is based on tract contribution to the drainage basin less additional future costs. The assessment completely disregards protection benefits, access benefits which were to be considered according to Section III (D) of the Protest

Hearing Notice as well as the benefit of land reclamation from flood areas.

The Special Assessment District also does not take into consideration the funds in excess of $100,000 which ABQ Development has previously spent on engineering the Coors By-Pass and its associated utilities and drainage facilities.

Though ABQ Development Corporation has protested the Estimated Benefits and the Estimated Assessments, it does support the concept of the Special Assessment District. The City also needs to be aware that The Resolution Trust Corporation as Receiver for ABQ Federal Savings Bank holds the first mortgage on the property and has only consented to allowing an assessment lien of $861,761.00 to have priority over its first mortgage.

ABQ Development Corporation is willing to discuss and resolve these concerns so the District may proceed.

Sincerely,

Mary S. Hicks

Mary S. HIcks
Project Manager II

msh

cc: Stan Strickman, Vice President
Charles C. Mann, Financial Institution Specialist (RTC)

Appendix 2.2

25X

# ALBUQUERQUE PUBLIC SCHOOLS

PROPERTY MANAGEMENT

912 - 919 LOCUST STREET, S.E.
P. O. BOX 25704
ALBUQUERQUE, NEW MEXICO 87125

DR. JACK BOBROFF
SUPERINTENDENT

CHARLES O. ATWOOD
PROPERTY MANAGER


May 8, 1991

PWD/ENGINEERING GROUP
RECEIVED
MAY 1 . 1991

Mr. Lee Lunsford, P.E.
Special Assessment District Engineer
Public Works Department
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Dear Mr. Lunsford:

Re: City of Albuquerque, S.A.D. No. 223

As you were previously advised by me, the school district has asked its consulting engineer, Mr. Jeff Mortensen, to review the proposed S.A.D. 223 informational package. This review is now complete, a copy of which is attached for your information.

Please be advised the school district has already invested an estimated $118,944.50 for storm drainage improvement to serve Cibola High School.

Further, as the city has determined to disregard these drainage improvements in its determination of benefit to the school district, the school district now must oppose creation of S.A.D. 223 and inclusion of the Cibola High School site in the S.A.D.

Please be advised the school district hereby formally protests creation of S.A.D. 223 and inclusion of the Cibola High School site into S.A.D. 223. In addition, the school district claims all rights and protections available to it under regulation and law nor waives any of these rights and protections.

Please don't hesitate to call me at 765-5950 extension 265 if you have any questions.

Sincerely,

Charles O. Atwood
Property Manager

COA:sl

cc: Richard Toledo
Gerard Brown
Jeff Mortensen

Appendix 2.3

*An Equal Opportunity Employer*

A MEMBER OF CONSULTING
ENGINEERS COUNCIL OF NEW MEXICO

JEFF MORTENSEN & ASSOCIATES, INC. ◻ ENGINEERS
6010-B MIDWAY PARK BLVD. N.E. ◻ ALBUQUERQUE ◻ NEW MEXICO 87109 ◻ (505) 345-4250

901833
May 1, 1991

RECEIVED
6 1991

Mr. Charles O. Atwood
Property Manager
Albuquerque Public Schools
P. O. Box 25704
Albuquerque, NM 87125

Re: Cibola High School/SAD 223

Dear Chuck:

We are in receipt of the SAD No. 223 Preliminary Estimated Assessments Information Package dated April 24, 1991. Per your request, we have reviewed this information. Based upon our review, it is clearly evident that no credit is being given for the construction which has already taken place within the City's public drainage easement. It is our opinion that a vast majority of the excavation and fencing have already been completed at the full expense of the School District in advance of the SAD project. It was our complete and thorough understanding at the onset of the Cibola High School 1990 Storm Drain and Roof Drain Modifications, (City Project No. 4040.90) that credit would be given for the APS constructed improvements. Please reference the attached correspondence:

1. Letter from Gerard R. Brown to Mr. Lee Lunsford dated June 27, 1990.

2. Fax transmittal from Easterling & Associates to the Albuquerque Public School dated June 25, 1990.

It is clear from the review of this correspondence that it was understood that participation "in kind" was an acceptable method by which the School District could participate in the upcoming Special Assessment District (SAD).

We now find it a strange turn of events that the City is now trying to assess the School District for storm drainage improvements. To my knowledge, Mr. Lee Lunsford never responded to the June 27, 1990 letter from Mr. Gerard R. Brown. Said letter clearly sets forth the criteria under which the School District proceeded with its project which has improved the public drainage easement. If participation in kind was not acceptable, then the



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City should have promptly responded accordingly. Instead, there was no response. Furthermore, we find it strange that the guidance offered by Easterling & Associates relative to participation in kind would also be unacceptable. As you are aware, Easterling & Associates prepared the preliminary estimated assessments information package referenced above. Either the City and/or its consultant have forgotten or overlooked these very important details and previous agreements, or the School District was misinformed and mislead.

As of this writing, the School District has incurred the following costs:

1. Construction of retention pond and appurtenances
   $104,692.50

2. Design phase services
   $7,834.17

3. Construction phase services - inspection
   $3,797.83

4. Construction phase services - staking
   $2,620.40

Total: <u>$118,944.90</u>

As you can see, the costs incurred by the School District to provide itself with satisfactory drainage improvements well exceeds the assessment as set forth in the above referenced document. We feel very strongly that credit should be given for the work already performed by the School District and its assessment eliminated in its entirety. The costs listed above were obtained from the Bid Proposal from the low bidder, Albuquerque Underground, Inc. The drainage improvements represented 37.9562% of the overall storm drainage project cost. The design and construction phase services were calculated based upon our invoices to the School District for the entire project and adjusted by 37.9562% .

We hope that you will find this information helpful in your evaluation of the information provided to you by the City. We are returning the copies of the documents which you had provided us to review. If you should have any questions or comments concerning this information, or if we can be of further assistance to you, please do not hesitate to call.

Sincerely,

JEFF MORTENSEN & ASSOCIATES, INC.

Jeffrey G. Mortensen, P.E.
President

JGM:dj/Attachments



25×10

SIMON

June 3, 1991

Mr. Lee Lunsford
SAD Project Engineer
City of Albuquerque

RECEIVED

C RECD

Re: SAD #223

ENG-DESIGN

Dear Lee:

As the major proponent behind SAD #223, Simon continues to be very supportive of the district and wishes to see it progress in a timely fashion. We do not protest the estimated maximum benefit which will be heard by City Council this evening; however, we do have concerns about the size and scope of some of the preliminary estimates we have received. We hope that through our continued cooperation we will be able to resolve these issues prior to the next protest hearing.

As a matter of record, following is a very general list of some of the items we are disputing:

1.) Several fee items are calculated as a percentage of total construction cost which includes Gross Receipts Tax. These fees are then taxed again as a separate line item resulting in a double taxation.

2.) The city's Incidental Fees should not be a function of the construction cost. If this is to be an on-going process cost, it should be removed from the first tabulation of total costs.

3.) Any costs associated with the bank letter of credit should be included as part of the city process fee and not a separate cost. This fee should reduce as risk declines.

4.) The allocation for the relocation of the high pressure natural gas pipeline needs to be reapportioned for those areas where the line is being rerouted in accordance with the city's request.

5.) Telephone lines need to be added to overall street improvements and allocated proportionally.

Appendix 2.6

12121 WILSHIRE BOULEVARD SUITE #1001 LOS ANGELES, CALIFORNIA 90025 TEL: (213) 207-8111

6.) There appears to be excessive use of high cost items such as textured and colored concrete which should be revisited in an attempt to reduce costs.

7.) The revised location of the storm drain increased costs dramatically and should be studied to determine if a more cost efficient method can be used.

This is not an all-inclusive list as we are continuing to investigate the numbers associated with SAD #223. We are concerned by the substantial increase in costs since the original estimate provided to us on August 2, 1990. We hope that these costs will decrease in accordance with the comments listed above and as actual bid numbers are received, thereby eliminating some of the difficulties encountered by all the participants.

Thank you for your consideration of these matters.

Sincerely,

Terri Sturm
Assistant Vice President
Development

cc: Art Blumenfeld
Tom Hoover
Lou Hoffman
Members of City Council

Appendix 2.7

# Seven Bar Ranch

June 3, 1991

HAND DELIVERED

City of Albuquerque
City Clerk
P. O. Box 1293
Albuquerque, NM 87103

RE: Special Assessment District No. 223

Dear City Clerk:

Our company is the owner of Tracts M, Tract MM-1, Tract O-1A, Tract O-2A, and portions of Ellison Drive that are included in the above referenced Special Assessment District No. 223 (SAD #223).

We are in favor of SAD #223 moving forward through the normal process. Although we are in general concurrence with the proposed assessments and the estimated maximum benefits for our properties we have some specific concerns related to the proposed financing of SAD #223.

First, we object to a charge of 1.5% of the cost of construction by the City of Albuquerque defined as City Incidental Fees (Item #13) which is currently projected at $141,338.16. It is our understanding that a charge of 1.5% is typical in standard special assessment districts where there are numerous participants (50 - 100) and administration costs related to notices and accounting are substantial. Because there are relatively few participants in SAD #223 we feel that the City Incidental Fees should be lowered to more accurately reflect the actual costs that may be incurred.

Second, we object to the City Credit Enhancement Fee, as proposed by the City Treasurer, in the amount of 150 basis points annually on the outstanding principle balance. If approved at this rate the property owners in the District will be required to pay an additional $1,800,000.00 (approx.) to the City of Albuquerque over and above the normal processing costs associated with a typical special assessment district. In addition to the City Credit Enhancement Fee the participants are being required to fund a Letter of Credit Fee of 50 basis points (approx. $600,000.00), Debt Service Reserve Fund (approx. $1,150,000.00), and an Annual Surplus Fund (approx. $500,000.00) over the life of the District. We believe that if in fact there should be a City Credit Enhancement Fee at all that it should be not more than 50 basis points, which is the amount being requested by Sumitomo Bank for its annual Letter of Credit Fee. We believe that this is a reasonable request considering the fact that Sumitomo Bank's Letter of Credit would be called before the City would be at risk.

Appendix 2.8

10200 Corrales Rd. N.W. Suite E-3 / Albuquerque, N.M. 87048 / (505) 897-7227 / FAX (505) 897-1846

A representative of Seven Bar Land & Cattle Company will attend the Protest Hearing scheduled for June 3, 1991 at 6:00 at the Council Chamber to answer any questions that may be raised by this letter.

Sincerely,

John F. Black
General Partner
Seven Bar Land & Cattle Company

Appendix 2.9

25X

June 3, 1991

City of Albuquerque
City Clerk
P. O. Box 1293
Albuquerque, NM 87103

**HAND DELIVERED**

RE: Special Assessment District No. 223

Dear City Clerk:

The A. J. Black and Mary Jane Black Revocable Trust is the owner of Tract G-1, Tract G-2, and a portion of Lot 10, Questa del Rio that are included in the above referenced Special Assessment District No. 223 (SAD #223).

We are in favor of SAD #223 moving forward through the normal process. Although we are in general concurrence with the proposed assessments and the estimated maximum benefits for our properties we have some specific concerns related to the proposed financing of SAD #223.

First, we object to a charge of 1.5% of the cost of construction by the City of Albuquerque defined as City Incidental Fees (Item #13) which is currently projected at $141,338.16. It is our understanding that a charge of 1.5% is typical in standard special assessment districts where there are numerous participants (50 - 100) and administration costs related to notices and accounting are substantial. Because there are relatively few participants in SAD #223 we feel that the City Incidental Fees should be lowered to more accurately reflect the actual costs that may be incurred.

Second, we object to the City Credit Enhancement Fee, as proposed by the City Treasurer, in the amount of 150 basis points annually on the outstanding principle balance. If approved at this rate the property owners in the District will be required to pay an additional $1,800,000.00 (approx.) to the City of Albuquerque over and above the normal processing costs associated with a typical special assessment district. In addition to the City Credit Enhancement Fee the participants are being required to fund a Letter of Credit Fee of 50 basis points (approx. $600,000.00), Debt Service Reserve Fund (approx. $1,150,000.00), and an Annual Surplus Fund (approx. $500,000.00) over the life of the District. We believe that if in fact there should be a City Credit Enhancement Fee at all that it should be not more than 50 basis points, which is the amount being requested by Sumitomo Bank for its annual Letter of Credit Fee. We believe that this is a reasonable request considering the fact that Sumitomo Bank's Letter of Credit would be called before the City would be at risk.

A representative of Seven Bar Land & Cattle Company will attend the Protest Hearing scheduled for June 3, 1991 at 6:00 at the Council Chamber to answer any questions that may be raised by this letter.

Sincerely,

A. Rolfe Black
Co-Trustee
A. J. Black & Mary Jane Black Revocable Trust

Appendix 2.11

RECEIVED

JUN 05 REC'D

PWD/ENG-DESIGN

ELAN CORPORATION

May 28, 1991

Lee R. Lunsford
City of Albuquerque
Public Works Department
P.O. Box 1293
Albuquerque, NM 87103

RE: Special Assessment District # 223

Dear Mr. Lunsford:

Per our telephone conversation last week, this letter shall serve as our formal protest of our responsibility for additional costs relating to the above referenced improvements.

As I explained to you on the phone and to Art Blumenfeld in writing (see July 1990 letter.) It was our understanding that the funds which we pledged many years ago would cover any costs that might be encountered relating to infrastructure improvements for 7-Bar Ranch (see pledge agreement.)

Please let me know what we can do to further protest our incurring any additional expenses relating to SAD 223.

Sincerely,
ELAN CORPORATION

Ron W. Schwabe
President

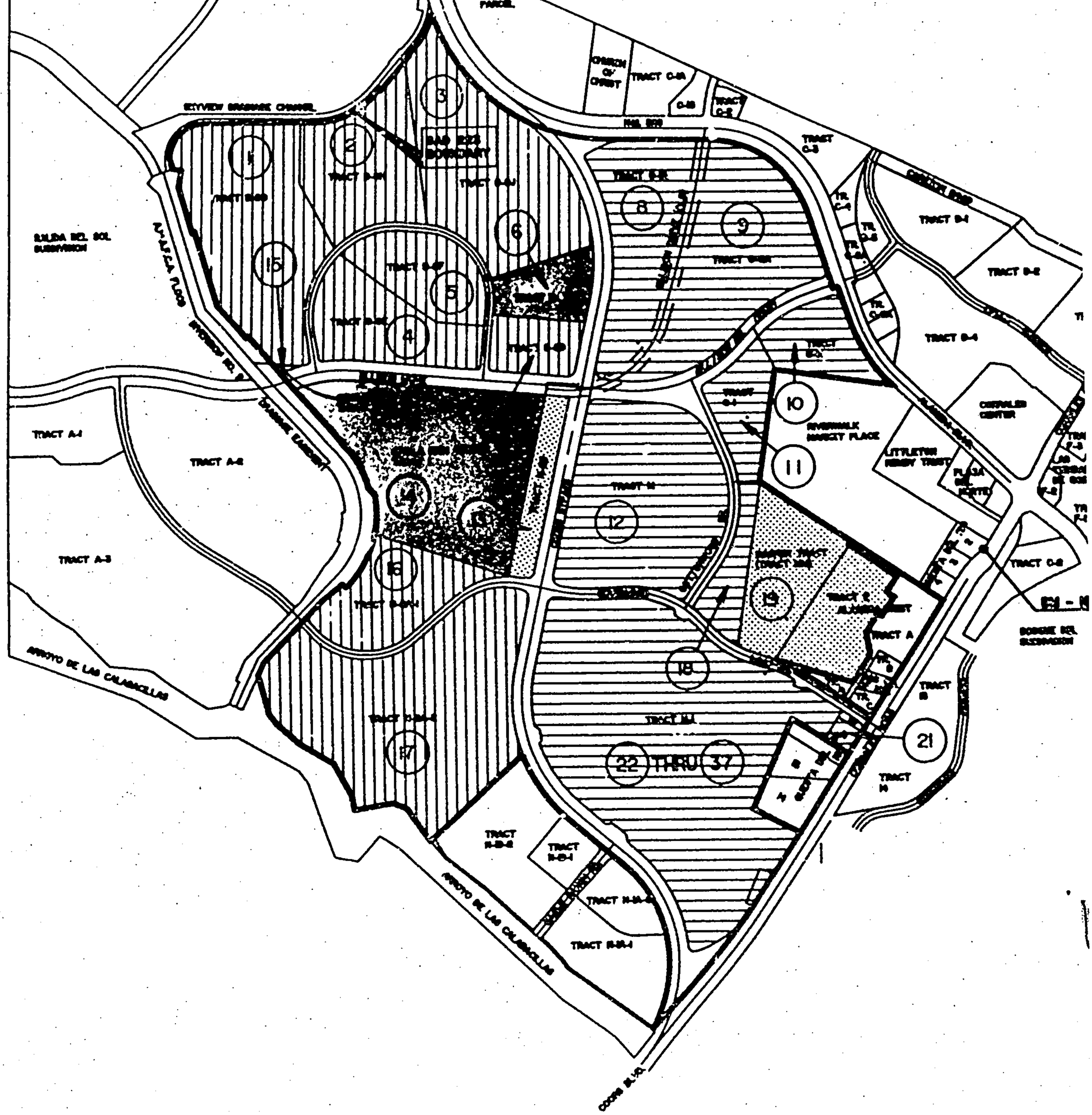
RWS/en

299 SOUTH PARK AVENUE • TUCSON • ARIZONA 85719 • (602) 798-3331 • FAX (602) 798-1288

Appendix 2.12

# APPENDIX 3

## PROTEST PROPERTY PLAN

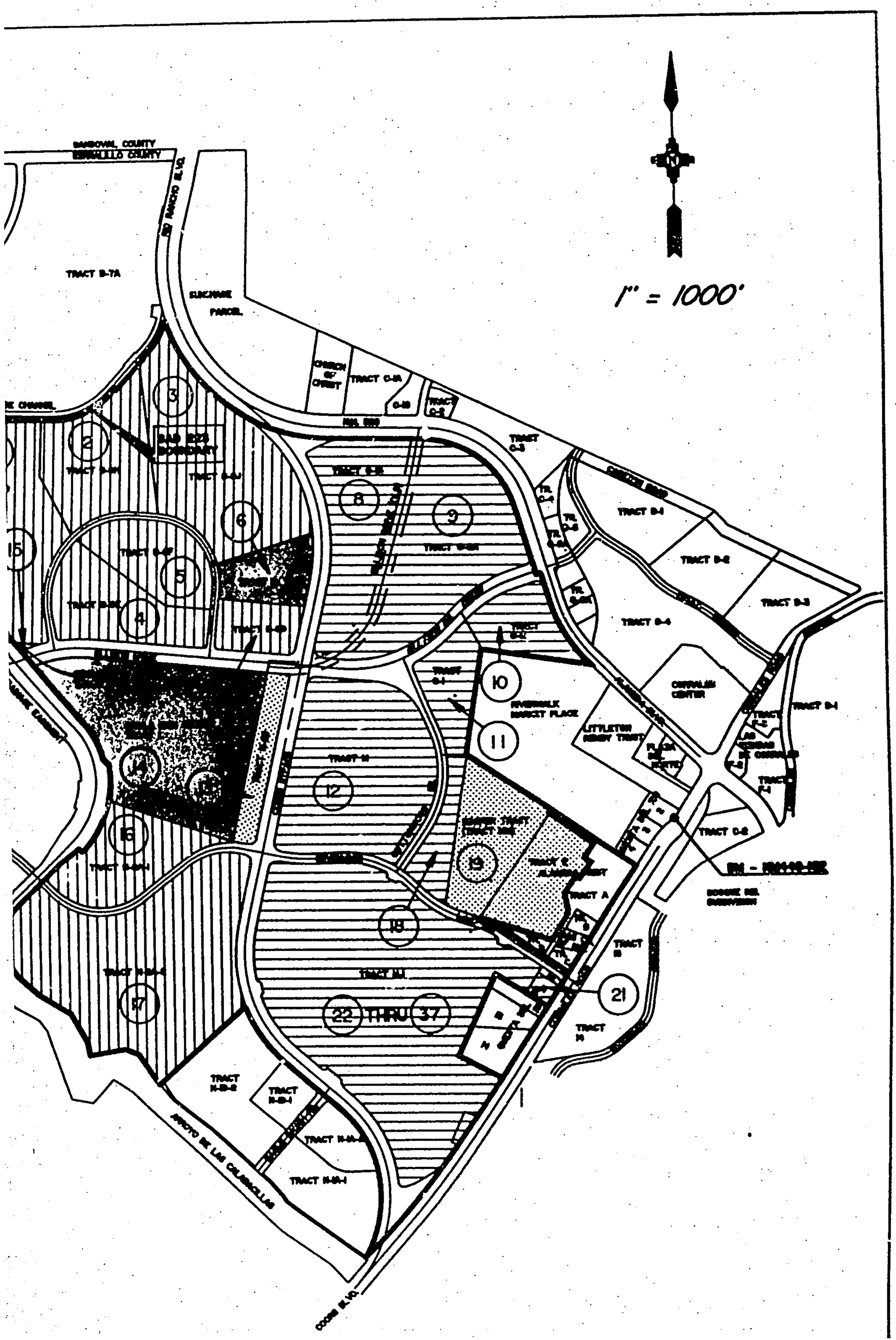



# SAD 223
# PROTEST PROPERTY PLAN

JUNE, 1991

## PROTEST PROPERTY KEY

- STRONG SUPPORT FOR DISTRIC WITH SPECIFIC PROTESTS / CO
- MODERATE SUPPORT FOR DISTF WITH SPECIFIC PROTESTS / CO
- OPPOSITION TO DISTRICT
- NON-RESPONSIVE
- (9) PROPERTY ITEM NUMBER


SANDOVAL COUNTY
BERNALILLO COUNTY
TRACT B-7A
SUNCHASE PARCEL
CHURCH OF CHRIST
TRACT C-4A
TRACT C-3
TRACT B-1
TRACT B-2
TRACT B-3
TRACT B-4
CINNAMON CENTER
RIVERWALK MARKET PLACE
LITTLETON FAMILY TRUST
TRACT B-1
TRACT C-6
TRACT A
TRACT M
22 THRU 37
TRACT N
TRACT N-1
TRACT N-2
21
10
11
12
13
18
19
15
16
17
1" = 1000'

# APPENDIX 4

**BROWN, CHUDLEIGH, SCHULER & ASSOCIATES**
**LETTER DATED JUNE 12, 1991, WITH ENCLOSURES**

# APPENDIX 4

**BROWN, CHUDLEIGH, SCHULER & ASSOCIATES**
REAL ESTATE APPRAISALS-MARKET STUDIES

LAWRENCE E. BROWN, MAI
WALTER H. CHUDLEIGH III, MAI
GREGORY S. SCHULER
MARK B. DIMARCO
SUSAN R. SHANLEY
JON D. KLINE
MARGARET GARRINGTON
ANDREW E. ALTPFORT
DEAN A. MEYERS

PARK CITY OFFICE:
1500 E. Kearns Blvd.
Suite C-204
Park City, Utah 84060
Telephone (801) 649-5906

EASTERLING & ASSOC. INC.
RECEIVED
JUN 13 1991

June 12, 1991

Easterling and Associates, Inc.
10131 Coors Road, N.W.
Suite H-7
Albuquerque, NM 87114
Attn: Mr. R.P. Bohannan, P.E.

Re: SAD No. 223- Parcels 1,2,3,4,5,16 & 17
Albuquerque, New Mexico

Gentlemen:

In response to your FAX correspondence date May 31, 1991 we have re-appraised the above referenced parcels. The updated analysis includes the new information provided by Easterling Associates with regard to development costs and CIP fees for the properties. The market value of a fee interest in the parcels has been estimated under two premises. The first valuation assumes that the infrastructure improvements which are scheduled to be installed as part of the special assessment district are not in place. The second premise assumes that the SAD improvements are in place. As a result of our appraisal and analysis, the opinion has been formed that the market values of the properties, subject to the referenced limiting conditions, as of March 1, 1991, are as follows:

| No. | Tract | Area | Value "Before" | Value After | Benefit |
|---|---|---|---|---|---|
| 1 | B-9G | 37.1755 | 323,900 | 760,000 | 436,100 |
| 2 | B-9H | 21.1325 | 184,100 | 428,000 | 243,900 |
| 3 | B-9J | 37.1147 | 404,200 | 1,050,000 | 645,800 |
| 4 | B-9E | 16.8985 | 184,000 | 235,000 | 51,000 |
| 5 | B-9F | 12.9125 | 140.600 | 240,000 | 99,400 |
| 16 | N-2A-2 | 16.3480 | 178,000 | 235,000 | 57,000 |
| 17 | N-2A-1 | 58.1795 | 760,300 | 1,750,000 | 989,700 |
| | TOTALS | 199.7612 | 2,175,100 | 4,698,000 | 2,522,900 |

East Coast Office: 555 Long Wharf Drive Suite 9H New Haven, CT 06511 (203) 624-8466
West Coast Office: 744 Cardley Avenue Suite 100 Medford, OR 97504 (503) 772-8566

A brief discussion of the valuation process and the values allocated to the individual parcels are presented on the following pages. Please refer to our full narrative report dated April 29, 1991 for details with regard to the subject parcels, definition of market value, demographic data, comparables, and limiting conditions and assumptions.

Respectfully submitted,
BROWN, CHUDLEIGH, SCHULER AND ASSOCIATES

Walter H. Chudleigh III, MAI
WHC:mp

Appendix 4.2

Valuation Methodology

The subject parcels range in size from approximately 13 to 58 acres, and total 199.7612 acres. Given the common ownership of the parcels and the fact that they are in close proximity and would compete with each other, we have staged development as though they were one 200 ± acre development. This will result in a more conservative valuation, inasmuch as it will include the negative impact on value resulting from an extended absorption period.

The current zoning regulation permit a mixture of single and multi-family development on the parcels, and we have allocated 75% of the land to single family development and 25% to multi-family development. The appropriate densities are four units per acre for single family and 15 units per acre for multi-family. This results in a total of 600 single family lots and 750 multi-family units. It is anticipated that the lots would be sold to developers who would differentiate the design and pricing of the homes to appeal to a broad market.

The value of the single family lots is estimated at $22,000 each, and the multi-family land at $3,500 per unit, based on comparable sales data. The weighted average value for the 1,350 total units is calculated at $11,722. The sales of the lots is assumed to commence in the third year, assuming a two year planning and construction period for the SAD improvements and the off-site improvements for the subject parcels. We have estimated an eight year sell-out, or absorption period, based on an analysis of historic absorption and projections for the future. This is equal to 170 units per year, including multi-family and single family.

The estimated off-site construction costs of approximately $4,700,000, as provided by Easterling and Associates have been included in our discounted cash flow analysis. Deductions are also made for taxes, sales commissions and marketing, legal fees, general administrative and overhead, interest, and developer's profit in arriving at a value for the entire project. In the case of the Premise I, or "as is"



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valuation, the estimated costs which would have been provided by the SAD are also included. This assumes that a private developer would be required to construct the same infrastructure as is planned for the SAD, and that he could complete the construction within the same budget parameters. It is noted that the purchase of the property "as is" assuming no SAD is considerably more risky than the purchase assuming that the SAD improvements are in place. The purchaser would have to obtain city approvals for the project and would face additional construction cost overrun risk as well as market risk, and the risk that the city might require additional street improvements, traffic lights, etc.

The estimated values of the parcels under Premise I range from $0.20 to $0.30 per square foot, depending on the location, size and configuration of the parcels. The attached discounted cash flow printouts indicate aggregate values for the subject property of $2,175,000 under Premise I and $4,700,000 under Premise II. The difference between the two figures, or the "benefit" is calculated at $2,525,000 dollars. The values of the parcels have been estimated individually, assuming that the parcels closest to the proposed mall are developed first and the more remote parcels are developed last.

The cash flow analyses generally assume underlying inflation rates of 4% per year commencing in the second year. Marketing expenses are projected at 6% of gross sales revenue; developer's overhead at 1% of gross revenue, and developer's profit at 15% of gross sales revenue. The cash flow is discounted at 12% per annum to reflect the time value of money and to account for the projected delay in receiving funds due to the extended absorption period. Please feel free to contact us if you have any questions, or if we can be of further assistance.

Respectfully submitted
BROWN, CHUDLEIGH, SCHULER & ASSOCIATES

Walter H. Chudleigh III, MAI

Appendix 4.4

Addenda

Discounted Cash Flow Analysis

Parcels 1, 2, 3, 4, 5, 16 & 17

Appendix 4.5

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DISCOUNTED CASH FLOW- Land Residual - Parcel 1 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative Completed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Closed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative Closed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $11,722 | $12,191 | $12,679 | $13,186 | $13,713 | $14,262 | $14,832 |
| Sales Income | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Loan Draw | 17,934 | 19,957 | 22,205 | 24,702 | 27,475 | 30,556 | 33,979 |
| Total Revenue | 17,934 | 19,957 | 22,205 | 24,702 | 27,475 | 30,556 | 33,979 |
| Development Costs | | | | | | | |
| Offsite Costs- | | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Offsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Onsite Costs- | | | | | | | |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | | |
| Architect/Engineering | 1,255 | 1,305 | 1,357 | 1,412 | 1,468 | 1,527 | 1,588 |
| Legal & Closing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes- Acreage | 12,550 | 12,550 | 12,550 | 12,550 | 12,550 | 12,550 | 12,550 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest/Finance Charges | 0 | 1,973 | 4,168 | 6,611 | 9,328 | 12,350 | 15,711 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 4,129 | 4,129 | 4,129 | 4,129 | 4,129 | 4,129 | 4,129 |
| Total Costs | 17,934 | 19,957 | 22,205 | 24,702 | 27,475 | 30,556 | 33,979 |
| Loan Draw | 17,934 | 19,957 | 22,205 | 24,702 | 27,475 | 30,556 | 33,979 |
| Loan Repayment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Loan Balance | 17,934 | 37,892 | 60,097 | 84,798 | 112,274 | 142,830 | 176,809 |
| Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Less Developer's Profit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash Flow to Property | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative CF | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disc Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative DCF | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Appendix 4.6

DISCOUNTED CASH FLOW- Land Residual - Parcel 1 Page 2

| Year | 8 | 9 | 10 |
|---|---|---|---|
| | --- | --- | --- |
| % Onsites Completed | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 91 | 160 |
| Cumulative Completed | 0 | 91 | 251 |
| Total Closed | 0 | 91 | 160 |
| Cumulative Closed | 0 | 91 | 251 |
| Current Inventory | 0 | 0 | 0 |
| Ave Price/Unit-Land | $15,426 | $16,043 | $16,684 |
| Sales Income | 0 | 1,459,883 | 2,669,500 |
| Loan Draw | 37,780 | 751,272 | 177,472 |
| | ------ | ------ | ------ |
| Total Revenue | 37,780 | 2,211,155 | 2,846,973 |
| Development Costs | | | |
| Offsite Costs- | | | |
| Grading | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 |
| Total Offsites | 0 | 620,000 | 0 |
| Onsite Costs- | | | |
| Base unit | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 |
| Soft Costs: | | | |
| Architect/Engineering | 1,651 | 1,718 | 1,786 |
| Legal & Closing | 0 | 6,227 | 11,386 |
| Taxes -Finished lots | 0 | 6 | 6 |
| Taxes- Acreage | 12,550 | 7,994 | (6) |
| Promotion | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 87,593 | 160,170 |
| Interest/Finance Charges | 19,449 | 23,605 | 0 |
| Sewer Assessment | 0 | 0 | 0 |
| Developer's Overhead | 4,129 | 4,129 | 4,129 |
| | ------ | ------ | ------ |
| Total Costs | 37,780 | 751,272 | 177,472 |
| Loan Draw | 37,780 | 751,272 | 177,472 |
| Loan Repayment | 0 | 965,860 | 177,472 |
| Loan Balance | 214,589 | 0 | 0 |
| Cash Flow | 0 | 494,023 | 2,492,028 |
| Less Developer's Profit | 0 | 494,023 | 125,385 |
| Cash Flow to Property | 0 | 0 | 2,366,643 |
| Cumulative CF | 0 | 0 | 2,366,643 |
| Disc Cash Flow | 0 | 0 | 761,996 |
| Cumulative DCF | 0 | 0 | 761,996 |

Appendix 4.7

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcel 1 (Land Residual)

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $761,996 |
| Original Loan Balance | 0 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | 0 |
| Total Estimated Residual Land Value | 761,996 |
| Residual Land Value/Unit | 3,036 |
| Residual Value/Gross Acre | 20,497 |
| Residual Value/SF Land | $0.47 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $4,129,383 | $16,452 | 100.00% |
| Total Onsites | 0 | 0 | 0.00% |
| Total Grading | 0 | 0 | 0.00% |
| Total Blasting | 0 | 0 | 0.00% |
| Total Paving | 0 | 0 | 0.00% |
| Total Sewer Construction | 0 | 0 | 0.00% |
| Total Sewer Assessment Fee | 0 | 0 | 0.00% |
| Total Utility construction | 0 | 0 | 0.00% |
| Total Offsite Construction | 620,000 | 2,470 | 15.01% |
| Total Architect/Engineer | 15,068 | 60 | 0.36% |
| Total Legal & Closing | 17,613 | 70 | 0.43% |
| Total Tax & Insurance | 108,400 | 432 | 2.63% |
| Total Interest/Financing | 93,194 | 371 | 2.26% |
| Total Marketing & Promo | 247,763 | 987 | 6.00% |
| Total Developer's Overhead | 41,294 | 165 | 1.00% |
| TOTAL COSTS | 1,143,332 | 4,555 | 27.69% |
| Total Developer's Profit | 619,408 | 2,468 | 15.00% |
| Residual Land Value | 761,996 | 3,036 | 18.45% |
| Totals | 2,524,736 | 10,059 | 61.14% |

DISCOUNTED CASH FLOW- Land Residual - Parcel 2 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative Completed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Closed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative Closed | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $11,722 | $12,191 | $12,679 | $13,186 | $13,713 | $14,262 | $14,832 |
| Sales Income | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Loan Draw | 10,450 | 11,631 | 12,943 | 14,401 | 16,021 | 17,821 | 19,820 |
| Total Revenue | 10,450 | 11,631 | 12,943 | 14,401 | 16,021 | 17,821 | 19,820 |
| Development Costs | | | | | | | |
| Offsite Costs- | | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Offsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Onsite Costs- | | | | | | | |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | | |
| Architect/Engineering | 794 | 826 | 859 | 894 | 929 | 967 | 1,005 |
| Legal & Closing | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes- Acreage | 7,150 | 7,150 | 7,150 | 7,150 | 7,150 | 7,150 | 7,150 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest/Finance Charges | 0 | 1,149 | 2,429 | 3,853 | 5,437 | 7,199 | 9,159 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 2,505 | 2,505 | 2,505 | 2,505 | 2,505 | 2,505 | 2,505 |
| Total Costs | 10,450 | 11,631 | 12,943 | 14,401 | 16,021 | 17,821 | 19,820 |
| Loan Draw | 10,450 | 11,631 | 12,943 | 14,401 | 16,021 | 17,821 | 19,820 |
| Loan Repayment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Loan Balance | 10,450 | 22,080 | 35,024 | 49,425 | 65,446 | 83,267 | 103,087 |
| Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Less Developer's Profit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash Flow to Property | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative CF | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disc Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative DCF | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Appendix 4.9

DISCOUNTED CASH FLOW- Land Residual - Parcel 2 Page 2

| Year | 8 | 9 | 10 |
|---|---|---|---|
| | --- | --- | --- |
| % Onsites Completed | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% |
| Units Completed (Land) | 64 | 79 | 0 |
| Cumulative Completed | 64 | 143 | 143 |
| Total Closed | 64 | 79 | 0 |
| Cumulative Closed | 64 | 143 | 143 |
| Current Inventory | 0 | (0) | (0) |
| Ave Price/Unit-Land | $15,426 | $16,043 | $16,684 |
| Sales Income | 987,241 | 1,267,371 | 0 |
| Loan Draw | 541,286 | 85,040 | 0 |
| | ------ | ------ | ------ |
| Total Revenue | 1,528,527 | 1,352,411 | 0 |
| Development Costs | | | |
| Offsite Costs- | | | |
| Grading | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 |
| Total Offsites | 459,000 | 0 | 0 |
| Onsite Costs- | | | |
| Base unit | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 |
| Soft Costs: | | | |
| Architect/Engineering | 1,045 | 1,087 | 0 |
| Legal & Closing | 4,211 | 5,406 | 0 |
| Taxes -Finished lots | 6 | (10) | (10) |
| Taxes- Acreage | 3,944 | 10 | 10 |
| Promotion | 0 | 0 | 0 |
| Marketing/Commissions | 59,234 | 76,042 | 0 |
| Interest/Finance Charges | 11,340 | 0 | 0 |
| Sewer Assessment | 0 | 0 | 0 |
| Developer's Overhead | 2,505 | 2,505 | 0 |
| | ------ | ------ | ------ |
| Total Costs | 541,286 | 85,040 | 0 |
| Loan Draw | 541,286 | 85,040 | 0 |
| Loan Repayment | 644,372 | 85,040 | 0 |
| Loan Balance | 0 | 0 | 0 |
| Cash Flow | 342,869 | 1,182,330 | 0 |
| Less Developer's Profit | 338,192 | 0 | 0 |
| Cash Flow to Property | 4,677 | 1,182,330 | 0 |
| Cumulative CF | 4,677 | 1,187,008 | 1,187,008 |
| Disc Cash Flow | 1,889 | 426,360 | 0 |
| Cumulative DCF | 1,889 | 428,249 | 428,249 |

Appendix 4.10

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcel 2 (Land Residual)

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $428,249 |
| Original Loan Balance | 0 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | (0) |
| Total Estimated Residual Land Value | 428,249 |
| Residual Land Value/Unit | 2,995 |
| Residual Value/Gross Acre | 20,265 |
| Residual Value/SF Land | $0.47 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $2,254,612 | $15,767 | 100.00% |
| Total Onsites | 0 | 0 | 0.00% |
| Total Grading | 0 | 0 | 0.00% |
| Total Blasting | 0 | 0 | 0.00% |
| Total Paving | 0 | 0 | 0.00% |
| Total Sewer Construction | 0 | 0 | 0.00% |
| Total Sewer Assessment Fee | 0 | 0 | 0.00% |
| Total Utility construction | 0 | 0 | 0.00% |
| Total Offsite Construction | 459,000 | 3,210 | 20.36% |
| Total Architect/Engineer | 8,407 | 59 | 0.37% |
| Total Legal & Closing | 9,617 | 67 | 0.43% |
| Total Tax & Insurance | 54,000 | 378 | 2.40% |
| Total Interest/Financing | 40,566 | 284 | 1.80% |
| Total Marketing & Promo | 135,277 | 946 | 6.00% |
| Total Developer's Overhead | 22,546 | 158 | 1.00% |
| TOTAL COSTS | 729,413 | 5,101 | 32.35% |
| Total Developer's Profit | 338,192 | 2,365 | 15.00% |
| Residual Land Value | 428,249 | 2,995 | 18.99% |
| Totals | 1,495,854 | 10,461 | 66.35% |

DISCOUNTED CASH FLOW- Land Residual - Parcel 3 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 0 | 0 | 6 | 170 | 75 |
| Cumulative Completed | 0 | 0 | 0 | 0 | 6 | 176 | 251 |
| Total Closed | 0 | 0 | 0 | 0 | 6 | 170 | 75 |
| Cumulative Closed | 0 | 0 | 0 | 0 | 6 | 176 | 251 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $11,722 | $12,191 | $12,679 | $13,186 | $13,713 | $14,262 | $14,832 |
| Sales Income | 0 | 0 | 0 | 0 | 82,280 | 2,424,519 | 1,112,426 |
| Loan Draw | 19,513 | 21,731 | 24,196 | 26,936 | 500,967 | 223,358 | 78,929 |
| Total Revenue | 19,513 | 21,731 | 24,196 | 26,936 | 583,247 | 2,647,876 | 1,191,356 |
| Development Costs | | | | | | | |
| Offsite Costs- | | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Offsites | 0 | 0 | 0 | 0 | 466,000 | 0 | 0 |
| Onsite Costs- | | | | | | | |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | | |
| Architect/Engineering | 1,793 | 1,865 | 1,939 | 2,017 | 2,097 | 2,181 | 2,269 |
| Legal & Closing | 0 | 0 | 0 | 0 | 351 | 10,342 | 4,745 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 17 | 17 | 0 |
| Taxes- Acreage | 12,550 | 12,550 | 12,550 | 12,550 | 12,233 | 3,733 | 0 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 0 | 0 | 4,937 | 145,471 | 66,746 |
| Interest/Finance Charges | 0 | 2,146 | 4,537 | 7,198 | 10,161 | 56,443 | 0 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 5,170 | 5,170 | 5,170 | 5,170 | 5,170 | 5,170 | 5,170 |
| Total Costs | 19,513 | 21,731 | 24,196 | 26,936 | 500,967 | 223,358 | 78,929 |
| Loan Draw | 19,513 | 21,731 | 24,196 | 26,936 | 500,967 | 223,358 | 78,929 |
| Loan Repayment | 0 | 0 | 0 | 0 | 80,223 | 736,478 | 78,929 |
| Loan Balance | 19,513 | 41,245 | 65,441 | 92,376 | 513,120 | 0 | 0 |
| Cash Flow | 0 | 0 | 0 | 0 | 2,057 | 1,688,041 | 1,033,497 |
| Less Developer's Profit | 0 | 0 | 0 | 0 | 0 | 542,884 | 0 |
| Cash Flow to Property | 0 | 0 | 0 | 0 | 2,057 | 1,145,157 | 1,033,497 |
| Cumulative CF | 0 | 0 | 0 | 0 | 2,057 | 1,147,214 | 2,180,711 |
| Disc Cash Flow | 0 | 0 | 0 | 0 | 1,167 | 580,172 | 467,502 |
| Cumulative DCF | 0 | 0 | 0 | 0 | 1,167 | 581,340 | 1,048,841 |

Appendix 4.12

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcel 3 (Land Residual)

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $1,048,841 |
| Original Loan Balance | 0 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | 0 |
| Total Estimated Residual Land Value | 1,048,841 |
| Residual Land Value/Unit | 4,179 |
| Residual Value/Gross Acre | 49,632 |
| Residual Value/SF Land | $1.14 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $3,619,225 | $14,419 | 100.00% |
| Total Onsites | 0 | 0 | 0.00% |
| Total Grading | 0 | 0 | 0.00% |
| Total Blasting | 0 | 0 | 0.00% |
| Total Paving | 0 | 0 | 0.00% |
| Total Sewer Construction | 0 | 0 | 0.00% |
| Total Sewer Assessment Fee | 0 | 0 | 0.00% |
| Total Utility construction | 0 | 0 | 0.00% |
| Total Offsite Construction | 466,000 | 1,857 | 12.88% |
| Total Architect/Engineer | 14,161 | 56 | 0.39% |
| Total Legal & Closing | 15,437 | 62 | 0.43% |
| Total Tax & Insurance | 66,200 | 264 | 1.83% |
| Total Interest/Financing | 80,486 | 321 | 2.22% |
| Total Marketing & Promo | 217,154 | 865 | 6.00% |
| Total Developer's Overhead | 36,192 | 144 | 1.00% |
| TOTAL COSTS | 895,630 | 3,568 | 24.75% |
| Total Developer's Profit | 542,884 | 2,163 | 15.00% |
| Residual Land Value | 1,048,841 | 4,179 | 28.98% |
| Totals | 2,487,355 | 9,910 | 68.73% |

Appendix 4.13

25X

DISCOUNTED CASH FLOW- Land Residual - Parcel 4 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Cumulative Completed | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total Closed | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Cumulative Closed | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $11,722 | $12,191 | $12,679 | $13,186 | $13,713 | $14,262 | $14,832 |
| Sales Income | 0 | 0 | 0 | 0 | 0 | 0 | 118,659 |
| Loan Draw | 8,605 | 9,580 | 10,663 | 11,867 | 13,204 | 14,690 | 73,566 |
| Total Revenue | 8,605 | 9,580 | 10,663 | 11,867 | 13,204 | 14,690 | 192,225 |
| Development Costs | | | | | | | |
| Offsite Costs- | | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Offsites | 0 | 0 | 0 | 0 | 0 | 0 | 50,000 |
| Onsite Costs- | | | | | | | |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | | |
| Architect/Engineering | 713 | 741 | 771 | 801 | 834 | 867 | 902 |
| Legal & Closing | 0 | 0 | 0 | 0 | 0 | 0 | 506 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Taxes- Acreage | 5,700 | 5,700 | 5,700 | 5,700 | 5,700 | 5,700 | 5,295 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 0 | 0 | 0 | 0 | 7,120 |
| Interest/Finance Charges | 0 | 947 | 2,000 | 3,173 | 4,479 | 5,931 | 7,547 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 2,192 | 2,192 | 2,192 | 2,192 | 2,192 | 2,192 | 2,192 |
| Total Costs | 8,605 | 9,580 | 10,663 | 11,867 | 13,204 | 14,690 | 73,566 |
| Loan Draw | 8,605 | 9,580 | 10,663 | 11,867 | 13,204 | 14,690 | 73,566 |
| Loan Repayment | 0 | 0 | 0 | 0 | 0 | 0 | 115,692 |
| Loan Balance | 8,605 | 18,184 | 28,848 | 40,715 | 53,919 | 68,609 | 26,483 |
| Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2,966 |
| Less Developer's Profit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash Flow to Property | 0 | 0 | 0 | 0 | 0 | 0 | 2,966 |
| Cumulative CF | 0 | 0 | 0 | 0 | 0 | 0 | 2,966 |
| Disc Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 1,342 |
| Cumulative DCF | 0 | 0 | 0 | 0 | 0 | 0 | 1,342 |

Appendix 4.14

25X

DISCOUNTED CASH FLOW- Land Residual - Parcel 4 Page 2

| | | |
|---|---|---|
| Year | 8 | 9 |
| | --- | --- |
| % Onsites Completed | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% |
| Units Completed (Land) | 106 | 0 |
| Cumulative Completed | 114 | 114 |
| Total Closed | 106 | 0 |
| Cumulative Closed | 114 | 114 |
| Current Inventory | 0 | 0 |
| Ave Price/Unit-Land | $15,426 | $16,043 |
| Sales Income | 1,635,118 | 0 |
| Loan Draw | 767,125 | 0 |
| | ------ | ------ |
| Total Revenue | 2,402,243 | 0 |
| Development Costs | | |
| Offsite Costs- | | |
| Grading | $0 | $0 |
| Blasting | 0 | 0 |
| Sewers | 0 | 0 |
| Paving | 0 | 0 |
| Utilities | 0 | 0 |
| Total Offsites | 656,000 | 0 |
| Onsite Costs- | | |
| Base unit | 0 | 0 |
| Appliances/options | 0 | 0 |
| Garage | 0 | 0 |
| Clubhouse & amenities | 0 | 0 |
| Soft Costs: | | |
| Architect/Engineering | 938 | 0 |
| Legal & Closing | 6,974 | 0 |
| Taxes -Finished lots | 0 | 0 |
| Taxes- Acreage | 0 | 0 |
| Promotion | 0 | 0 |
| Marketing/Commissions | 98,107 | 0 |
| Interest/Finance Charges | 2,913 | 0 |
| Sewer Assessment | 0 | 0 |
| Developer's Overhead | 2,192 | 0 |
| | ------ | ------ |
| Total Costs | 767,125 | 0 |
| Loan Draw | 767,125 | 0 |
| Loan Repayment | 793,608 | 0 |
| Loan Balance | 0 | 0 |
| Cash Flow | 841,511 | 0 |
| Less Developer's Profit | 263,067 | 0 |
| Cash Flow to Property | 578,444 | 0 |
| Cumulative CF | 581,411 | 581,411 |
| Disc Cash Flow | 233,624 | 0 |
| Cumulative DCF | 234,966 | 234,966 |

Appendix 4.15

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcel 4 (Land Residual)

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $234,966 |
| Original Loan Balance | 0 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | (0) |
| Total Estimated Residual Land Value | 234,966 |
| Residual Land Value/Unit | 2,061 |
| Residual Value/Gross Acre | 11,119 |
| Residual Value/SF Land | $0.26 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $1,753,777 | $15,384 | 100.00% |
| Total Onsites | 0 | 0 | 0.00% |
| Total Grading | 0 | 0 | 0.00% |
| Total Blasting | 0 | 0 | 0.00% |
| Total Paving | 0 | 0 | 0.00% |
| Total Sewer Construction | 0 | 0 | 0.00% |
| Total Sewer Assessment Fee | 0 | 0 | 0.00% |
| Total Utility construction | 0 | 0 | 0.00% |
| Total Offsite Construction | 706,000 | 6,193 | 40.26% |
| Total Architect/Engineer | 6,565 | 58 | 0.37% |
| Total Legal & Closing | 7,481 | 66 | 0.43% |
| Total Tax & Insurance | 39,500 | 346 | 2.25% |
| Total Interest/Financing | 26,990 | 237 | 1.54% |
| Total Marketing & Promo | 105,227 | 923 | 6.00% |
| Total Developer's Overhead | 17,538 | 154 | 1.00% |
| TOTAL COSTS | 909,300 | 7,976 | 51.85% |
| Total Developer's Profit | 263,067 | 2,308 | 15.00% |
| Residual Land Value | 234,966 | 2,061 | 13.40% |
| Totals | 1,407,332 | 12,345 | 80.25% |

Appendix 4.16

25X

DISCOUNTED CASH FLOW- Land Residual - Parcel 5 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| | --- | --- | --- | --- | --- | --- | --- |
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| Cumulative Completed | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| Total Closed | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| Cumulative Closed | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $11,722 | $12,191 | $12,679 | $13,186 | $13,713 | $14,262 | $14,832 |
| Sales Income | 0 | 0 | 0 | 0 | 0 | 0 | 1,290,415 |
| Loan Draw | 6,815 | 7,589 | 8,450 | 9,406 | 10,469 | 11,650 | 504,541 |
| | --- | --- | --- | --- | --- | --- | --- |
| Total Revenue | 6,815 | 7,589 | 8,450 | 9,406 | 10,469 | 11,650 | 1,794,955 |
| Development Costs | | | | | | | |
| Offsite Costs- | | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Offsites | 0 | 0 | 0 | 0 | 0 | 0 | 413,000 |
| Onsite Costs- | | | | | | | |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | | |
| Architect/Engineering | 621 | 646 | 672 | 699 | 727 | 756 | 786 |
| Legal & Closing | 0 | 0 | 0 | 0 | 0 | 0 | 5,504 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes- Acreage | 4,350 | 4,350 | 4,350 | 4,350 | 4,350 | 4,350 | 0 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 0 | 0 | 0 | 0 | 77,425 |
| Interest/Finance Charges | 0 | 0 | 0 | 0 | 0 | 0 | 5,982 |
| Sewer Assessment | 0 | 750 | 1,584 | 2,514 | 3,549 | 4,700 | 0 |
| Developer's Overhead | 1,843 | 1,843 | 1,843 | 1,843 | 1,843 | 1,843 | 1,843 |
| | --- | --- | --- | --- | --- | --- | --- |
| Total Costs | 6,815 | 7,589 | 8,450 | 9,406 | 10,469 | 11,650 | 504,541 |
| Loan Draw | 6,815 | 7,589 | 8,450 | 9,406 | 10,469 | 11,650 | 504,541 |
| Loan Repayment | | 0 | 0 | 0 | 0 | 0 | 558,920 |
| Loan Balance | 6,[illegible] | 14,404 | 22,854 | 32,261 | 42,730 | 54,380 | 0 |
| Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 731,494 |
| Less Developer's Profit | 0 | 0 | 0 | 0 | 0 | 0 | 193,562 |
| Cash Flow to Property | 0 | 0 | 0 | 0 | 0 | 0 | 537,932 |
| Cumulative CF | 0 | 0 | 0 | 0 | 0 | 0 | 537,932 |
| Disc Cash Flow | 0 | 0 | 0 | 0 | 0 | 0 | 243,333 |
| Cumulative DCF | 0 | 0 | 0 | 0 | 0 | 0 | 243,333 |

Appendix 4.17

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcel 5 (Land Residual)

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $243,333 |
| Original Loan Balance | 0 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | (0) |
| Total Estimated Residual Land Value | 243,333 |
| Residual Land Value/Unit | 2,797 |
| Residual Value/Gross Acre | 11,515 |
| Residual Value/SF Land | $0.26 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $1,290,415 | $14,832 | 100.00% |
| Total Onsites | 0 | 0 | 0.00% |
| Total Grading | 0 | 0 | 0.00% |
| Total Blasting | 0 | 0 | 0.00% |
| Total Paving | 0 | 0 | 0.00% |
| Total Sewer Construction | 0 | 0 | 0.00% |
| Total Sewer Assessment Fee | 0 | 0 | 0.00% |
| Total Utility construction | 0 | 0 | 0.00% |
| Total Offsite Construction | 413,000 | 4,747 | 32.01% |
| Total Architect/Engineer | 4,905 | 56 | 0.38% |
| Total Legal & Closing | 5,504 | 63 | 0.43% |
| Total Tax & Insurance | 26,100 | 300 | 2.02% |
| Total Interest/Financing | 19,079 | 219 | 1.48% |
| Total Marketing & Promo | 77,425 | 890 | 6.00% |
| Total Developer's Overhead | 12,904 | 148 | 1.00% |
| TOTAL COSTS | 558,920 | 6,424 | 43.31% |
| Total Developer's Profit | 193,562 | 2,225 | 15.00% |
| Residual Land Value | 243,333 | 2,797 | 18.86% |
| Totals | 995,816 | 11,446 | 77.17% |

Appendix 4.18

25X

DISCOUNTED CASH FLOW- Land Residual - Parcel 16 Page 1

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 0 | 0 | 110 | 0 | 0 |
| Cumulative Completed | 0 | 0 | 0 | 0 | 110 | 110 | 110 |
| Total Closed | 0 | 0 | 0 | 0 | 110 | 0 | 0 |
| Cumulative Closed | 0 | 0 | 0 | 0 | 110 | 110 | 110 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $11,722 | $12,191 | $12,679 | $13,186 | $13,713 | $14,262 | $14,832 |
| Sales Income | 0 | 0 | 0 | 0 | 1,508,468 | 0 | 0 |
| Loan Draw | 9,617 | 10,719 | 11,944 | 13,305 | 822,260 | 0 | 0 |
| Total Revenue | 9,617 | 10,719 | 11,944 | 13,305 | 2,330,728 | 0 | 0 |
| Development Costs | | | | | | | |
| Offsite Costs- | | | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Offsites | 0 | 0 | 0 | 0 | 716,000 | 0 | 0 |
| Onsite Costs- | | | | | | | |
| Base unit | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | | | |
| Architect/Engineering | 1,100 | 1,144 | 1,190 | 1,237 | 1,287 | 0 | 0 |
| Legal & Closing | 0 | 0 | 0 | 0 | 6,434 | 0 | 0 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Taxes- Acreage | 5,500 | 5,500 | 5,500 | 5,500 | 0 | 0 | 0 |
| Promotion | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 0 | 0 | 90,508 | 0 | 0 |
| Interest/Finance Charges | 0 | 1,058 | 2,237 | 3,551 | 5,014 | 0 | 0 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 | 0 | 0 |
| Total Costs | 9,617 | 10,719 | 11,944 | 13,305 | 822,260 | 0 | 0 |
| Loan Draw | 9,617 | 10,719 | 11,944 | 13,305 | 822,260 | 0 | 0 |
| Loan Repayment | 0 | 0 | 0 | 0 | 867,865 | 0 | 0 |
| Loan Balance | 9,617 | 20,336 | 32,279 | 45,584 | 0 | 0 | 0 |
| Cash Flow | 0 | 0 | 0 | 0 | 640,623 | 0 | 0 |
| Less Developer's Profit | 0 | 0 | 0 | 0 | 226,270 | 0 | 0 |
| Cash Flow to Property | 0 | 0 | 0 | 0 | 414,353 | 0 | 0 |
| Cumulative CF | 0 | 0 | 0 | 0 | 414,353 | 414,353 | 414,353 |
| Disc Cash Flow | 0 | 0 | 0 | 0 | 235,115 | 0 | 0 |
| Cumulative DCF | 0 | 0 | 0 | 0 | 235,115 | 235,115 | 235,115 |

Appendix 4.19

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcel 16 (Land Residual)

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $235,115 |
| Original Loan Balance | 0 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | (0) |
| Total Estimated Residual Land Value | 235,115 |
| Residual Land Value/Unit | 2,137 |
| Residual Value/Gross Acre | 11,126 |
| Residual Value/SF Land | $0.26 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $1,508,468 | $13,713 | 100.00% |
| Total Onsites | 0 | 0 | 0.00% |
| Total Grading | 0 | 0 | 0.00% |
| Total Blasting | 0 | 0 | 0.00% |
| Total Paving | 0 | 0 | 0.00% |
| Total Sewer Construction | 0 | 0 | 0.00% |
| Total Sewer Assessment Fee | 0 | 0 | 0.00% |
| Total Utility construction | 0 | 0 | 0.00% |
| Total Offsite Construction | 716,000 | 6,509 | 47.47% |
| Total Architect/Engineer | 5,958 | 54 | 0.39% |
| Total Legal & Closing | 6,434 | 58 | 0.43% |
| Total Tax & Insurance | 22,000 | 200 | 1.46% |
| Total Interest/Financing | 11,860 | 108 | 0.79% |
| Total Marketing & Promo | 90,508 | 823 | 6.00% |
| Total Developer's Overhead | 15,085 | 137 | 1.00% |
| TOTAL COSTS | 867,845 | 7,889 | 57.53% |
| Total Developer's Profit | 226,270 | 2,057 | 15.00% |
| Residual Land Value | 235,115 | 2,137 | 15.59% |
| Totals | 1,329,230 | 12,084 | 88.12% |

Appendix 4.20

25X

DISCOUNTED CASH FLOW- Land Residual - Parcel 17 Page 1

| Year | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| | --- | --- | --- | --- | --- |
| % Onsites Completed | 0% | 0% | 0% | 0% | 0% |
| Cumulative % Onsites Comp | 0% | 0% | 0% | 0% | 0% |
| Units Completed (Land) | 0 | 0 | 170 | 170 | 53 |
| Cumulative Completed | 0 | 0 | 170 | 340 | 393 |
| Total Closed | 0 | 0 | 170 | 170 | 53 |
| Cumulative Closed | 0 | 0 | 170 | 340 | 393 |
| Current Inventory | 0 | 0 | 0 | 0 | 0 |
| Ave Price/Unit-Land | $11,722 | $12,191 | $12,679 | $13,186 | $13,713 |
| Sales Income | 0 | 0 | 2,155,388 | 2,241,604 | 726,807 |
| Loan Draw | 33,828 | 37,706 | 1,235,034 | 161,376 | 61,554 |
| | ------ | ------ | ------ | ------ | ------ |
| Total Revenue | 33,828 | 37,706 | 3,390,422 | 2,402,980 | 788,361 |
| Development Costs | | | | | |
| Offsite Costs- | | | | | |
| Grading | $0 | $0 | $0 | $0 | $0 |
| Blasting | 0 | 0 | 0 | 0 | 0 |
| Sewers | 0 | 0 | 0 | 0 | 0 |
| Paving | 0 | 0 | 0 | 0 | 0 |
| Utilities | 0 | 0 | 0 | 0 | 0 |
| Total Offsites | 0 | 0 | 1,063,000 | 0 | 0 |
| Onsite Costs- | | | | | |
| Base unit | 0 | 0 | 0 | 0 | 0 |
| Appliances/options | 0 | 0 | 0 | 0 | 0 |
| Garage | 0 | 0 | 0 | 0 | 0 |
| Clubhouse & amenities | 0 | 0 | 0 | 0 | 0 |
| Soft Costs: | | | | | |
| Architect/Engineering | 3,930 | 4,087 | 4,251 | 4,421 | 4,598 |
| Legal & Closing | 0 | 0 | 9,194 | 9,561 | 3,100 |
| Taxes -Finished lots | 0 | 0 | 0 | 0 | 0 |
| Taxes- Acreage | 19,650 | 19,650 | 11,150 | 2,650 | 0 |
| Promotion | 0 | 0 | 0 | 0 | 0 |
| Marketing/Commissions | 0 | 0 | 129,323 | 134,496 | 43,608 |
| Interest/Finance Charges | 0 | 3,721 | 7,869 | 0 | 0 |
| Sewer Assessment | 0 | 0 | 0 | 0 | 0 |
| Developer's Overhead | 10,248 | 10,248 | 10,248 | 10,248 | 10,248 |
| | ------ | ------ | ------ | ------ | ------ |
| Total Costs | 33,828 | 37,706 | 1,235,034 | 161,376 | 61,554 |
| Loan Draw | 33,828 | 37,706 | 1,235,034 | 161,376 | 61,554 |
| Loan Repayment | 0 | 0 | 1,306,567 | 161,376 | 61,554 |
| Loan Balance | 33,828 | 71,533 | 0 | 0 | 0 |
| Cash Flow | 0 | 0 | 848,821 | 2,080,228 | 665,253 |
| Less Developer's Profit | 0 | 0 | 768,570 | 0 | 0 |
| Cash Flow to Property | 0 | 0 | 80,251 | 2,080,228 | 665,253 |
| Cumulative CF | 0 | 0 | 80,251 | 2,160,479 | 2,825,733 |
| Disc Cash Flow | 0 | 0 | 57,121 | 1,322,023 | 377,483 |
| Cumulative DCF | 0 | 0 | 57,121 | 1,379,144 | 1,756,626 |

Appendix 4.21

SUMMARY OF VALUES AND DEVELOPMENT COSTS Parcel 17 (Land Residual)

VALUE SUMMARY

| | |
|---|---|
| Present Worth of Cash Flow to Equity | $1,756,626 |
| Original Loan Balance | 0 |
| Less Outstanding Loan Balance | 0 |
| Less Required Dev Profit Accrued | (0) |
| Total Estimated Residual Land Value | 1,756,626 |
| Residual Land Value/Unit | 4,470 |
| Residual Value/Gross Acre | 83,124 |
| Residual Value/SF Land | $1.91 |

COST SUMMARY:

| | Total | Per Lot | Percent of Sellout |
|---|---|---|---|
| Gross Sellout | $5,123,800 | $13,038 | 100.00% |
| Total Onsites | 0 | 0 | 0.00% |
| Total Grading | 0 | 0 | 0.00% |
| Total Blasting | 0 | 0 | 0.00% |
| Total Paving | 0 | 0 | 0.00% |
| Total Sewer Construction | 0 | 0 | 0.00% |
| Total Sewer Assessment Fee | 0 | 0 | 0.00% |
| Total Utility construction | 0 | 0 | 0.00% |
| Total Offsite Construction | 1,063,000 | 2,705 | 20.75% |
| Total Architect/Engineer | 21,286 | 54 | 0.42% |
| Total Legal & Closing | 21,855 | 56 | 0.43% |
| Total Tax & Insurance | 53,100 | 135 | 1.04% |
| Total Interest/Financing | 11,590 | 29 | 0.23% |
| Total Marketing & Promo | 307,428 | 782 | 6.00% |
| Total Developer's Overhead | 51,238 | 130 | 1.00% |
| TOTAL COSTS | 1,529,497 | 3,892 | 29.85% |
| Total Developer's Profit | 768,570 | 1,956 | 15.00% |
| Residual Land Value | 1,756,626 | 4,470 | 34.28% |
| Totals | 4,054,693 | 10,317 | 79.13% |

# CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE January 9, 1991 REF. NO._____

TO: Michael Brasher, President, City Council

FROM: Louis E. Saavedra, Mayor

SUBJECT: SPECIAL ASSESSMENT DISTRICT NO. 223 - RESOLUTION NO. 1 (CITY COUNCIL DISTRICT #1)

Submitted herewith for your consideration and that of the City Council is Resolution No. 1 for Special Assessment District No. 223. Resolution No. 1 directs the engineering consultant, Easterling & Associates, Inc. to prepare preliminary plans, an engineer's estimate of costs, maximum benefit roll, report on method used in determining benefits, and an assessment plat.

Special Assessment District No. 223, as proposed, will consist of needed infrastructure improvements to four streets and Cottonwood Mall in the Seven Bar Ranch Sector Plan Development area of Albuquerque's West Mesa. The streets being improved are Coors Bypass, Seven Bar Loop Rd., Ellison Dr., and Cottonwood Dr.

Partial funding of the District was approved by the City Council in R-192 in the following amounts:

| | Account No. | Amount |
|---|---|---|
| Street Bond | 7360580 | $866,240 |
| Storm Bond | 7361240 | $229,301 |

This resolution is forwarded to the City Council for Introduction on January 23, 1991.

RECOMMENDED BY:

Robert E. Gurule, Director
Public Works Department

REVIEWED BY:

Victoria Sedillo Perea
CIP Official

RECOMMENDED BY:

Arthur A. Blumenfeld
Chief Administrative Officer

REVIEWED BY THE LEGAL DEPARTMENT:

Malcolm W. deVesty
Assistant City Attorney

LL/tsl/WP+125392

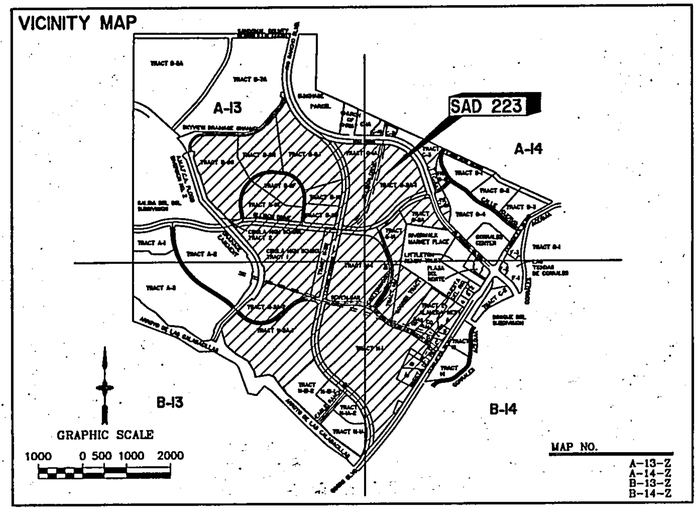
25×10

# CONSTRUCTION PLANS FOR CITY OF ALBUQUERQUE

# SAD NO. 223 - PART 4

## NEW INFRASTRUCTURE IMPROVEMENTS FOR ELLISON DRIVE, SEVEN BAR LOOP ROAD AND COTTONWOOD DRIVE

### VICINITY MAP




### SHEET INDEX

SEE SHEET 2 FOR INDEX

### GENERAL NOTES

1. ALL WORK DETAILED ON THESE PLANS, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - 1986 EDITION - AS AMENDED THROUGH UPDATE NO. 4.
2. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT ONE CALL SYSTEM, INC., 260-1990, FOR LOCATION OF EXISTING UTILITIES. CONTACT NEW MEXICO UTILITY INC. FOR WATER AND SEWER LOCATION. CONTRACTOR SHALL COORDINATE ALL UTILITY WORK INCLUDING CUT OFF OF EXISTING UTILITIES FOR NEW CONNECTIONS (FIRE PROTECTION, DOMESTIC WATER, SEWER, STORM DRAIN, GAS PIPING, ETC.) WITH ENGINEER, OWNER, AND LOCAL UTILITY REPRESENTATIVES.
3. THESE DRAWINGS REFLECT INFORMATION ON UTILITIES GATHERED BY SITE INSPECTION, DISCUSSIONS WITH MUNICIPAL OFFICIALS, AND PREVIOUS CONSTRUCTION DRAWINGS. IT IS POSSIBLE THAT THE EXACT LOCATION OF LINES AND UTILITY CONNECTION POINTS IN THE VICINITY OF THE REQUIRED WORK MAY BE DIFFERENT FROM THE LOCATION SHOWN ON THESE DRAWINGS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
4. ALL GAS, ELECTRIC, TELEPHONE LINES, CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS.
5. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND MAINTAIN IN SERVICE ALL EXISTING UTILITIES.
6. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL REMAIN THE CONTRACTOR'S RESPONSIBILITY.
7. ALL EXCAVATION/CONSTRUCTION PERMITS WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR PERMITS.
8. THE CONTRACTOR SHALL EXERCISE REASONABLE CARE DURING CONSTRUCTION TO PREVENT THE MOVEMENT OF SEDIMENT FROM THE SITE INTO EXISTING STREETS. LOOSE SOIL STOCKPILES DURING CONSTRUCTION ACTIVITIES SHALL BE PROMPTLY CLEANED UP OR PROTECTED FROM BEING CARRIED DOWNSTREAM BY FLOWING WATER.
9. DISPOSAL OF ALL WASTE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AS SPECIFIED IN SECTION 6.14 OF THE GENERAL CONDITIONS IN THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - 1986 EDITION. AS AMENDED THROUGH UPDATE No. 4.
10. A DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL, ASPHALTIC PAVING, CONCRETE CURBS AND SIDEWALKS, ETC., SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE FIELD ENGINEER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.
11. THE CONTRACTOR WILL BE REQUIRED TO CONFINE HIS WORK WITHIN THE CONSTRUCTION LIMITS AND/OR PUBLIC RIGHT-OF-WAY TO PRESERVE EXISTING VEGETATION AND PRIVATE PROPERTY. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE RIGHT-OF-WAY UNLESS THE EQUIPMENT OR MATERIAL IS PROPERLY SHIELDED UTILIZING CURRENT SAFETY DESIGN AND INSTALLATION METHODS. THE SAFETY DESIGN FOR THIS SHIELDING SHALL BE PROVIDED BY THE CONTRACTOR AND MUST BE APPROVED BY THE ENGINEER BEFORE IMPLEMENTING. THERE WILL BE NO DIRECT MEASUREMENT OR PAYMENT FOR THE DESIGN, MATERIALS, INSTALLATION, AND REMOVAL OF THE SAFETY BARRIER.
12. CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION. REFER TO SECTION 19 OF THE SPECIFICATIONS.
13. CONTRACTOR SHALL COORDINATE WITH NEW MEXICO UTILITIES, INC., A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO IMPLEMENTING THE PROPOSED WATER VALVE SHUT-OFF AND PRIOR TO INITIATING ANY WORK AFFECTING ANY EXISTING PUBLIC OR PRIVATE UTILITY.
14. WHEN ABUTTING NEW PAVEMENT TO EXISTING, SAWCUT EXISTING PAVEMENT TO A STRAIGHT EDGE AND AT A RIGHT ANGLE, OR AS APPROVED BY THE PROJECT ENGINEER, TO REMOVE ANY BROKEN OR CRACKED PAVEMENT. ALL SAWCUT PAVEMENT SHALL BE SPRAYED WITH TACK COAT PRIOR TO INSTALLATION OF ADJOINING ASPHALT PAVEMENT.
15. A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SCHEDULE AND A CONSTRUCTION SIGNING AND BARRICADE PLAN TO CONSTRUCTION COORDINATION. TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE TRAFFIC ENGINEERING DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER (768-2551) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF THE SPECIFICATIONS.
16. THE CONTRACTOR SHALL PLACE THE PERMANENT PAVEMENT MARKINGS AS SHOWN ON THE DRAWING.
17. THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, ARE INTENDED FOR USE ON THIS PROJECT AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF EASTERLING & ASSOCIATES, INC. IN THE EVENT OF UNAUTHORIZED USE, THE USER ASSUMES ALL RESPONSIBILITY AND LIABILITY WHICH RESULTS.
18. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE ENGINEER AND SHALL NOTIFY THE ENGINEER AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE ENGINEER. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATION OF THE PAVEMENT OR ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 44 OF THE SPECIFICATIONS.
19. ANY EXCAVATION WORK IN THE AREA OF ALL HIGH PRESSURE GAS LINES SHALL REQUIRE THE PRESENCE OF A GAS COMPANY OF NEW MEXICO REPRESENTATIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE GAS COMPANY OF NEW MEXICO REPRESENTATIVE, ERMINIO GURULE, AT 345-1677, EMERGENCY NUMBER 345-6056.
20. MANHOLE STEPS WILL BE INSTALLED IN ALL STORM DRAIN MANHOLES AND JUNCTION BOXES AND CATCH BASINS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO OTHER CONTRACT ITEMS AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.
21. ALL CONFLICTING EXISTING STRIPING SHALL BE REMOVED BY EITHER GRINDING OR WITH APPROVED CHEMICAL PROCEDURES.
22. ALL AREAS DISTURBED BY CONTRACTORS WORK SHALL BE REVEGETATED IN ACCORDANCE WITH SUPPLEMENTAL TECHNICAL SPECIFICATION 1012.
23. ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
24. BACKFILL, COMPACTION AND PAVING SHALL BE ACCORDING TO C.O.A. STD. DWG. 2465.
25. TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE FIELD ENGINEER.
26. SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
27. IF CURB IS DEPRESSED FOR A HANDICAP RAMP, THE RAMP SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF THE CURB AND GUTTER.
28. ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.

### UTILITY COMPANY CONTACTS

| PNM | GAS CO. | US WEST COMMUNICATIONS |
|---|---|---|
| Tony Machac<br>4201 Edith Blvd. NE<br>Albuquerque, New Mexico 87107<br>(505) 848-3426 | Tim Cynova<br>4625 Edith Blvd., NE<br>Albuquerque, New Mexico 87107<br>(505) 761-7775 | Mary Ann Jojola<br>201 Third Street<br>P.O. Box 1355, Sta. 952<br>Albuquerque, New Mexico 87103<br>(505) 245-6296 |
| **AT&T** | **JONES INTERCABLE** | **NEW MEXICO UTILITIES, INC.** |
| Ishmael Panlojo<br>111 Third ST., NW<br>Albuquerque, New Mexico 87103<br>(505) 842-2806 | Karen Shore<br>4611 Montbel PL. NE<br>P.O. Box 27138<br>Albuquerque, NM 87125-7138<br>(505) 761-6220 | Bob Gay<br>4700 Irving, NW<br>Albuquerque, New Mexico 87114<br>(505) 898-2661<br>(505) 898-6379 Fax |

| REV. | SHEETS | CITY ENGINEER | DATE | USER DEPARTMENT | DATE | USER DEPARTMENT | DATE |
|---|---|---|---|---|---|---|---|
| 1 | 17,23,28,39,90 | Billy J. Gallegos | 3-21-95 | See Individual Sheets | | | |
| 2 | 2,20,24,24A | [illegible] | 5-18-95 | [illegible] | 5-23-95 | | |
| | 30,45,92, | Billy J. Gallegos | 5-23-95 | | | | |
| | 113, 114, 116 | | | | | | |
| | 117 | | | | | | |
| 3 | 16,17,18,21,22,27, 89,90 & 93 | B.J. Gallegos | 9-25-95 | [illegible] | 9-26-95 | | |
| 4 | 23 | | | | | | |
| | | | | | | | |
| | ~~RECORD DRAWING - SAD 223 PARTS~~ 3 & 4 | | | | | | |
| | | I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished. | | | | | |
| | | R. P. Bohannan<br>~~N.M.P.E. No. 9814~~ | 3/25/97 | | | | |

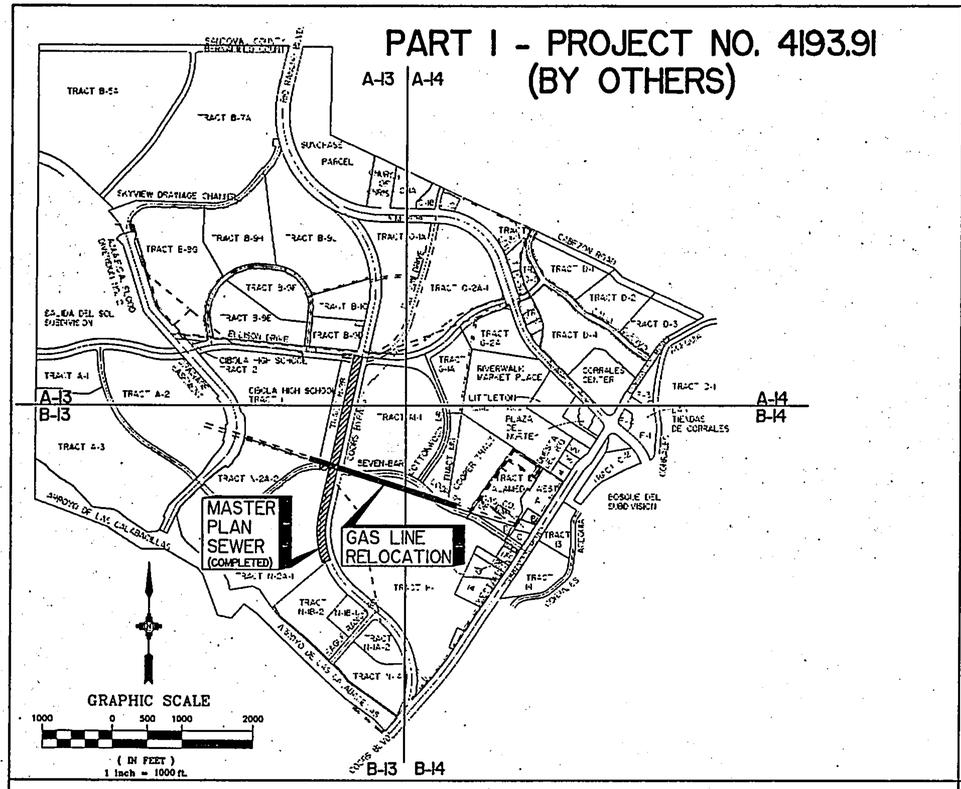
RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

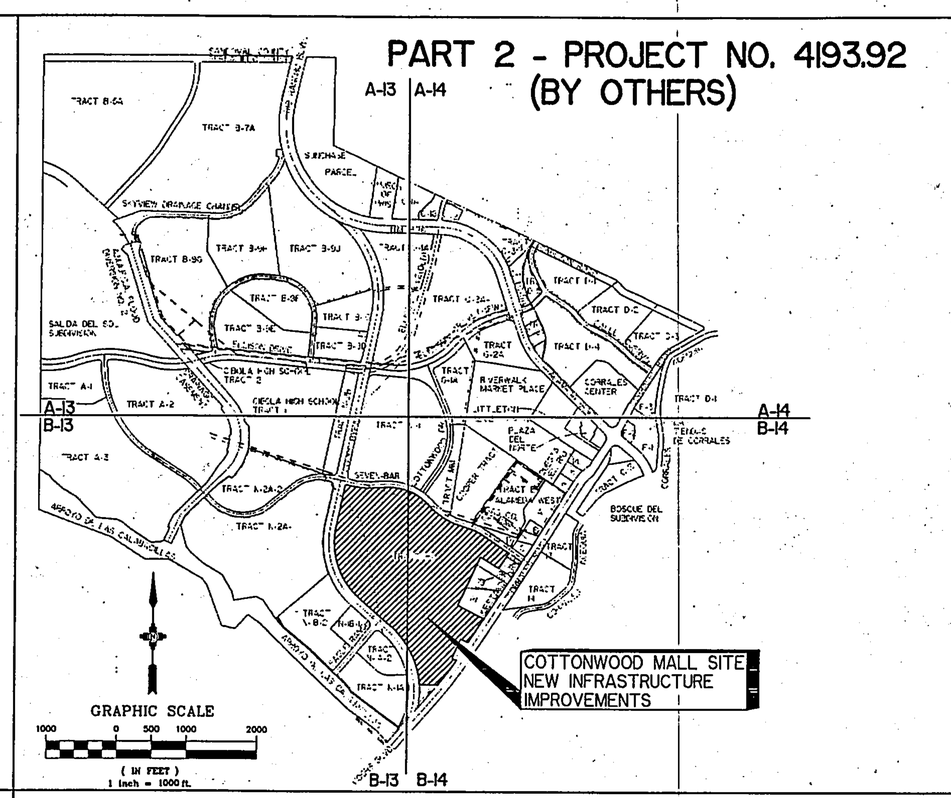
| ENGINEERS STAMP & SIGNATURE | APPROVALS | ENGINEER | DATE | ********** |
|---|---|---|---|---|
| RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER<br>8/8/94<br>EB 5/2/95<br>EB 10/17/95 | DRC CHAIR | Billy J. Gallegos | 9-7-94 | APPROVED FOR CONSTRUCTION |
| | TRANSPORTATION | [illegible] | 9-8-94 | |
| | WATER/WASTEWATER | R.W. Kane | 9-9-94 | |
| | HYDROLOGY | [illegible] | 9-8-94 | |
| | PARKS | | | CITY ENGINEER DATE |
| | CONSTR. MNGMT. | | | |
| | | | | 11-X-94 |
| | | | | N.M.U.I. DATE |
| EASTERLING & ASSOCIATES, INC. CONSULTING ENGINEERS 10001 COORS RD. NW, SUITE H - 7 & 8 ALBUQUERQUE, NEW MEXICO 87114 (505) 898-8051 FAX (505) 898-8601 | CITY PROJECT NO. 4193.94 | | | SHEET 1 OF 120 |

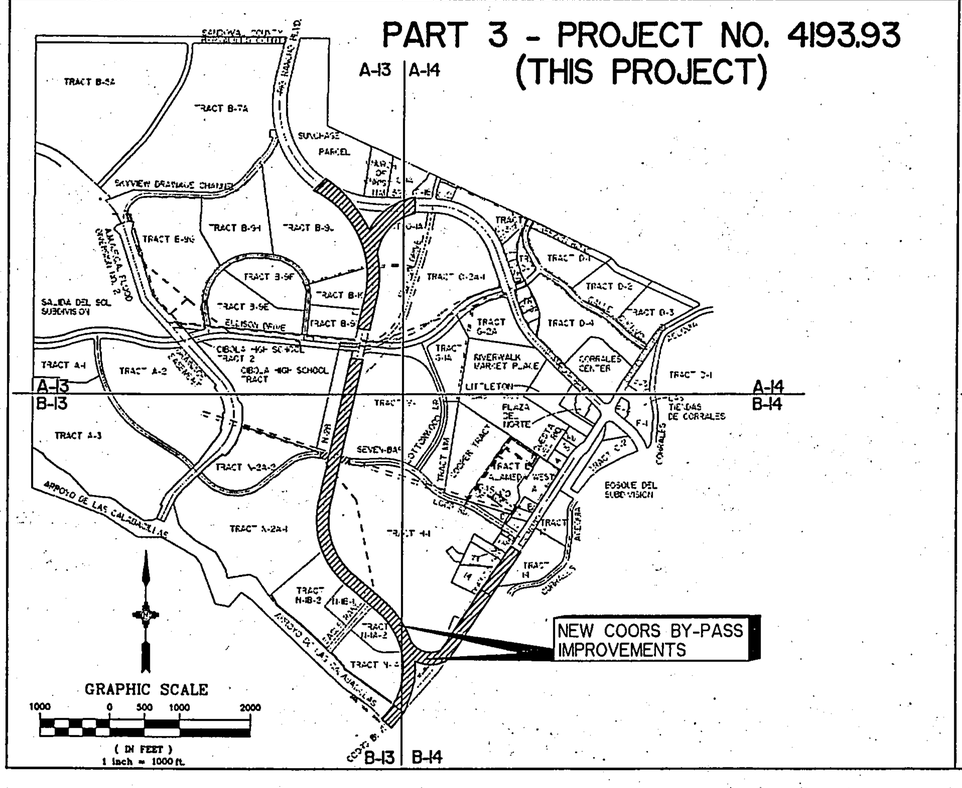
### ABBREVIATIONS

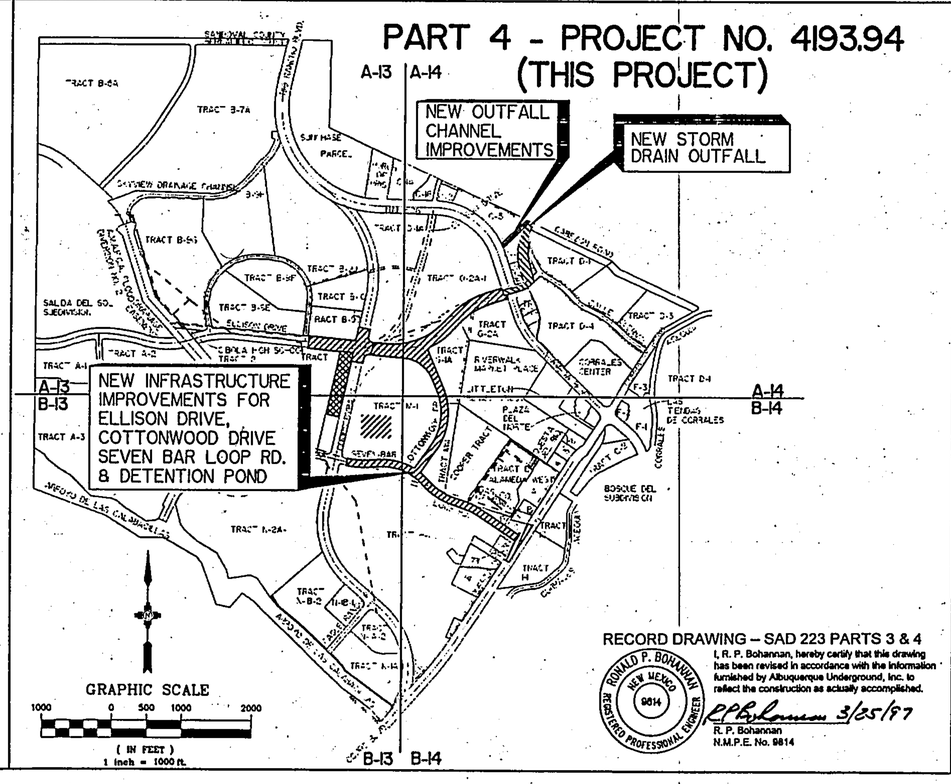
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AC | - ASBESTOS CEMENT | DD | - DEFLECT DOWN | FO | - FIBER OPTIC CABLE | PRC | - POINT OF REVERSE CURVATURE | SAS | - SANITARY SEWER |
| ARV | - AIR/VACUUM RELEASE VALVE | DIP | - DUCTILE IRON PIPE | G | - GAS | PRV | - PRESSURE RELIEF VALVE | SD | - STORM DRAIN |
| B | - BASELINE | DU | - DEFLECT UP | HP | - HIGH PRESSURE | PT | - POINT OF TANGENCY | TC | - TOP OF CURB |
| BCT | - BEGIN CROWN TRANSITION | E | - EXISTING | I | - INSTALL | PUE | - PUBLIC UTILITY EASEMENT | T | - TELEPHONE |
| C | - CONSTRUCT | ECT | - END CROWN TRANSITION | LP | - LIGHT POLE | R/REL | - REMOVE & RELOCATE | TL | - TRAFFIC LIGHT |
| CAV | - COMBINATION AIR VALVE | ELEV | - ELEVATION | MH | - MANHOLE | R/RPLC | - REMOVE & REPLACE | TP | - TOP OF PIPE |
| CCP | - CONCRETE CYLINDER PIPE | F-F | - FACE TO FACE | NMUI | - NEW MEXICO UTILITIES, INC. | PVC | - POLY VINYL CHLORIDE | UE | - UNDERGROUND ELECTRIC |
| CI | - CAST IRON | F/F | - FEET/FOOT | PC | - POINT OF CURVATURE | R | - REMOVE | VCP | - VITRIFIED CLAY PIPE |
| CL | - CENTERLINE | FH | - FIRE HYDRANT | PCC | - POINT OF COMPOUND CURVATURE | REL | - RELOCATE | VER | - VERIFY LOCATION |
| COA | - CITY OF ALBUQUERQUE | FL | - FLOW LINE | POC | - POINT ON CURVE | ROW | - RIGHT-OF-WAY | W OR WL | - WATERLINE |
| | | | | PP | - POWER POLE | | | X | - CROSSING |

SAD 223 - LOMR
ENCLOSURE 2




RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R P Bohannan 3/25/97
R. P. Bohannan
N.M.P.E. No. 9814

AS BUILT INFORMATION

| | |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | DATE |
| RECEIPT OF RECORDS | DATE |
| FIELD VERIFICATION BY | DATE |
| DRAWINGS CORRECTED BY | DATE |

MICRO-FILM INFORMATION

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

BENCH MARKS

STATION NAME: NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING: 1,568,940.94
EASTING: 38,408.54
ELEVATION: 5023.48

SURVEY INFORMATION

FIELD NOTES

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

ENGINEER'S SEAL

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

REVISIONS

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

DESIGN

| | | |
|---|---|---|
| DESIGNED BY | DEC | DATE JUNE 1994 |
| DRAWN BY | DEC | DATE JUNE 1994 |
| CHECKED BY | RPB | DATE JUNE 1994 |

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors RD., NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

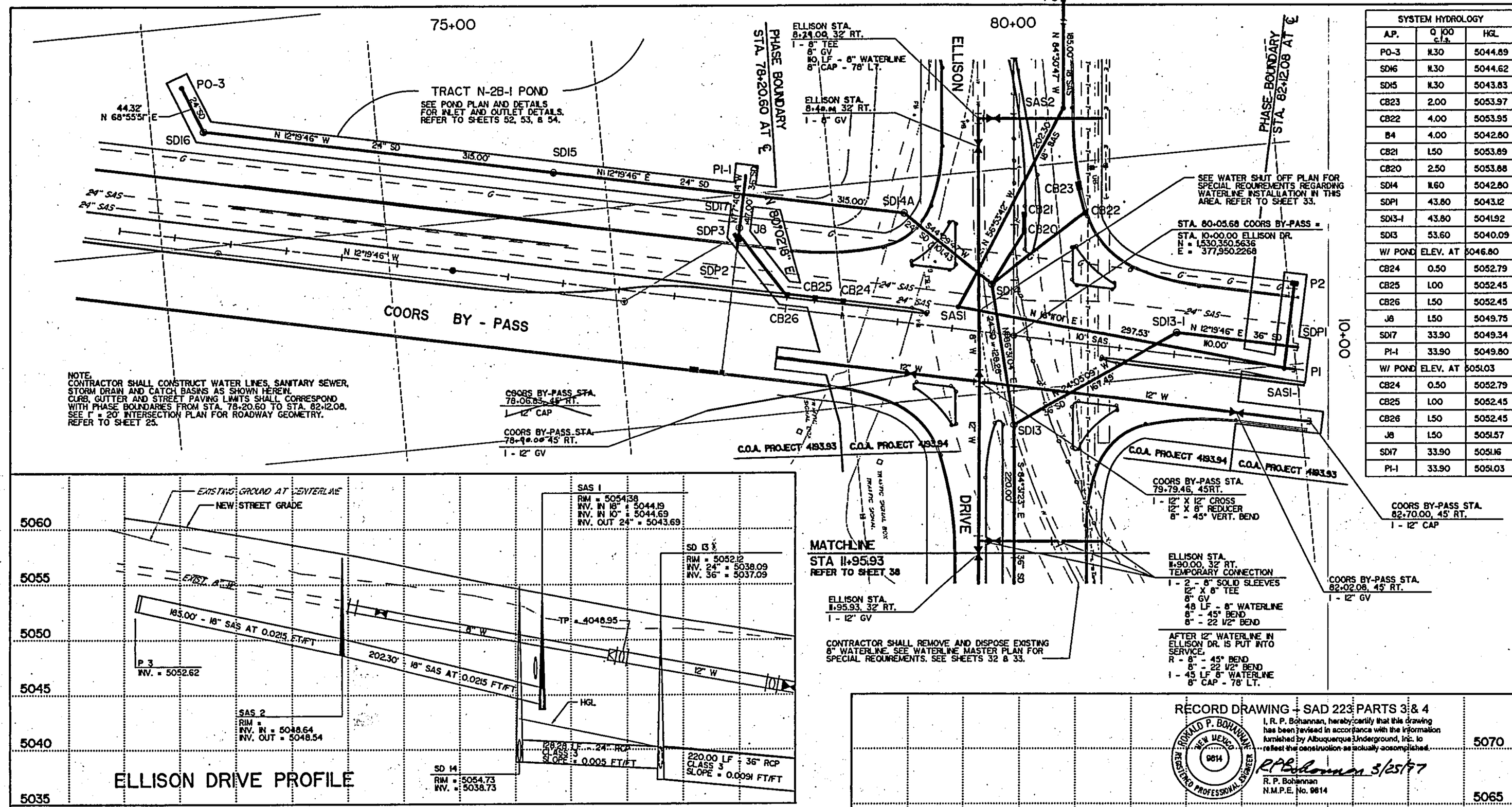
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
MASTER PLAN INFORMATION

| APPROVALS | | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|
| D.R.C. Chair | | WATER | | |
| TRANS. DEV. | | WASTE WATER | | |
| HYDROLOGY | | | | |

DESIGN REVIEW COMMITTEE

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A13/A14 B13/B14 | 3 | 120 |




| SYSTEM HYDROLOGY | | |
|---|---|---|
| A.P. | Q 100 c.f.s. | HGL |
| PO-3 | 11.30 | 5044.69 |
| SD16 | 11.30 | 5044.62 |
| SD15 | 11.30 | 5043.83 |
| CB23 | 2.00 | 5053.97 |
| CB22 | 4.00 | 5053.95 |
| B4 | 4.00 | 5042.80 |
| CB21 | 1.50 | 5053.89 |
| CB20 | 2.50 | 5053.88 |
| SD14 | 11.60 | 5042.80 |
| SDP1 | 43.80 | 5043.12 |
| SD13-1 | 43.80 | 5041.92 |
| SD13 | 53.60 | 5040.09 |
| W/ POND | ELEV. AT | 5046.80 |
| CB24 | 0.50 | 5052.79 |
| CB25 | 1.00 | 5052.45 |
| CB26 | 1.50 | 5052.45 |
| J8 | 1.50 | 5049.75 |
| SD17 | 33.90 | 5049.34 |
| PI-1 | 33.90 | 5049.80 |
| W/ POND | ELEV. AT | 5051.03 |
| CB24 | 0.50 | 5052.79 |
| CB25 | 1.00 | 5052.45 |
| CB26 | 1.50 | 5052.45 |
| J8 | 1.50 | 5051.57 |
| SD17 | 33.90 | 5051.16 |
| PI-1 | 33.90 | 5051.03 |

SANITARY SEWER MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SAS1 | 4 | E | 79+53.14 | 20.00' LT. | - |
| SAS1-1 | 4 | E | 82+50.00 | 0 | - |
| SAS2 | 4 | E | 7+94.63 | 44.00' LT. | ELLISON |

SANITARY SEWER FITTINGS

| REF. NO. | SIZE / TYPE | STATION | OFFSET | INV |
|---|---|---|---|---|
| P 1 | 10" PLUG | 82+60.00 | 0 | 46.60 |
| P2 | 8" PLUG | 82+50.00 | 78.00' LT. | 47.13 |
| P3 | 18" PLUG | 6+09.63 | 44.00' LT. | 52.62 |

SANITARY SEWER LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| SAS2 | PI | 10" | 10.00' | 0.006 | N12°19'46"E |
| SAS1-1 | P2 | 8" | 78.00' | 0.006 | N77°40'14"W |

STORM DRAIN MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SD13 | 6' | E | 80+15.21 | 79.43' RT. | |
| SD13-1 | 6' | E | 81+50.00 | 20.00' LT. | |
| SD14 | 6' | E | 79+80.26 | 44.00' LT. | |
| SD14A | 4' | E | 78+94.40 | 98.00' LT. | |
| SD15 | 4' | E | 75+79.40 | 98.00' LT. | |
| SD16 | 4' | E | 72+64.40 | 98.00' LT. | |
| SD17 | 4' | E | 77+50.00 | 68.00' LT. | |

STORM DRAIN CATCH BASINS

| REF. NO. | TYPE | STATION | OFFSET | TC / INV |
|---|---|---|---|---|
| CB20 | MOD D | 9+04.85 | 10.00' LT. | 55.88 / 51.88 |
| CB21 | MOD D | 8+90.60 | 10.00' LT. | 56.16 / 52.08 |
| CB22 | CC | 8+88.97 | 64.26' LT. | 56.11 / 51.95 |
| CB23 | A | 8+64.74 | 58.19' LT. | 56.33 / 52.33 |
| CB24 | MOD D | 78+50.00 | 14.00' LT. | 55.29 / 51.29 |
| CB25 | MOD D | 78+25.00 | 14.00' LT. | 55.41 / 50.87 |
| CB26 | MOD D | 78+00.00 | 14.00' LT. | 55.53 / 50.45 |

STORM DRAIN JUNCTIONS, BENDS, & REDUCERS

| REF. NO. | FITTING SIZE | STATION | OFFSET | INV |
|---|---|---|---|---|
| J8 | 36"X30"X24" | 77+50.00 | 62.00' LT. | 48.91 / 48.41 |
| PI-1 | 36"(SEE NOTE 2) | 77+50.00 | 115.00' LT. | 46.00 |
| PO-3 | 24"(SEE NOTE 2) | 72+40.00 | 135.00' LT. | 42.68 |
| SDP 1 | 36 | 82+60.00 | 20.00' LT. | 40.12 |
| SDP2 | 24" | 77+50.00 | 58.00' LT. | 47.41 |
| SDP3 | 30" | 77+46.82 | 59.57' LT. | 46.66 |

STORM DRAIN LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| CB21 | CB20 | 18" | 9.85' | 0.020 | S84°32'28"E |
| CB20 | SD14 | 24" | 54.74' | 0.112 | S52°31'30"E |
| CB23 | CB22 | 18" | 19.01' | 0.020 | N8°21'10"E |
| CB22 | SD14 | 24" | 103.66' | 0.108 | S32°21'8"E |
| CB24 | CB25 | 18" | 21.00' | 0.020 | S12°19'46"W |
| CB25 | CB26 | 18" | 21.00' | 0.020 | S12°19'46"W |
| CB26 | J8 | 24" | 68.22' | 0.052 | S57°37'54"W |
| J8 | SD17 | 36" | 6.00' | 0.0072 | N77°40'14"W |
| SD17 | PI-1 | 36" | 47.00' | 0.0072 | N77°40'14"W |
| SDP3 | J8 | 30" | 4.00' | 0.0072 | S25°07'17"E |

NOTE.
1. JUNCTION INV. AT LATERAL.
2. REFER TO TRACT N-2B-1 POND PLAN FOR FITTING DETAILS.



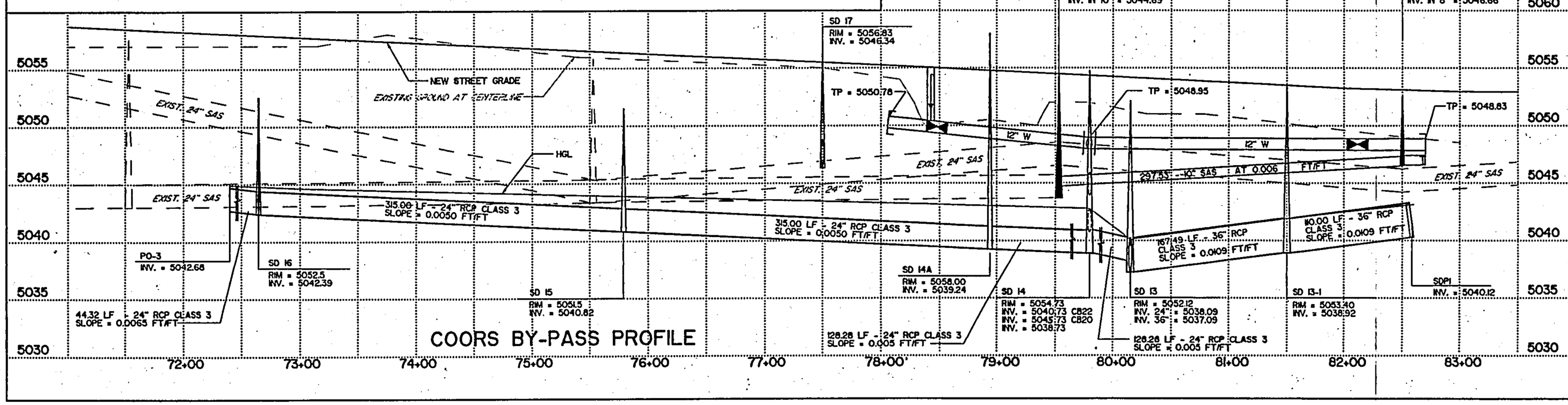

RECORD DRAWING - SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R.P. Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814




NOTE:
1 inch = 5 ft. (vert.)
1 inch = 50 ft. (horiz.)

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ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
COORS BY-PASS / ELLISON DR. UTILITY PLAN & PROFILE
STA. 72+40 TO STA. 82+70 / STA. 6+09 TO STA. 11+95.93

| APPROVALS | ENGINEER | DATE |
|---|---|---|
| D.R.C. Chair | | |
| TRANS. DEV. | | |
| HYDROLOGY | | |

| APPROVALS | ENGINEER | DATE |
|---|---|---|
| WATER | | |
| WASTE WATER | | |
| N.M.U.L | | 7-1-94 |

DESIGN REVIEW COMMITTEE

PROJECT NO. 4193.94 | MAP NO. A-13 A-14 | SHEET 37 OF 120

AS BUILT INFORMATION
CONTRACTOR | WORK STAKED BY | WORK INSPECTED BY | ACCEPTANCE BY | FIELD VERIFICATION BY | DRAWINGS CORRECTED BY | DATE
BENCH MARKS
STATION NAME: NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET
SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZIVERT CONTROL | JAN. 91 |
| | BY HUGG SURVEY | |
| 2 | PLANIMETRIC AND | JAN. 91 |
| | TOPO MAPPING BY | |
| | T.R. MANN | |
| 3 | SITE SURVEYS BY | MAR. 91 |
| | HUGG SURVEY | |

MICRO-FILM INFORMATION
RECORDED BY | DATE | NO.
9.30 MILES NORTH OF THE INTERSECTION OF
SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING: 1,528,340.94
EASTING: 381,108.54
ELEVATION: 5023.41

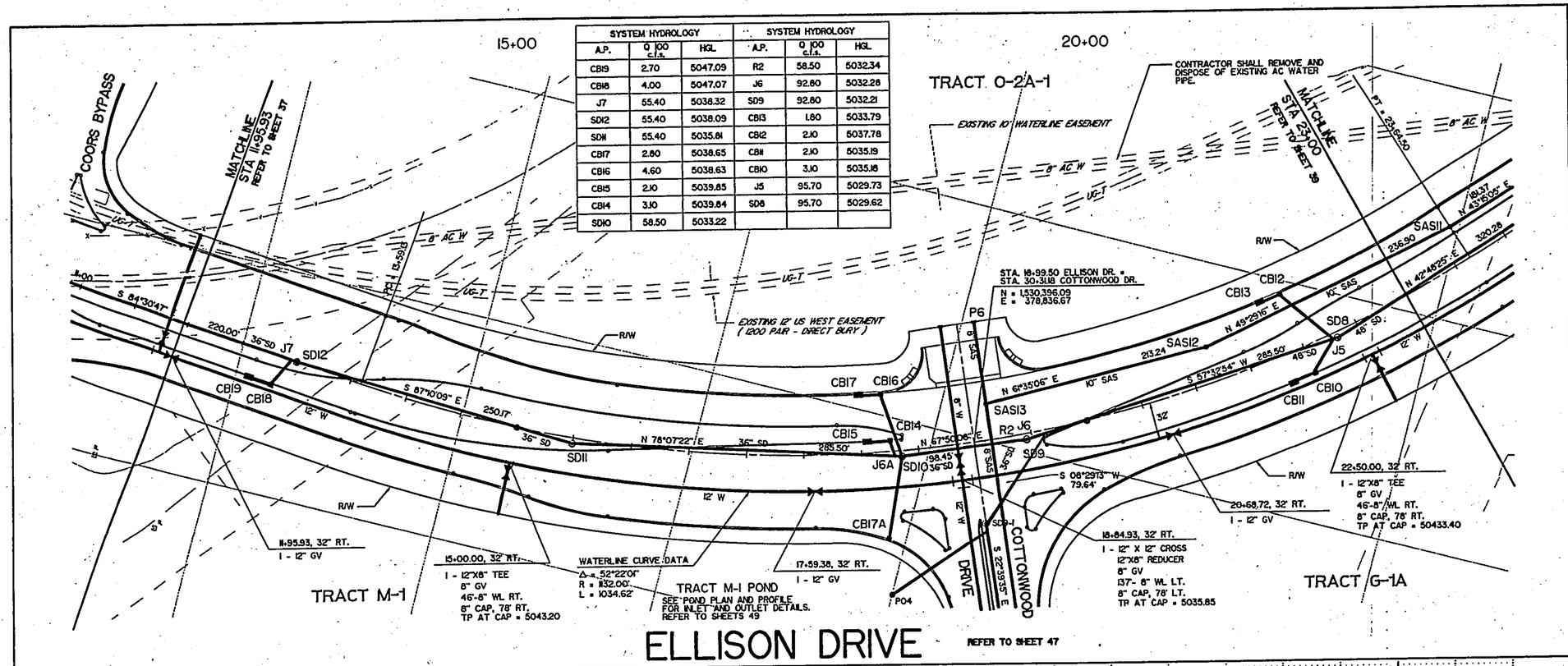
ENGINEERS SEAL
RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

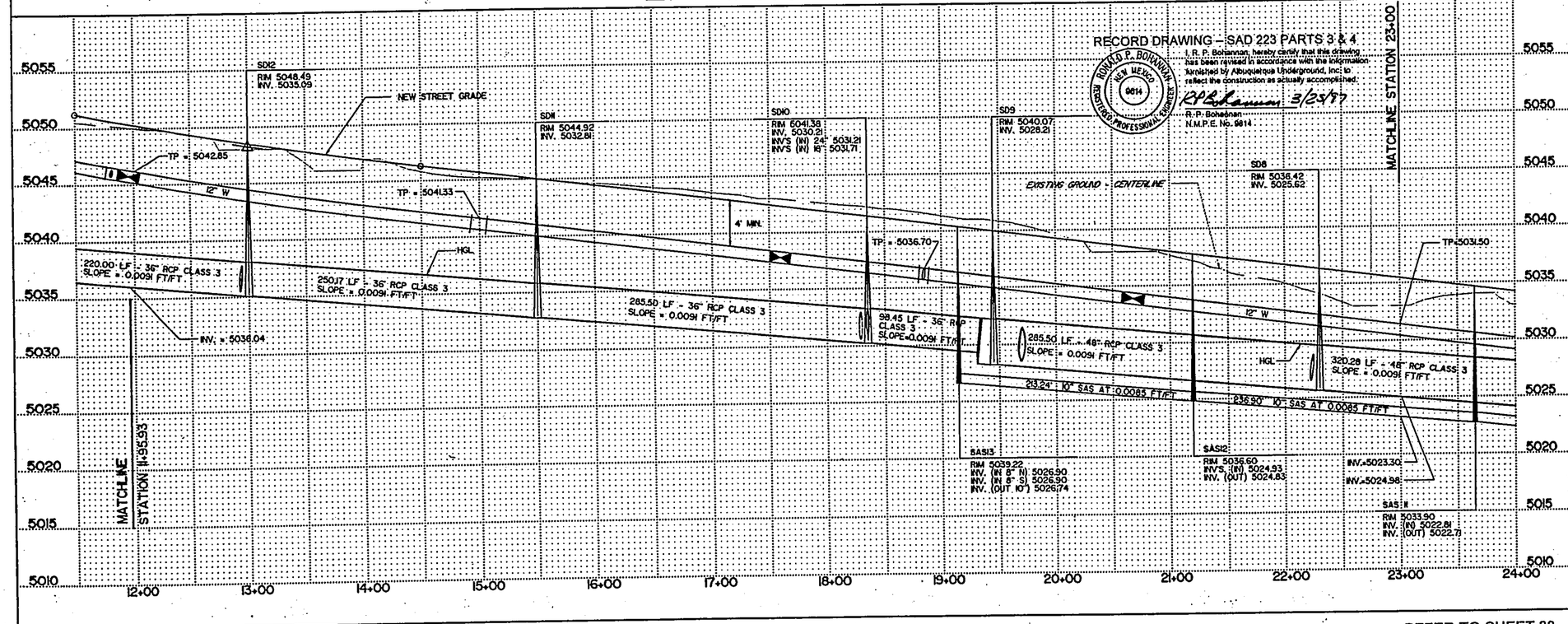
REVISIONS

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

DESIGN: DESIGNED BY DEC DATE JUNE 1994; DRAWN BY DEC DATE JUNE 1994; CHECKED BY RPB DATE JUNE 1994

| SYSTEM HYDROLOGY | | | SYSTEM HYDROLOGY | | |
|---|---|---|---|---|---|
| A.P. | Q 100 c.f.s. | HGL | A.P. | Q 100 c.f.s. | HGL |
| CBI9 | 2.70 | 5047.09 | R2 | 58.50 | 5032.34 |
| CBI8 | 4.00 | 5047.07 | J6 | 92.80 | 5032.28 |
| J7 | 55.40 | 5038.32 | SD9 | 92.80 | 5032.21 |
| SDI2 | 55.40 | 5038.09 | CBI3 | 1.80 | 5033.79 |
| SDII | 55.40 | 5035.81 | CBI2 | 2.10 | 5037.78 |
| CBI7 | 2.80 | 5038.65 | CBII | 2.10 | 5035.19 |
| CBI6 | 4.60 | 5038.63 | CBI0 | 3.10 | 5035.16 |
| CBI5 | 2.10 | 5039.85 | J5 | 95.70 | 5029.73 |
| CBI4 | 3.10 | 5039.84 | SD8 | 95.70 | 5029.62 |
| SDI0 | 58.50 | 5033.22 | | | |




SANITARY SEWER MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SASI2 | 4' | E | 21+20.00 | 32.00' LT. | - |
| SASI3 | 4' | E | 19+14.96 | 32.00' LT. | - |

SANITARY SEWER FITTINGS

| REF. NO. | SIZE / TYPE | STATION | OFFSET | INV |
|---|---|---|---|---|
| P6 | 8" PLUG | 19+14.96 | 105.22' LT. | 27.34 |

SANITARY SEWER LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| SASI3 | P6 | 8" | 73.22' | 0.006 | N 22°39'35" W |

STORM DRAIN MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SD8 | 6' | E | 22+30.00 | 5.00' RT. | - |
| SD9 | 6' | E | 19+45.00 | 5.00' RT. | - |
| SDI0 | 6' | E | 18+35.00 | 5.00' RT. | - |
| SDII | 6' | E | 15+50.00 | 5.00' RT. | - |
| SDI2 | 6' | E | 13+00.00 | 0 | - |

STORM DRAIN CATCH BASINS

| REF. NO. | TYPE | STATION | OFFSET | TC / INV |
|---|---|---|---|---|
| CBI0 | MOD D | 22+00.00 | 26.00' RT. | 37.21 / 33.16 |
| CBII | MOD D | 21+80.00 | 26.00' RT. | 37.47 / 33.47 |
| CBI2 | C | 22+00.00 | 52.00' LT. | 35.79 / 31.78 |
| CBI3 | A | 21+80.00 | 52.00' LT. | 36.05 / 32.05 |
| CBI4 | MOD D | X | X | X |
| CBI5 | MOD D | X | X | X |
| CBI6 | C | 18+20.16 | 52.00' LT. | 40.64 / 36.63 |
| CBI7 | A | 18+00.00 | 52.00' LT. | 40.90 / 36.90 |
| CBI7A | A | 18+17.88 | 76.89' RT. | 42.99 / 38.99 |
| CBI8 | MOD D | 12+85.00 | 26.00' RT. | 49.07 / 45.07 |
| CBI9 | MOD D | 12+65.00 | 26.00' RT. | 49.36 / 45.35 |

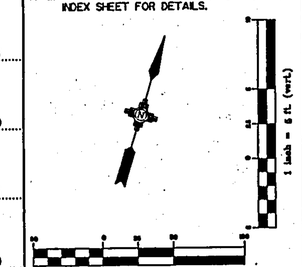
STORM DRAIN JUNCTIONS, BENDS, & REDUCERS

| REF. NO. | FITTING SIZE | STATION | OFFSET | INV |
|---|---|---|---|---|
| J5 | 48"X24"X24" | 22+26.00 | 4.48' RT. | 26.68 |
| J6 | 48"X36" | 19+70.53 | 4.78' RT. | 28.77 |
| J6A | 36"X24" | 18+28.86 | 4.21' RT. | 30.77 |
| J7 | 36"x24" | 12+95.50 | 0 | 35.65 |
| R2 | 48"X36" | 19+34.06 | 4.5' RT. | 33.34 |

STORM DRAIN LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING. |
|---|---|---|---|---|---|
| CBII | CBI0 | 18" | 14.75' | 0.020 | N 52°07'50" E |
| CBI0 | J5 | 24" | 32.42' | 0.200 | N 15°12'30" W |
| CBI3 | CBI2 | 18" | 13.34' | 0.020 | N 52°26'54" E |
| CBI2 | J5 | 24" | 59.69' | 0.086 | S 64°14'47" E |
| CBI5 | CBI4 | 18" | 14.12' | 0.020 | N 71°10'02" E |
| CBI4 | SDI0 | 24" | 19.50' | 0.340 | N 19°04'13" W |
| CBI7 | CBI6 | 18" | 13.30' | 0.020 | N 71°57'09" E |
| CBI7A | SDI0 | 18" | 71.59' | 0.102 | N 05°25'30" E |
| CBI6 | SDI0 | 24" | 56.41' | 0.096 | S 34°01'46" E |
| CBI9 | CBI8 | 18" | 13.93' | 0.020 | S 84°35'28" E |
| CBI8 | J7 | 24" | 26.46' | 0.356 | N 27°41'26" E |

NOTE, JUNCTION INV. AT LATERAL
NOTE, MOD D = MODIFIED "D" CATCH BASIN. SEE INDEX SHEET FOR DETAILS.




AS BUILT INFORMATION
CONTRACTOR: WORK STAKED BY / INSPECTOR'S REPORTS REVIEWED BY / FIELD VERIFICATION BY / DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
STATION NAME: NM 446 - N2
BRASS TABLET SET IN A CONCRETE TABLET

SURVEY INFORMATION

| NO. | FIELD NOTES | BY | DATE |
|---|---|---|---|
| 1 | HORIZ/VERT CONTROL | JAN. 91 | |
| | PROJECTING 0.3 FT. ABOVE GROUND LOCATED | BY HUGG SURVEY | |
| 2 | 9.30 MILES NORTH OF THE INTERSECTION OF | JAN. 91 | |
| | PLANIMETRIC AND TOPO MAPPING BY | T.R. MANN | |
| | SIDE OF COORS RD. AT MT. BELL SUB STA. | | |
| 3 | SITE SURVEYS BY | MAR. 91 | |
| | NORTHING: 1,528,390.94 EASTING: 381,108.54 | HUGG SURVEY | |
| | ELEVATION: 5023.41 | | |

ENGINEERS SEAL
RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

| NO. | REMARKS | BY | DATE |
|---|---|---|---|
| | REVISIONS | | |
| | DESIGN | | |
| | DESIGNED BY DEC | | DATE JUNE 1994 |
| | DRAWN BY DEC | | DATE JUNE 1994 |
| | CHECKED BY RPB | | DATE JUNE 1994 |


EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H - 7 8 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

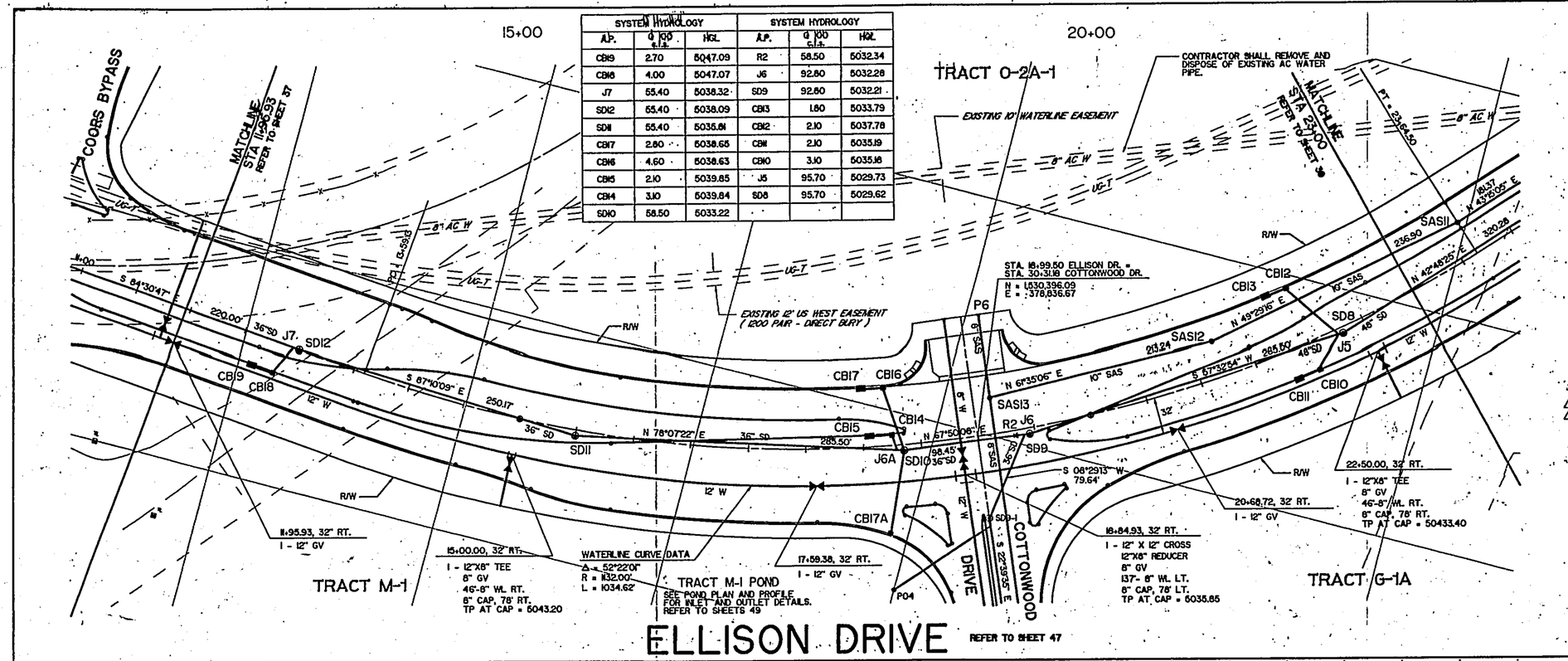
TITLE: SAD 223 PART 4
ELLISON DR. UTILITY PLAN & PROFILE
STA. 11+95.93 TO STA. 23+00

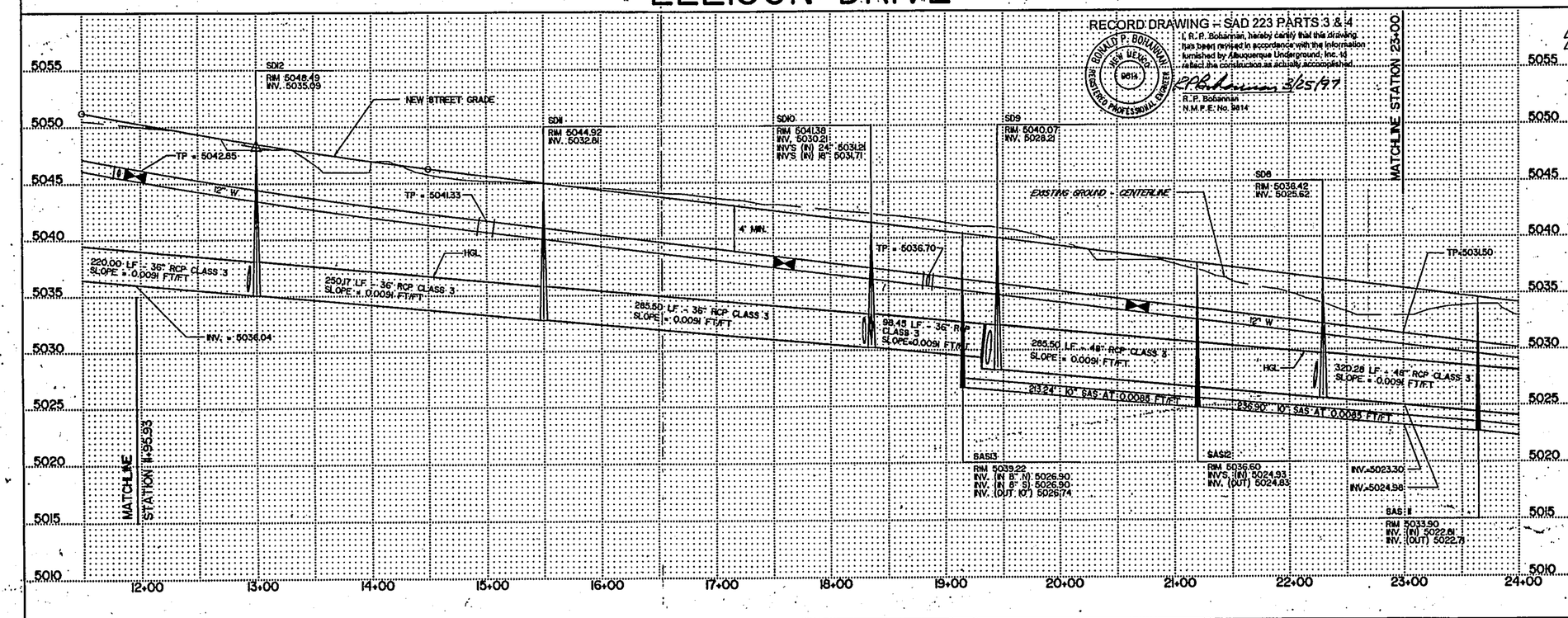
| APPROVALS | ENGINEER | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|
| D.R.C. Chair | | WATER | | |
| TRANS. DEV. | | WASTE WATER | | |
| HYDROLOGY | | N.M.U.I. | | 7-7-77 |

DESIGN REVIEW COMMITTEE

PROJECT NO. 4193.94 | MAP NO. A-13 A-14 | SHEET 38 OF 120

| SYSTEM HYDROLOGY | | | SYSTEM HYDROLOGY | | |
|---|---|---|---|---|---|
| A.P. | Q 100 c.f.s. | HGL | A.P. | Q 100 c.f.s. | HGL |
| CBI9 | 2.70 | 5047.09 | R2 | 58.50 | 5032.34 |
| CBI8 | 4.00 | 5047.07 | J6 | 92.80 | 5032.28 |
| J7 | 55.40 | 5038.32 | SD9 | 92.80 | 5032.21 |
| SDI2 | 55.40 | 5038.09 | CBI3 | 1.80 | 5033.79 |
| SDII | 55.40 | 5035.81 | CBI2 | 2.10 | 5037.78 |
| CBI7 | 2.80 | 5038.65 | CBII | 2.10 | 5035.19 |
| CBI6 | 4.60 | 5038.63 | CBI0 | 3.10 | 5035.18 |
| CBI5 | 2.10 | 5039.85 | J5 | 95.70 | 5029.73 |
| CBI4 | 3.10 | 5039.84 | SD8 | 95.70 | 5029.62 |
| SDI0 | 58.50 | 5033.22 | | | |




## SANITARY SEWER MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SASI2 | 4' | E | 21+20.00 | 32.00' LT. | - |
| SASI3 | 4' | E | 19+14.96 | 32.00' LT. | - |

## SANITARY SEWER FITTINGS

| REF. NO. | SIZE / TYPE | STATION | OFFSET | INV |
|---|---|---|---|---|
| P6 | 8" PLUG | 19+14.96 | 105.22' LT. | 27.34 |

## SANITARY SEWER LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| SASI3 | P6 | 8" | 73.22' | 0.006 | N 22°39'35" W |

## STORM DRAIN MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SD8 | 6' | E | 22+30.00 | 5.00' RT. | - |
| SD9 | 6' | E | 19+45.00 | 5.00' RT. | - |
| SDI0 | 6' | E | 18+35.00 | 5.00' RT. | - |
| SDII | 6' | E | 15+50.00 | 5.00' RT. | - |
| SDI2 | 6' | E | 13+00.00 | 0 | - |

## STORM DRAIN CATCH BASINS

| REF. NO. | TYPE | STATION | OFFSET | TC / INV |
|---|---|---|---|---|
| CBI0 | MOD D | 22+00.00 | 26.00' RT. | 37.21 / 33.18 |
| CBII | MOD D | 21+80.00 | 26.00' RT. | 37.47 / 33.47 |
| CBI2 | C | 22+00.00 | 52.00' LT. | 35.79 / 34.78 |
| CBI3 | A | 21+80.00 | 52.00' LT. | 36.05 / 32.05 |
| CBI4 | MOD D | 18+25.20 | 10.00' LT. | 41.28 / 37.25 |
| ⚠ CBI5 | MOD D | 18+05.34 | 10.00' LT. | 41.53 / 37.53 |
| CBI6 | C | 18+20.16 | 52.00' LT. | 40.64 / 36.63 |
| CBI7 | A | 18+00.00 | 52.00' LT. | 40.90 / 36.90 |
| CBI7A | A | 16+17.86 | 76.89' RT. | 42.99 / 38.99 |
| CBI8 | MOD D | 12+85.00 | 26.00' RT. | 49.07 / 45.07 |
| CBI9 | MOD D | 12+65.00 | 26.00' RT. | 49.36 / 45.35 |

## STORM DRAIN JUNCTIONS, BENDS, & REDUCERS

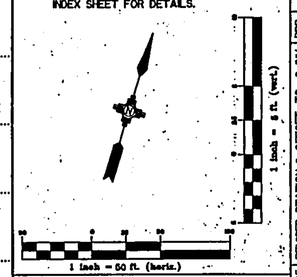
| REF. NO. | FITTING SIZE | STATION | OFFSET | INV. |
|---|---|---|---|---|
| J5 | 48"X24"X24" | 22+26.00 | 4.48' RT. | 26.68 |
| J6 | 48"X36" | 19+40.53 | 4.78' RT. | 28.77 |
| J6A | 36"X24" | 18+28.86 | 4.21' RT. | 30.77 |
| J7 | 36"X24" | 12+95.50 | 0 | 35.65 |
| R2 | 48"X36" | 19+34.06 | 4.5' RT. | 33.34 |

## STORM DRAIN LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| CBII | CBI0 | 18" | 14.75' | 0.020 | N 52°07'50" E |
| CBI0 | J5 | 24" | 32.42' | 0.200 | N 15°12'30" W |
| CBI3 | CBI2 | 18" | 13.34' | 0.020 | N 52°26'54" E |
| CBI2 | J5 | 24" | 59.69' | 0.086 | S 64°14'47" E |
| CBI5 | CBI4 | 18" | 14.12' | 0.020 | N 71°11'02" E |
| CBI4 | J6A | 24" | 14.70' | 0.440 | N 34°31'37" W |
| CBI7 | CBI6 | 18" | 13.30' | 0.020 | N 71°57'09" E |
| CBI7A | SDI0 | 18" | 71.59' | 0.102 | N 05°25'30" E |
| CBI6 | SDI0 | 24" | 56.41' | 0.096 | S 34°01'46" E |
| CBI9 | CBI8 | 18" | 13.93' | 0.020 | S 84°35'28" E |
| CBI8 | J7 | 24" | 26.46' | 0.356 | N 27°41'26" E |

NOTE: JUNCTION INV. AT LATERAL.

NOTE: MOD D = MODIFIED "D" CATCH BASIN. SEE INDEX SHEET FOR DETAILS.





EASTERLING & ASSOCIATES, INC.
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10131 Coors Rd., NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
ELLISON DR. - UTILITY PLAN & PROFILE
STA. 11+95.93 TO STA. 23+00

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | N.M.U.I. | | |

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A-13 A-14 | 38 | 120 |

AS BUILT INFORMATION
CONTRACTOR — DATE
TYPE OF MARKER USED BY — DATE
INSPECTORS FIELD INSPECTOR — DATE
VERIFICATION BY — DATE
CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
STATION NAME: NM 446 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING: L528,190.54
EASTING: 381,006.54
ELEVATION: 5023.48

SURVEY INFORMATION

| NO. | FIELD NOTES BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT. CONTROL | JAN. 91 |
| 2 | BY HUGG SURVEY | |
| 3 | PLANIMETRIC AND TOPO MAPPING BY | JAN. 91 |
| | T.R. MANN - | |
| 3 | SITE SURVEYS BY | MAR. 91 |
| | HUGG SURVEY | |

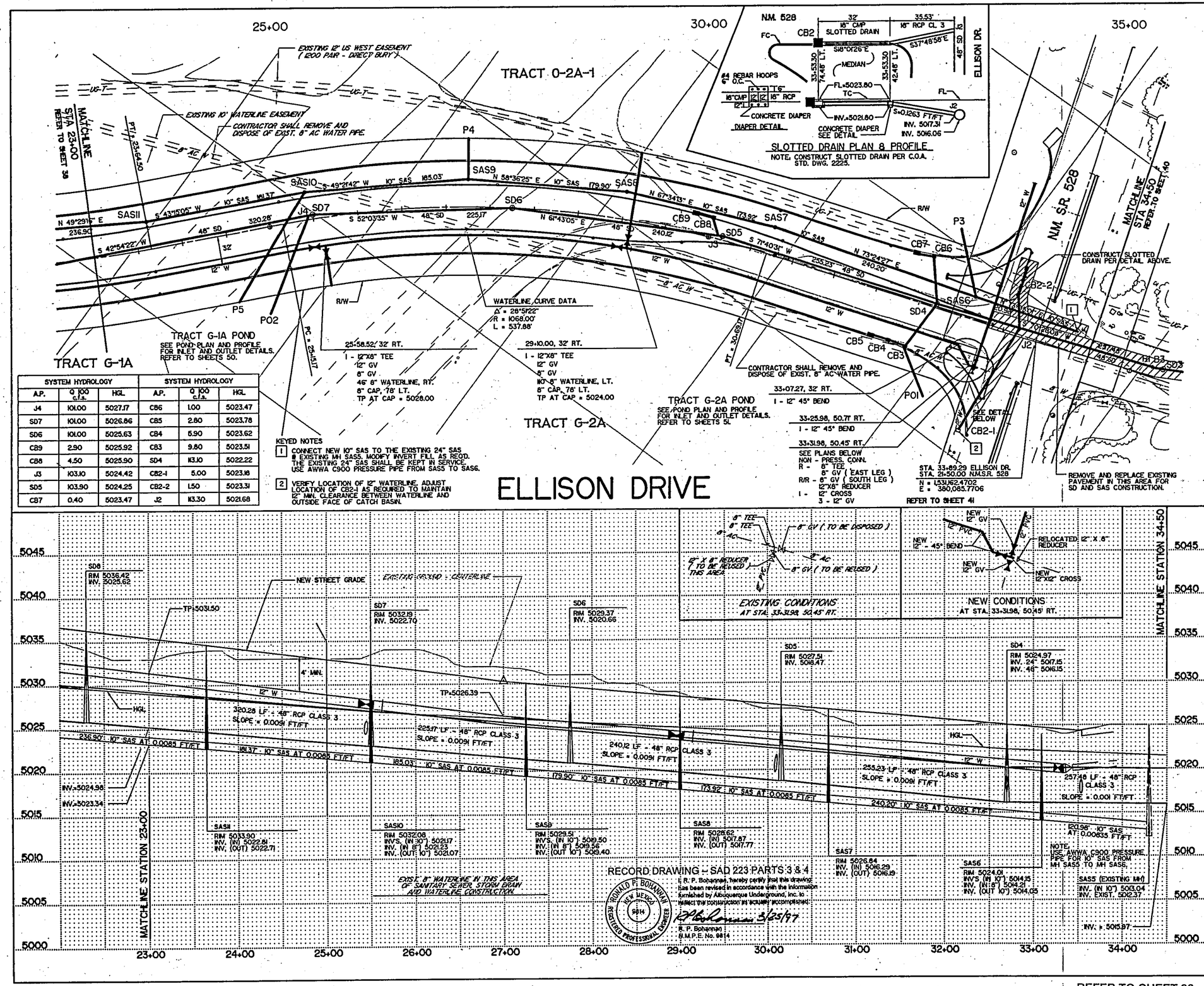
ENGINEER'S SEAL
DONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| 4 | 4/18/95 | REVISED STATION & OFFSET, TC & INV. RPB | |
| | | ELEV., LATERAL PIPING FOR CBI4 & CBI5 | |

REVISIONS

| DESIGN | | |
|---|---|---|
| DESIGNED BY | DEC. | DATE JUNE 1994 |
| DRAWN BY | DEC | DATE JUNE 1994 |
| CHECKED BY | RPB | DATE JUNE 1994 |

REFER TO SHEET 16 REVISED 9/5/95




| SYSTEM HYDROLOGY | | | SYSTEM HYDROLOGY | | |
|---|---|---|---|---|---|
| A.P. | Q 100 C.I.S. | HGL | A.P. | Q 100 C.I.S. | HGL |
| J4 | 101.00 | 5027.17 | CB6 | 1.00 | 5023.47 |
| SD7 | 101.00 | 5026.86 | CB5 | 2.80 | 5023.78 |
| SD6 | 101.00 | 5025.63 | CB4 | 5.90 | 5023.62 |
| CB9 | 2.90 | 5025.92 | CB3 | 9.80 | 5023.51 |
| CB8 | 4.50 | 5025.90 | SD4 | 113.10 | 5022.22 |
| J3 | 103.10 | 5024.42 | CB2-1 | 5.00 | 5023.16 |
| SD5 | 103.90 | 5024.25 | CB2-2 | 1.50 | 5023.31 |
| CB7 | 0.40 | 5023.47 | J2 | 113.30 | 5021.68 |

RECORD DRAWING - SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

R P Bohannan 3/25/97
R. P. Bohannan
B.M.P.E. No. 9814

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

| SANITARY SEWER MANHOLES | | | | | | |
|---|---|---|---|---|---|---|
| REF. NO. | DIA. | TYPE | STATION | OFFSET | | REMARKS |
| SAS5 | - | - | 34+30.25 | 23.66' | LT. | EXISTING |
| SAS6 | 4' | E | 33+09.30 | 26.00' | LT. | - |
| SAS7 | 4' | E | 30+69.17 | 32.00' | LT. | - |
| SAS8 | 4' | E | 29+00.00 | 32.00' | LT. | - |
| SAS9 | 4' | E | 27+25.00 | 32.00' | LT. | - |
| SAS10 | 4' | E | 25+45.00 | 32.00' | LT. | - |
| SAS11 | 4' | E | 23+64.50 | 32.00' | LT. | - |

| SANITARY SEWER FITTINGS | | | | |
|---|---|---|---|---|
| REF. NO. | SIZE / TYPE | STATION | OFFSET | INV |
| P3 | 8" PLUG | 32+70.00 | 95.00' LT. | 14.69 |
| P4 | 8" PLUG | 27+25.00 | 78.00' LT. | 19.83 |
| P5 | 8" PLUG | 24+50.00 | 78.00' RT. | 22.10 |

| SANITARY SEWER LATERAL PIPING | | | | | |
|---|---|---|---|---|---|
| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
| P5 | SAS10 | 8" | 145.60' | 0.006 | S 05°42'05" E |
| P4 | SAS9 | 8" | 46.00' | 0.006 | N 35°57'02" W |
| P3 | SAS6 | 8" | 79.41' | 0.006 | N 47°41'13" W |

| STORM DRAIN MANHOLES | | | | | |
|---|---|---|---|---|---|
| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
| SD4 | 6' | E | 32+70.00 | 5.00' LT. | - |
| SD5 | 6' | E | 30+15.00 | 5.00' LT. | - |
| SD6 | 6' | E | 27+75.00 | 0 | - |
| SD7 | 6' | E | 25+50.00 | 5.00' LT. | - |

| STORM DRAIN CATCH BASINS | | | | |
|---|---|---|---|---|
| REF. NO. | TYPE | STATION | OFFSET | TC / INV |
| CB2-1 | D | 33+37.80 | 124.71' RT. | 22.56 / 19.98 |
| CB2-2 | C | 33+54.30 | 74.87' LT. | 24.30 / 21.80 |
| CB3 | C | 32+50.00 | 53.23' RT. | 24.29 / 18.33 |
| CB4 | C | 32+30.00 | 52.00' RT. | 24.50 / 20.41 |
| CB5 | A | 32+10.00 | 52.00' RT. | 24.69 / 20.69 |
| CB6 | C | 32+50.00 | 56.29' LT. | 24.24 / 20.24 |
| CB7 | A | 32+30.00 | 53.56' LT. | 24.64 / 20.53 |
| CB8 | MOD D | 30+00.00 | 22.48' LT. | 28.00 / 23.90 |
| CB9 | MOD D | 29+80.00 | 23.04' LT. | 28.19 / 24.19 |

| STORM DRAIN JUNCTIONS, BENDS, & REDUCERS | | | | |
|---|---|---|---|---|
| REF. NO. | FITTING SIZE | STATION | OFFSET | INV |
| J2 | 48"X8"X16" | 33+67.00 | 7.55' LT. | 17.31 |
| J3 | 48"x24" | 30+10.00 | 4.36' LT. | 19.53 |
| J4 | 48"X8" | 25+45.52 | 4.85' LT. | 24.02 |
| POI | 18" | 32+87.31 | 100.00' RT. | 19.51 |
| PO2 | 18" | 24+52.70 | 97.74' RT. | 26.42 |

| STORM DRAIN LATERAL PIPING | | | | | |
|---|---|---|---|---|---|
| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
| CB2-1 | J2 | 18" | 133.75' | 0.020 | N 05°25'12" W |
| CB2-2 | J2 | 18" | SEE DETAIL ABOVE | | |
| CB5 | CB4 | 18" | 14.18' | 0.020 | N 71°44'23" E |
| CB4 | CB3 | 18" | 16.13' | 0.129 | N 75°13'46" E |
| POI | CB3 | 18" | 58.92' | 0.020 | S 57°32'30" E |
| CB3 | SD4 | 24" | 59.13' | 0.020 | N 01°25'48" E |
| CB7 | CB6 | 18" | 14.54' | 0.028 | N 63°44'09" E |
| CB6 | SD4 | 24" | 52.60' | 0.059 | S 39°51'27" E |
| CB9 | CB8 | 18" | 14.63' | 0.020 | N 70°25'09" E |
| CB8 | J3 | 24" | 19.28' | 0.226 | S 53°00'36" E |
| PO2 | J4 | 18" | 120.00' | 0.020 | S 15°44'29" E |

NOTE: JUNCTION INV. AT LATERAL
NOTE: MOD D = MODIFIED "D" CATCH BASIN, SEE INDEX SHEET FOR DETAILS. REFER TO SHEET 32.

1 inch = 5 ft. (vert.)
1 inch = 50 ft. (horiz.)

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

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

BENCH MARKS
STATION NAME: NM 448 - M2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING 1,528,910.94
EASTING 381,106.54
ELEVATION 5023.48

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL
RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

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

REVISIONS

| | | DATE |
|---|---|---|
| DESIGNED BY | DEC | JUNE 1994 |
| DRAWN BY | DEC | JUNE 1994 |
| CHECKED BY | RPB | JUNE 1994 |

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

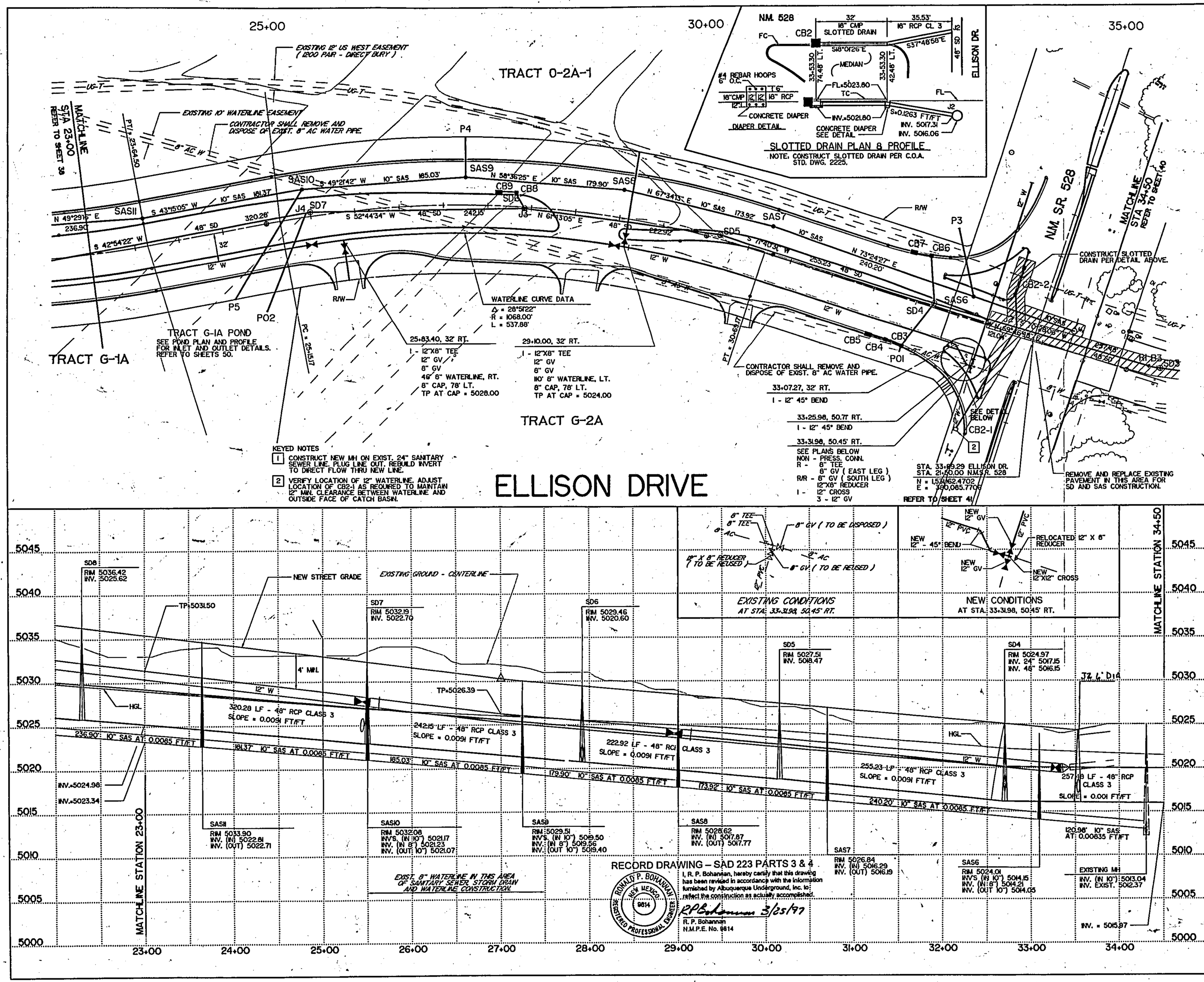
TITLE: SAD 223 - PART 4
ELLISON DR. UTILITY PLAN & PROFILE
STA. 23+00 TO STA. 34+50

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | N.M.U.I. | | 7-4-94 |

DESIGN REVIEW COMMITTEE

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A-14 | 39 | 120 |

REFER TO SHEET 39 , REVISION 2 , ENGINEER STAMP DATE 03/30/95




RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RPBohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

| SANITARY SEWER MANHOLES | | | | | |
|---|---|---|---|---|---|
| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
| SAS6 | 4' | E | 33+09.30 | 26.00' LT. | - |
| SAS7 | 4' | E | 30+69.17 | 32.00' LT. | - |
| SAS8 | 4' | E | 29+00.00 | 32.00' LT. | - |
| SAS9 | 4' | E | 27+25.00 | 32.00' LT. | - |
| SAS10 | 4' | E | 25+45.00 | 32.00' LT. | - |
| SAS11 | 4' | E | 23+64.50 | 32.00' LT. | - |

| SANITARY SEWER FITTINGS | | | | |
|---|---|---|---|---|
| REF. NO. | SIZE / TYPE | STATION | OFFSET | INV |
| P3 | 8" PLUG | 32+70.00 | 95.00' LT. | 14.69 |
| P4 | 8" PLUG | 27+25.00 | 78.00' LT. | 19.83 |
| P5 | 8" PLUG | 24+50.00 | 78.00' RT. | 22.10 |

| SANITARY SEWER LATERAL PIPING | | | | | |
|---|---|---|---|---|---|
| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
| P5 | SAS10 | 8" | 145.60' | 0.006 | S 05°42'05" E |
| P4 | SAS9 | 8" | 46.00' | 0.006 | N 35°57'02" W |
| P3 | SAS6 | 8" | 79.41' | 0.006 | N 47°41'13" W |

| STORM DRAIN MANHOLES | | | | | |
|---|---|---|---|---|---|
| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
| SD4 | 6' | E | 32+70.00 | 5.00' LT. | 32 + 67.5 |
| SD5 | 6' | E | 30+15.00 | 5.00' LT. | - |
| SD6 | 6' | E | 27+92.16 | 1.39' RT. | - |
| SD7 | 6' | E | 25+50.00 | 5.00' LT. | - |

| STORM DRAIN CATCH BASINS | | | | | |
|---|---|---|---|---|---|
| REF. NO. | TYPE | STATION | OFFSET | TC / INV | |
| CB2-1 | D | 33+37.80 | 124.71' RT. | 22.56 / 19.98 | |
| CB2-2 | C | 33+54.30 | 74.87' LT. | 24.30 / 21.80 | |
| CB3 | C | 32+50.00 | 53.23' RT. | 24.29 / 18.33 | |
| CB4 | C | 32+30.00 | 52.00' RT. | 24.50 / 20.41 | |
| CB5 | A | 32+10.00 | 52.00' RT. | 24.69 / 20.69 | |
| CB6 | C | 32+50.00 | 56.29' LT. | 24.24 / 20.24 | |
| CB7 | A | 32+30.00 | 53.56' LT. | 24.64 / 20.53 | |
| CB8 | MOD D | 27+81.80 | 13.98' LT. | 29.84 / 25.74 | |
| CB9 | MOD D | 27+61.71 | 13.43' LT. | 30.02 / 26.02 | |

| STORM DRAIN JUNCTIONS, BENDS, & REDUCERS | | | | |
|---|---|---|---|---|
| REF. NO. | FITTING SIZE | STATION | OFFSET | INV |
| J2 | MH 4' DIA | 33+67.00 | 7.55' LT. | 17.31 |
| | INTENTIONALLY LEFT BLANK | | | |
| J4 | 48"X18" | 25+45.52 | 4.85' LT. | 24.02 |
| POI | 12" PVC | 32+42.69 | 59.57' RT. | 18.43 |
| PO2 | 18" | 24+82.70 | 57.74' RT. | 26.42 |

| STORM DRAIN LATERAL PIPING | | | | | |
|---|---|---|---|---|---|
| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
| CB2-1 | J2 | 18" | 133.75' | 0.020 | N 05°25'12" W |
| CB2-2 | J2 | 18" | SEE DETAIL ABOVE | | |
| CB5 | CB4 | 18" | 14.16' | 0.020 | N 71°44'23" E |
| CB4 | CB3 | 18" | 16.13' | 0.129 | N 75°13'46" E |
| POI | CB3 | 18" | 5.00' | 0.020 | N 18°01'26"W |
| CB3 | SD4 | 24" | 59.13' | 0.020 | N 01°25'48" E |
| CB7 | CB6 | 18" | 14.54' | 0.028 | N 63°44'09" E |
| CB6 | SD4 | 24" | 52.60' | 0.059 | S 39°51'27" E |
| CB9 | CB8 | 18" | 14.65' | 0.019 | N 70°25'09" E |
| CB8 | SD6 | 24" | 18.55' | 0.277 | S 66°35'08" E |
| PO2 | J4 | 18" | 120.00' | 0.020 | S 15°44'29" E |

NOTE: JUNCTION INV. AT LATERAL.
NOTE: MOD D = MODIFIED "D" CATCH BASIN, SEE INDEX SHEET FOR DETAILS. REFER TO SHEET 32.

1 inch = 50 ft. (horiz.)
1 inch = 5 ft. (vert.)

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY DATE
INSPECTOR'S ACCEPTANCE BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
STATION NAME: NM 446 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.50 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING: 1,528,910.54
EASTING: 381,068.54
ELEVATION: 5023.41

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL
RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER
3/25/97

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| 1 | 12/94 | REPLACEMENT SHEET | DSH |
| 2 | 3/95 | REV. POI LATERAL PIPING DIM. | DSH |

REVISIONS

| DESIGN | | |
|---|---|---|
| DESIGNED BY | DEC | JUNE 1994 |
| DRAWN BY | DEC | JUNE 1994 |
| CHECKED BY | RPB | JUNE 1994 |

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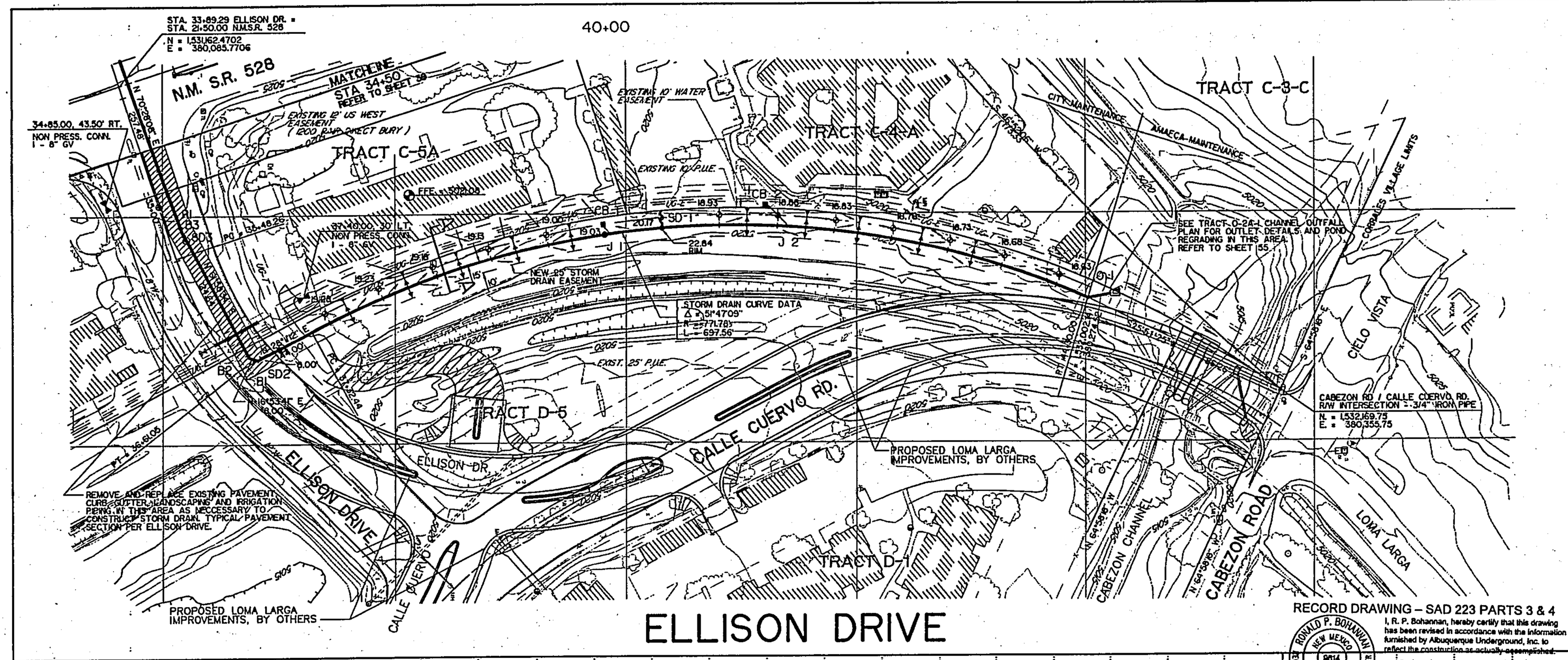
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
ELLISON DR. UTILITY PLAN & PROFILE
STA. 23+00 TO STA. 34+50

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | R.W. Kane | 2-28-95 |
| TRANS. DEV. | K. Powter | 3-15-95 | WASTE WATER | R.W. Kane | 2-28-95 |
| HYDROLOGY | J. Martin | 3-13-95 | N.M.U. | | |

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A-14 | 39 | 120 |



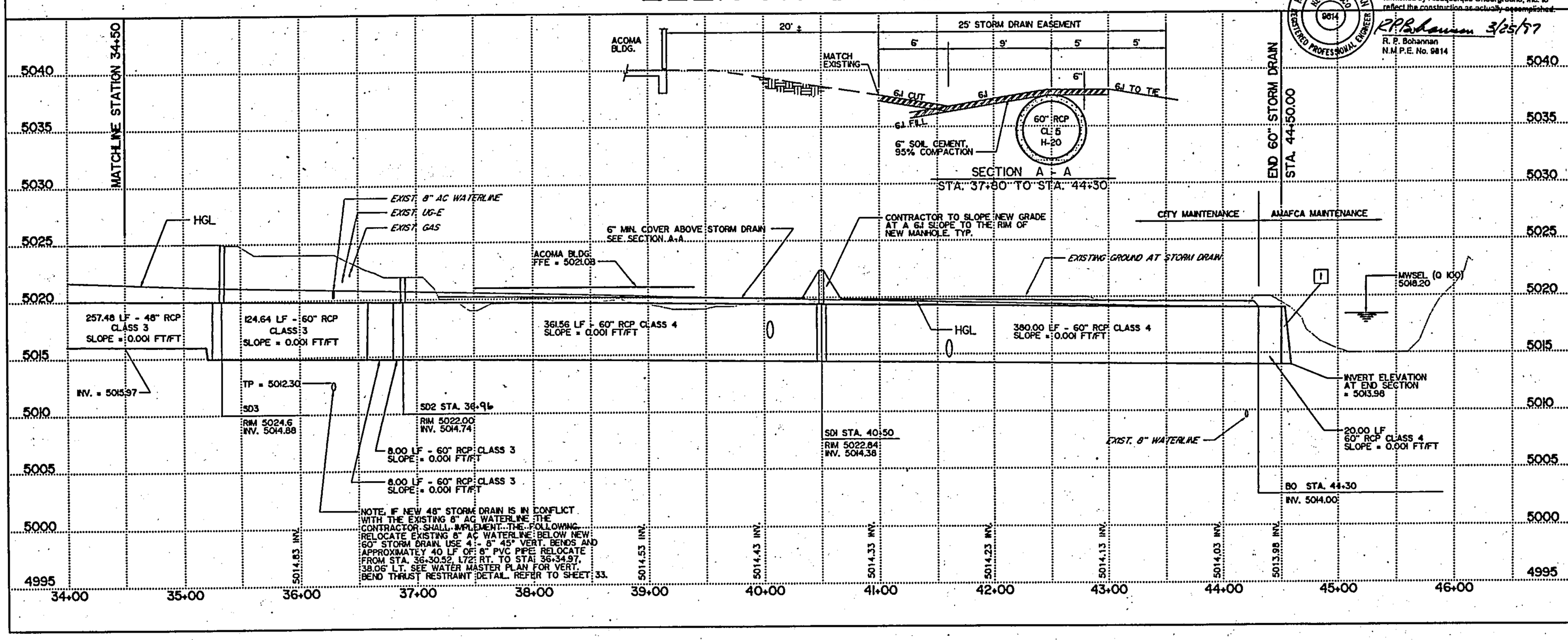

# ELLISON DRIVE

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

R.P. Bohannan 3/25/97
R. P. Bohannan
N.M.P.E. No. 9814

RONALD P. BOHANNAN — NEW MEXICO — 9814 — REGISTERED PROFESSIONAL ENGINEER




## STORM DRAIN MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SD1 | 4' | C | 40+50.00 | 0 | 60"x48" TEE |
| SD2 | 4' | C | 36+96.00 | 0 | 60"x48" TEE |
| SD3 | 4' | C | 35+35.28 | 13.16' LT. | 60"x48" TEE |

## STORM DRAIN JUNCTIONS, BENDS & REDUCERS END SECTIONS

| REF. NO. | FITTING SIZE | STATION | OFFSET | INV |
|---|---|---|---|---|
| O1 | 60" | 44+50.00 | 0 | 13.98 |
| J 1 | 60" X 18" | 40+05.00 | 0 | 16.18 |
| J2 | 60" X 18" | 41+60.00 | 0 | 14.74 |
| B0 | 60" - 30° | 44+30.00 | 0 | 14.00 |
| B1 | 60" - 45° | 36+80.42 | 0 | 14.75 |
| B2 | 60" - 45° | 36+58.07 | 14.56' LT. | 14.76 |
| B3 | 60" - 10° | 35+27.40 | 11.77' LT. | 14.89 |
| R1 | 60" X 48" | 35+22.36 | 11.64' LT. | 14.89 |

## STORM DRAIN CATCH BASINS

| REF. NO. | TYPE | STATION | OFFSET | RIM / INV |
|---|---|---|---|---|
| CB1 | D | 40+00.00 | 9.00' LT. | 19.00 / 16.35 |
| CB2 | D | 41+40.00 | 16.50' LT. | 17.50 / 15.00 |

## STORM DRAIN LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| CB1 | J 1 | 18"* | 8.66' | 0.020 | N 45°30'14" E |
| CB2 | J2 | 18"* | 26.00' | 0.010 | N 46°00'58" E |

* CLASS IV RCP

NOTE:
STATIONING FROM B1 TO O1 IS ALONG THE CENTERLINE OF THE 60" RCP STORM DRAIN.

JUNCTION INV. AT LATERAL.

KEY NOTE:
1 CONTRACTOR SHALL SALVAGE AND REUSE EXISTING 60" RCP END SECTION FROM CORRALES RD. AT STA. 16+28.66 REFER TO SHEET 45.

| SYSTEM HYDROLOGY | | |
|---|---|---|
| A.P. | Q 100 c.f.s. | HGL |
| R1 | 113.3 | 5020.62 |
| B3 | 113.3 | 5021.18 |
| SD3 | 113.3 | 5021.13 |
| B2 | 113.3 | 5020.89 |
| B1 | 113.3 | 5020.80 |
| SD2 | 113.3 | 5020.71 |
| CB1 | 4.6 | 5020.59 |
| J1 | 121.4 | 5020.11 |
| SD1 | 121.4 | 5019.79 |
| O1 | 121.4 | 5019.00 |

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
INSPECTOR'S FIELD TAKE
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
DATE

MICRO-FILM INFORMATION
RECORDED BY
DATE
NO.

BENCH MARKS
STATION NAME: NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET
PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING. 1,528,940.94
EASTING. 381,108.54
ELEVATION. 5023.41

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL
RONALD P. BOHANNAN — NEW MEXICO — 9814 — REGISTERED PROFESSIONAL ENGINEER

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

REVISIONS

| | | DATE |
|---|---|---|
| DESIGNED BY | RPB | JUNE 1994 |
| DRAWN BY | DEC | JUNE 1994 |
| CHECKED BY | RPB | JUNE 1994 |

1 inch = 50 ft. (horiz.)
1 inch = 5 ft. (vert.)

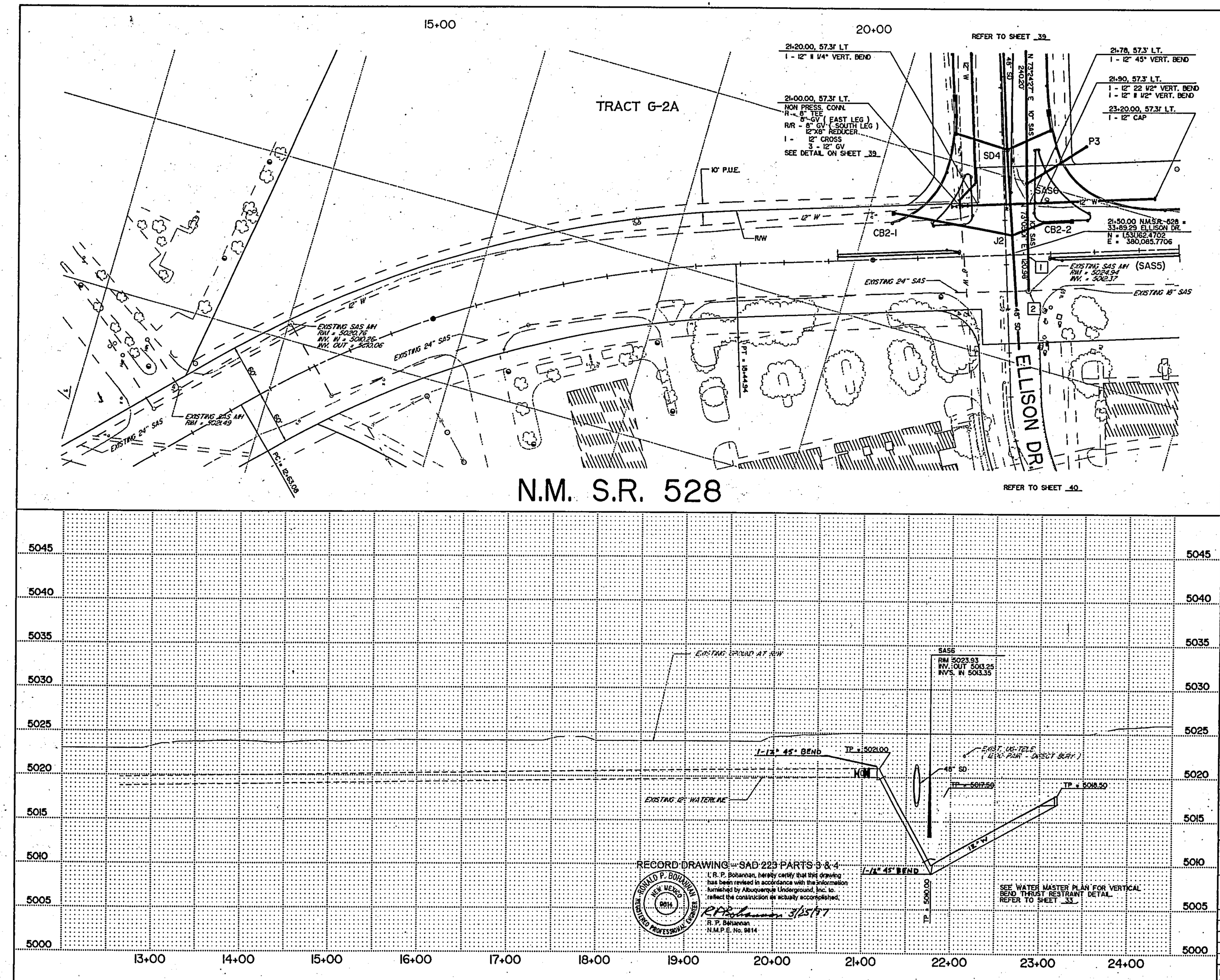

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
ELLISON DR. UTILITY PLAN & PROFILE
STA. 34+50 TO STA. 44+50

| APPROVALS | | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | N.M.U.I. | | 8-4-94 |
| | DESIGN REVIEW COMMITTEE | | A.M.A.F.C.A. | | 8/4/94 |

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A-14 | 40 | 120 |




RECORD DRAWING - SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RPBohannan 3/25/97
R. P. Bohannan
N.M.P.E. No. 9814

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

REFER TO COA PROJECT NO. 5075.90

## SANITARY SEWER MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SAS5 | - | - | 21+73.79 | 40.95' RT. | EXISTING |
| SAS6 | 4' | E | 21+76.13 | 60.00' LT. | - |

## SANITARY SEWER FITTINGS

| REF. NO. | SIZE / TYPE | STATION | OFFSET | INV |
|---|---|---|---|---|
| P3 | 8" PLUG | 22+45.13 | 119.30' LT. | 13.83 |

## SANITARY SEWER LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| SAS6 | P3 | 8" | 79.41' | 0.006 | N 47°41'13" W |

KEYED NOTES:

1. USE AWWA C-900 PRESSURE PIE FOR 10" SANITARY SEWER FROM MH-5 TO MH-6. SEE SHEET 39 FOR PROFILE INFORMATION.
2. CONNECT NEW 10" SAS TO EXIST. 24" SAS. @ EXIST. MH. MODIFY INVERT FILL AS REQD. EXIST. 24" LINE SHALL BE KEPT IN SERVICE.

AS BUILT INFORMATION

CONTRACTOR

WORK STAKED BY
INSPECTIONS RECEIVED BY
FIELD TAKE BY
VERIFICATION BY
DRAWINGS REVIEWED BY

DATE
DATE
DATE
DATE

MICRO-FILM INFORMATION

RECORDED BY
DATE
NO.

BENCH MARKS

STATION NAME: NM 448 - N2

BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.

NORTHING: 1,528,910.94
EASTING: 381,108.54
ELEVATION: 5023.41

SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | REVISIONS | |

DESIGN

| | | DATE |
|---|---|---|
| DESIGNED BY | HCA | JUNE 1994 |
| DRAWN BY | HCA | JUNE 1994 |
| CHECKED BY | RPB | JUNE 1994 |

1 inch = 50 ft. (horiz.)
1 inch = 5 ft. (vert.)

EASTERLING & ASSOCIATES, INC.
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ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

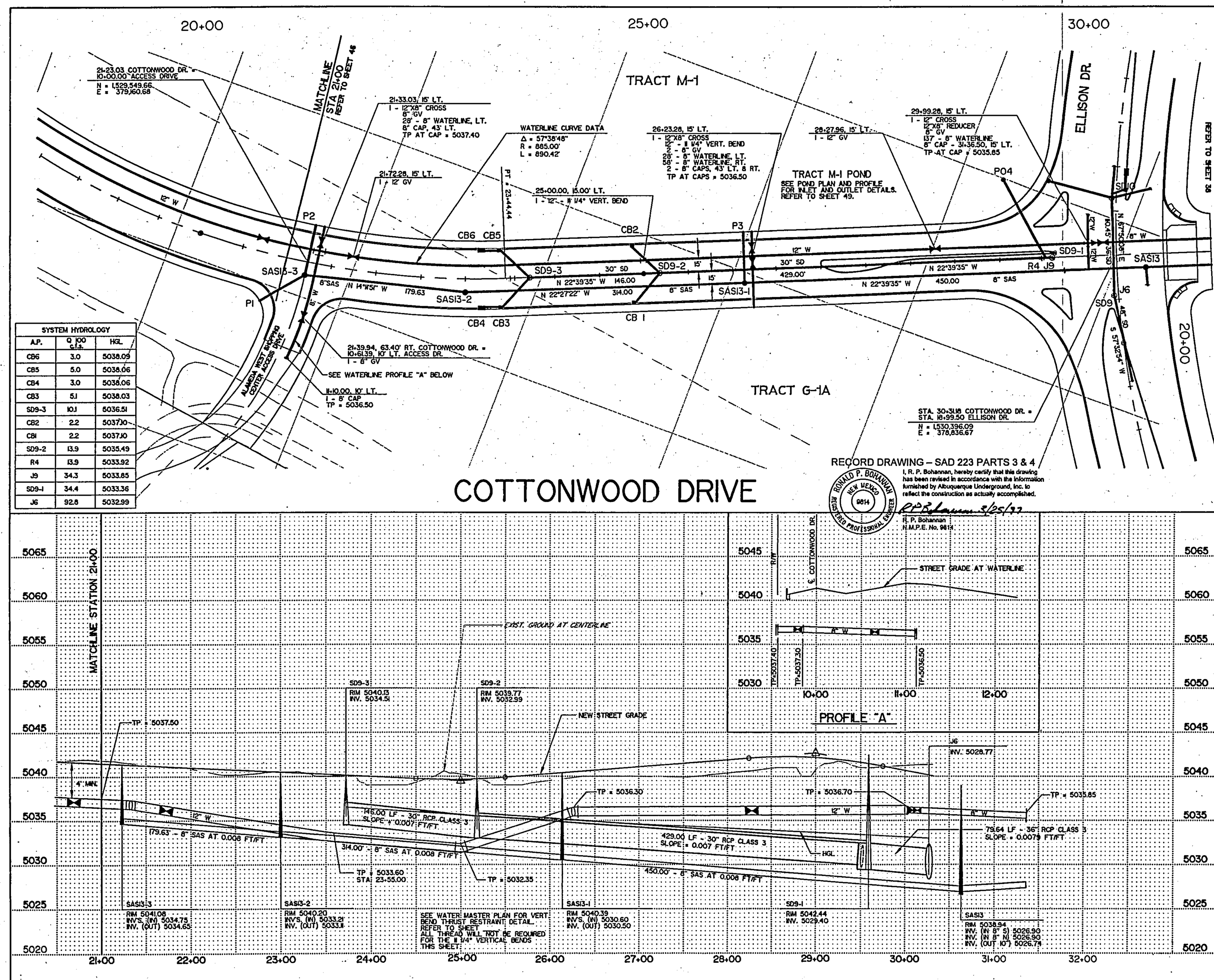
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
N.M. 528 SANITARY SEWER PLAN & PROFILE
STA. 13+25 TO STA. 23+20

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | N.M.U.I. | | 8-4-94 |

DESIGN REVIEW COMMITTEE

PROJECT NO. 4193.94 | MAP NO. A-14 | SHEET 41 OF 120




| SYSTEM HYDROLOGY | | |
|---|---|---|
| A.P. | Q 100 c.f.s. | HGL |
| CB6 | 3.0 | 5038.09 |
| CB5 | 5.0 | 5038.06 |
| CB4 | 3.0 | 5038.06 |
| CB3 | 5.1 | 5038.03 |
| SD9-3 | 10.1 | 5036.51 |
| CB2 | 2.2 | 5037.10 |
| CB1 | 2.2 | 5037.10 |
| SD9-2 | 13.9 | 5035.49 |
| R4 | 13.9 | 5033.92 |
| J9 | 34.3 | 5033.85 |
| SD9-1 | 34.4 | 5033.36 |
| J6 | 92.8 | 5032.99 |

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R. P. Bohannan 3/25/97
R. P. Bohannan
N.M.P.E. No. 9814

SANITARY SEWER MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SASI3 | 4' | E | 19+14.96 | 32.00' LT. | - |
| SASI3-1 | 4' | E | 26+13.28 | 15.00' RT. | - |
| SASI3-2 | 4' | E | 23+00.00 | 15.00' RT. | - |
| SASI3-3 | 4' | E | 21+23.03 | 15.00' RT. | - |

SANITARY SEWER FITTINGS

| REF. NO. | FITTING SIZE | STATION | OFFSET | INV |
|---|---|---|---|---|
| P1 | 8" PLUG | 20+83.30 | 54.20' RT. | 35.09 |
| P2 | 8" PLUG | 21+23.03 | 43.00' LT. | 35.10 |
| P3 | 8" PLUG | 26+13.28 | 43.00' LT. | 30.95 |

SANITARY SEWER LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| SASI3-1 | P3 | 8" | 58.00' | 0.006 | S 67°20'26" W |
| SASI3-3 | P2 | 8" | 58.00' | 0.006 | S 81°26'09" W |
| SASI3-3 | P1 | 8" | 56.90' | 0.006 | N 50°50'09" E |

STORM DRAIN MANHOLES

| REF. NO. | DIA. | TYPE | STATION | OFFSET | REMARKS |
|---|---|---|---|---|---|
| SD9 | 6' | E | 19+45.00 | 5.00' RT. | - |
| SD9-1 | 6' | E | 29+59.00 | 0 | - |
| SD9-2 | 6' | E | 25+18.00 | 0 | - |
| SD9-3 | 6' | E | 23+72.00 | 0 | - |

STORM DRAIN CATCH BASINS

| REF. NO. | TYPE | STATION | OFFSET | TC / INV |
|---|---|---|---|---|
| CB1 | DT A | 24+88.00 | 33.00' RT. | 39.60 / 35.60 |
| CB2 | DT A | 24+88.00 | 33.00' LT. | 39.60 / 35.60 |
| CB3 | C | 23+38.00 | 33.00' RT. | 40.23 / 36.03 |
| CB4 | A | 23+18.00 | 33.00' RT. | 40.33 / 36.33 |
| CB5 | C | 23+38.00 | 33.00 RT. | 40.23 / 36.06 |
| CB6 | A | 23+18.00 | 33.00' LT. | 40.33 / 36.33 |

STORM DRAIN JUNCTIONS, BENDS, & REDUCERS

| REF. NO. | FITTING SIZE | STATION | OFFSET | INV |
|---|---|---|---|---|
| J6 | 48"X36" | 19+40.53 | 4.78' RT. | 28.77 |
| J9 | 36"X30" | 29+52.00 | 0 | 29.70 |
| P04 | 30" | 29+07.09 | 89.9' LT. | 31.71 |
| R4 | 36"X30" | 29+47.00 | 0 | 29.33 / 29.43 |

STORM DRAIN LATERAL PIPING

| FROM | TO | DIA. | LENGTH | SLOPE (FT/FT) | BEARING |
|---|---|---|---|---|---|
| CB1 | SD9-2 | 18" | 42.53' | 0.038 | N 71°29'50" W |
| CB2 | SD9-2 | 18" | 42.79' | 0.038 | N 23°48'08" E |
| CB4 | CB3 | 18" | 14.97' | 0.020 | N 22°00'09" W |
| CB3 | SD9-3 | 24" | 45.43' | 0.022 | N 67°30'31" W |
| CB6 | CB5 | 18" | 13.50' | 0.020 | N 21°52'06" W |
| CB5 | SD9-3 | 24" | 45.08' | 0.023 | N 22°28'11" E |
| P04 | J9 | 30" | 100.50' | 0.020 | N 40°47'54" E |

DT = DOUBLE THROATED.
NOTE: JUNCTION INVERT AT LATERAL.

1 inch = 5 ft. (vert.)
1 inch = 50 ft. (horiz.)

AS BUILT INFORMATION

CONTRACTOR
WORK STARTED BY — DATE
WORK ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
STATION NAME: NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING. 1,529,910.94
EASTING. 381,108.54
ELEVATION. 5023.48

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL | JAN. 91 |
| | BY HUGG SURVEY | |
| 2 | PLANIMETRIC AND TOPO MAPPING BY | JAN. 91 |
| | T.R. MANN | |
| 3 | SITE SURVEYS BY | MAR. 91 |
| | HUGG SURVEY | |

ENGINEERS SEAL
RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

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

REVISIONS

| | | DATE |
|---|---|---|
| DESIGNED BY | DEC | JUNE 1994 |
| DRAWN BY | DEC | JUNE 1994 |
| CHECKED BY | RPB | JUNE 1994 |


EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10051 Coors Rd., NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

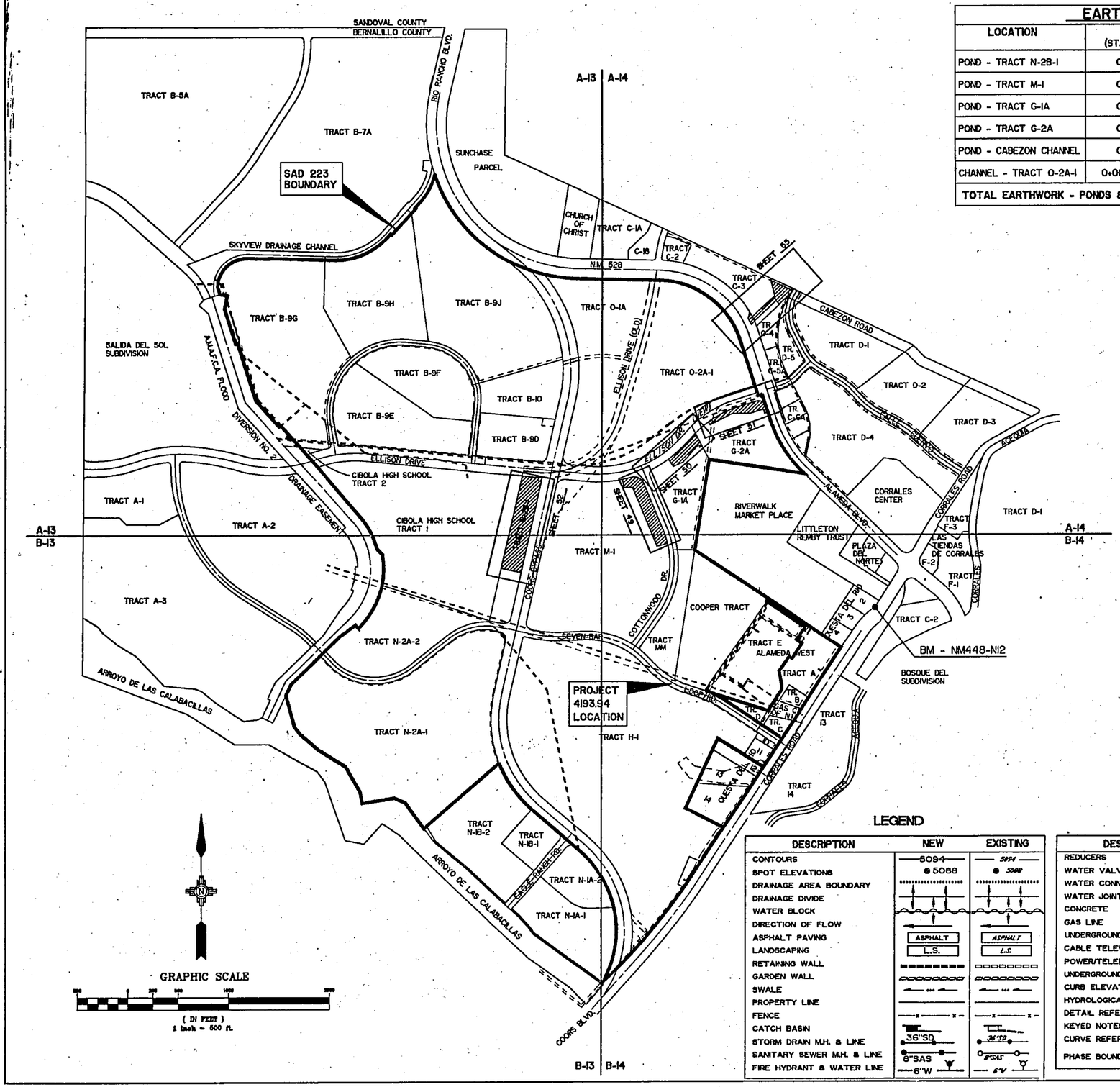

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
COTTONWOOD DRIVE UTILITY PLAN & PROFILE
STA. 21+00 TO STA. 30+31.7

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | N.M.U.I. | | 7-7-94 |

DESIGN REVIEW COMMITTEE

PROJECT NO. 4193.94 | MAP NO. A-14 B-14 | SHEET 47 OF 120




## EARTHWORK SUMMARY - PONDS & CHANNEL

| LOCATION | LIMITS (STA. TO STA.) | CUT (UNADJUSTED) (CUBIC YARDS) | FILL (UNADJUSTED) (CUBIC YARDS) |
|---|---|---|---|
| POND - TRACT N-2B-1 | COMPLETE | 20,819 | 989 |
| POND - TRACT M-1 | COMPLETE | 6,330 | 1,025 |
| POND - TRACT G-1A | COMPLETE | 1,725 | 410 |
| POND - TRACT G-2A | COMPLETE | 2,210 | 75 |
| POND - CABEZON CHANNEL | COMPLETE | 6,157 | 333 |
| CHANNEL - TRACT O-2A-1 | 0+00 TO 4+13.23 | 721 | 196 |
| TOTAL EARTHWORK - PONDS & CHANNEL | | 37,962 | 3,028 |

## FILTER MATERIAL GRADATION

| SIEVE SIZE | % PASSING BY WEIGHT |
|---|---|
| 3" | - |
| 2" | 90 - 100 |
| 1-1/2" | - |
| 3/4" | 20 - 90 |
| 3/8" | - |
| #4 | 0 - 20 |
| #16 | - |
| #40 | - |
| #50 | - |
| #100 | - |
| #200 | 0 - 3 |

## LEGEND

| DESCRIPTION | NEW | EXISTING |
|---|---|---|
| CONTOURS | 5094 | 5094 |
| SPOT ELEVATIONS | ● 5088 | ● 5088 |
| DRAINAGE AREA BOUNDARY | | |
| DRAINAGE DIVIDE | | |
| WATER BLOCK | | |
| DIRECTION OF FLOW | | |
| ASPHALT PAVING | ASPHALT | ASPHALT |
| LANDSCAPING | L.S. | L.S. |
| RETAINING WALL | | |
| GARDEN WALL | | |
| SWALE | | |
| PROPERTY LINE | | |
| FENCE | —x—x— | —x—x— |
| CATCH BASIN | | |
| STORM DRAIN M.H. & LINE | 36"SD | 36"SD |
| SANITARY SEWER M.H. & LINE | 8"SAS | 8"SAS |
| FIRE HYDRANT & WATER LINE | 6"W | 6"W |

## LEGEND

| DESCRIPTION | NEW | EXISTING |
|---|---|---|
| REDUCERS | | |
| WATER VALVES | GATE BUTTERFLY | GATE BUTTERFLY |
| WATER CONNECTIONS | | |
| WATER JOINTS | CROSS TEE + SIZE CAP | CROSS TEE + SIZE CAP |
| CONCRETE | CONCRETE | CONCRETE |
| GAS LINE | G | G |
| UNDERGROUND TELEPHONE | T | T |
| CABLE TELEVISION | CT | CT |
| POWER/TELEPHONE POLE | P.P. | P.P. |
| UNDERGROUND ELECTRICAL | E | E |
| CURB ELEVATION | TC 5088.28 FL 5087.78 | TC 5088.28 FL 5087.78 |
| HYDROLOGICAL ANALYSIS PT. | | |
| DETAIL REFERENCE | | |
| KEYED NOTES | | |
| CURVE REFERENCE | | |
| PHASE BOUNDARY | | |

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R.P. Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814

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

REVISIONS

| DESIGN | DATE | |
|---|---|---|
| DESIGNED BY | DEC | FEB. 1992 |
| DRAWN BY | DEC | FEB. 1992 |
| CHECKED BY | DWC | FEB. 1992 |

AS BUILT INFORMATION

CONTRACTOR

| | DATE |
|---|---|
| STAKED BY | |
| INSPECTORS | |
| FIELD CHANGE BY | DATE |
| FIELD VERIFICATION BY | DATE |
| DRAWINGS CORRECTED BY | DATE |

MICRO-FILM INFORMATION

RECORDED BY DATE

NO.

BENCH MARKS

STATION NAME: NM 448 - N12

BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.

NORTHING: L528,590.54
EASTING: 38U08.54
ELEVATION: 5023.41

SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZVERT CONTROL | JAN. 91 |
| | BY HUGG SURVEY | |
| 2 | PLANIMETRIC AND TOPO MAPPING BY | JAN. 91 |
| | T.R. MANN | |
| 3 | SITE SURVEYS BY | MAR. 91 |
| | HUGG SURVEY | |

ENGINEER'S SEAL

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 COORS RD., NW, SUITE H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

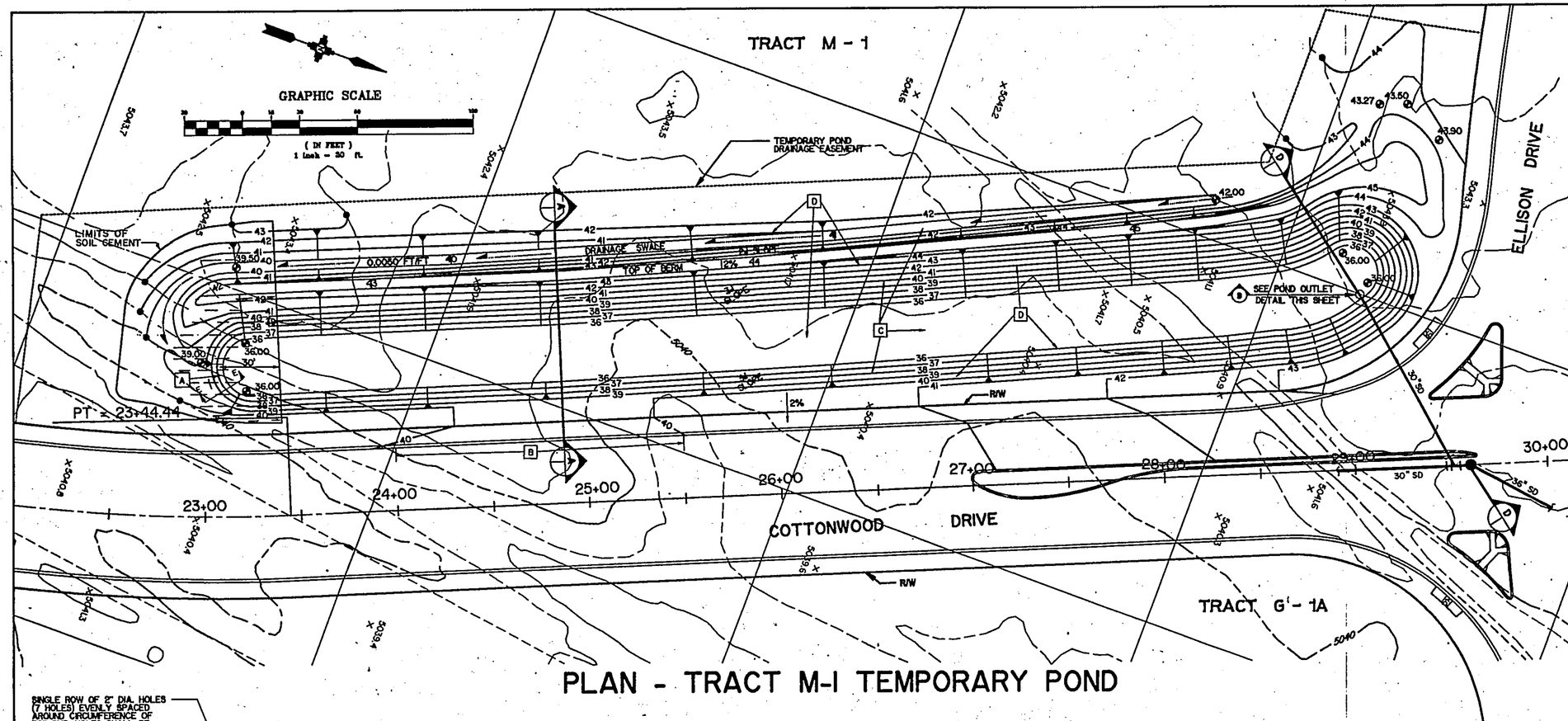
TITLE: SAD 223 - PART 4
DRAINAGE SHEET INDEX & NOTES
INFRASTRUCTURE IMPROVEMENTS FOR ELLISON DRIVE, SEVEN BAR LOOP ROAD AND COTTONWOOD DRIVE

| APPROVALS | | DATE |
|---|---|---|
| D.R.C. Chair | | |
| TRANS. DEV. | | |
| HYDROLOGY | | |

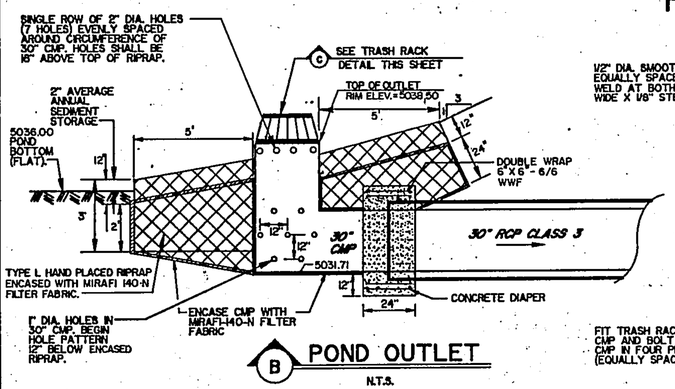
ENGINEER — DESIGN REVIEW COMMITTEE

| APPROVALS | ENGINEER | DATE |
|---|---|---|
| WATER | RPB | 3-17-92 |
| WASTE WATER | RPB | - |

PROJECT NO. 4193.94 | MAP NO. A13/A14 B13/B14 | SHEET 48 OF 120

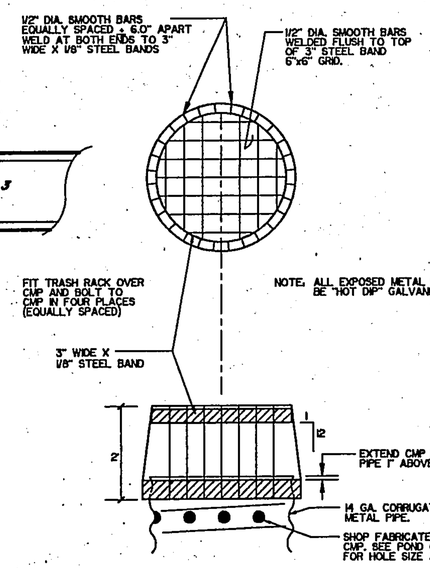



# PLAN - TRACT M-I TEMPORARY POND



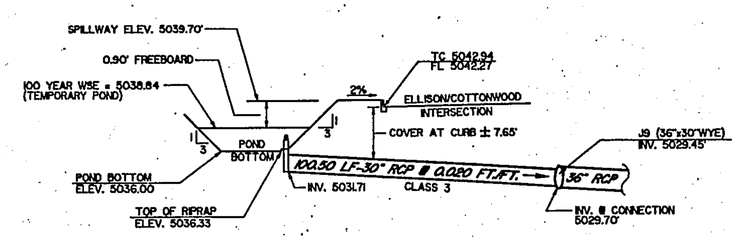

## B POND OUTLET

N.T.S.



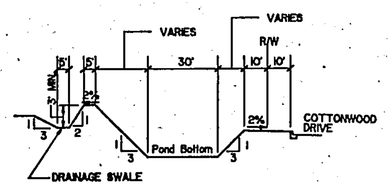

## C TRASH RACK DETAIL

N.T.S.



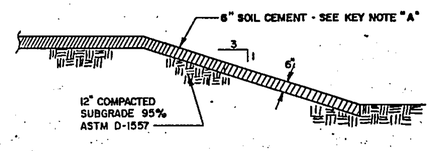

## D STORM DRAIN LATERAL PIPING PROFILE

N.T.S.




## A SECTION AT LOW POINT

N.T.S.




## E SOIL CEMENT SLOPE PAVEMENT

## KEYED NOTES

A. ARMOR POND INLET WITH 6" THICK SOIL CEMENT. USE 10% CEMENT BY WEIGHT. SHAPE POND INLET TO COLLECT AND CHANNEL WATER ACROSS SC MATERIAL AND INTO POND.

B. PERMANENT CURB AND GUTTER ON WEST SIDE OF COTTONWOOD DRIVE FROM STATION 24+00 TO 25+50 WILL SERVE AS EMERGENCY SPILLWAY FOR TEMPORARY DESILTATION POND.

C. CONSTRUCT POND BOTTOM, POND SLOPE, AND DRAINAGE SWALE TO 90% MAXIMUM DRY DENSITY PRIOR TO REVEGETATION.

D. REVEGETATE ALL DISTURBED AREAS INCLUDING POND BOTTOM, SLOPES AND DRAINAGE SWALE.

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R P Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814

AS BUILT INFORMATION

| | | |
|---|---|---|
| CONTRACTOR | | |
| WORK STAKED BY | | DATE |
| INSPECTOR'S ACCEPTANCE BY | | DATE |
| VERIFICATION BY CONTRACTOR | | DATE |
| MICRO-FILM INFORMATION | | |
| RECORDED BY | | DATE |
| NO. | | |

BENCH MARKS

STATION NAME: NM 448 - N2

BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.

NORTHING: 1,528,910.94
EASTING: 381,008.54
ELEVATION: 5023.48

SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL | JAN. 91 |
| | BY HUGG SURVEY | |
| 2 | PLANIMETRIC AND | JAN. 91 |
| | TOPO MAPPING BY | |
| | T.R. MANN | |
| 3 | SITE SURVEYS BY | MAR. 91 |
| | HUGG SURVEY | |

ENGINEER'S SEAL

WILLIAM W. LOVELAND NEW MEXICO 5023 REGISTERED PROFESSIONAL ENGINEER

HYDROLOGY DATA - TRACT M-I

TEMPORARY POND (EXISTING CONDITIONS):
PEAK OUTFLOW (Q100) = 5.1 CFS
MAX. STORAGE (V100) = 1.47 AF

TRACT M-I DEVELOPED CONDITIONS
PEAK DISCHARGE (Q100 ALLOWABLE) = 30.7 CFS

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | REVISIONS | |
| | | DESIGN | |

| | | | |
|---|---|---|---|
| DESIGNED BY | DWC, DEC | DATE | FEB. 1992 |
| DRAWN BY | BRG, WLV | DATE | FEB. 1992 |
| CHECKED BY | DWC | DATE | FEB. 1992 |

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

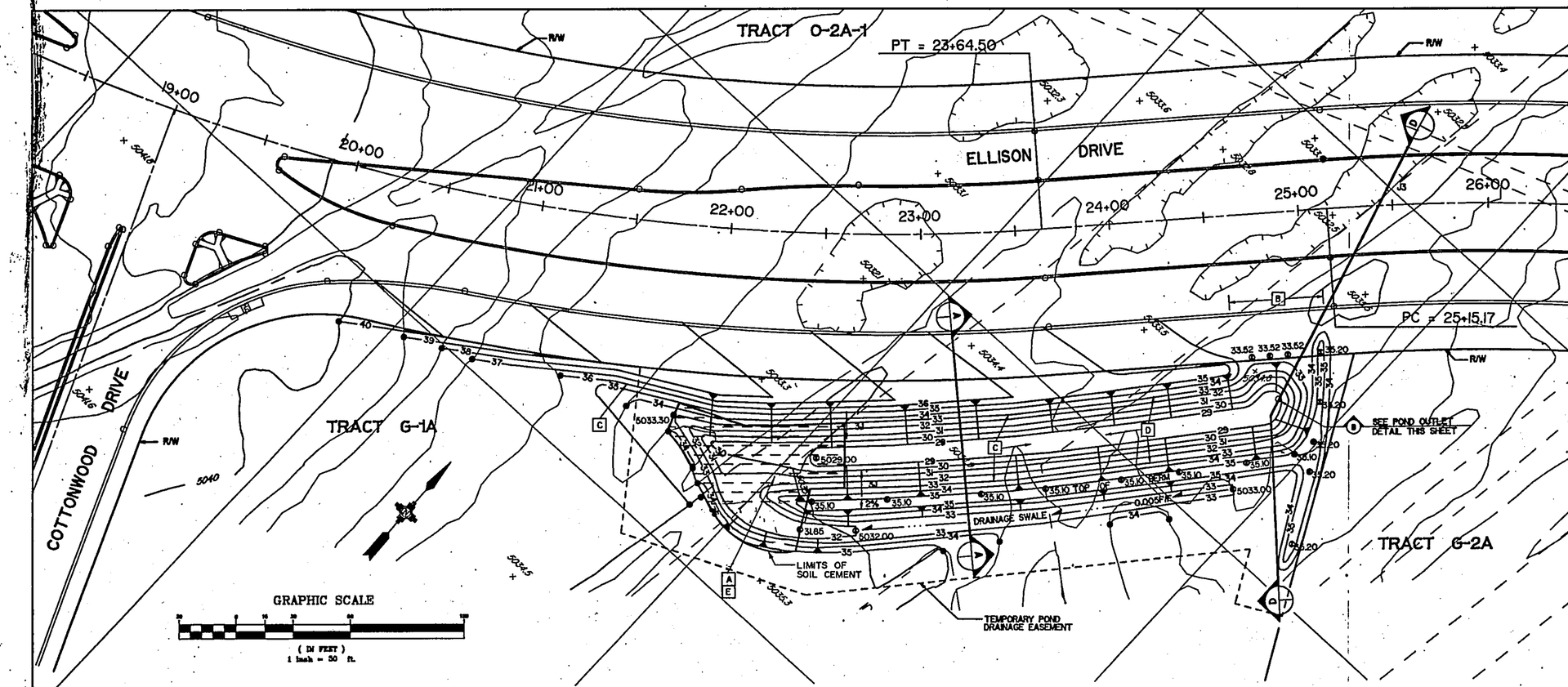
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
TRACT M-I TEMPORARY POND
PLAN-PROFILE-DETAILS

| APPROVALS | ENGINEER | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|
| D.R.C. Chair | | WATER | | 3-19-92 |
| TRANS. DEV. | | WASTE WATER | | " |
| HYDROLOGY | | | | |

DESIGN REVIEW COMMITTEE

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A-14 | 49 | 120 |




# PLAN - TRACT G-IA TEMPORARY POND

## KEYED NOTES

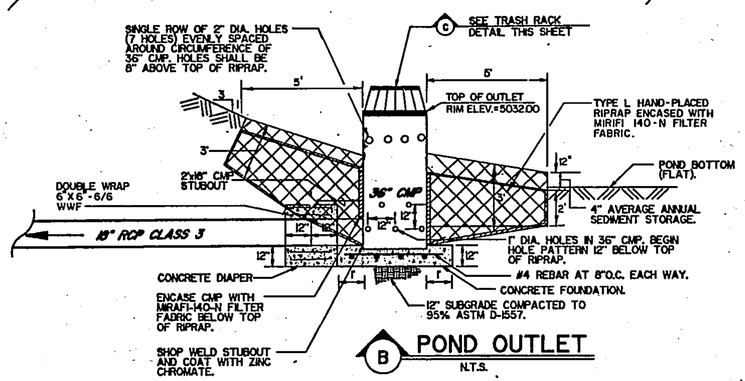
A. ARMOR POND INLET WITH 6" THICK SOIL CEMENT. USE 10% CEMENT BY WEIGHT. SHAPE POND INLET TO COLLECT AND CHANNEL WATER ACROSS SC MATERIAL AND INTO POND.

B. PERMANENT CURB AND GUTTER ON SOUTH SIDE OF ELLISON DRIVE FROM STATION 24+60 TO 25+10 WILL SERVE AS EMERGENCY SPILLWAY FOR TEMPORARY DESILTATION POND.

C. CONSTRUCT POND BOTTOM, POND SLOPE, AND DRAINAGE SWALE TO 90% MAXIMUM DRY DENSITY PRIOR TO REVEGETATION.

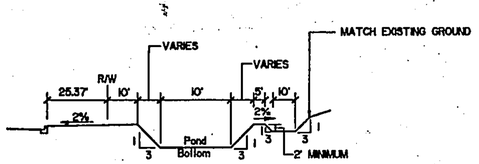
D. REVEGETATE ALL DISTURBED AREAS INCLUDING POND BOTTOM, SLOPES AND DRAINAGE SWALE.

E. FOR SOIL CEMENT DETAIL, SEE SECTION E, SHEET 49



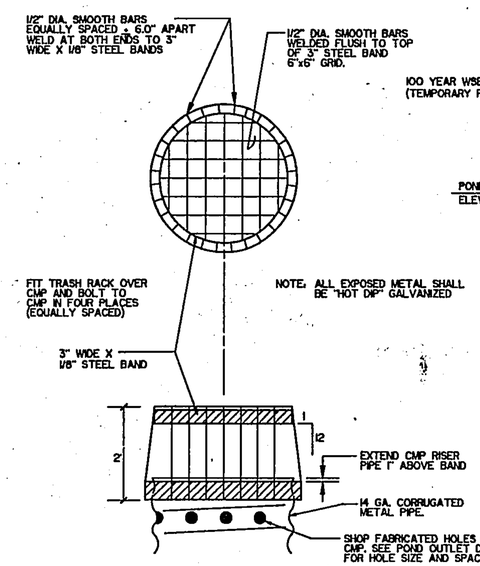

## B POND OUTLET

N.T.S.



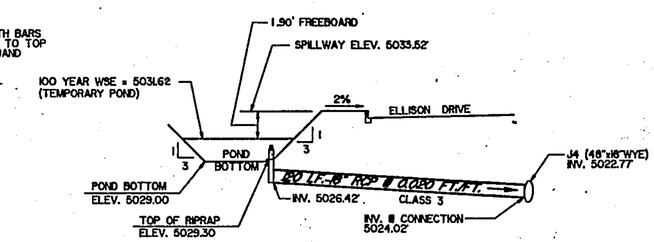

## A TYPICAL SECTION THROUGH POND

N.T.S.




## C TRASH RACK DETAIL

N.T.S.




## D STORM DRAIN PROFILE

N.T.S.

## HYDROLOGY DATA - TRACT G-IA

TEMPORARY POND (EXISTING CONDITIONS)
PEAK OUTFLOW (Q100) = 0.9 CFS
MAX. STORAGE (V100) = 0.31 AF

TRACT G-IA DEVELOPED CONDITIONS
PEAK DISCHARGE (Q100 ALLOWABLE) = 6.7 CFS

RECORD DRAWING – SAD 223 PARTS 3 & 4

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

R.P. Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814

AS BUILT INFORMATION

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

MICRO-FILM INFORMATION

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

BENCH MARKS

STATION NAME: NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING: L526,910.94
EASTING: 381,908.54
ELEVATION: 5023.48

SURVEY INFORMATION

| NO. | FIELD NOTES BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY | JAN. 91 |
| | T.R. MANN | MAR. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | |

ENGINEER'S SEAL

DONALD W. COPELAND NEW MEXICO 6768 REGISTERED PROFESSIONAL ENGINEER

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

REVISIONS

| DESIGN | | DATE |
|---|---|---|
| DESIGNED BY | DWC, BRG | FEB. 1992 |
| DRAWN BY | BRG, WLV | FEB. 1992 |
| CHECKED BY | DWC | FEB. 1992 |


EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10631 Coors Rd. NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

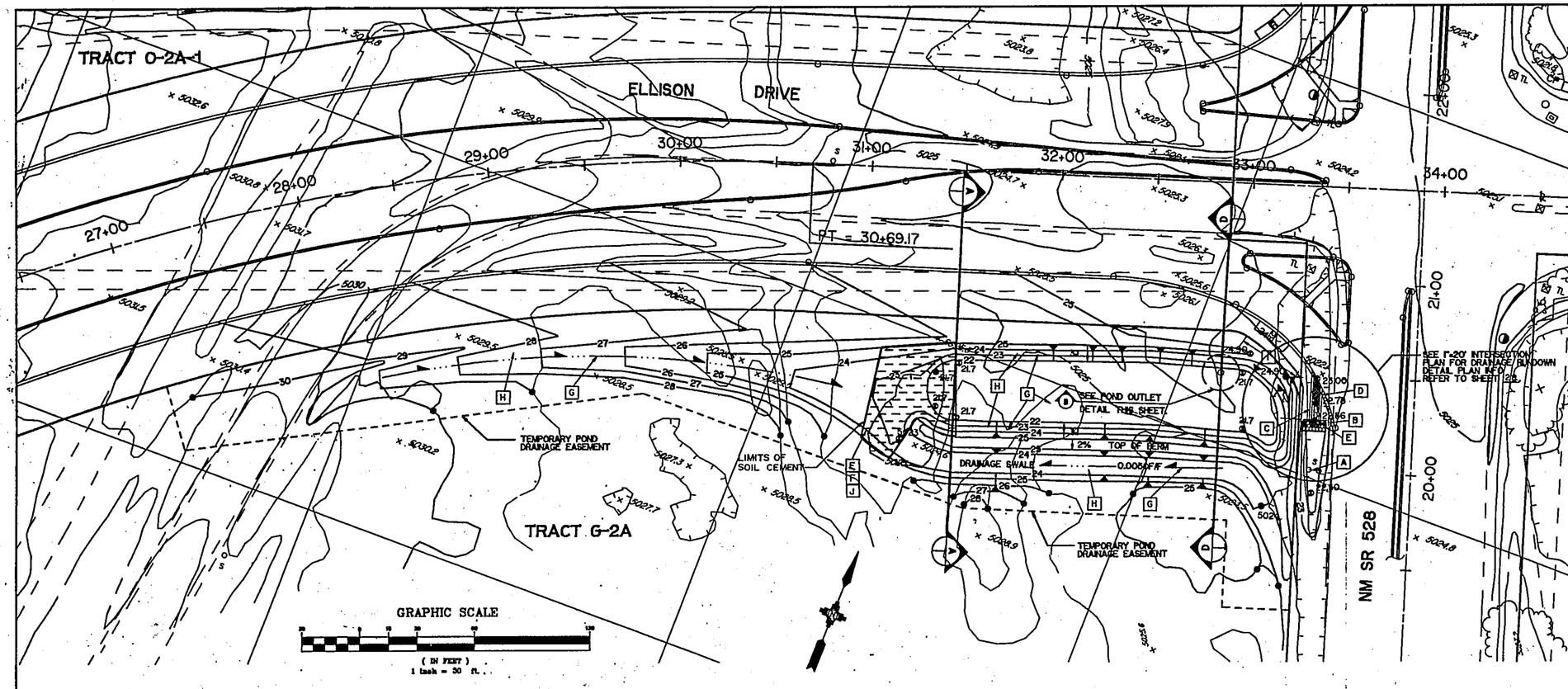

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
TRACT G-IA TEMPORARY POND
PLAN-PROFILE-DETAILS

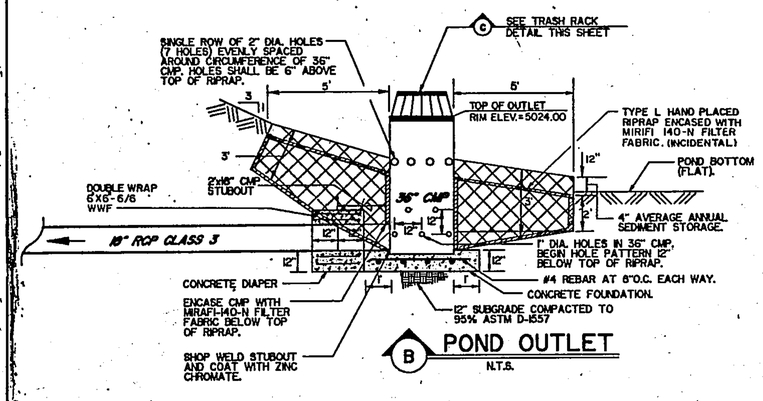
| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | AED | 1-19-92 |
| TRANS. DEV. | | | WASTE WATER | AED | " |
| HYDROLOGY | | | | | |

ENGINEER — DESIGN REVIEW COMPLETED

PROJECT NO. 4193.94 | MAP NO. A-14 | SHEET 50 OF 120

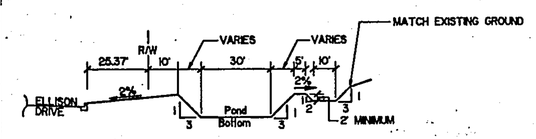



# PLAN - TRACT G-2A TEMPORARY POND



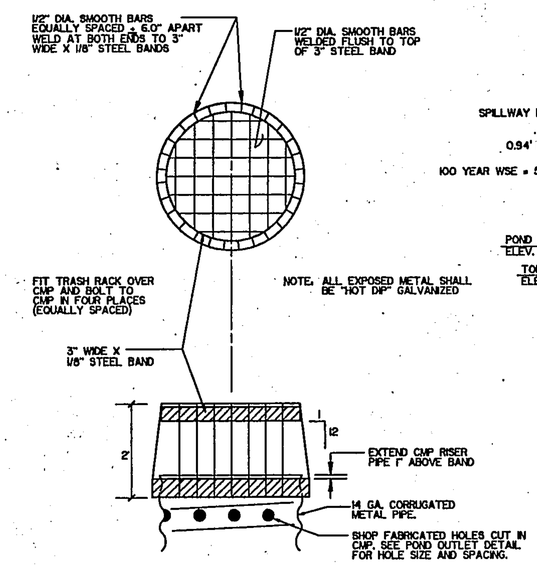

## B POND OUTLET

N.T.S.



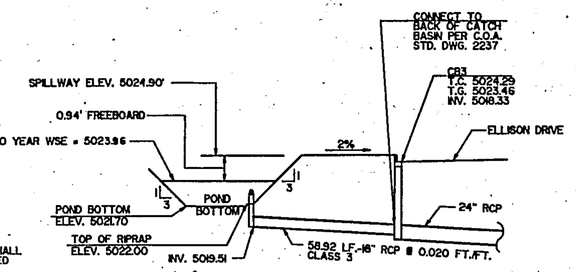

## A TYPICAL SECTION THROUGH POND

N.T.S.




## C TRASH RACK DETAIL

N.T.S.




## D STORM DRAIN PROFILE

N.T.S.

### HYDROLOGY DATA - TRACT G-2A

TEMPORARY POND (EXISTING CONDITIONS)
PEAK OUTFLOW (Q100) = 0.9 CFS
MAX. STORAGE (V100) = 0.37 AF

TRACT G-2A DEVELOPED CONDITIONS
PEAK DISCHARGE (Q100 ALLOWABLE) = 7.2 CFS

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R P Bohannan 3/25/97
R. P. Bohannan
N.M.P.E. No. 9814

## KEYED NOTES

A. RELOCATE EXISTING SIGN APPROXIMATELY 40 FEET SOUTH.

B. CONSTRUCT SINGLE "D" CATCH BASIN PER C.O.A. STD. DWG. 2206.

C. CONSTRUCT CONCRETE RUN DOWN PER TYPICAL SECTION.

D. CONSRUCT DOUBLE SIDEWALK CULVERT WITH 24" MAXIMUM OPENING PER C.O.A. STD. DWG. 2236.

E. INSTALL TYPE M RIPRAP MATERIAL TO A DEPTH OF 2 FEET.

F. ARMOR POND INLET WITH 6" THICK SOIL CEMENT. USE 10% CEMENT BY WEIGHTS. SHAPE POND INLET TO COLLECT AND CHANNEL WATER ACROSS SC MATERIAL.

G. COMPACT POND BOTTOM, POND SLOPES AND DRAINAGE SWALE TO 90% MAX. DRY DENSITY PRIOR TO REVEGETATING.

H. REVEGETATE ALL DISTURBED AREAS INCLUDING POND BOTTOM, SLOPES AND DRAINAGE SWALE.

I. PERMANENT CURB AND GUTTER ON SOUTH SIDE OF ELLISON DRIVE FROM STATION 33+00 TO 33+25 WILL SERVE AS EMERGENCY SPILLWAY FOR TEMPORARY DESILTATION POND.

J. FOR SOIL CEMENT DETAIL, SEE SECTION E, SHEET 49.

**TRACT G-2A ONSITE DRAINAGE IMPROVEMENTS TO BE CONSTRUCTED BY OTHERS. NOT PART OF THIS PROJECT.**


EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd. NW, Suite H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501


AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
RESPECTORS ACCEPTANCE BY — DATE
VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
STATION NAME: NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.50 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING: 1528,910.94
EASTING: 381,008.54
ELEVATION: 5023.41

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEER'S SEAL
DOUGLAS W. COPELAND NEW MEXICO 7981 REGISTERED PROFESSIONAL ENGINEER

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | REVISIONS | |

DESIGN
DESIGNED BY DWC DATE FEB. 1992
DRAWN BY BRG, WLV DATE FEB. 1992
CHECKED BY DWC DATE FEB. 1992

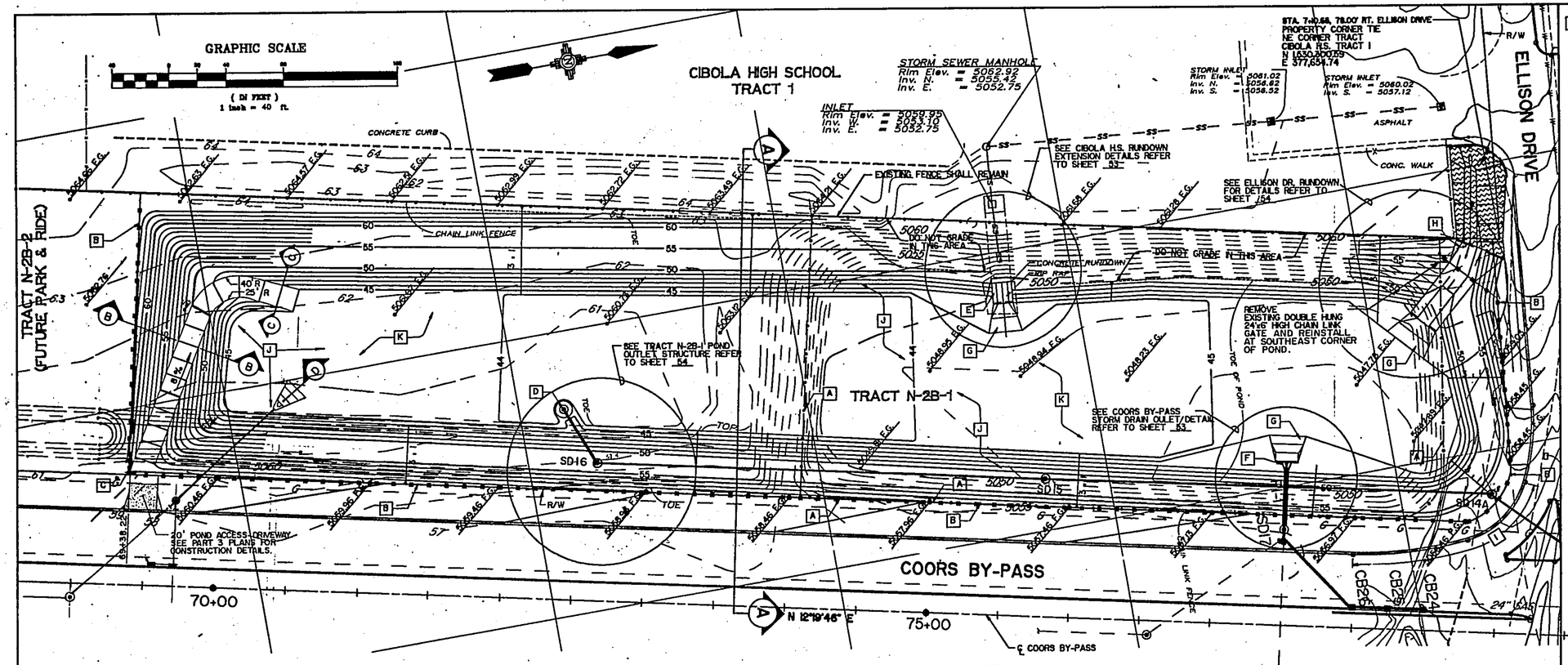
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
TRACT G-2A TEMPORARY POND
PLAN-PROFILE-DETAILS

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | AHD | 1-19-96 |
| TRANS. DEV. | | | WASTE WATER | AHD | " |
| HYDROLOGY | | | | | |

DESIGN REVIEW COMMITTEE

PROJECT NO. 4193.94 | MAP NO. A-13/A-14 | SHEET 51 OF 120




# PLAN - TRACT N-2B-I REGIONAL DETENTION POND

## KEYED NOTES

A. REMOVE EXISTING FENCE POSTS, GATE BRACES AND MISC. HARDWARE. REINSTALL FENCE HARDWARE AT LOCATIONS SHOWN.

B. INSTALL CHAIN LINK FENCE PER C.O.A STD. DWG. 2252. SET FENCE ALONG PROPERTY LINE UNLESS SHOWN OTHERWISE

C. REINSTALL EXISTING CHAIN LINK GATE AT TOP OF MAINTENANCE RAMP PER C.O.A STD. DWG. 2252

D. CONSTRUCT POND INLET PER DETAIL REFER TO SHEET 54

E. EXTEND EXISTING CONCRETE RUNDOWN PER DETAIL. REFER TO SHEET 53

F. INSTALL 24" PRECAST END SECTION.

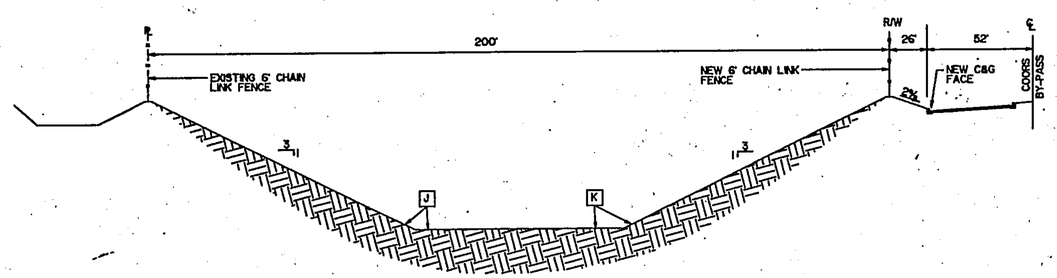
G. CONSTRUCT DUMPED RIPRAP TYPE M ENERGY DISSIPATOR.

H. CONSTRUCT NEW CONCRETE RUNDOWN PER DETAIL. REFER TO SHEET 54

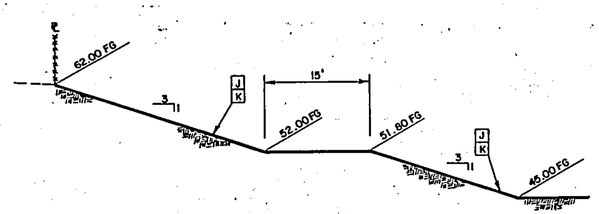
I. PERMANENT CURB AND GUTTER ON WEST SIDE OF COORS BY-PASS FROM STATION 78+00 TO 79+00 WILL SERVE AS EMERGENCY SPILLWAY FOR REGIONAL DETENTION POND.

J. CONSTRUCT POND BOTTOM, POND SLOPE, AND DRAINAGE SWALE TO 90% MAXIMUM DRY DENSITY PRIOR TO REVEGETATION

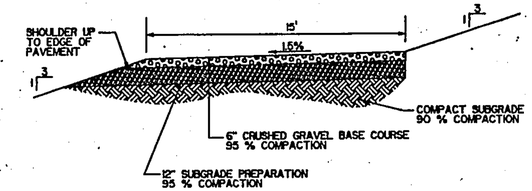
K. REVEGETATE ALL DISTURBED AREAS INCLUDING POND BOTTOM, SLOPES, AND DRAINAGE SWALE.



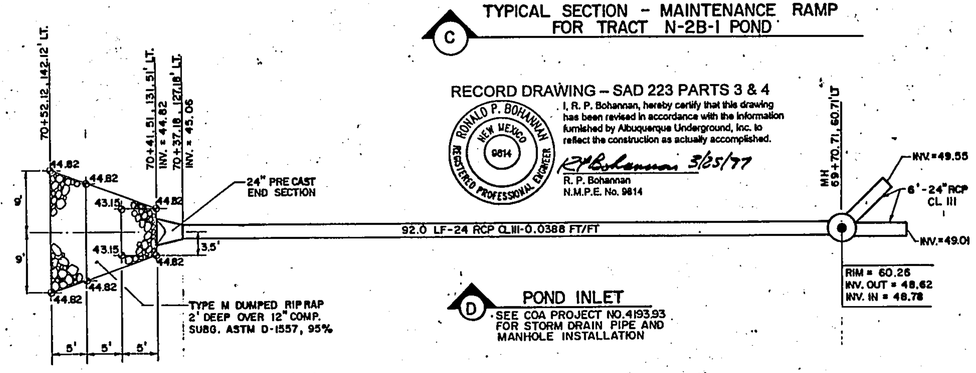

A TYPICAL SECTION - SLOPE ANALYSIS FOR TRACT N-2B-I POND
N.T.S.




B TYPICAL SECTION - SLOPE ANALYSIS FOR TRACT N-2B-I POND
N.T.S.




C TYPICAL SECTION - MAINTENANCE RAMP FOR TRACT N-2B-I POND




D POND INLET
SEE COA PROJECT NO.4193.93 FOR STORM DRAIN PIPE AND MANHOLE INSTALLATION

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R. P. Bohannan 3/25/97
R. P. Bohannan
N.M.P.E. No. 9814

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
STAKING REVIEWED BY
ACCEPTANCE BY
VERIFICATION BY
DRAWINGS CORRECTED BY
DATE
MICRO-FILM INFORMATION
RECORDED BY
DATE
NO.

BENCH MARKS
STATION NAME. NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA.
NORTHING. L528,940.94
EASTING. 38,006.54
ELEVATION. 5023.48

SURVEY INFORMATION
FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZVERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

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

REVISIONS

DESIGN
DESIGNED BY RPB DATE JUNE 1994
DRAWN BY DEC DATE JUNE 1994
CHECKED BY RPB DATE JUNE 1994

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H-7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

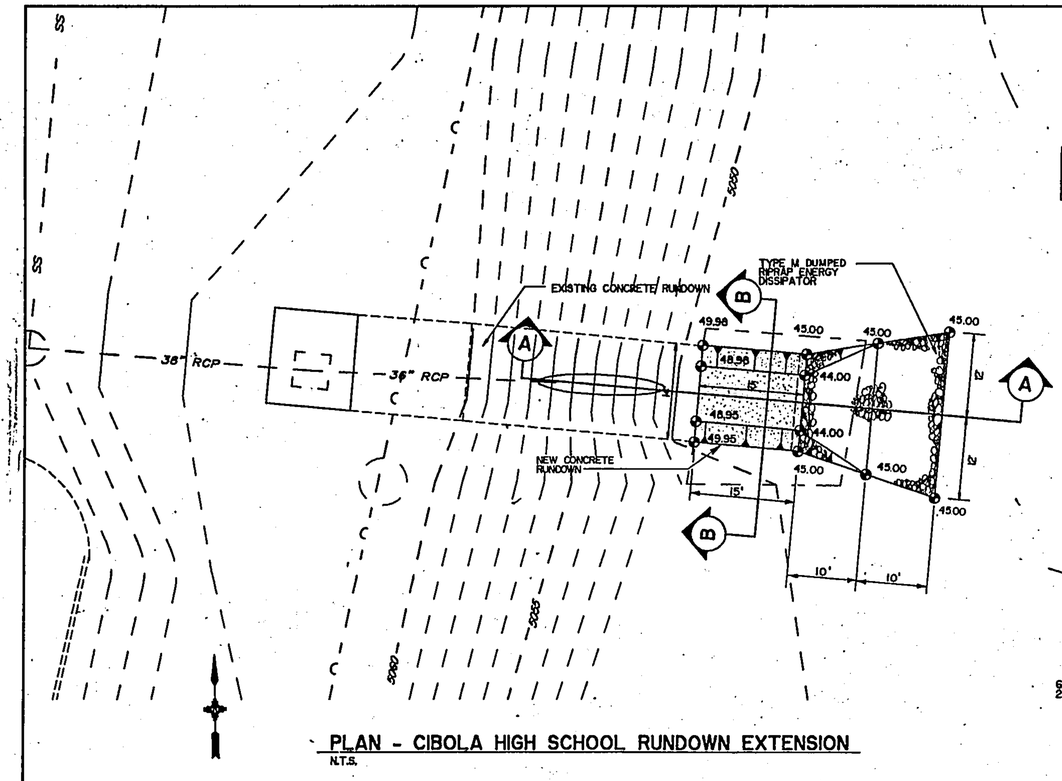
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
TRACT N-2B-I REGIONAL DETENTION POND
PLAN-PROFILE-DETAILS

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | | | |

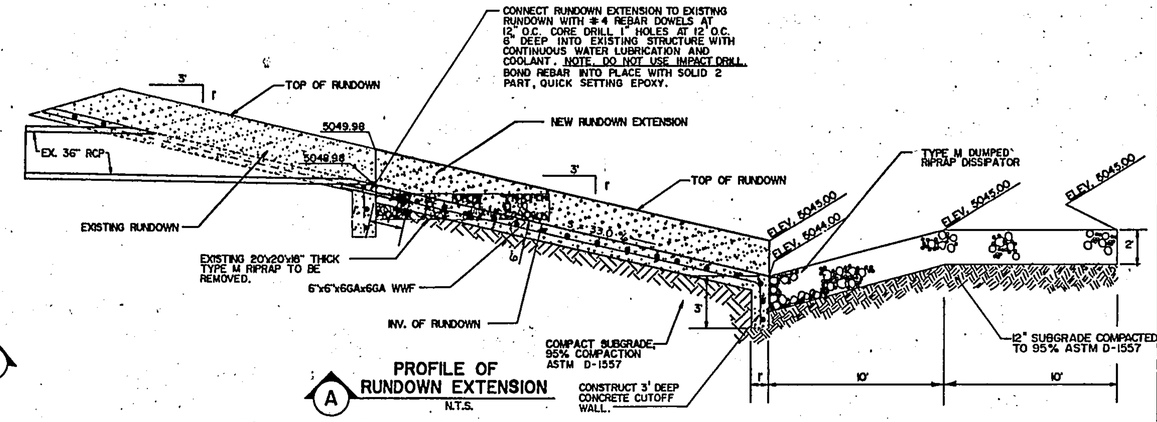
DESIGN REVIEW COMMITTEE

PROJECT NO. 4193.94 | MAP NO. A-14 | SHEET 52 OF 120



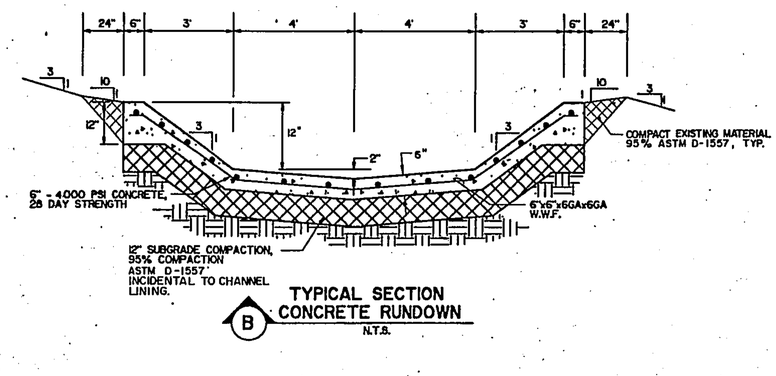

## PLAN - CIBOLA HIGH SCHOOL RUNDOWN EXTENSION

N.T.S.



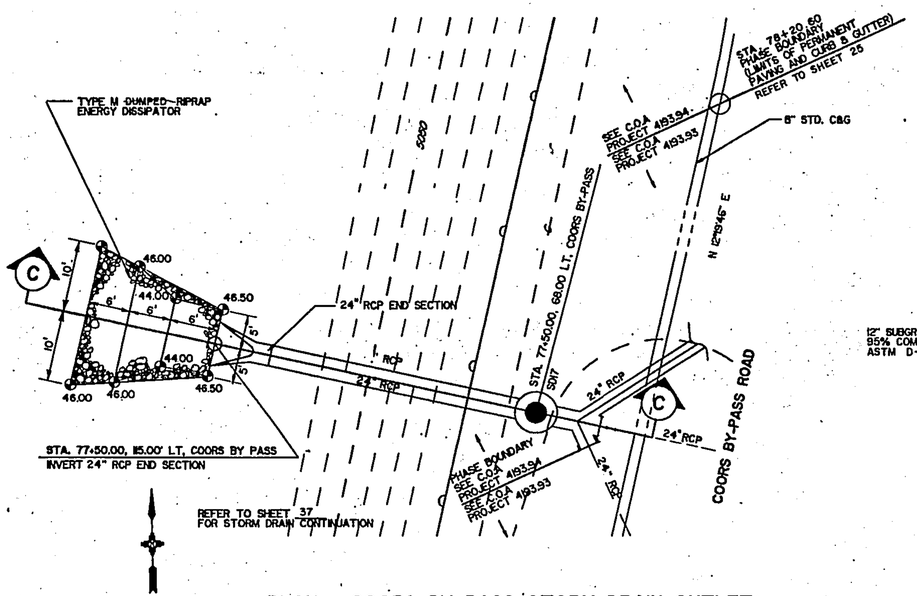

## PROFILE OF RUNDOWN EXTENSION

N.T.S.



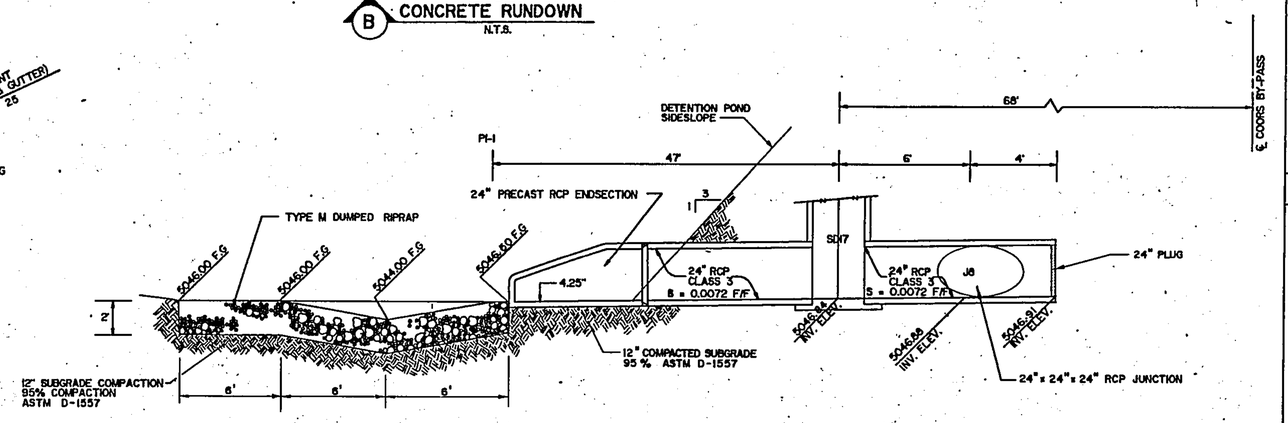

## TYPICAL SECTION CONCRETE RUNDOWN

N.T.S.




## PLAN - COORS BY-PASS STORM DRAIN OUTLET

N.T.S.




## COORS BY-PASS STORM DRAIN OUTLET DETAIL

N.T.S.

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

R. P. Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

AS BUILT INFORMATION

| | | |
|---|---|---|
| CONTRACTOR | | |
| STAKED BY | | DATE |
| INSPECTORS | | |
| CHANGES MADE BY | | DATE |
| FIELD VERIFICATION BY | | DATE |
| DRAWINGS CORRECTED BY | | DATE |

MICRO-FILM INFORMATION

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

BENCH MARKS

| | |
|---|---|
| STATION NAME: | NM 448 - N2 |
| BRASS TABLET SET IN A CONCRETE TABLET | |
| PROJECTING 0.3 FT. ABOVE GROUND LOCATED | |
| 9.30 MILES NORTH OF THE INTERSECTION OF | |
| COORS RD. AND CENTRAL AVE. ON THE WEST | |
| SIDE OF COORS RD. AT MT. BELL SUB STA. | |
| NORTHING: | L289,910.94 |
| EASTING: | 381108.54 |
| ELEVATION: | 5023.48 |

SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL | JAN. 91 |
| | BY HUGG SURVEY | |
| 2 | PLANIMETRIC AND | JAN. 91 |
| | TOPO MAPPING BY | |
| | T.R. MANN | |
| 3 | SITE SURVEYS BY | MAR. 91 |
| | HUGG SURVEY | |

ENGINEER'S SEAL

REGISTERED PROFESSIONAL ENGINEER 6411 NEW MEXICO 7-13-92

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

REVISIONS

| | | |
|---|---|---|
| DESIGNED BY | DWC, ALM, RPB | DATE APRIL, 1991 |
| DRAWN BY | ALM, DEC | DATE APRIL, 1991 |
| CHECKED BY | RPB | DATE APRIL, 1991 |

DESIGN


EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 COORS RD., NW, SUITE H - 7 8 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501

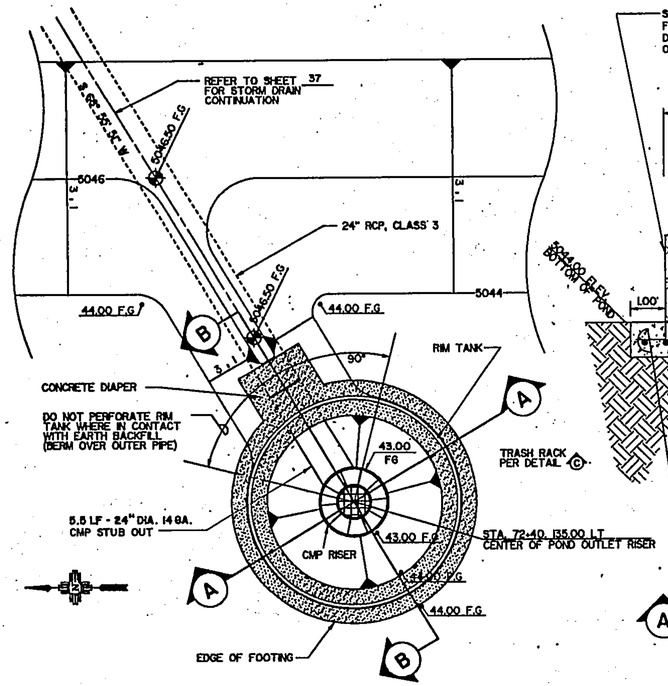

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
TRACT N-2B-1 REGIONAL DETENTION POND
CIBOLA HIGH SCHOOL / COORS-BYPASS INLETS AND DETAILS

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | AWD | 3-19-92 |
| TRANS. DEV. | | | WASTE WATER | AWD | " |
| HYDROLOGY | | | | | |

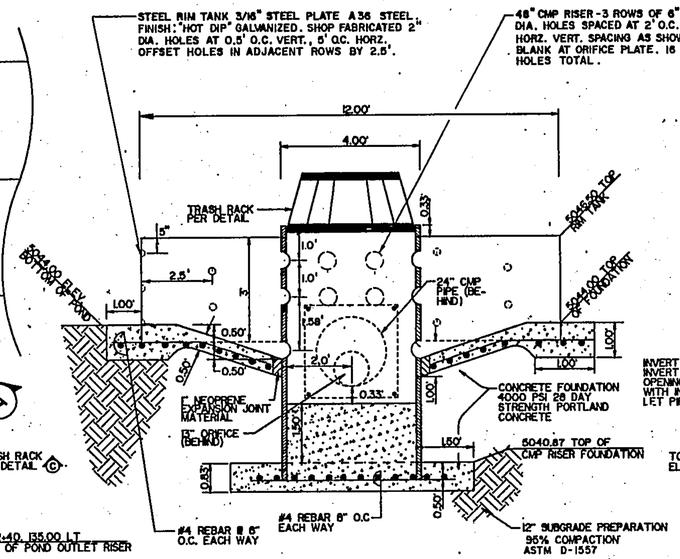
DESIGN REVIEW COMMITTEE

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A-13 B-13 | 53 | 120 |



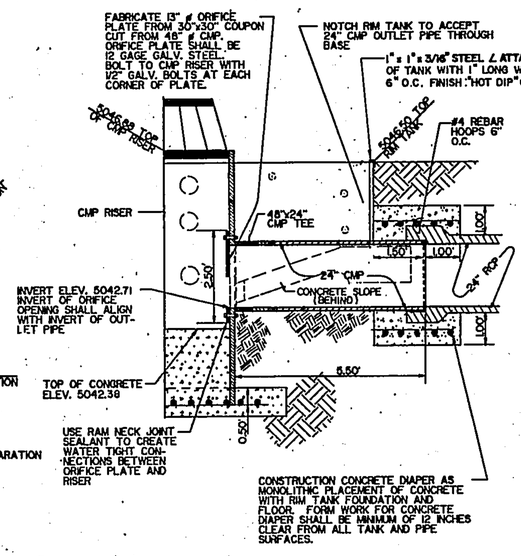

## PLAN - TRACT N-2B-I POND OUTLET STRUCTURE

N.T.S.



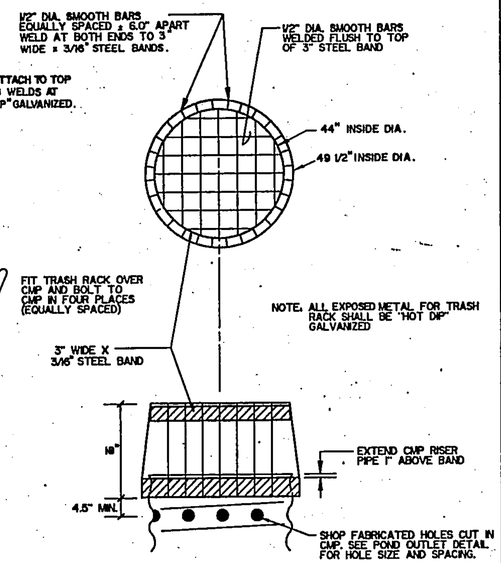

A TYPICAL SECTION - POND OUTLET RISER

N.T.S.




B TYPICAL SECTION - POND OUTLET PIPING

N.T.S.




C TRASH RACK DETAIL

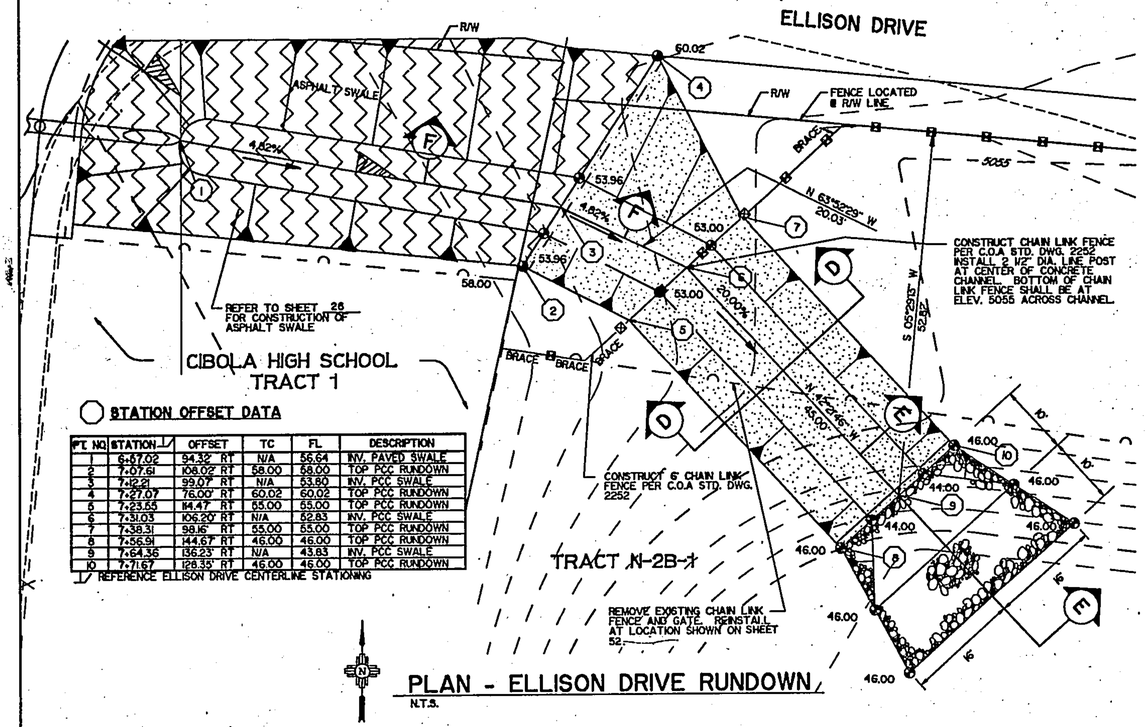
N.T.S.

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

R P Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814



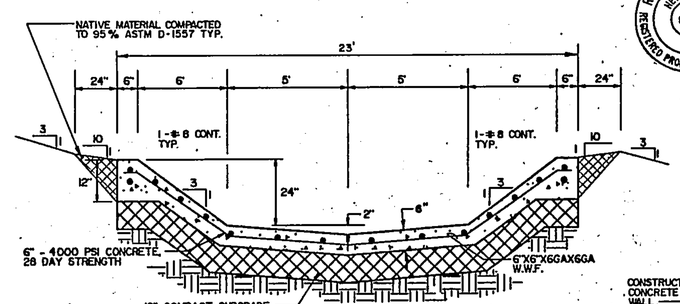

STATION OFFSET DATA

| PT. NO. | STATION ⊥ | OFFSET | TC | FL. | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | 6+57.02 | 94.32' RT | N/A | 56.64 | INV. PAVED SWALE |
| 2 | 7+07.61 | 108.02' RT | 58.00 | 58.00 | TOP PCC RUNDOWN |
| 3 | 7+19.21 | 99.07' RT | N/A | 53.80 | INV. PCC SWALE |
| 4 | 7+27.07 | 76.00' RT | 60.02 | 60.02 | TOP PCC RUNDOWN |
| 5 | 7+23.55 | 114.47' RT | 55.00 | 55.00 | TOP PCC RUNDOWN |
| 6 | 7+31.03 | 106.20' RT | N/A | 52.83 | INV. PCC SWALE |
| 7 | 7+38.31 | 98.16' RT | 55.00 | 55.00 | TOP PCC RUNDOWN |
| 8 | 7+56.91 | 144.67' RT | 46.00 | 46.00 | TOP PCC RUNDOWN |
| 9 | 7+64.36 | 136.23' RT | N/A | 43.83 | INV. PCC SWALE |
| 10 | 7+71.67 | 128.35' RT | 46.00 | 46.00 | TOP PCC RUNDOWN |

⊥ REFERENCE ELLISON DRIVE CENTERLINE STATIONING

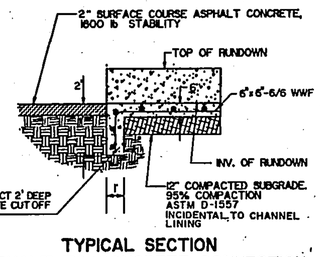
## PLAN - ELLISON DRIVE RUNDOWN

N.T.S.



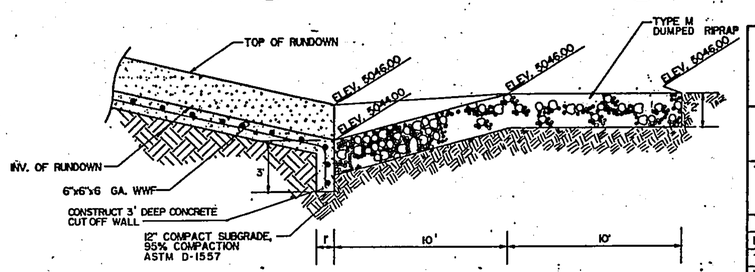

D TYPICAL SECTION CONCRETE RUNDOWN

N.T.S.




F TYPICAL SECTION ASPHALT TO CONCRETE CONNECTION

N.T.S.




E TYPICAL SECTION CONCRETE RUNDOWN

N.T.S.

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.

BENCH MARKS

STATION NAME: NM 448 - N2
BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL S.B. STA.
NORTHING: 1,528,910.34
EASTING: 358,068.54
ELEVATION: 5023.48

SURVEY INFORMATION

| NO. | FIELD NOTES BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL

REVISIONS

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

DESIGN

DESIGNED BY DWC, ALM DATE 1992
DRAWN BY ALM DATE 1992
CHECKED BY DWC DATE 1992

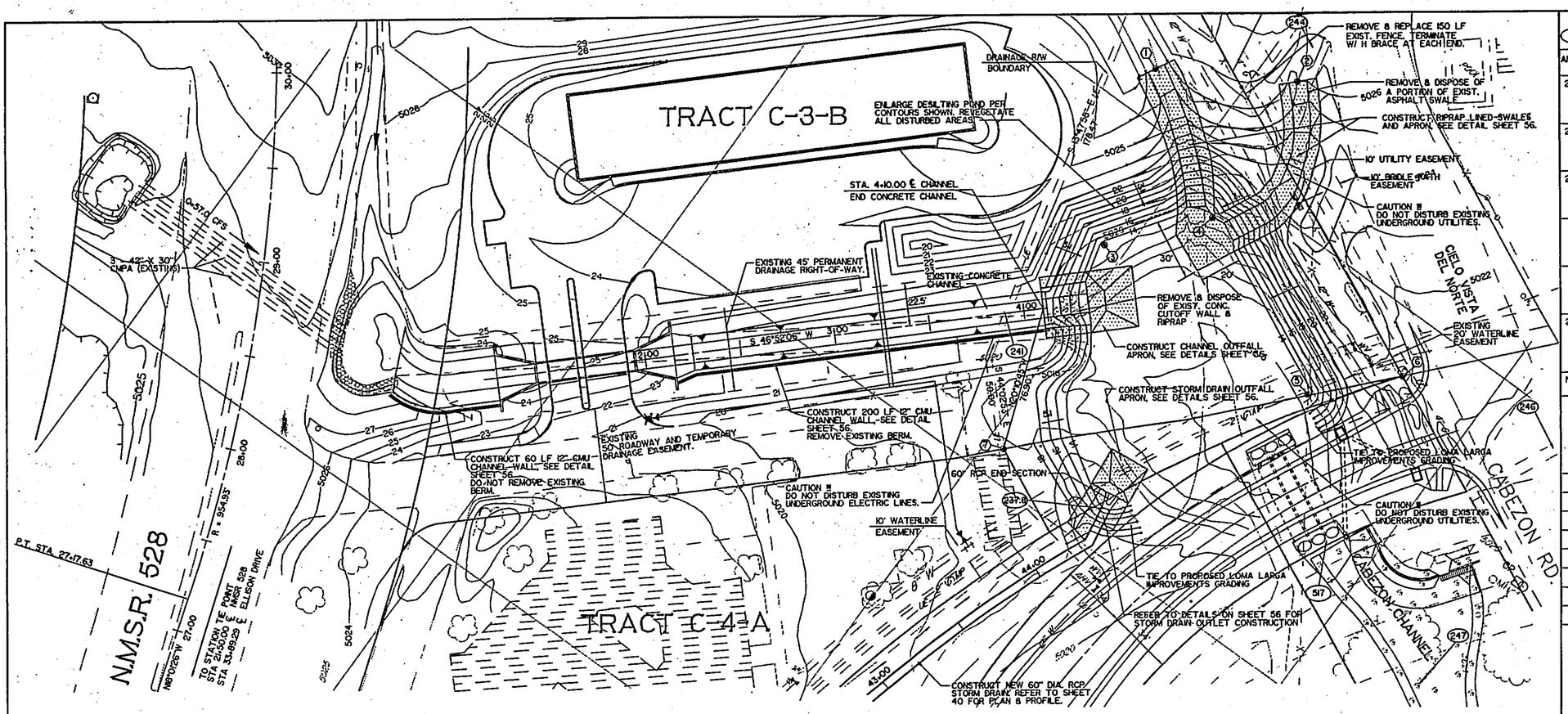
EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10151 COORS RD., NW, SUITE H - 7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-6021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

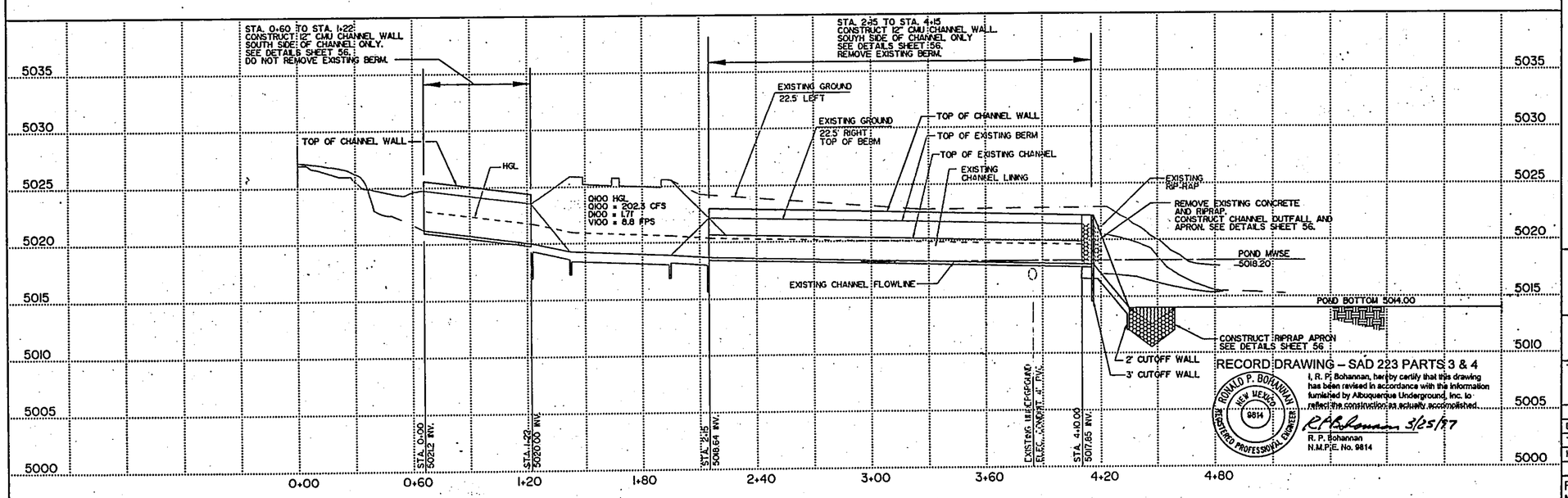
TITLE: SAD 223 - PART 4
TRACT N-2B-I REGIONAL DETENTION POND
COORS - BYPASS / ELLISON DR. INLET/OUTLET DETAILS

| APPROVALS | | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|
| D.R.C. Chair. | | WATER | AWD | 3-19-92 |
| TRANS. DEV. | | WASTE WATER | AWD | " |
| HYDROLOGY | | | | |

PROJECT NO. 4193.94 | MAP NO. A-13 B-13 | SHEET 54 OF 120




# CABEZON CHANNEL DESILTING POND




RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R P Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814

## HYDROLOGIC DATA

| ANALYSIS POINT | Q100 (CFS) | HYDROLOGIC CONDITIONS |
|---|---|---|
| 244 | 161.4 | FULLY DEVELOPED SKYVIEW ACRES |
| 241 | 202.3 | TRACT O-1A & O-2A FULLY DEVELOPED REMAINDER OF DRAINAGE BASIN-EXISTING CONDITIONS |
| 237.8 | 125.3 | FULLY DEVELOPED CONDITIONS WEST OF 528 |
| 246. | 50 | CORRALES MAIN CANAL EXISTING CONDITION PER M.R.G.C.D. |
| 517 | 463 | PEAK FLOW RATE FROM THE CABEZON CHANNEL POND WITH THE NOTED UPSTREAM CONDITIONS |
| 247 | 513 | PEAK FLOW RATE IN THE CABEZON CHANNEL WITH THE NOTED UPSTREAM CONDITIONS CAPACITY = 517.00 CFS WITH 2' OF FREEBOARD |

NOTE: 1. PEAK FLOW RATES IN THE VARIOUS INFLOWS DO OCCUR SIMULTANEOUSLY

## POINT COORDINATES

| POINT | NORTHING | EASTING |
|---|---|---|
| 1 | 32225.058 | 80156.501 |
| 2 | 32262.790 | 80220.063 |
| 3 | 32133.995 | 80188.798 |
| 4 | 32178.893 | 80226.339 |
| 5 | 32132.706 | 80321.036 |
| 6 | 32169.754 | 80355.750 |
| 7 | 32016.493 | 80209.475 |

AS BUILT INFORMATION

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

MICRO-FILM INFORMATION

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

BENCH MARKS

| | |
|---|---|
| STATION NAME. NN 446 - N2 | |
| BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED BY HUGG SURVEY | DATE JAN. 91 |
| 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA. | DATE JAN. 91 |
| NORTHING. L528.940.94 | |
| EASTING. 38,108.54 | DATE MAR. 91 |
| ELEVATION. 5023.48 | |

SURVEY INFORMATION:

| NO. | BY | DATE |
|---|---|---|
| | FIELD NOTES | |
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

GRAPHIC SCALE

1 inch = 30 ft. (horz.)

1 inch = 6 ft. (vert.)


EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H-7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501


| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | REVISIONS | |

| | | |
|---|---|---|
| DESIGN | DATE JUNE 1994 | DESIGNED BY RPB |
| | DATE JUNE 1994 | DRAWN BY DEC |
| | DATE JUNE 1994 | CHECKED BY RPB |

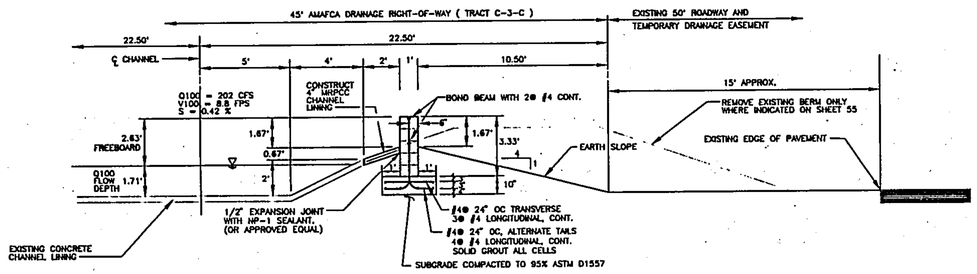
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223 - PART 4
CABEZON CHANNEL DESILTING POND
DRAINAGE IMPROVEMENTS

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | AMAFCA | | |

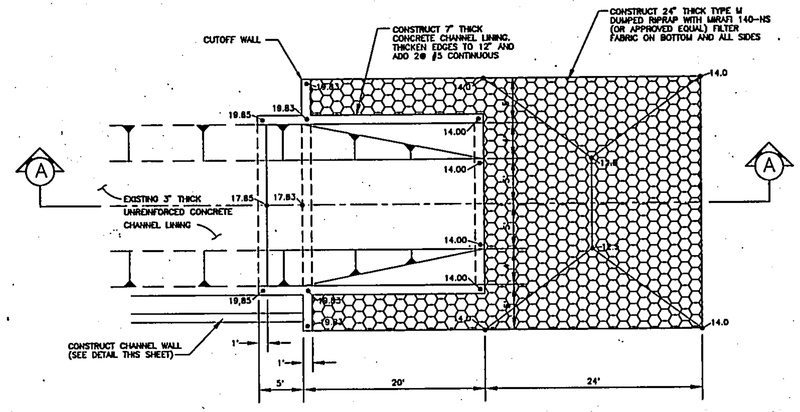
DESIGN REVIEW COMMITTEE

PROJECT NO. 4193.94 | MAP NO. A-14 | SHEET 55 OF 120



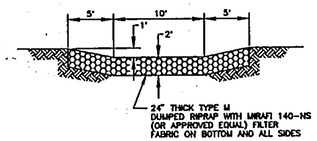

## CHANNEL WALL
### TYPICAL SECTION

NO SCALE



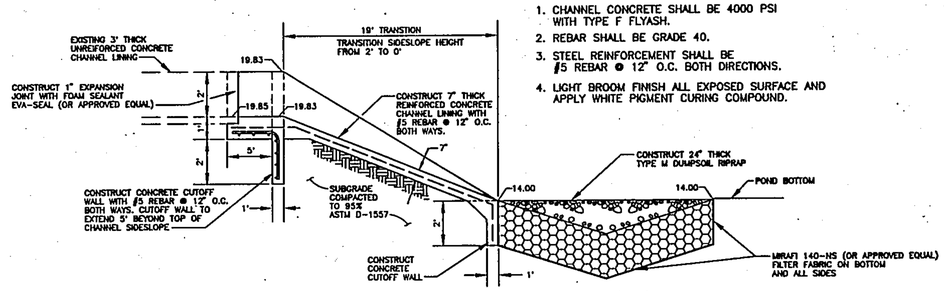

## CHANNEL OUTFALL APRON PLAN

NO SCALE




## RIPRAP SWALE
### TYPICAL SECTION

NO SCALE

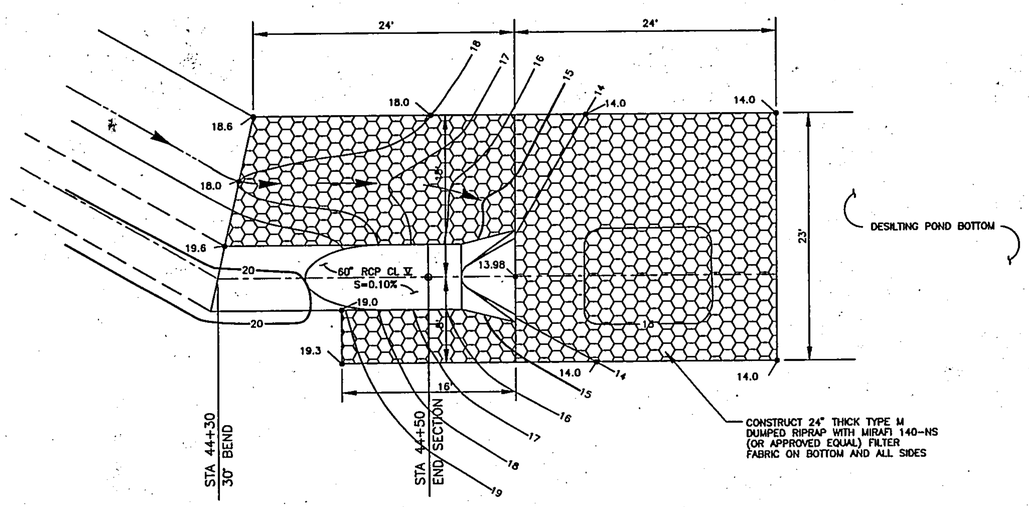



## CHANNEL OUTFALL APRON SECTION A–A

NO SCALE

NOTES:

1. CHANNEL CONCRETE SHALL BE 4000 PSI WITH TYPE F FLYASH.
2. REBAR SHALL BE GRADE 40.
3. STEEL REINFORCEMENT SHALL BE #5 REBAR @ 12" O.C. BOTH DIRECTIONS.
4. LIGHT BROOM FINISH ALL EXPOSED SURFACE AND APPLY WHITE PIGMENT CURING COMPOUND.




## 60" STORM DRAIN OUTFALL APRON PLAN

NO SCALE

RECORD DRAWING – SAD 223 PARTS 3 & 4

I, R. P. Bohannan, hereby certify that this drawing has been revised in accordance with the information furnished by Albuquerque Underground, Inc. to reflect the construction as actually accomplished.

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER

R. P. Bohannan 3/25/97

R. P. Bohannan
N.M.P.E. No. 9814

AS BUILT INFORMATION

| | |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | DATE |
| INSPECTORS PRELIMINARY MARKS BY | DATE |
| FIELD VERIFICATION BY | DATE |
| DRAWINGS CORRECTED BY | DATE |
| MICRO-FILM INFORMATION | |
| RECORDED BY | DATE |
| NO. | |

BENCH MARKS

| | |
|---|---|
| STATION NAME: | NM 448 - N2 |
| BRASS TABLET SET IN A CONCRETE TABLET PROJECTING 0.3 FT. ABOVE GROUND LOCATED 9.30 MILES NORTH OF THE INTERSECTION OF COORS RD. AND CENTRAL AVE. ON THE WEST SIDE OF COORS RD. AT MT. BELL SUB STA. | |
| NORTHING: | 1528.910.94 |
| EASTING: | 381108.54 |
| ELEVATION: | 5023.411 |

SURVEY INFORMATION

FIELD NOTES

| NO. | BY | DATE |
|---|---|---|
| 1 | HORIZ/VERT CONTROL BY HUGG SURVEY | JAN. 91 |
| 2 | PLANIMETRIC AND TOPO MAPPING BY T.R. MANN | JAN. 91 |
| 3 | SITE SURVEYS BY HUGG SURVEY | MAR. 91 |

ENGINEERS SEAL

RONALD P. BOHANNAN NEW MEXICO 9814 REGISTERED PROFESSIONAL ENGINEER 8/3/94

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

REVISIONS

| | | |
|---|---|---|
| DESIGNED BY | RPB | DATE JUNE 1994 |
| DRAWN BY | JMM | DATE JUNE 1994 |
| CHECKED BY | RPB | DATE JUNE 1994 |


EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
10131 Coors Rd., NW, Suite H-7 & 8
ALBUQUERQUE, NEW MEXICO 87114
(505) 898-8021 FAX (505) 898-8501


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SAD 223-PART 4
CABEZON CHANNEL DESILTING POND
DRAINAGE DETAILS

| APPROVALS | | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|
| D.R.C. Chair | ENGINEER OF WORK | WATER | | |
| TRANS. DEV. | SEP 9 1994 | WASTE WATER | | |
| HYDROLOGY | DESIGN REVIEW COMMITTEE | AMAFCA | | 8/9/94 |

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.94 | A-14 | 56 | 120 |

BOHANNAN - HUSTON INC.

DRAINAGE REPORT FOR
COTTONWOOD MALL AND
SAD NO. 223 - PART 2

AUGUST 1994

# DRAINAGE REPORT FOR COTTONWOOD MALL AND SAD 223 - PART 2

Prepared for:

**SIMON PROPERTY GROUP, L.P.**
**MERCHANTS PLAZA**
**P.O. BOX 7033**
**INDIANAPOLIS, IN 46207**

Prepared by:

Job No. 90316.83
and 94133.01

BOHANNAN-HUSTON INC.
*ENGINEERS ARCHITECTS PHOTOGRAMMETRISTS SURVEYORS*
COURTYARD I, 7500 JEFFERSON NE ALBUQUERQUE, NM 87109 TEL (505) 823-1000 FAX (505) 821-0892

# DRAINAGE REPORT FOR COTTONWOOD MALL AND SAD 223 - PART 2

AUGUST 1994

Prepared for:

SIMON PROPERTY GROUP, L.P.
MERCHANTS PLAZA
P.O. BOX 7033
INDIANAPOLIS, IN 46207

Prepared by:

Bohannan-Huston Inc.
Courtyard I
7500 Jefferson NE
Albuquerque, NM 87109

Prepared by:

Michael Jeffords

Under the Supervision of:

Kerry L. Davis, P.E.

KERRY L. DAVIS
NEW MEXICO
8/1/94
REGISTERED PROFESSIONAL ENGINEER



BOHANNAN-HUSTON INC.
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# COTTONWOOD MALL

*NOTE: The following report is a re-submittal of a previously approved drainage report. This report has been prepared using the updated procedures found in recent revisions to the DPM.*

## MASTER DRAINAGE PLAN

### I. PURPOSE

The purpose of this report is to outline the drainage and management plan for a major shopping mall site comprising approximately 90 acres, referred to as Cottonwood Mall, owned and to be developed by Simon Property Group, L.P. The Drainage Ordinance, Development Process Manual (DPM), North Coors Drainage Management Plan, and the Seven Bar Ranch Sector Development Plan have been utilized to prepare this report.

### II. SITE LOCATION AND DESCRIPTION

Cottonwood Mall is bordered on the north by Seven Bar Loop Road and the Alameda West Shopping Center, on the south by Coors Bypass Road, and the east by Corrales Road (old North Coors Road). Plate 1 better identifies the project locations.

The project site is generally located on the western bank of the Rio Grande Valley within the watershed area that is drained by the Calabacillas Arroyo. Existing soils at the site are identified in the Soil Conservation Service (SCS) report entitled "Soil Survey of Bernalillo County" as those within the Bluepoint Series. The specific Bluepoint soil type shown in the report is Bluepoint Loamy Fine Sand (BCC) which is characterized as a sandy alluvium and wind-borne deposits of moderate slopes. The water and wind erosion potential of these soils is severe. The hydrologic classification of the Bluepoint soils is class "A."



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## III. EXISTING CONDITIONS

The mall site is to be constructed at the southern portion of the old Alameda Airport. Existing buildings, underground storage tanks, and asphalt runways that are still in place will be removed and disposed of prior to the earthwork operations. The adjacent developments surrounding the proposed shopping center include the Alameda West Shopping Center to the north, the V.T. Autopark to the south, and the A.J. Black residential property to the east.

The V.T. Autopark is located on the south side of Coors Bypass Road, just west of Corrales Road. Infrastructure improvements (W.O. 3040) constructed as a requirement for this development included the southern 24' of the Coors Bypass Road up to the mall's west property line, sanitary sewer and water for the development, and the storm drain system that collects and discharges runoff to the Calabacillas Arroyo. The storm drain system constructed in Coors Bypass Road collects flows developed in the V.T. Autopark and a portion of the adjacent western property, Coors Bypass Road, and Eagle Ranch Road. Also, the majority of Cottonwood Mall runoff will be discharged to the downstream portion of this existing storm drain system.

The property of A.J. Black is located on the west side of Corrales Road south of Seven Bar Loop Road. The western and the southern boundaries of this property are shared with the mall site. An existing arroyo which begins on the mall site and continues easterly across the Black's property conveys collected flows into 2-24" C.M.P. storm drains, conveys flow under the road into a detention pond for ultimate discharge into the existing Middle Rio Grande Conservancy District Corrales Main Canal. Existing conditions show that a portion of the runoff developed on the mall site drains into the existing arroyo for ponding and discharges through the 24" storm drains to the Corrales Main Drain.

The perimeter street improvements that will be constructed as part of this development include the construction of the southern half of Seven Bar Loop Road, the

northern 24' of Coors Bypass Road, and drainage improvements to Corrales Road. The construction of the improvements fall under the constraints of both the Coors Corridor Plan and the Seven Bar Ranch Sector Development Plan. The public facilities associated with Cottonwood Mall will be constructed as part of the Special Assessment District (SAD) 223. SAD 223 will include other street, utility, and drainage improvements within Seven Bar Ranch, as required to serve parcels east of Coors Bypass Road. The construction of the street improvements is anticipated to be completed concurrently with the construction of the mall site.

One offsite drainage basin will discharge onto the Cottonwood Mall site; this comprises flows from the southern portion of Seven Bar Loop Road from the intersection with Cottonwood Drive to the intersection with Coors Bypass Road. Flows that develop in properties on the west and south sides of Coors Bypass Road that are not directly discharged into the Calabacillas Arroyo are conveyed either north or south in Coors Bypass Road. The southern flows will be collected and discharged through the existing storm system for release to the Calabacillas Arroyo, while the northern flows will be directed to a detention pond located on the east side of the Cibola High School site for ultimate discharge to the Cabezone Arroyo. The remaining flows that drain into Seven Bar Loop Road north of the site will be conveyed east in the roadway, then north in the proposed Cottonwood Drive to a detention pond that discharges to the Cabezone Arroyo. The Cooper Tract located north of the mall site and west of the Alameda West Shopping Center will drain toward the north for release into Ellison Drive. The information above was obtained from both the Seven Bar Drainage Management Plan (Easterling and Associates, Inc., January, 1990), and the North Coors Drainage Management Plan (Volume IV-D, AMAFCA, August, 1989).

## IV. HYDROLOGIC AND HYDRAULIC ANALYSIS

The hydrologic calculations which appear herein analyze the developed discharge for the 100-year, 24-hour storm, as identified within the recent revision to Chapter 22.2 of the Development Process Manual, 1/93 version (DPM Update). The

computerized watershed model "AHYMO" (9/93 version) was used to calculate and route flows through ponds and the storm drain system. Peak flows have been checked by the rational method as presented within the DPM Update.

The hydraulic calculations which appear herein were computed as follows. Street capacities were computed using Manning's equation with Manning's N values as identified within the DPM Update. Interior Loop Road capacities were computed with the maximum water elevation at top of curb. Inlet capacities on grade were determined in accordance with DPM charts and procedures. Inlet capacities in sump conditions were made using the orifice equation and the weir equation. Storm drain capacities and hydraulic grade line calculations are included in the report. Stage/storage/discharge relationships were developed for each pond and outlet using the orifice and weir equations, as applicable. Parking lot detention ponds have typically been designed to reach a depth of .75' at their peak discharge. All calculations have been made in accordance with DPM procedures.

The basin boundaries, and conceptual proposed contours are shown on Plate 1 of the attached plans. The proposed storm sewer diameters, lengths, slopes, HGL information, manhole sizes and service connection information are shown on the attached plan and profile sheets (see Appendix III).

## V. DRAINAGE MANAGEMENT PLAN

The mall site was divided into three major basins (A, B, and C) which will drain to the existing storm system in Coors Bypass Road, and a fourth basin (Basin D) which will drain to Seven Bar Loop Road, as shown on the drainage plan (Plate 1). The approved drainage report for the J.T. Autopark development established the maximum flowrate of developed runoff that can be discharged into the existing storm sewer system from the mall site to be 169 cfs. The water collected in the existing storm sewer system will discharge into the Calabacillas Arroyo for ultimate release into the Rio Grande. The remaining developed runoff from Basin D will be discharged into the

south side of Seven Bar Loop Road for collection and discharge across Corrales Road into the Corrales Main Canal. This flow is governed by the North Coors Drainage Management Plan.

The three major basins (A, B, and C) are comprised of a series of contributing basins. Each contributing basin is provided a means of collecting the flow (junction boxes, inlets, or ponds) and a storm sewer lateral to convey the flow. The table given below shows the relationship between the major basins and the contributing basins as identified on Plate 1 and in the hydrologic analysis in Appendix I.

| MAJOR BASINS | CONTRIBUTING BASINS |
|---|---|
| Basin A | Basins 1-17 |
| Basin B | Basins 1a-27 |
| Basin C | Basins 1a-3e |

Basin A and Basin B were designed to collect and distribute approximately two-thirds of the developed flow generated from the shopping mall to the existing storm sewer. Basin C-2 was designed to collect the flows generated in the Reserve Parcel at the intersection of Corrales Road and Coors Bypass Road and route it to the existing storm system.

Flows from Basins C-1-A and C-3-A, through C-3-E are collected at the mall entrance at the southeast corner of the A.J. Black property and conveyed to the system which collects Basin B flows.

Basin A routes flows from the southwest corner of the site easterly along the southern half of the site to a manhole which combines the flows with those collected in Basin B. The peak flowrate developed in the Basin A as identified in the HYMO output is 44.5 cfs. Basin B routes flows from the northwest corner of the site easterly along the northern half of the site, then south along the interior loop road to the manhole

described above. The peak flow generated in Basin B at the intersecting manhole is 120.7 cfs. The water is then conveyed south to a manhole that intercepts the flows from Basins A and B. The peak flowrate to be discharged into the existing storm sewer system in Coors Bypass Road as identified in the HYMO output is 160 cfs.

Basin D is located at the northeast corner of the site. Basin D-1 flows will be collected in a small detention pond prior to discharge into Seven Bar Loop Road. Basin D-2 flows will be discharged directly into Seven Bar Loop Road. The flows will then be conveyed from Corrales Road into an existing arroyo. The North Coors Drainage Management Plan identified 106 cfs to be discharged from the mall site in the developed condition to the existing arroyo. The peak flowrate that was calculated for the 100-year, 6-hour storm which will be discharged from Basin D (developed) was 11.1 cfs. Of the 11.1 cfs, 7.7 cfs will be collected in a small detention pond at the northeast corner of the site and a peak of 7.5 cfs will be released into the southern portion of Seven Bar Loop Road. The flow will then continue south along Corrales Road into the existing arroyo (see Plate 1).

The runoff collected on the roof areas will be released by a series of gutters and pipes into the storm sewer system. The openings that will be provided to allow the runoff collected on the roof into the gutter system will be sized so that no ponding will occur on the roof areas.

It was determined through several iterations that detention ponding will be necessary in order to meet the discharge requirements at the outlet to the existing storm sewer and Seven Bar Loop Road. Size, shape, and depth of each pond will vary depending on the location and outlet conditions. The interior slopes of the ponds will be landscaped with sod and will be designed to a maximum of a 3:1 (horizontal:vertical) slope. The bottom surface of the pond will be sodded or lined with gravel in order to collect sediment and provide for erosion control. Inlets and manhole inlets will be utilized to control the discharge from the detention ponds.

Extensive landscaping will be provided on the mall site at locations not utilized for parking or buildings. Landscaped areas will include any combination of grass, trees, or shrubs. The landscaping used will provide for erosion protection of side slopes and ponds, beautification of the site, and provide an aesthetic buffer between the site and surrounding developments. The treatment provided for the individual landscaped areas will be determined by the Landscape Architect at the appropriate time.

## VI. PHASING AND EROSION CONTROL

The construction of the mall site will be completed in one phase with the surrounding Reserve Parcels to be developed as need dictates. The infrastructure improvements required for the building will be completed with the construction of the mall. A stub-out will be provided from the storm sewer system to the building areas for the roof drains.

Soil erosion and dust control are recognized as significant problems for this development. As identified in the Seven Bar Ranch Sector Development Plan, this area will be subject to the Albuquerque/Bernalillo County Air Quality Control Board regulations and ordinances regarding soil erosion and dust control during development and construction. This includes obtaining a "Top Soil Disturbance Permit" which shall outline specific dust control plans and measures for this project. It is the responsibility of the Contractor to obtain the necessary permit before mass grading operations start.

The site will be graded in two phases to allow for greater ease in mall construction and pipe installation. All lower level parking areas will be mass graded in Phase I grading. Only upper level parking areas on the far north and west sides of the site will be mass graded in Phase I grading. Mall pad areas will be excavated and tie slopes to the surrounding parking areas will also occur in Phase I. Any excess earth will be stockpiled on the perimeter (future) pad sites. Phase II grading will fill in all upper level parking areas on the east side of the site after substantial mall completion and pipe installation. Extensive erosion control and wind protection will be necessary

during the mass grading operations. These measures should include interim contour berms, snow fences, and site watering. The control berms should follow the boundary of the site to keep flows collected during grading operations on the site and to stop sediment from damaging adjacent properties. Snow fences should be placed generally in the north/south directions along the eastern boundary of the site prior to grading operations in order to contain wind-borne materials onsite. Water should be applied during all phases of the earthwork and especially at the end of the working day in order to form a crust surface. Those portions of the Reserve Parcels that are not to be developed within one year shall be treated with hay mulch crimped into north/south furrows to provide for long term dust control.

## VI. CONCLUSIONS

The Cottonwood Mall is to be constructed between Coors Bypass Road and Seven Bar Loop Road on the west side of Corrales Road. The offsite infrastructure improvements include the construction of the north portion of Coors Bypass Road, the southern half of Seven Bar Loop Road, and channelization improvements to the Corrales Road.

The site has been designed to convey developed flows to the existing storm sewer system in Coors Bypass Road. Minor flows from Wards T.B.A. will be conveyed to the Corrales Main Canal via the following route: Seven Bar Loop Road to Corrales Road to an existing arroyo to the Canal. The constraints on discharging developed runoff offsite to the existing storm system or the existing arroyo were identified in the drainage report prepared for the V.T. Autopark site and the North Coors Drainage Management Plan, respectively.

Based on the hydrologic analysis contained herein, and previous research and analysis, detention ponding will be necessary to control the discharge to the previously approved flowrates. The detention ponds will be landscaped and standpipe structures will be utilized for discharge. Roof flows will be collected by a series of gutters and

pipes for discharge into the storm sewer. The maximum peak flowrate generated onsite by this development when fully developed has been computed to be 160 cfs, which is less than the 169 cfs allowed by the V.T. Autopark Drainage Management Plan.

The project is to be graded in two phases. Extensive dust and erosion control measures will be necessary as required by the Air Quality Control Board regulations and ordinances. These measures shall include interim control berms, water protection, snow fences, and crimped hay much. It will be the Contractor's responsibility to obtain the necessary permits and provide the control measures during construction.

The construction of the mall is to be completed in one phase and the required infrastructure will be installed concurrently. The Reserve Parcels will be developed in future phases.

# APPENDICES

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I

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SUMMARY OF HYDROLOGIC DATA

| BASIN ID | AREA AC | AREA SQ.MI. | % LAND TREATMENT A | B | C | D | TIME TO PEAK | DISCHARGE CFS/AC | Q (R) CFS | Q(HYMO) CFS |
|---|---|---|---|---|---|---|---|---|---|---|
| A-1 | 2.990 | 0.0047 | 0.0 | 14.0 | 0.0 | 86.0 | 0.1333 | 4.04 | 12.1 | 12.0 |
| A-2 | 6.070 | 0.0095 | 0.0 | 6.0 | 0.0 | 94.0 | 0.1333 | 4.23 | 25.7 | 25.3 |
| A-3 | 7.970 | 0.0125 | 0.0 | 14.0 | 0.0 | 86.0 | 0.1333 | 4.04 | 32.2 | 31.8 |
| A-4 | 1.970 | 0.0031 | 0.0 | 4.0 | 0.0 | 96.0 | 0.1333 | 4.28 | 8.4 | 8.3 |
| A-6 | 1.710 | 0.0027 | 0.0 | 3.0 | 12.0 | 85.0 | 0.1333 | 4.12 | 7.0 | 7.0 |
| A-7 | 0.640 | 0.0010 | 0.0 | 4.0 | 0.0 | 96.0 | 0.1333 | 4.28 | 2.7 | 2.7 |
| A-8 | 3.430 | 0.0054 | 0.0 | 6.0 | 5.0 | 89.0 | 0.1333 | 4.15 | 14.3 | 14.1 |
| A-9 | 1.530 | 0.0024 | 0.0 | 3.0 | 13.0 | 84.0 | 0.1333 | 4.10 | 6.3 | 6.2 |
| A-10 | 0.230 | 0.0004 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.0 | 1.1 |
| A-11 | 0.730 | 0.0011 | 0.0 | 7.0 | 22.0 | 71.0 | 0.1333 | 3.88 | 2.8 | 2.7 |
| A-12 | 2.520 | 0.0039 | 0.0 | 3.0 | 6.0 | 91.0 | 0.1333 | 4.21 | 10.6 | 10.3 |
| A-13-A-1 | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| A-13-A-2 | 0.440 | 0.0007 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.9 | 1.9 |
| A-13-B-1 | 0.200 | 0.0003 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.9 | 0.8 |
| A-13-B-2 | 0.740 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.2 | 3.3 |
| A-13-C | 0.720 | 0.0011 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.1 | 3.0 |
| A-14-A | 0.740 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.2 | 3.3 |
| A-14-B-1 | 1.230 | 0.0019 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 5.4 | 5.2 |
| A-14-B-2 | 0.510 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.2 | 2.2 |
| A-15-A | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.1 |
| A-15-B | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.1 |
| A-16 | 0.080 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| A-17 | 2.820 | 0.0044 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 11.9 | 11.8 |
| | 38.740 | 0.061 | | | | | | | | |
| B-1-A | 2.470 | 0.0039 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 10.5 | 10.4 |
| B-1-B | 1.100 | 0.0017 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 4.7 | 4.6 |
| B-1-C | 0.950 | 0.0015 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 4.0 | 4.0 |
| B-1-D | 2.780 | 0.0043 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 11.8 | 11.5 |
| B-2-A | 0.990 | 0.0015 | 0.0 | 31.0 | 0.0 | 69.0 | 0.1333 | 3.64 | 3.6 | 3.3 |
| B-2-B | 0.310 | 0.0005 | 0.0 | 0.0 | 100.0 | 0.0 | 0.1333 | 2.87 | 0.9 | 0.9 |
| B-3 | 2.430 | 0.0038 | 0.0 | 9.0 | 11.0 | 80.0 | 0.1333 | 3.99 | 9.7 | 9.6 |
| B-4 | 2.080 | 0.0033 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 9.1 | 9.1 |
| B-5 | 3.860 | 0.0060 | 0.0 | 5.0 | 0.0 | 95.0 | 0.1333 | 4.25 | 16.4 | 16.1 |
| B-6 | 0.370 | 0.0006 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.6 | 1.7 |
| B-7 | 0.500 | 0.0008 | 0.0 | 0.0 | 100.0 | 0.0 | 0.1333 | 2.87 | 1.4 | 1.5 |
| B-8-A | 1.620 | 0.0025 | 0.0 | 5.0 | 0.0 | 95.0 | 0.1333 | 4.25 | 6.9 | 6.7 |
| B-8-B | 1.200 | 0.0019 | 0.0 | 3.0 | 0.0 | 97.0 | 0.1333 | 4.30 | 5.2 | 5.2 |
| B-8-C | 2.970 | 0.0046 | 0.0 | 5.0 | 0.0 | 95.0 | 0.1333 | 4.25 | 12.6 | 12.3 |
| B-9 | 2.370 | 0.0037 | 0.0 | 1.0 | 11.0 | 88.0 | 0.1333 | 4.18 | 9.9 | 9.7 |
| B-10 | 2.100 | 0.0033 | 0.0 | 13.0 | 0.0 | 87.0 | 0.1333 | 4.07 | 8.5 | 8.5 |
| B-13 | 1.900 | 0.0030 | 0.0 | 4.0 | 5.0 | 91.0 | 0.1333 | 4.20 | 8.0 | 8.0 |
| B-14 | 2.130 | 0.0033 | 0.0 | 3.0 | 12.0 | 85.0 | 0.1333 | 4.12 | 8.8 | 8.6 |
| B-15-A | 0.935 | 0.0015 | 0.0 | 4.0 | 10.0 | 86.0 | 0.1333 | 4.13 | 3.9 | 3.8 |
| B-15-B | 0.935 | 0.0015 | 0.0 | 4.0 | 10.0 | 86.0 | 0.1333 | 4.13 | 3.9 | 3.8 |
| B-16 | 2.140 | 0.0033 | 0.0 | 3.0 | 0.0 | 97.0 | 0.1333 | 4.30 | 9.2 | 9.0 |
| B-18-A-1 | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| B-18-A-2 | 0.460 | 0.0007 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.0 | 1.9 |
| B-18-B | 0.270 | 0.0004 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.2 | 1.1 |
| B-18-C | 0.480 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| B-19-A | 0.480 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.1 |
| B-19-B | 0.790 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.5 | 3.3 |
| B-19-C | 0.760 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.3 | 3.1 |
| B-19-D | 0.560 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.4 | 2.5 |
| B-20-A | 0.590 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.6 | 2.8 |
| B-20-B | 1.080 | 0.0017 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 4.7 | 4.7 |
| B-20-C | 0.580 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.5 | 2.5 |
| B-21-A | 0.560 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.4 | 2.5 |
| B-21-B | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| B-21-C | 0.505 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.2 | 2.2 |
| B-21-D | 0.505 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.2 | 2.2 |
| B-22 | 0.060 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| B-23 | 0.040 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.2 | 0.3 |
| B-24 | 0.060 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| B-25 | 0.080 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| B-26 | 0.600 | 0.0009 | 0.0 | 0.0 | 100.0 | 0.0 | 0.1333 | 2.87 | 1.7 | 1.6 |
| B-27 | 0.050 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.2 | 0.3 |
| | 45.630 | 0.0713 | | | | | | | | |
| C-1-A | 4.380 | 0.0068 | 0.0 | 30.0 | 0.0 | 70.0 | 0.1333 | 3.67 | 16.1 | 15.7 |
| C-1-B | 0.710 | 0.0011 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.1 | 3.0 |
| C-2 | 1.780 | 0.0028 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 7.8 | 7.9 |
| C-3-A | 0.880 | 0.0014 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.8 | 3.9 |
| C-3-C | 0.360 | 0.0006 | 0.0 | 7.0 | 0.0 | 93.0 | 0.1333 | 4.21 | 1.5 | 1.6 |
| C-3-D | 0.250 | 0.0004 | 0.0 | 100.0 | 0.0 | 0.0 | 0.1333 | 2.03 | 0.5 | 0.5 |
| C-3-E | 0.180 | 0.0003 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.8 | 0.8 |
| | 8.540 | 0.0133 | | | | | | | | |
| D-1 | 1.820 | 0.0028 | 0.0 | 12.0 | 0.0 | 88.0 | 0.1333 | 4.09 | 7.4 | --- |
| D-2 | 0.670 | 0.0010 | 0.0 | 20.0 | 0.0 | 80.0 | 0.1333 | 3.90 | 2.6 | --- |
| D-3 | 0.240 | 0.0004 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.0 | --- |
| | 2.730 | 0.0043 | | | | | | | | |
| TOTAL | 95.64 | | | | | | | | | |

[C9413301.HYDRO] HYD_OAT.WK4

# TIME TO PEAK CALCULATIONS

| Description | Variable | Unit | Basin B-4 | Basin A-2 | Basin A-3 | Basin C-1-A |
|---|---|---|---|---|---|---|
| Total Reach | L | Feet | 1400.0 | 650.0 | 1000.0 | 1000.0 |
| Overland Reach | L1 | Feet | 30.0 | 400.0 | 400.0 | 200.0 |
| Overland K | K1 | | 1 | 1 | 1 | 1 |
| Overland Slope | S1 | Percent | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Overland Slope | S1' | Percent | 1.000 | 1.000 | 1.000 | 1.000 |
| Gully Reach | L2 | Feet | 470 | 250 | 600 | 800 |
| Gully K | K2 | | 2 | 2 | 2 | 2 |
| Gully Slope | S2 | Percent | 1.000 | 1.000 | 1.000 | 0.700 |
| Adj. Gully Slope | S2' | Percent | 1.000 | 1.000 | 1.000 | 0.700 |
| Arroyo Reach | L3 | Feet | 900.0 | 0.0 | 0.0 | 0.0 |
| Arroyo K | K3 | | 3 | 1 | 1 | 1 |
| Arroyo Slope | L3 | Percent | 2.000 | 1.000 | 1.000 | 4.000 |
| Adj. Arroyo Slope | S3' | Percent | 2.000 | 1.000 | 1.000 | 4.000 |
| Lca | Lca | Feet | 0.0 | 0.0 | 0.0 | 0.0 |
| Base Discharge | Qb | cfs | 11.0 | 25.3 | 11.0 | 10.0 |
| Ground Slope S | S | Percent | 1.643 | 1.000 | 1.000 | 0.760 |
| Adjusted Slope S' | S' | Percent | 1.643 | 1.000 | 1.000 | 0.760 |
| K | K | | 2.289 | 1.238 | 1.429 | 1.692 |
| K' | K' | | 2.289 | 1.238 | 1.429 | 1.692 |
| K" | K" | | 3.628 | 5.402 | 4.650 | 5.243 |
| K''' | K''' | | 2.487 | 3.703 | 3.187 | 3.594 |
| Kn | Kn | | 0.042 | 0.042 | 0.042 | 0.042 |
| Orig. TC | TC | Hrs. | 0.133 | 0.146 | 0.194 | 0.188 |
| K Value Used | K | | 2.289 | 1.238 | 1.429 | 1.692 |
| Adjusted TC | TC' | Hrs. | 0.122 | 0.049 | 0.087 | 0.089 |
| Time Lag | Lg | Hrs. | - | - | - | - |
| Time to Peak | TP | Hrs. | 0.133 | 0.133 | 0.133 | 0.133 |

NOTE: SINCE THESE FOUR BASINS ARE THE LARGEST, LONGEST, FLATTEST AND HAVE MINIMUM TP VALUES IT CAN BE ASSUMED THAT ALL OTHER BASINS ARE AT THE MINIMUM TP.

COTTONWOOD MALL
100-YEAR, 24-HOUR STORM
HYMO SUMMARY TABLE



| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| HYDROGRAPH AT | A1 | 1 | - | 0.0047 | 12.0 | NA | 1.50 | 3.99 |
| RESERVOIR HYD | A1 | 1 | 1 | 0.0047 | 6.7 | | 1.65 | |
| ROUTED 18" | | 1 | 2 | | | | | |
| | A1 | 1 | | 0.0047 | 6.7 | | 1.65 | |
| | A1:MH14 | 2 | | 0.0047 | 6.7 | | 1.63 | |
| HYDROGRAPH AT | A13A2 | 3 | - | 0.0007 | 1.9 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 3 | 4 | | | | | |
| | A13A2 | 3 | | 0.0007 | 1.9 | | 1.50 | |
| | A13A2:14 | 4 | | 0.0007 | 1.9 | | 1.50 | |
| COMBINED FLOW AT | MH14 | 2& 4 | 5 | 0.0054 | 8.1 | | 1.57 | |
| ROUTED 18" | | 5 | 6 | | | | | |
| | MH14 | 5 | | 0.0054 | 8.1 | | 1.57 | |
| | MH14:M15 | 6 | | 0.0054 | 8.0 | | 1.60 | |
| HYDROGRAPH AT | A13A1 | 7 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 7 | 8 | | | | | |
| | A13A1 | 7 | | 0.0008 | 2.2 | | 1.50 | |
| | A13A1:MH | 8 | | 0.0008 | 2.1 | | 1.50 | |
| HYDROGRAPH AT | A13B1 | 9 | - | 0.0003 | 0.8 | NA | 1.50 | 4.33 |
| ROUTED 12" | | 9 | 10 | | | | | |
| | A13B1 | 9 | | 0.0003 | 1.0 | | 1.50 | |
| | A13B1:MH | 10 | | 0.0003 | 1.0 | | 1.50 | |
| COMBINED FLOW AT | MH15A1 | 8&10 | 11 | 0.0011 | 2.9 | | 1.50 | |
| HYDROGRAPH AT | A13B2 | 12 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| ROUTED 12" | | 12 | 13 | | | | | |
| | A13B2 | 12 | | 0.0012 | 3.3 | | 1.50 | |
| | A13B2:MH | 13 | | 0.0012 | 3.3 | | 1.50 | |
| COMBINED FLOW AT | MH15A2 | 11&13 | 14 | 0.0023 | 6.2 | | 1.50 | |
| HYDROGRAPH AT | A13C | 15 | - | 0.0011 | 3.0 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 15 | 16 | | | | | |
| | A13C | 15 | | 0.0011 | 3.0 | | 1.50 | |
| | A13C2:MH | 16 | | 0.0011 | 3.0 | | 1.50 | |
| COMBINED FLOW AT | MH15ATOT | 14&16 | 17 | 0.0034 | 9.2 | | 1.50 | |
| ROUTED 15" | | 17 | 18 | | | | | |
| | MH15ATOT | 17 | | 0.0034 | 9.2 | | 1.50 | |
| | MH15B:A2 | 18 | | 0.0034 | 9.0 | | 1.50 | |
| HYDROGRAPH AT | A2 | 19 | - | 0.0095 | 25.3 | NA | 1.50 | 4.16 |
| RESERVOIR HYD | A2:POND | 19 | 19 | 0.0095 | 12.2 | | 1.70 | |
| COMBINED FLOW AT | A2:MH15B | 18&19 | 20 | 0.0129 | 19.9 | | 1.53 | |
| ROUTED 21" | | 20 | 21 | | | | | |
| | A2:MH15B | 20 | | 0.0129 | 19.9 | | 1.53 | |
| | A2:MH15 | 21 | | 0.0129 | 19.9 | | 1.53 | |
| COMBINED FLOW AT | MH15TOT | 21& 6 | 4 | 0.0183 | 27.8 | | 1.53 | |
| ROUTED 27" | | 4 | 2 | | | | | |
| | MH15TOT | 4 | | 0.0183 | 27.8 | | 1.53 | |
| | MH15:MH1 | 2 | | 0.0183 | 27.7 | | 1.57 | |
| HYDROGRAPH AT | A3 | 3 | - | 0.0125 | 31.8 | NA | 1.50 | 3.97 |
| HYDROGRAPH AT | A4 | 4 | - | 0.0031 | 8.3 | NA | 1.50 | 4.20 |

[C9413301.HYDRO]CWHYM100.MSJ/.OUT

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| COMBINED FLOW AT | A3:A4 | 3& 4 | 5 | 0.0156 | 40.1 | | 1.50 | |
| ROUTED 33" | | 5 | 8 | | | | | |
| | A3:A4 | 5 | | 0.0156 | 40.1 | | 1.50 | |
| | A3:A4:RT | 8 | | 0.0156 | 40.2 | | 1.50 | |
| COMBINED FLOW AT | MH16 | 2& 8 | 9 | 0.0339 | 66.2 | | 1.50 | |
| ROUTED 42" | | 9 | 10 | | | | | |
| | MH16 | 9 | | 0.0339 | 66.2 | | 1.50 | |
| | MH16:MH1 | 10 | | 0.0339 | 65.5 | | 1.50 | |
| HYDROGRAPH AT | A10 | 11 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |
| ROUTED 18" | | 11 | 12 | | | | | |
| | A10 | 11 | | 0.0004 | 1.1 | | 1.50 | |
| | A10:MH17 | 12 | | 0.0004 | 1.1 | | 1.50 | |
| COMBINED FLOW AT | MH17TOT | 10&12 | 13 | 0.0343 | 66.6 | | 1.50 | |
| ROUTED 42" | | 13 | 14 | | | | | |
| | MH17TOT | 13 | | 0.0343 | 66.6 | | 1.50 | |
| | MH17:A8 | 14 | | 0.0343 | 66.9 | | 1.53 | |
| HYDROGRAPH AT | A8 | 15 | - | 0.0054 | 14.1 | NA | 1.50 | 4.09 |
| RESERVOIR HYD | A8:POND | 15 | 15 | 0.0054 | 9.9 | | 1.60 | |
| ROUTED 12" | | 15 | 16 | | | | | |
| | A8:POND | 15 | | 0.0054 | 9.9 | | 1.60 | |
| | A8:IN | 16 | | 0.0054 | 9.9 | | 1.60 | |
| COMBINED FLOW AT | A8:IN | 14&16 | 17 | 0.0397 | 76.3 | | 1.53 | |
| ROUTED 42" | | 17 | 18 | | | | | |
| | A8:IN | 17 | | 0.0397 | 76.3 | | 1.53 | |
| | A8:MH18 | 18 | | 0.0397 | 76.5 | | 1.53 | |
| HYDROGRAPH AT | A14A | 1 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| ROUTED 12" | | 1 | 2 | | | | | |
| | A14A | 1 | | 0.0012 | 3.3 | | 1.50 | |
| | A14A:18A | 2 | | 0.0012 | 3.3 | | 1.50 | |
| HYDROGRAPH AT | A16 | 6 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| ROUTED 12" | | 6 | 7 | | | | | |
| | A16 | 6 | | 0.0001 | 1.0 | | 1.50 | |
| | A16:MH18 | 7 | | 0.0001 | 1.0 | | 1.50 | |
| COMBINED FLOW AT | A14A:A16 | 2& 7 | 8 | 0.0013 | 3.6 | | 1.50 | |
| HYDROGRAPH AT | A14B1 | 9 | - | 0.0019 | 5.2 | NA | 1.50 | 4.30 |
| ROUTED 12" | | 9 | 10 | | | | | |
| | A14B1 | 9 | | 0.0019 | 5.2 | | 1.50 | |
| | A14B1:MH | 10 | | 0.0019 | 5.2 | | 1.50 | |
| COMBINED FLOW AT | MH18C | 8&10 | 11 | 0.0032 | 8.8 | | 1.50 | |
| ROUTED 24" | | 11 | 12 | | | | | |
| | MH18C | 11 | | 0.0032 | 8.8 | | 1.50 | |
| | M18A:18B | 12 | | 0.0032 | 8.7 | | 1.50 | |
| HYDROGRAPH AT | A6 | 13 | - | 0.0027 | 7.0 | NA | 1.50 | 4.06 |
| RESERVOIR HYD | A6:POND | 13 | 13 | 0.0027 | 1.5 | | 2.05 | |
| ROUTED 12" | | 13 | 14 | | | | | |
| | A6:POND | 13 | | 0.0027 | 1.5 | | 2.05 | |
| | A6:MH18B | 14 | | 0.0027 | 1.5 | | 2.07 | |
| COMBINED FLOW AT | MH18B:TO | 12&14 | 15 | 0.0059 | 10.0 | | 1.50 | |
| ROUTED 24" | | 15 | 1 | | | | | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| | MH18B:TO | 15 | | 0.0059 | 10.0 | | 1.50 | |
| | M18B:18C | 1 | | 0.0059 | 9.9 | | 1.50 | |
| HYDROGRAPH AT | A14B2 | 2 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 2 | 3 | | | | | |
| | A14B2 | 2 | | 0.0008 | 2.2 | | 1.50 | |
| | A14B2:18 | 3 | | 0.0008 | 2.2 | | 1.50 | |
| COMBINED FLOW AT | A14B2:MH | 1& 3 | 4 | 0.0067 | 12.1 | | 1.50 | |
| HYDROGRAPH AT | A7 | 5 | - | 0.0010 | 2.7 | NA | 1.50 | 4.23 |
| RESERVOIR HYD | A7:POND | 5 | 5 | 0.0010 | 0.2 | | 2.20 | |
| ROUTED 12" | | 5 | 6 | | | | | |
| | A7:POND | 5 | | 0.0010 | 1.0 | | 1.50 | |
| | A7:MH18C | 6 | | 0.0010 | 1.0 | | 1.50 | |
| COMBINED FLOW AT | MH18C:TO | 4& 6 | 7 | 0.0077 | 12.1 | | 1.50 | |
| ROUTED 30" | | 7 | 8 | | | | | |
| | MH18C:TO | 7 | | 0.0077 | 12.1 | | 1.50 | |
| | MH18C:MH | 8 | | 0.0077 | 12.1 | | 1.53 | |
| COMBINED FLOW AT | MH18 | 8&18 | 9 | 0.0474 | 88.6 | | 1.53 | |
| HYDROGRAPH AT | A15A | 10 | - | 0.0008 | 2.1 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 10 | 11 | | | | | |
| | A15A | 10 | | 0.0008 | 2.1 | | 1.50 | |
| | A15A:MH1 | 11 | | 0.0008 | 2.1 | | 1.50 | |
| COMBINED FLOW AT | MH18:TOT | 9&11 | 12 | 0.0482 | 90.5 | | 1.53 | |
| ROUTED 48" | | 12 | 13 | | | | | |
| | MH18:TOT | 12 | | 0.0482 | 90.5 | | 1.53 | |
| | MH18:MH1 | 13 | | 0.0482 | 91.1 | | 1.53 | |
| HYDROGRAPH AT | A9 | 14 | - | 0.0024 | 6.2 | NA | 1.50 | 4.05 |
| RESERVOIR HYD | A9:POND | 14 | 14 | 0.0024 | 1.4 | | 2.00 | |
| ROUTED 12" | | 14 | 15 | | | | | |
| | A9:POND | 14 | | 0.0024 | 1.4 | | 2.00 | |
| | A9:MH19 | 15 | | 0.0024 | 1.4 | | 2.00 | |
| COMBINED FLOW AT | A9:MH19 | 13&15 | 16 | 0.0506 | 92.4 | | 1.53 | |
| HYDROGRAPH AT | A15B | 17 | - | 0.0008 | 2.1 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 17 | 18 | | | | | |
| | A15B | 17 | | 0.0008 | 2.1 | | 1.50 | |
| | A15B:M19 | 18 | | 0.0008 | 2.1 | | 1.50 | |
| COMBINED FLOW AT | MH19:TOT | 16&18 | 19 | 0.0513 | 94.4 | | 1.53 | |
| ROUTED 48" | | 19 | 1 | | | | | |
| | MH19:TOT | 19 | | 0.0513 | 94.4 | | 1.53 | |
| | MH19:MH2 | 1 | | 0.0513 | 95.0 | | 1.53 | |
| HYDROGRAPH AT | A11 | 2 | - | 0.0011 | 2.7 | NA | 1.50 | 3.83 |
| RESERVOIR HYD | A11:POND | 2 | 2 | 0.0011 | 0.2 | | 2.20 | |
| ROUTED 12" | | 2 | 3 | | | | | |
| | A11:POND | 2 | | 0.0011 | 1.0 | | 1.53 | |
| | A11:MH20 | 3 | | 0.0011 | 1.0 | | 1.53 | |
| COMBINED FLOW AT | MH20:TOT | 1& 3 | 4 | 0.0524 | 95.2 | | 1.53 | |
| ROUTED 48" | | 4 | 21 | | | | | |
| | MH20:TOT | 4 | | 0.0524 | 95.2 | | 1.53 | |
| | MH20:M21 | 21 | | 0.0524 | 95.1 | | 1.53 | |
| HYDROGRAPH AT | A17 | 2 | - | 0.0044 | 11.8 | NA | 1.50 | 4.18 |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| RESERVOIR HYD | A17:POND | 2 | 2 | 0.0044 | 2.5 | | 2.05 | |
| ROUTED 18" | | 2 | 3 | | | | | |
| | A17:POND | 2 | | 0.0044 | 2.5 | | 2.05 | |
| | A17:M21D | 3 | | 0.0044 | 2.5 | | 2.07 | |
| HYDROGRAPH AT | A12 | 6 | - | 0.0039 | 10.3 | NA | 1.50 | 4.15 |
| RESERVOIR HYD | A12:POND | 6 | 7 | 0.0039 | 2.6 | | 2.00 | |
| COMBINED FLOW AT | A12:TOT | 3& 7 | 8 | 0.0083 | 5.1 | | 2.03 | |
| ROUTED 18" | | 8 | 9 | | | | | |
| | A12:TOT | 8 | | 0.0083 | 5.1 | | 2.03 | |
| | A12:MH21 | 9 | | 0.0083 | 5.1 | | 2.03 | |
| COMBINED FLOW AT | MH21 | 9&21 | 10 | 0.0607 | 99.6 | | 1.53 | |
| ROUTED 54" | | 10 | 17 | | | | | |
| | MH21 | 10 | | 0.0607 | 99.6 | | 1.53 | |
| | MH21:MH1 | 17 | | 0.0607 | 99.6 | | 1.53 | |
| HYDROGRAPH AT | B26 | 18 | - | 0.0009 | 1.6 | NA | 1.50 | 2.86 |
| COMBINED FLOW AT | POND | 17&18 | 19 | 0.0616 | 101.2 | | 1.53 | |
| RESERVOIR HYD | B26:POND | 19 | 20 | 0.0616 | 44.3 | | 2.03 | |
| ROUTED 33" | | 20 | 21 | | | | | |
| | B26:POND | 20 | | 0.0616 | 44.3 | | 2.03 | |
| | POND:MH1 | 21 | | 0.0616 | 44.3 | | 2.03 | |
| HYDROGRAPH AT | B1A | 1 | - | 0.0039 | 10.4 | NA | 1.50 | 4.17 |
| DIVIDED FLOW AT | | 1 | 1& 2 | | | | | |
| | B1A:MH4A | 1 | - | 0.0000 | 6.0 | | 1.50 | |
| | B1A:DOCK | 2 | - | 0.0000 | 4.4 | | 1.50 | |
| HYDROGRAPH AT | B1B | 3 | - | 0.0017 | 4.6 | NA | 1.50 | 4.18 |
| COMBINED FLOW AT | B1B:DOCK | 3& 2 | 3 | 0.0017 | 9.0 | | 1.50 | |
| HYDROGRAPH AT | B22 | 4 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| COMBINED FLOW AT | B22:DOCK | 3& 4 | 3 | 0.0018 | 9.2 | | 1.50 | |
| RESERVOIR HYD | 367:B1C | 3 | 4 | 0.0018 | 6.2 | | 1.60 | |
| COMBINED FLOW AT | DOCK:MH4 | 4& 1 | 5 | 0.0018 | 11.6 | | 1.50 | |
| HYDROGRAPH AT | B1C | 1 | - | 0.0015 | 4.0 | NA | 1.50 | 4.19 |
| RESERVOIR HYD | B1C:POND | 1 | 2 | 0.0015 | 3.0 | | 1.60 | |
| COMBINED FLOW AT | B1C:MH4A | 2& 5 | 5 | 0.0033 | 14.3 | | 1.50 | |
| HYDROGRAPH AT | B18A2 | 1 | - | 0.0007 | 1.9 | NA | 1.50 | 4.31 |
| COMBINED FLOW AT | MH4A:TOT | 5& 1 | 5 | 0.0040 | 16.2 | | 1.50 | |
| ROUTED 12" | | 5 | 3 | | | | | |
| | MH4A:TOT | 5 | | 0.0040 | 16.2 | | 1.50 | |
| | MH4A:M4C | 3 | | 0.0040 | 15.9 | | 1.53 | |
| HYDROGRAPH AT | B18A1 | 4 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 4 | 5 | | | | | |
| | B18A1 | 4 | | 0.0008 | 2.2 | | 1.50 | |
| | B18A1:4B | 5 | | 0.0008 | 2.2 | | 1.50 | |
| HYDROGRAPH AT | B1D | 7 | - | 0.0043 | 11.5 | NA | 1.50 | 4.16 |
| RESERVOIR HYD | B1D:POND | 7 | 7 | 0.0043 | 3.7 | | 1.85 | |
| ROUTED 18" | | 7 | 8 | | | | | |
| | B1D:POND | 7 | | 0.0043 | 3.7 | | 1.85 | |
| | B2:MH4B | 8 | | 0.0043 | 3.7 | | 1.87 | |
| COMBINED FLOW AT | B2:MH4B | 5& 8 | 9 | 0.0051 | 5.6 | | 1.50 | |
| HYDROGRAPH AT | B18B | 10 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| ROUTED 12" | | 10 | 11 | | | | | |
| | B18B | 10 | | 0.0004 | 1.1 | | 1.50 | |
| | B18B:M4B | 11 | | 0.0004 | 1.1 | | 1.50 | |
| COMBINED FLOW AT | B18B:M4B | 9&11 | 12 | 0.0055 | 6.7 | | 1.50 | |
| HYDROGRAPH AT | B18C | 13 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 13 | 14 | | | | | |
| | B18C | 13 | | 0.0008 | 2.2 | | 1.50 | |
| | B18C:M4B | 14 | | 0.0008 | 2.2 | | 1.50 | |
| COMBINED FLOW AT | B18C:M4B | 12&14 | 15 | 0.0063 | 8.9 | | 1.50 | |
| ROUTED 30" | | 15 | 19 | | | | | |
| | B18C:M4B | 15 | | 0.0063 | 8.9 | | 1.50 | |
| | MH4B:M4C | 19 | | 0.0063 | 8.9 | | 1.50 | |
| COMBINED FLOW AT | MH4C:TOT | 3&19 | 1 | 0.0103 | 24.7 | | 1.53 | |
| ROUTED 36" | | 1 | 2 | | | | | |
| | MH4C:TOT | 1 | | 0.0103 | 24.7 | | 1.53 | |
| | MH4C:MH4 | 2 | | 0.0103 | 24.2 | | 1.57 | |
| HYDROGRAPH AT | B3 | 6 | - | 0.0038 | 9.6 | NA | 1.50 | 3.93 |
| RESERVOIR HYD | B3:POND | 6 | 6 | 0.0038 | 2.2 | | 2.00 | |
| ROUTED 12" | | 6 | 7 | | | | | |
| | B3:POND | 6 | | 0.0038 | 2.2 | | 2.00 | |
| | B3:MH4D | 7 | | 0.0038 | 2.2 | | 2.00 | |
| HYDROGRAPH AT | 232:B27 | 9 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| ROUTED 12" | | 9 | 10 | | | | | |
| | 232:B27 | 9 | | 0.0001 | 1.0 | | 2.00 | |
| | B27:MH46 | 10 | | 0.0001 | 1.0 | | 2.00 | |
| COMBINED FLOW AT | MH4D | 7&10 | 11 | 0.0039 | 2.4 | | 1.53 | |
| HYDROGRAPH AT | B19A1 | 12 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |
| ROUTED 12" | | 12 | 13 | | | | | |
| | B19A1 | 12 | | 0.0004 | 1.1 | | 1.50 | |
| | B19A1:MH | 13 | | 0.0004 | 1.1 | | 1.50 | |
| COMBINED FLOW AT | MH4D2 | 11&13 | 14 | 0.0043 | 3.4 | | 1.50 | |
| ROUTED 12" | | 14 | 15 | | | | | |
| | MH4D2 | 14 | | 0.0043 | 3.4 | | 1.50 | |
| | MH4D:MH4 | 15 | | 0.0043 | 3.4 | | 1.53 | |
| COMBINED FLOW AT | MH4-1 | 2&15 | 20 | 0.0146 | 27.3 | | 1.57 | |
| HYDROGRAPH AT | B2A | 6 | - | 0.0015 | 3.3 | NA | 1.50 | 3.46 |
| HYDROGRAPH AT | B2B | 1 | - | 0.0005 | 0.9 | NA | 1.50 | 2.87 |
| COMBINED FLOW AT | B2:POND | 1& 6 | 2 | 0.0020 | 4.2 | | 1.50 | |
| HYDROGRAPH AT | B4 | 3 | - | 0.0033 | 9.1 | NA | 1.50 | 4.30 |
| ROUTED 24" | | 3 | 4 | | | | | |
| | B4 | 3 | | 0.0033 | 9.1 | | 1.50 | |
| | B4:MH3B | 4 | | 0.0033 | 9.2 | | 1.50 | |
| HYDROGRAPH AT | B5 | 7 | - | 0.0060 | 16.1 | NA | 1.50 | 4.18 |
| HYDROGRAPH AT | B6 | 8 | - | 0.0006 | 1.7 | NA | 1.50 | 4.31 |
| COMBINED FLOW AT | B6:B5 | 8& 7 | 8 | 0.0066 | 17.7 | | 1.50 | |
| COMBINED FLOW AT | B2:B5:B6 | 8& 2 | 8 | 0.0086 | 22.0 | | 1.50 | |
| ROUTED 27" | | 8 | 9 | | | | | |
| | B2:B5:B6 | 8 | | 0.0086 | 22.0 | | 1.50 | |
| | B2:B5:PO | 9 | | 0.0086 | 22.1 | | 1.50 | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| COMBINED FLOW AT | POND | 2& 9 | 10 | 0.0106 | 26.4 | | 1.50 | |
| HYDROGRAPH AT | B7 | 11 | - | 0.0008 | 1.5 | NA | 1.50 | 2.86 |
| COMBINED FLOW AT | B7:PND:T | 10&11 | 12 | 0.0114 | 27.8 | | 1.50 | |
| RESERVOIR HYD | B7:PND:R | 12 | 13 | 0.0114 | 5.6 | | 2.07 | |
| ROUTED 12" | | 13 | 14 | | | | | |
| | B7:PND:R | 13 | | 0.0114 | 5.6 | | 2.07 | |
| | POND:MH3 | 14 | | 0.0114 | 5.6 | | 2.03 | |
| COMBINED FLOW AT | MH3B:TOT | 4&14 | 15 | 0.0147 | 13.7 | | 1.50 | |
| ROUTED 27" | | 15 | 16 | | | | | |
| | MH3B:TOT | 15 | | 0.0147 | 13.7 | | 1.50 | |
| | MH3B:MH4 | 16 | | 0.0147 | 13.2 | | 1.50 | |
| COMBINED FLOW AT | MH4:TOT | 16&20 | 17 | 0.0293 | 40.6 | | 1.53 | |
| ROUTED 36" | | 17 | 18 | | | | | |
| | MH4:TOT | 17 | | 0.0293 | 40.6 | | 1.53 | |
| | MH4:MH5 | 18 | | 0.0293 | 40.4 | | 1.53 | |
| HYDROGRAPH AT | B19A2 | 1 | - | 0.0004 | 1.0 | NA | 1.50 | 4.32 |
| ROUTED 12" | | 1 | 2 | | | | | |
| | B19A2 | 1 | | 0.0004 | 1.0 | | 1.50 | |
| | B19A2:5B | 2 | | 0.0004 | 1.0 | | 1.50 | |
| HYDROGRAPH AT | B19B | 3 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| ROUTED 12" | | 3 | 4 | | | | | |
| | B19B | 3 | | 0.0012 | 3.3 | | 1.50 | |
| | B19B:MH5 | 4 | | 0.0012 | 3.3 | | 1.50 | |
| COMBINED FLOW AT | MH5B | 2& 4 | 5 | 0.0016 | 4.3 | | 1.50 | |
| HYDROGRAPH AT | B19D1 | 6 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |
| ROUTED 12" | | 6 | 7 | | | | | |
| | B19D1 | 6 | | 0.0004 | 1.1 | | 1.50 | |
| | B19D:MH5 | 7 | | 0.0004 | 1.1 | | 1.50 | |
| HYDROGRAPH AT | B19C | 8 | - | 0.0011 | 3.1 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 8 | 9 | | | | | |
| | B19C | 8 | | 0.0011 | 3.1 | | 1.50 | |
| | B19C:MH5 | 9 | | 0.0011 | 3.1 | | 1.50 | |
| COMBINED FLOW AT | MH5A:TOT | 7& 9 | 10 | 0.0015 | 4.2 | | 1.50 | |
| ROUTED 12" | | 10 | 11 | | | | | |
| | MH5A:TOT | 10 | | 0.0015 | 4.2 | | 1.50 | |
| | MH5A:M5B | 11 | | 0.0015 | 4.2 | | 1.50 | |
| COMBINED FLOW AT | MH5B:TOT | 5&11 | 12 | 0.0031 | 8.5 | | 1.50 | |
| ROUTED 18" | | 12 | 13 | | | | | |
| | MH5B:TOT | 12 | | 0.0031 | 8.5 | | 1.50 | |
| | MH5A:MH5 | 13 | | 0.0031 | 8.4 | | 1.50 | |
| COMBINED FLOW AT | MH5:TOT | 13&18 | 14 | 0.0324 | 48.6 | | 1.53 | |
| ROUTED 42" | | 14 | 15 | | | | | |
| | MH5:TOT | 14 | | 0.0324 | 48.6 | | 1.53 | |
| | MH5:MH5D | 15 | | 0.0324 | 48.5 | | 1.53 | |
| HYDROGRAPH AT | B19D2 | 16 | - | 0.0005 | 1.4 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | B20A2 | 17 | - | 0.0005 | 1.4 | NA | 1.50 | 4.32 |
| COMBINED FLOW AT | B19D:B20 | 16&17 | 16 | 0.0010 | 2.8 | | 1.50 | |
| ROUTED 12" | | 16 | 17 | | | | | |
| | B19D:B20 | 16 | | 0.0010 | 2.8 | | 1.50 | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| | B19D1:5D | 17 | | 0.0010 | 2.8 | | 1.50 | |
| COMBINED FLOW AT | MH5D:TOT | 15&17 | 18 | 0.0334 | 51.0 | | 1.53 | |
| ROUTED 42" | | 18 | 19 | | | | | |
| | MH5D:TOT | 18 | | 0.0334 | 51.0 | | 1.53 | |
| | MH5D:MH6 | 19 | | 0.0334 | 50.8 | | 1.53 | |
| HYDROGRAPH AT | B10 | 1 | - | 0.0033 | 8.5 | NA | 1.50 | 4.02 |
| ROUTED 18" | | 1 | 2 | | | | | |
| | B10 | 1 | | 0.0033 | 8.5 | | 1.50 | |
| | B10:MH6A | 2 | | 0.0033 | 8.3 | | 1.50 | |
| HYDROGRAPH AT | B9 | 7 | - | 0.0037 | 9.7 | NA | 1.50 | 4.11 |
| RESERVOIR HYD | B9 | 7 | 11 | 0.0037 | 1.9 | | 2.05 | |
| ROUTED 18" | | 11 | 12 | | | | | |
| | B9 | 11 | | 0.0037 | 1.9 | | 2.05 | |
| | B9:MH6A | 12 | | 0.0037 | 1.9 | | 2.10 | |
| COMBINED FLOW AT | MH6A:TOT | 2&12 | 13 | 0.0070 | 9.3 | | 1.50 | |
| ROUTED 21" | | 13 | 15 | | | | | |
| | MH6A:TOT | 13 | | 0.0070 | 9.3 | | 1.50 | |
| | MH6A:NLT | 15 | | 0.0070 | 9.2 | | 1.53 | |
| HYDROGRAPH AT | B13 | 1 | - | 0.0030 | 8.0 | NA | 1.50 | 4.15 |
| RESERVOIR HYD | B13 | 1 | 1 | 0.0030 | 2.4 | | 1.85 | |
| COMBINED FLOW AT | B13TOT | 1&15 | 13 | 0.0100 | 11.3 | | 1.53 | |
| ROUTED 15" | | 13 | 2 | | | | | |
| | B13TOT | 13 | | 0.0100 | 11.3 | | 1.53 | |
| | B13:MH6 | 2 | | 0.0100 | 11.1 | | 1.53 | |
| HYDROGRAPH AT | B14 | 4 | - | 0.0033 | 8.6 | NA | 1.50 | 4.06 |
| RESERVOIR HYD | B14:POND | 4 | 4 | 0.0033 | 1.1 | | 2.15 | |
| ROUTED 12" | | 4 | 5 | | | | | |
| | B14:POND | 4 | | 0.0033 | 1.1 | | 2.15 | |
| | B14:MH6 | 5 | | 0.0033 | 1.1 | | 2.13 | |
| COMBINED FLOW AT | B13:B14 | 2& 5 | 20 | 0.0133 | 12.1 | | 1.53 | |
| COMBINED FLOW AT | MH6:TOT | 20&19 | 20 | 0.0467 | 62.9 | | 1.53 | |
| ROUTED 48" | | 20 | 17 | | | | | |
| | MH6:TOT | 20 | | 0.0467 | 62.9 | | 1.53 | |
| | MH6:MH7 | 17 | | 0.0467 | 63.2 | | 1.53 | |
| HYDROGRAPH AT | B20A1 | 1 | - | 0.0005 | 1.4 | NA | 1.50 | 4.32 |
| ROUTED 12" | | 1 | 2 | | | | | |
| | B20A1 | 1 | | 0.0005 | 1.4 | | 1.50 | |
| | B20A1:7A | 2 | | 0.0005 | 1.4 | | 1.50 | |
| HYDROGRAPH AT | B23 | 3 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| ROUTED 12" | | 3 | 4 | | | | | |
| | B23 | 3 | | 0.0001 | 1.0 | | 1.50 | |
| | B23:MH7A | 4 | | 0.0001 | 1.0 | | 1.50 | |
| COMBINED FLOW AT | MH7A | 2& 4 | 5 | 0.0006 | 1.7 | | 1.50 | |
| HYDROGRAPH AT | B20B | 6 | - | 0.0017 | 4.7 | NA | 1.50 | 4.30 |
| ROUTED 12" | | 6 | 7 | | | | | |
| | B20B | 6 | | 0.0017 | 4.7 | | 1.50 | |
| | B20B:MH7 | 7 | | 0.0017 | 4.7 | | 1.50 | |
| COMBINED FLOW AT | MH7A3 | 5& 7 | 8 | 0.0023 | 6.3 | | 1.50 | |
| HYDROGRAPH AT | B24 | 9 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| ROUTED 12" | | 9 | 10 | | | | | |
| | B24 | 9 | | 0.0001 | 1.0 | | 1.50 | |
| | B24:MH7A | 10 | | 0.0001 | 1.0 | | 1.50 | |
| COMBINED FLOW AT | MH7A4 | 8&10 | 11 | 0.0024 | 6.6 | | 1.50 | |
| HYDROGRAPH AT | B20C | 12 | - | 0.0009 | 2.5 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 12 | 13 | | | | | |
| | B20C | 12 | | 0.0009 | 2.5 | | 1.50 | |
| | B20C:M7A | 13 | | 0.0009 | 2.5 | | 1.50 | |
| COMBINED FLOW AT | MH7A:TOT | 11&13 | 14 | 0.0033 | 9.1 | | 1.50 | |
| ROUTED 21" | | 14 | 15 | | | | | |
| | MH7A:TOT | 14 | | 0.0033 | 9.1 | | 1.50 | |
| | MH7A:MH7 | 15 | | 0.0033 | 9.0 | | 1.50 | |
| COMBINED FLOW AT | MH7:TOT | 17&15 | 3 | 0.0500 | 71.9 | | 1.53 | |
| ROUTED 54" | | 3 | 4 | | | | | |
| | MH7:TOT | 3 | | 0.0500 | 71.9 | | 1.53 | |
| | MH7:B15I | 4 | | 0.0500 | 71.9 | | 1.53 | |
| HYDROGRAPH AT | B15 | 5 | - | 0.0029 | 7.5 | NA | 1.50 | 4.07 |
| RESERVOIR HYD | B15:POND | 5 | 5 | 0.0029 | 2.6 | | 1.80 | |
| ROUTED 12" | | 5 | 6 | | | | | |
| | B15:POND | 5 | | 0.0029 | 2.6 | | 1.80 | |
| | B15IN | 6 | | 0.0029 | 2.6 | | 1.80 | |
| COMBINED FLOW AT | B15OUT | 4& 6 | 7 | 0.0529 | 74.5 | | 1.53 | |
| ROUTED 54" | | 7 | 8 | | | | | |
| | B15OUT | 7 | | 0.0529 | 74.5 | | 1.53 | |
| | B15OUT:M | 8 | | 0.0529 | 74.8 | | 1.53 | |
| HYDROGRAPH AT | B16 | 9 | - | 0.0033 | 9.0 | NA | 1.50 | 4.24 |
| ROUTED 15" | | 9 | 10 | | | | | |
| | B16 | 9 | | 0.0033 | 9.0 | | 1.50 | |
| | B16:MH8 | 10 | | 0.0033 | 8.9 | | 1.50 | |
| COMBINED FLOW AT | MH8 | 8&10 | 11 | 0.0562 | 83.2 | | 1.53 | |
| ROUTED 54" | | 11 | 20 | | | | | |
| | MH8 | 11 | | 0.0562 | 83.2 | | 1.53 | |
| | MH8:MH9 | 20 | | 0.0562 | 81.9 | | 1.57 | |
| HYDROGRAPH AT | B21A | 1 | - | 0.0009 | 2.5 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 1 | 2 | | | | | |
| | B21A | 1 | | 0.0009 | 2.5 | | 1.50 | |
| | B21A:MH2 | 2 | | 0.0009 | 2.5 | | 1.50 | |
| HYDROGRAPH AT | B21B | 3 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 3 | 4 | | | | | |
| | B21B | 3 | | 0.0008 | 2.2 | | 1.50 | |
| | B21B:M21 | 4 | | 0.0008 | 2.2 | | 1.50 | |
| COMBINED FLOW AT | MH21A2 | 2& 4 | 5 | 0.0017 | 4.7 | | 1.50 | |
| HYDROGRAPH AT | B25 | 6 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| ROUTED 12" | | 6 | 7 | | | | | |
| | B25 | 6 | | 0.0001 | 1.0 | | 1.50 | |
| | B25:M21A | 7 | | 0.0001 | 1.0 | | 1.50 | |
| COMBINED FLOW AT | MH21A1 | 5& 7 | 8 | 0.0018 | 4.9 | | 1.50 | |
| HYDROGRAPH AT | B21C | 9 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 9 | 10 | | | | | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| | B21C | 9 | | 0.0008 | 2.2 | | 1.50 | |
| | B21C1:21 | 10 | | 0.0008 | 2.2 | | 1.50 | |
| COMBINED FLOW AT | MH21A | 8&10 | 11 | 0.0026 | 7.1 | | 1.50 | |
| ROUTED 15" | | 11 | 15 | | | | | |
| | MH21A | 11 | | 0.0026 | 7.1 | | 1.50 | |
| | M21A:21B | 15 | | 0.0026 | 7.1 | | 1.50 | |
| HYDROGRAPH AT | B21D | 16 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 12" | | 16 | 17 | | | | | |
| | B21D | 16 | | 0.0008 | 2.2 | | 1.50 | |
| | B21D:21B | 17 | | 0.0008 | 2.2 | | 1.50 | |
| COMBINED FLOW AT | MH21B:TO | 15&17 | 18 | 0.0034 | 9.3 | | 1.50 | |
| ROUTED 15" | | 18 | 19 | | | | | |
| | MH21B:TO | 18 | | 0.0034 | 9.3 | | 1.50 | |
| | MH21B:M9 | 19 | | 0.0034 | 9.2 | | 1.50 | |
| COMBINED FLOW AT | MH9 | 19&20 | 20 | 0.0596 | 89.6 | | 1.57 | |
| HYDROGRAPH AT | C1A | 2 | - | 0.0068 | 15.7 | NA | 1.50 | 3.61 |
| HYDROGRAPH AT | C1B | 4 | - | 0.0011 | 3.0 | NA | 1.50 | 4.31 |
| COMBINED FLOW AT | C1A:C1B | 2& 4 | 1 | 0.0079 | 18.7 | | 1.50 | |
| RESERVOIR HYD | BDPOND | 1 | 1 | 0.0079 | 13.3 | | 1.60 | |
| ROUTED 24" | | 1 | 2 | | | | | |
| | BDPOND | 1 | | 0.0079 | 13.3 | | 1.60 | |
| | MH9A1 | 2 | | 0.0079 | 13.3 | | 1.60 | |
| HYDROGRAPH AT | C3A | 3 | - | 0.0014 | 3.9 | NA | 1.50 | 4.30 |
| COMBINED FLOW AT | MH9A3 | 2& 3 | 4 | 0.0093 | 16.9 | | 1.50 | |
| ROUTED 24" | | 4 | 5 | | | | | |
| | MH9A3 | 4 | | 0.0093 | 16.9 | | 1.50 | |
| | MH9A1 | 5 | | 0.0093 | 16.9 | | 1.50 | |
| HYDROGRAPH AT | C3E | 6 | - | 0.0003 | 0.8 | NA | 1.50 | 4.33 |
| ROUTED 18" | | 6 | 7 | | | | | |
| | C3E | 6 | | 0.0003 | 1.0 | | 1.50 | |
| | C3E:MH9A | 7 | | 0.0003 | 1.0 | | 1.50 | |
| COMBINED FLOW AT | MH9A1 | 5& 7 | 8 | 0.0096 | 17.8 | | 1.50 | |
| HYDROGRAPH AT | C3C | 9 | - | 0.0006 | 1.6 | NA | 1.50 | 4.17 |
| HYDROGRAPH AT | C3D | 10 | - | 0.0004 | 0.5 | NA | 1.50 | 2.04 |
| COMBINED FLOW AT | C3C:C3D | 9&10 | 11 | 0.0010 | 2.1 | | 1.50 | |
| ROUTED 18" | | 11 | 12 | | | | | |
| | C3C:C3D | 11 | | 0.0010 | 2.1 | | 1.50 | |
| | C3C:MH9A | 12 | | 0.0010 | 2.1 | | 1.50 | |
| COMBINED FLOW AT | MH9A:TOT | 8&12 | 13 | 0.0106 | 19.9 | | 1.50 | |
| ROUTED 36" | | 13 | 14 | | | | | |
| | MH9A:TOT | 13 | | 0.0106 | 19.9 | | 1.50 | |
| | MH9A:M9B | 14 | | 0.0106 | 19.8 | | 1.50 | |
| ROUTED 36" | | 14 | 15 | | | | | |
| | MH9A:M9B | 14 | | 0.0106 | 19.8 | | 1.50 | |
| | MH9B:MH9 | 15 | | 0.0106 | 20.0 | | 1.50 | |
| COMBINED FLOW AT | MH9:TOT | 15&20 | 1 | 0.0702 | 108.5 | | 1.53 | |
| ROUTED 60" | | 1 | 2 | | | | | |
| | MH9:TOT | 1 | | 0.0702 | 108.5 | | 1.53 | |
| | MH9:MH10 | 2 | | 0.0702 | 107.4 | | 1.53 | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| HYDROGRAPH AT | B8A | 3 | - | 0.0025 | 6.7 | NA | 1.50 | 4.20 |
| HYDROGRAPH AT | B8B | 4 | - | 0.0019 | 5.2 | NA | 1.50 | 4.25 |
| COMBINED FLOW AT | B8A:B8B | 3& 4 | 4 | 0.0044 | 11.9 | | 1.50 | |
| RESERVOIR HYD | B8:POND | 4 | 6 | 0.0044 | 6.8 | | 1.65 | |
| COMBINED FLOW AT | MH10 | 2& 6 | 7 | 0.0746 | 114.1 | | 1.53 | |
| ROUTED 60" | | 7 | 8 | | | | | |
| | MH10 | 7 | | 0.0746 | 114.1 | | 1.53 | |
| | MH10:M11 | 8 | | 0.0746 | 114.1 | | 1.57 | |
| HYDROGRAPH AT | B8C | 9 | - | 0.0046 | 12.3 | NA | 1.50 | 4.17 |
| RESERVOIR HYD | B8C | 9 | 10 | 0.0046 | 6.0 | | 1.70 | |
| ROUTED 12" | | 10 | 11 | | | | | |
| | B8C | 10 | | 0.0046 | 6.0 | | 1.70 | |
| | B8C:MH11 | 11 | | 0.0046 | 6.0 | | 1.70 | |
| COMBINED FLOW AT | MH11:TOT | 8&11 | 12 | 0.0792 | 120.0 | | 1.57 | |
| ROUTED 60" | | 12 | 13 | | | | | |
| | MH11:TOT | 12 | | 0.0792 | 120.0 | | 1.57 | |
| | MH11:M12 | 13 | | 0.0792 | 121.1 | | 1.57 | |
| COMBINED FLOW AT | MH12:TOT | 13&21 | 14 | 0.1408 | 159.2 | | 1.57 | |
| ROUTED 84" | | 14 | 15 | | | | | |
| | MH12:TOT | 14 | | 0.1408 | 159.2 | | 1.57 | |
| | 357:E1 | 15 | | 0.1408 | 159.8 | | 1.57 | |
| HYDROGRAPH AT | 385:E1 | 16 | - | 0.0004 | 1.0 | NA | 1.50 | 4.33 |
| ROUTED 18" | | 16 | 17 | | | | | |
| | 385:E1 | 16 | | 0.0004 | 1.0 | | 1.57 | |
| | 386:E1OU | 17 | | 0.0004 | 1.0 | | 1.57 | |
| COMBINED FLOW AT | 387:E1OU | 15&17 | 18 | 0.1412 | 160.6 | | 1.57 | |
| ROUTED 84" | | 18 | 19 | | | | | |
| | 387:E1OU | 18 | | 0.1412 | 160.6 | | 1.57 | |
| | 388:E1:E | 19 | | 0.1412 | 161.4 | | 1.57 | |
| HYDROGRAPH AT | 389:E2 | 20 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| ROUTED 18" | | 20 | 21 | | | | | |
| | 389:E2 | 20 | | 0.0008 | 2.2 | | 1.50 | |
| | 390:E1OU | 21 | | 0.0008 | 2.2 | | 1.50 | |
| COMBINED FLOW AT | 391:E1IN | 19&21 | 1 | 0.1420 | 163.2 | | 1.57 | |
| ROUTED 84" | | 1 | 2 | | | | | |
| | 391:E1IN | 1 | | 0.1420 | 163.2 | | 1.57 | |
| | 392:E2:E | 2 | | 0.1420 | 163.8 | | 1.57 | |
| HYDROGRAPH AT | 393:E3 | 3 | - | 0.0003 | 0.8 | NA | 1.50 | 4.34 |
| ROUTED 18" | | 3 | 4 | | | | | |
| | 393:E3 | 3 | | 0.0003 | 1.0 | | 1.57 | |
| | 394:E3OU | 4 | | 0.0003 | 1.0 | | 1.57 | |
| COMBINED FLOW AT | 395:E3IN | 2& 4 | 5 | 0.1423 | 164.5 | | 1.57 | |
| ROUTED 84" | | 5 | 20 | | | | | |
| | 395:E3IN | 5 | | 0.1423 | 164.5 | | 1.57 | |
| | 396:E3:E | 20 | | 0.1423 | 163.1 | | 1.60 | |
| HYDROGRAPH AT | 397:C2 | 1 | - | 0.0028 | 7.7 | NA | 1.50 | 4.30 |
| ROUTED 18" | | 1 | 2 | | | | | |
| | 397:C2 | 1 | | 0.0028 | 7.7 | | 1.50 | |
| | 398 | 2 | | 0.0028 | 7.7 | | 1.50 | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| HYDROGRAPH AT | 399:C1C | 3 | - | 0.0010 | 2.5 | NA | 1.50 | 3.78 |
| COMBINED FLOW AT | 400 | 2& 3 | 4 | 0.0038 | 10.2 | | 1.50 | |
| ROUTED 24" | | 4 | 5 | | | | | |
| | 400 | 4 | | 0.0038 | 10.2 | | 1.50 | |
| | 401R:P6I | 5 | | 0.0038 | 9.9 | | 1.50 | |
| COMBINED FLOW AT | 404:E4IN | 5&20 | 8 | 0.1461 | 171.5 | | 1.57 | |
| ROUTED 84" | | 8 | 9 | | | | | |
| | 404:E4IN | 8 | | 0.1461 | 171.5 | | 1.57 | |
| | 405:E4:E | 9 | | 0.1461 | 172.4 | | 1.57 | |
| HYDROGRAPH AT | 406:E5 | 10 | - | 0.0003 | 0.7 | NA | 1.50 | 4.34 |
| ROUTED 18" | | 10 | 11 | | | | | |
| | 406:E5 | 10 | | 0.0003 | 1.0 | | 1.57 | |
| | 407:E5OU | 11 | | 0.0003 | 1.0 | | 1.57 | |
| COMBINED FLOW AT | 408:E5IN | 9&11 | 12 | 0.1463 | 173.0 | | 1.57 | |
| ROUTED 84" | | 12 | 18 | | | | | |
| | 408:E5IN | 12 | | 0.1463 | 173.0 | | 1.57 | |
| | 409:E5:M | 18 | | 0.1463 | 173.8 | | 1.60 | |
| HYDROGRAPH AT | 410:N2A1 | 2 | - | 0.0223 | 48.4 | NA | 1.50 | 3.38 |
| RESERVOIR HYD | 411:N2A1 | 2 | 3 | 0.0223 | 6.6 | | 2.10 | |
| ROUTED 30" | | 3 | 4 | | | | | |
| | 411:N2A1 | 3 | | 0.0223 | 6.6 | | 2.10 | |
| | 412 | 4 | | 0.0223 | 6.6 | | 2.13 | |
| HYDROGRAPH AT | 413:BP1W | 2 | - | 0.0010 | 2.7 | NA | 1.50 | 4.31 |
| DIVIDED FLOW AT | | 2 | 2& 8 | | | | | |
| | BP1WP | 2 | - | 0.0000 | 2.2 | | 1.45 | |
| | BP1WS | 8 | - | 0.0000 | 0.4 | | 1.00 | |
| ROUTED 18" | | 2 | 3 | | | | | |
| | BP1WP | 2 | | 0.0000 | 2.2 | | 1.55 | |
| | 414 | 3 | | 0.0000 | 2.2 | | 1.50 | |
| HYDROGRAPH AT | 405:BP1E | 5 | - | 0.0008 | 2.3 | NA | 1.50 | 4.31 |
| ROUTED 18" | | 5 | 6 | | | | | |
| | 405:BP1E | 5 | | 0.0008 | 2.3 | | 1.50 | |
| | 405 | 6 | | 0.0008 | 2.3 | | 1.50 | |
| COMBINED FLOW AT | 417:MH15 | 3& 6 | 7 | 0.0008 | 4.5 | | 1.50 | |
| ROUTED 24" | | 7 | 2 | | | | | |
| | 417:MH15 | 7 | | 0.0008 | 4.5 | | 1.50 | |
| | 418:MH24 | 2 | | 0.0008 | 4.5 | | 1.50 | |
| COMBINED FLOW AT | 419:MH24 | 4& 2 | 3 | 0.0232 | 8.6 | | 1.63 | |
| ROUTED 30" | | 3 | 2 | | | | | |
| | 419:MH24 | 3 | | 0.0232 | 8.6 | | 1.63 | |
| | 420 | 2 | | 0.0232 | 8.6 | | 1.63 | |
| ROUTED | | 8 | 8 | | | | | |
| | BP1WS | 8 | | 0.0000 | 1.0 | | 1.00 | |
| | BP1WS | 8 | | 0.0000 | 1.0 | | 1.63 | |
| HYDROGRAPH AT | 426:BP2W | 3 | - | 0.0006 | 1.5 | NA | 1.50 | 4.32 |
| COMBINED FLOW AT | 419:BP2W | 3& 8 | 5 | 0.0006 | 1.5 | | 1.50 | |
| ROUTED 24" | | 3 | 4 | | | | | |
| | 426:BP2W | 3 | | 0.0006 | 1.5 | | 1.00 | |
| | 427 | 4 | | 0.0006 | 1.5 | | 2.23 | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| COMBINED FLOW AT | 419:MH24 | 4& 2 | 5 | 0.0237 | 8.6 | | 1.63 | |
| ROUTED 36" | | 5 | 2 | | | | | |
| | 419:MH24 | 5 | | 0.0237 | 8.6 | | 1.63 | |
| | 420 | 2 | | 0.0237 | 8.6 | | 1.63 | |
| HYDROGRAPH AT | 421:N1B2 | 3 | - | 0.0116 | 28.6 | NA | 1.50 | 3.84 |
| RESERVOIR HYD | 422:N1B2 | 3 | 4 | 0.0116 | 13.9 | | 2.20 | |
| ROUTED 18" | | 4 | 3 | | | | | |
| | 422:N1B2 | 4 | | 0.0116 | 13.9 | | 2.20 | |
| | 423 | 3 | | 0.0116 | 13.5 | | 1.60 | |
| COMBINED FLOW AT | 424:MH25 | 2& 3 | 4 | 0.0354 | 22.0 | | 1.60 | |
| ROUTED 36" | | 4 | 2 | | | | | |
| | 424:MH25 | 4 | | 0.0354 | 22.0 | | 1.60 | |
| | 425 | 2 | | 0.0354 | 21.9 | | 2.23 | |
| HYDROGRAPH AT | 428:BP2E | 3 | - | 0.0010 | 2.9 | NA | 1.50 | 4.31 |
| ROUTED 24" | | 3 | 4 | | | | | |
| | 428:BP2E | 3 | | 0.0010 | 2.9 | | 1.50 | |
| | 429 | 4 | | 0.0010 | 2.9 | | 1.50 | |
| COMBINED FLOW AT | 431:MH26 | 2& 4 | 5 | 0.0364 | 23.8 | | 1.60 | |
| HYDROGRAPH AT | 428:BP-M | 6 | - | 0.0011 | 0.6 | NA | 1.80 | 0.81 |
| COMBINED FLOW AT | 431:MH26 | 5& 6 | 7 | 0.0375 | 24.2 | | 1.60 | |
| ROUTED 36" | | 7 | 2 | | | | | |
| | 431:MH26 | 7 | | 0.0375 | 24.2 | | 1.60 | |
| | 432 | 2 | | 0.0375 | 24.0 | | 1.60 | |
| HYDROGRAPH AT | 433:BP3E | 3 | - | 0.0005 | 1.5 | NA | 1.50 | 4.32 |
| ROUTED 24" | | 3 | 4 | | | | | |
| | 433:BP3E | 3 | | 0.0005 | 1.5 | | 1.50 | |
| | 434:MH27 | 4 | | 0.0005 | 1.5 | | 1.50 | |
| COMBINED FLOW AT | 435 | 2& 4 | 5 | 0.0381 | 25.1 | | 1.60 | |
| ROUTED 36" | | 5 | 6 | | | | | |
| | 435 | 5 | | 0.0381 | 25.1 | | 1.60 | |
| | 434:MH27 | 6 | | 0.0381 | 25.0 | | 1.60 | |
| HYDROGRAPH AT | 436:ER | 2 | - | 0.0029 | 6.6 | NA | 1.50 | 3.57 |
| HYDROGRAPH AT | 437:BP3W | 3 | - | 0.0015 | 4.2 | NA | 1.50 | 4.30 |
| COMBINED FLOW AT | 438 | 2& 3 | 4 | 0.0044 | 10.8 | | 1.50 | |
| HYDROGRAPH AT | 441:PB | 5 | - | 0.0064 | 16.6 | NA | 1.50 | 4.05 |
| RESERVOIR HYD | 442:PB:P | 5 | 1 | 0.0064 | 7.6 | | 1.60 | |
| ROUTED 12" | | 1 | 2 | | | | | |
| | 442:PB:P | 1 | | 0.0064 | 7.6 | | 1.60 | |
| | 443 | 2 | | 0.0064 | 7.5 | | 1.60 | |
| COMBINED FLOW AT | 438 | 2& 4 | 3 | 0.0108 | 14.9 | | 1.60 | |
| ROUTED 24" | | 3 | 2 | | | | | |
| | 438 | 3 | | 0.0108 | 14.9 | | 1.60 | |
| | 439:MH27 | 2 | | 0.0108 | 15.0 | | 1.53 | |
| COMBINED FLOW AT | 440 | 6& 2 | 3 | 0.0489 | 40.0 | | 1.60 | |
| HYDROGRAPH AT | 446:BP3E | 4 | - | 0.0003 | 0.7 | NA | 1.50 | 4.34 |
| ROUTED 24" | | 4 | 5 | | | | | |
| | 446:BP3E | 4 | | 0.0003 | 1.0 | | 1.60 | |
| | 447 | 5 | | 0.0003 | 1.0 | | 1.53 | |
| COMBINED FLOW AT | 448:MH27 | 3& 5 | 6 | 0.0491 | 40.5 | | 1.60 | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| ROUTED 42" | | 6 | 3 | | | | | |
| | 448:MH27 | 6 | | 0.0491 | 40.5 | | 1.60 | |
| | 445 | 3 | | 0.0491 | 40.2 | | 1.60 | |
| HYDROGRAPH AT | 446:BP4E | 4 | - | 0.0005 | 1.3 | NA | 1.50 | 4.32 |
| ROUTED 24" | | 4 | 5 | | | | | |
| | 446:BP4E | 4 | | 0.0005 | 1.3 | | 1.50 | |
| | 447 | 5 | | 0.0005 | 1.3 | | 1.50 | |
| COMBINED FLOW AT | 448:MH28 | 3& 5 | 6 | 0.0496 | 41.1 | | 1.60 | |
| ROUTED 42" | | 6 | 2 | | | | | |
| | 448:MH28 | 6 | | 0.0496 | 41.1 | | 1.60 | |
| | 449 | 2 | | 0.0496 | 40.9 | | 1.60 | |
| HYDROGRAPH AT | 450:N1A2 | 3 | - | 0.0071 | 17.5 | NA | 1.50 | 3.84 |
| RESERVOIR HYD | 451:N1A2 | 3 | 4 | 0.0071 | 7.9 | | 2.25 | |
| ROUTED 18" | | 4 | 5 | | | | | |
| | 451:N1A2 | 4 | | 0.0071 | 7.9 | | 2.25 | |
| | 452:MH29 | 5 | | 0.0071 | 7.4 | | 2.27 | |
| COMBINED FLOW AT | 453:MH29 | 2& 5 | 3 | 0.0567 | 47.9 | | 1.60 | |
| ROUTED 42" | | 3 | 4 | | | | | |
| | 453:MH29 | 3 | | 0.0567 | 47.9 | | 1.60 | |
| | 454 | 4 | | 0.0567 | 47.7 | | 1.60 | |
| HYDROGRAPH AT | 455:BP4W | 2 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | 456:RM | 3 | - | 0.0030 | 7.9 | NA | 1.50 | 4.17 |
| RESERVOIR HYD | 457:RM:P | 3 | 5 | 0.0030 | 3.4 | | 2.35 | |
| ROUTED 18" | | 5 | 6 | | | | | |
| | 457:RM:P | 5 | | 0.0030 | 3.4 | | 2.35 | |
| | 458 | 6 | | 0.0030 | 3.4 | | 2.37 | |
| COMBINED FLOW AT | 459 | 2& 6 | 5 | 0.0041 | 6.5 | | 1.50 | |
| ROUTED 18" | | 5 | 3 | | | | | |
| | 459 | 5 | | 0.0041 | 6.5 | | 1.50 | |
| | 460 | 3 | | 0.0041 | 6.5 | | 1.50 | |
| COMBINED FLOW AT | 461:MH30 | 4& 3 | 2 | 0.0609 | 52.2 | | 1.60 | |
| HYDROGRAPH AT | 437:BP5E | 3 | - | 0.0009 | 2.5 | NA | 1.50 | 4.31 |
| COMBINED FLOW AT | 438 | 2& 3 | 4 | 0.0618 | 53.8 | | 1.60 | |
| ROUTED 42" | | 4 | 1 | | | | | |
| | 438 | 4 | | 0.0618 | 53.8 | | 1.60 | |
| | 462 | 1 | | 0.0618 | 53.4 | | 1.60 | |
| HYDROGRAPH AT | 469:RC2 | 2 | - | 0.0064 | 16.7 | NA | 1.50 | 4.07 |
| DIVIDED FLOW AT | | 2 | 2& 6 | | | | | |
| | RC_CB | 2 | - | 0.0000 | 10.3 | | 1.40 | |
| | RC2_RCS | 6 | - | 0.0000 | 6.4 | | 1.00 | |
| ROUTED 18" | | 2 | 3 | | | | | |
| | RC_CB | 2 | | 0.0000 | 10.3 | | 1.60 | |
| | 470 | 3 | | 0.0000 | 10.5 | | 1.43 | |
| HYDROGRAPH AT | 466:BP5W | 4 | - | 0.0015 | 4.1 | NA | 1.50 | 4.30 |
| DIVIDED FLOW AT | | 4 | 5&49 | | | | | |
| | BP5WR | 5 | - | 0.0015 | 2.7 | | 0.97 | |
| | BP5WS | 49 | - | 0.0000 | 1.5 | | 0.00 | |
| COMBINED FLOW AT | 471 | 3& 5 | 2 | 0.0015 | 13.2 | | 1.43 | |
| ROUTED 18" | | 2 | 3 | | | | | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| | 471 | 2 | | 0.0015 | 13.2 | | 1.43 | |
| | 472 | 3 | | 0.0015 | 13.3 | | 1.43 | |
| COMBINED FLOW AT | 473:MH32 | 1& 3 | 2 | 0.0633 | 66.4 | | 1.60 | |
| ROUTED 42" | | 2 | 3 | | | | | |
| | 473:MH32 | 2 | | 0.0633 | 66.4 | | 1.60 | |
| | 474:MH23 | 3 | | 0.0633 | 66.4 | | 1.60 | |
| COMBINED FLOW AT | 475:MH23 | 18& 3 | 4 | 0.2096 | 240.2 | | 1.60 | |
| ROUTED 84" | | 4 | 2 | | | | | |
| | 475:MH23 | 4 | | 0.2096 | 240.2 | | 1.60 | |
| | 476 | 2 | | 0.2096 | 240.4 | | 1.60 | |
| HYDROGRAPH AT | 477:RC3 | 3 | - | 0.0058 | 15.6 | NA | 1.50 | 4.21 |
| COMBINED FLOW AT | 478 | 6& 3 | 4 | 0.0058 | 22.0 | | 1.50 | |
| COMBINED FLOW AT | 478 | 2& 4 | 5 | 0.2154 | 252.5 | | 1.57 | |
| ROUTED 84" | | 5 | 2 | | | | | |
| | 478 | 5 | | 0.2154 | 252.5 | | 1.57 | |
| | 479:MH33 | 2 | | 0.2154 | 253.8 | | 1.57 | |
| ROUTED 84" | | 2 | 3 | | | | | |
| | 479:MH33 | 2 | | 0.2154 | 253.8 | | 1.57 | |
| | 480:MH34 | 3 | | 0.2154 | 255.2 | | 1.57 | |
| ROUTED 84" | | 3 | 2 | | | | | |
| | 480:MH34 | 3 | | 0.2154 | 255.2 | | 1.57 | |
| | 481:CALO | 2 | | 0.2154 | 255.6 | | 1.60 | |
| HYDROGRAPH AT | 700:BP-M | 1 | - | 0.0005 | 0.7 | NA | 1.50 | 2.03 |
| ROUTED 18" | | 1 | 2 | | | | | |
| | 700:BP-M | 1 | | 0.0005 | 1.0 | | 1.57 | |
| | 701 | 2 | | 0.0005 | 1.0 | | 1.60 | |
| ROUTED | | 49 | 3 | | | | | |
| | BP5WS | 49 | | 0.0000 | 1.5 | | 1.50 | |
| | BP6WS | 3 | | 0.0000 | 1.0 | | 1.53 | |
| HYDROGRAPH AT | 702:BP6W | 4 | - | 0.0006 | 1.7 | NA | 1.50 | 4.31 |
| COMBINED FLOW AT | 703 | 3& 4 | 5 | 0.0006 | 2.6 | | 1.53 | |
| COMBINED FLOW AT | 704 | 2& 5 | 6 | 0.0012 | 3.3 | | 1.53 | |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| HYDROGRAPH AT | A1 | 1 | - | 0.0047 | 12.0 | NA | 1.50 | 3.99 |
| HYDROGRAPH AT | A13A2 | 3 | - | 0.0007 | 1.9 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | A13A1 | 7 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | A13B1 | 9 | - | 0.0003 | 0.8 | NA | 1.50 | 4.33 |
| HYDROGRAPH AT | A13B2 | 12 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | A13C | 15 | - | 0.0011 | 3.0 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | A2 | 19 | - | 0.0095 | 25.3 | NA | 1.50 | 4.16 |
| HYDROGRAPH AT | A3 | 3 | - | 0.0125 | 31.8 | NA | 1.50 | 3.97 |
| HYDROGRAPH AT | A4 | 4 | - | 0.0031 | 8.3 | NA | 1.50 | 4.20 |
| HYDROGRAPH AT | A10 | 11 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | A8 | 15 | - | 0.0054 | 14.1 | NA | 1.50 | 4.09 |
| HYDROGRAPH AT | A14A | 1 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | A16 | 6 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| HYDROGRAPH AT | A14B1 | 9 | - | 0.0019 | 5.2 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | A6 | 13 | - | 0.0027 | 7.0 | NA | 1.50 | 4.06 |
| HYDROGRAPH AT | A14B2 | 2 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | A7 | 5 | - | 0.0010 | 2.7 | NA | 1.50 | 4.23 |
| HYDROGRAPH AT | A15A | 10 | - | 0.0008 | 2.1 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | A9 | 14 | - | 0.0024 | 6.2 | NA | 1.50 | 4.05 |
| HYDROGRAPH AT | A15B | 17 | - | 0.0008 | 2.1 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | A11 | 2 | - | 0.0011 | 2.7 | NA | 1.50 | 3.83 |
| HYDROGRAPH AT | A17 | 2 | - | 0.0044 | 11.8 | NA | 1.50 | 4.18 |
| HYDROGRAPH AT | A12 | 6 | - | 0.0039 | 10.3 | NA | 1.50 | 4.15 |
| HYDROGRAPH AT | B26 | 18 | - | 0.0009 | 1.6 | NA | 1.50 | 2.86 |
| HYDROGRAPH AT | B1A | 1 | - | 0.0039 | 10.4 | NA | 1.50 | 4.17 |
| HYDROGRAPH AT | B1B | 3 | - | 0.0017 | 4.6 | NA | 1.50 | 4.18 |
| HYDROGRAPH AT | B22 | 4 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| HYDROGRAPH AT | B1C | 1 | - | 0.0015 | 4.0 | NA | 1.50 | 4.19 |
| HYDROGRAPH AT | B18A2 | 1 | - | 0.0007 | 1.9 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B18A1 | 4 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B1D | 7 | - | 0.0043 | 11.5 | NA | 1.50 | 4.16 |
| HYDROGRAPH AT | B18B | 10 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | B18C | 13 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B3 | 6 | - | 0.0038 | 9.6 | NA | 1.50 | 3.93 |
| HYDROGRAPH AT | 232:B27 | 9 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| HYDROGRAPH AT | B19A1 | 12 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | B2A | 6 | - | 0.0015 | 3.3 | NA | 1.50 | 3.46 |
| HYDROGRAPH AT | B2B | 1 | - | 0.0005 | 0.9 | NA | 1.50 | 2.87 |
| HYDROGRAPH AT | B4 | 3 | - | 0.0033 | 9.1 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | B5 | 7 | - | 0.0060 | 16.1 | NA | 1.50 | 4.18 |
| HYDROGRAPH AT | B6 | 8 | - | 0.0006 | 1.7 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B7 | 11 | - | 0.0008 | 1.5 | NA | 1.50 | 2.86 |
| HYDROGRAPH AT | B19A2 | 1 | - | 0.0004 | 1.0 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | B19B | 3 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | B19D1 | 6 | - | 0.0004 | 1.1 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | B19C | 8 | - | 0.0011 | 3.1 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B19D2 | 16 | - | 0.0005 | 1.4 | NA | 1.50 | 4.32 |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| HYDROGRAPH AT | B20A2 | 17 | - | 0.0005 | 1.4 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | B10 | 1 | - | 0.0033 | 8.5 | NA | 1.50 | 4.02 |
| HYDROGRAPH AT | B9 | 7 | - | 0.0037 | 9.7 | NA | 1.50 | 4.11 |
| HYDROGRAPH AT | B13 | 1 | - | 0.0030 | 8.0 | NA | 1.50 | 4.15 |
| HYDROGRAPH AT | B14 | 4 | - | 0.0033 | 8.6 | NA | 1.50 | 4.06 |
| HYDROGRAPH AT | B20A1 | 1 | - | 0.0005 | 1.4 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | B23 | 3 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| HYDROGRAPH AT | B20B | 6 | - | 0.0017 | 4.7 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | B24 | 9 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| HYDROGRAPH AT | B20C | 12 | - | 0.0009 | 2.5 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B15 | 5 | - | 0.0029 | 7.5 | NA | 1.50 | 4.07 |
| HYDROGRAPH AT | B16 | 9 | - | 0.0033 | 9.0 | NA | 1.50 | 4.24 |
| HYDROGRAPH AT | B21A | 1 | - | 0.0009 | 2.5 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B21B | 3 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B25 | 6 | - | 0.0001 | 0.3 | NA | 1.50 | 4.41 |
| HYDROGRAPH AT | B21C | 9 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | B21D | 16 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | C1A | 2 | - | 0.0068 | 15.7 | NA | 1.50 | 3.61 |
| HYDROGRAPH AT | C1B | 4 | - | 0.0011 | 3.0 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | C3A | 3 | - | 0.0014 | 3.9 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | C3E | 6 | - | 0.0003 | 0.8 | NA | 1.50 | 4.33 |
| HYDROGRAPH AT | C3C | 9 | - | 0.0006 | 1.6 | NA | 1.50 | 4.17 |
| HYDROGRAPH AT | C3D | 10 | - | 0.0004 | 0.5 | NA | 1.50 | 2.04 |
| HYDROGRAPH AT | B8A | 3 | - | 0.0025 | 6.7 | NA | 1.50 | 4.20 |
| HYDROGRAPH AT | B8B | 4 | - | 0.0019 | 5.2 | NA | 1.50 | 4.25 |
| HYDROGRAPH AT | B8C | 9 | - | 0.0046 | 12.3 | NA | 1.50 | 4.17 |
| HYDROGRAPH AT | 385:E1 | 16 | - | 0.0004 | 1.0 | NA | 1.50 | 4.33 |
| HYDROGRAPH AT | 389:E2 | 20 | - | 0.0008 | 2.2 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | 393:E3 | 3 | - | 0.0003 | 0.8 | NA | 1.50 | 4.34 |
| HYDROGRAPH AT | 406:E5 | 10 | - | 0.0003 | 0.7 | NA | 1.50 | 4.34 |
| HYDROGRAPH AT | 410:N2A1 | 2 | - | 0.0223 | 48.4 | NA | 1.50 | 3.38 |
| HYDROGRAPH AT | 413:BP1W | 2 | - | 0.0010 | 2.7 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | 405:BP1E | 5 | - | 0.0008 | 2.3 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | 426:BP2W | 3 | - | 0.0006 | 1.5 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | 421:N1B2 | 3 | - | 0.0116 | 28.6 | NA | 1.50 | 3.84 |
| HYDROGRAPH AT | 428:BP2E | 3 | - | 0.0010 | 2.9 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | 428:BP-M | 6 | - | 0.0011 | 0.6 | NA | 1.80 | 0.81 |
| HYDROGRAPH AT | 433:BP3E | 3 | - | 0.0005 | 1.5 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | 437:BP3W | 3 | - | 0.0015 | 4.2 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | 441:PB | 5 | - | 0.0064 | 16.6 | NA | 1.50 | 4.05 |
| HYDROGRAPH AT | 446:BP3E | 4 | - | 0.0003 | 0.7 | NA | 1.50 | 4.34 |
| HYDROGRAPH AT | 446:BP4E | 4 | - | 0.0005 | 1.3 | NA | 1.50 | 4.32 |
| HYDROGRAPH AT | 450:N1A2 | 3 | - | 0.0071 | 17.5 | NA | 1.50 | 3.84 |
| HYDROGRAPH AT | 455:BP4W | 2 | - | 0.0012 | 3.3 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | 456:RM | 3 | - | 0.0030 | 7.9 | NA | 1.50 | 4.17 |
| HYDROGRAPH AT | 437:BP5E | 3 | - | 0.0009 | 2.5 | NA | 1.50 | 4.31 |
| HYDROGRAPH AT | 469:RC2 | 2 | - | 0.0064 | 16.7 | NA | 1.50 | 4.07 |
| HYDROGRAPH AT | 466:BP5W | 4 | - | 0.0015 | 4.1 | NA | 1.50 | 4.30 |
| HYDROGRAPH AT | 477:RC3 | 3 | - | 0.0058 | 15.6 | NA | 1.50 | 4.21 |

| DESCRIPTION | HYDROGRAPH LABEL | FROM ID NO | TO ID NO | AREA SQ MI | DISCHARGE CFS | CURVE NO | TIME TO PEAK HR | CFS PER ACRE |
|---|---|---|---|---|---|---|---|---|
| HYDROGRAPH AT | 700:BP-M | 1 | - | 0.0005 | 0.7 | NA | 1.50 | 2.03 |
| HYDROGRAPH AT | 702:BP6W | 4 | - | 0.0006 | 1.7 | NA | 1.50 | 4.31 |

## APPENDIX II: HYDRAULIC COMPUTATIONS

CAPACITIES OF INLETS ON GRADE . . . . . A2-1
POND ANALYSIS . . . . . A2-7
HGL COMPUTATIONS . . . . . A2-41

## SUMMARY OF INLET GRATE CAPACITIES ON GRADE

| INLET/ TYPE | LOCATION | AVERAGE SLOPE | WIDTH F-F/ROW | Q 100 (CFS) | NORMAL DEPTH | Q GRATE (CFS) |
|---|---|---|---|---|---|---|
| DBL "A" | BASIN A-3 | 0.90% | 36'/N.A. | 8.8 | 0.45 | 5.5 |
| DBL "A" | BASIN A-3 | 2.00% | 36'/N.A. | 35.3 | 0.62 | 13.0 |
| DBL "C" | BASIN A-3 | 2.00% | 36'/N.A. | 22.3 | 0.53 | 10.5 |
| "A" | BASIN A-3 | 2.00% | 36'/N.A. | 15.7 | 0.47 | 7.2 |
| "C" | BASIN A-3 | 2.00% | 36'/N.A. | 8.5 | 0.39 | 5.0 |
| "A" | BASIN B-1-A/B | 5.00% | 28'/N.A. | 10.5 | 0.36 | 6.4 |
| "A" | BASIN B-16 | 4.00% | 36'/N.A. | 9.2 | 0.36 | 5.6 |
| "C" | BASIN B-16 | 1.00% | 36'/N.A. | 3.6 | 0.34 | 2.5 |

NOTE: THE ONLY INLETS SHOWN ARE ON GRADE.
SEE THE SECTION ON PONDS FOR INLETS IN SUMP.

BASIN A-3A: STD CURB -- 2% CROSS SLOPE

MANNING'S N = .0170 SLOPE = .0090

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | -10.00 | 0.87 | 3 | 0.00 | 0.00 | 5 | 40.00 | 0.89 |
| 2 | 0.00 | 0.67 | 4 | 2.00 | 0.13 | | | |

| WSEL (FT) | DEPTH INC | FLOW AREA (SQ FT) | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOP WID |
|---|---|---|---|---|---|---|
| 0.05 | 0.05 | 0.0 | 0.0 | 0.8 | 0.7 | 0.77 |
| 0.10 | 0.10 | 0.1 | 0.1 | 1.6 | 1.1 | 1.54 |
| 0.15 | 0.15 | 0.2 | 0.2 | 3.2 | 1.2 | 3.00 |
| 0.20 | 0.20 | 0.4 | 0.5 | 5.7 | 1.4 | 5.50 |
| 0.25 | 0.25 | 0.7 | 1.2 | 8.3 | 1.6 | 8.00 |
| 0.30 | 0.30 | 1.2 | 2.3 | 10.8 | 1.9 | 10.50 |
| 0.35 | 0.35 | 1.8 | 3.9 | 13.4 | 2.2 | 13.00 |
| 0.40 | 0.40 | 2.5 | 6.0 | 15.9 | 2.4 | 15.50 |
| 0.45 | 0.45 | 3.3 | 8.8 | 18.5 | 2.6 | 18.00 |
| 0.50 | 0.50 | 4.3 | 12.3 | 21.0 | 2.9 | 20.50 |
| 0.55 | 0.55 | 5.4 | 16.7 | 23.6 | 3.1 | 23.00 |
| 0.60 | 0.60 | 6.6 | 21.8 | 26.1 | 3.3 | 25.50 |
| 0.65 | 0.65 | 7.9 | 27.9 | 28.7 | 3.5 | 28.00 |
| 0.70 | 0.70 | 9.4 | 34.0 | 32.7 | 3.6 | 32.00 |
| 0.75 | 0.75 | 11.1 | 40.9 | 37.8 | 3.7 | 37.00 |
| 0.80 | 0.80 | 13.1 | 49.4 | 42.8 | 3.8 | 42.00 |
| 0.85 | 0.85 | 15.3 | 59.6 | 47.9 | 3.9 | 47.00 |
| 0.87 | 0.87 | 16.3 | 64.1 | 49.9 | 3.9 | 49.00 |

Q = 8.8 cfs

$D_N = .45'$

$Q_{Grate} = 5.5\,cfs$ (Type DBL "A")

$Q_{Removed} = 5.5\,cfs$

$Q_{Remaining} = 3.3\,cfs$

$Q_{Remaining\ @\ Eagle\ Ranch\ Road\ Enterance} = \overset{32.4}{Q_{A-3}} + \overset{8.4}{Q_{A-4}} - 5.5\,cfs$

$= 35.3\,cfs$

BASIN A-3: STD CURB -- 2% CROSS SLOPE

MANNING'S N = .0170 SLOPE = .0200

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | -10.00 | 0.87 | 3 | 0.00 | 0.00 | 5 | 40.00 | 0.89 |
| 2 | 0.00 | 0.67 | 4 | 2.00 | 0.13 | | | |

| WSEL (FT) | DEPTH INC | FLOW AREA (SQ FT) | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOP WID |
|---|---|---|---|---|---|---|
| 0.05 | 0.05 | 0.0 | 0.0 | 0.8 | 1.0 | 0.77 |
| 0.10 | 0.10 | 0.1 | 0.1 | 1.6 | 1.6 | 1.54 |
| 0.15 | 0.15 | 0.2 | 0.3 | 3.2 | 1.8 | 3.00 |
| 0.20 | 0.20 | 0.4 | 0.8 | 5.7 | 2.1 | 5.50 |
| 0.25 | 0.25 | 0.7 | 1.8 | 8.3 | 2.5 | 8.00 |
| 0.30 | 0.30 | 1.2 | 3.4 | 10.8 | 2.8 | 10.50 |
| 0.35 | 0.35 | 1.8 | 5.7 | 13.4 | 3.2 | 13.00 |
| 0.40 | 0.40 | 2.5 | 9.0 | 15.9 | 3.6 | 15.50 |
| 0.45 | 0.45 | 3.3 | 13.1 | 18.5 | 3.9 | 18.00 |
| 0.50 | 0.50 | 4.3 | 18.4 | 21.0 | 4.3 | 20.50 |
| 0.55 | 0.55 | 5.4 | 24.8 | 23.6 | 4.6 | 23.00 |
| 0.60 | 0.60 | 6.6 | 32.6 | 26.1 | 4.9 | 25.50 |
| 0.65 | 0.65 | 7.9 | 41.6 | 28.7 | 5.2 | 28.00 |
| 0.70 | 0.70 | 9.4 | 50.7 | 32.7 | 5.4 | 32.00 |
| 0.75 | 0.75 | 11.1 | 61.0 | 37.8 | 5.5 | 37.00 |
| 0.80 | 0.80 | 13.1 | 73.7 | 42.8 | 5.6 | 42.00 |
| 0.85 | 0.85 | 15.3 | 88.8 | 47.9 | 5.8 | 47.00 |
| 0.87 | 0.87 | 16.3 | 95.6 | 49.9 | 5.9 | 49.00 |

Q=35.3 cfs

$D_N = .62'$

$E = 1.01'$

Q=13.0 cfs (Type DBL "A")

$Q_{Remaining} = 22.3$ cfs

$D_N = .53'$

Q = 10.5 cfs (Type DBL "C")

$Q_{Remaining} = 11.8$ cfs

$Q_{@MH17} = 11.8\text{cfs} + \overset{1.0}{Q_{A-10}} + \overset{\frac{1}{5}14.3}{\frac{1}{5}Q_{A-8}}$
$= 15.7$ cfs

$D_N = .47'$

Q = 7.2 cfs (Type "A")

$Q_{Remaining} = 8.5$ cfs

$D_N = .39'$

Q = 5.0 cfs (Type "C")

$Q_{Remaining} = 3.5$ cfs

BASIN B-1-A/B: STD CURB -- 2% CROSS SLOPE

MANNING'S N = .0170 SLOPE = .0500

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | -10.00 | 0.87 | 3 | 0.00 | 0.00 | 5 | 40.00 | 0.89 |
| 2 | 0.00 | 0.67 | 4 | 2.00 | 0.13 | | | |

| WSEL (FT) | DEPTH INC | FLOW AREA (SQ FT) | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOP WID |
|---|---|---|---|---|---|---|
| 0.05 | 0.05 | 0.0 | 0.0 | 0.8 | 1.6 | 0.77 |
| 0.10 | 0.10 | 0.1 | 0.2 | 1.6 | 2.5 | 1.54 |
| 0.15 | 0.15 | 0.2 | 0.5 | 3.2 | 2.9 | 3.00 |
| 0.20 | 0.20 | 0.4 | 1.3 | 5.7 | 3.3 | 5.50 |
| 0.25 | 0.25 | 0.7 | 2.8 | 8.3 | 3.9 | 8.00 |
| 0.30 | 0.30 | 1.2 | 5.4 | 10.8 | 4.5 | 10.50 |
| 0.35 | 0.35 | 1.8 | 9.1 | 13.4 | 5.1 | 13.00 |
| 0.40 | 0.40 | 2.5 | 14.2 | 15.9 | 5.7 | 15.50 |
| 0.45 | 0.45 | 3.3 | 20.8 | 18.5 | 6.2 | 18.00 |
| 0.50 | 0.50 | 4.3 | 29.1 | 21.0 | 6.8 | 20.50 |
| 0.55 | 0.55 | 5.4 | 39.3 | 23.6 | 7.3 | 23.00 |
| 0.60 | 0.60 | 6.6 | 51.5 | 26.1 | 7.8 | 25.50 |
| 0.65 | 0.65 | 7.9 | 65.8 | 28.7 | 8.3 | 28.00 |
| 0.70 | 0.70 | 9.4 | 80.2 | 32.7 | 8.5 | 32.00 |
| 0.75 | 0.75 | 11.1 | 96.5 | 37.8 | 8.7 | 37.00 |
| 0.80 | 0.80 | 13.1 | 116.5 | 42.8 | 8.9 | 42.00 |
| 0.85 | 0.85 | 15.3 | 140.4 | 47.9 | 9.2 | 47.00 |
| 0.87 | 0.87 | 16.3 | 151.1 | 49.9 | 9.3 | 49.00 |

$Q = 10.5$ cfs

$D_N = .36'$

$Q_{Grate} = 6.4$ cfs (Type "A")

$Q_{Remaining} = 4.1$ cfs

BASIN B-16: STD CURB -- 2% CROSS SLOPE

MANNING'S N = .0170 SLOPE = .0400

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | -10.00 | 0.87 | 3 | 0.00 | 0.00 | 5 | 40.00 | 0.89 |
| 2 | 0.00 | 0.67 | 4 | 2.00 | 0.13 | | | |

| WSEL (FT) | DEPTH INC | FLOW AREA (SQ FT) | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOP WID |
|---|---|---|---|---|---|---|
| 0.05 | 0.05 | 0.0 | 0.0 | 0.8 | 1.4 | 0.77 |
| 0.10 | 0.10 | 0.1 | 0.2 | 1.6 | 2.3 | 1.54 |
| 0.15 | 0.15 | 0.2 | 0.5 | 3.2 | 2.6 | 3.00 |
| 0.20 | 0.20 | 0.4 | 1.2 | 5.7 | 2.9 | 5.50 |
| 0.25 | 0.25 | 0.7 | 2.5 | 8.3 | 3.5 | 8.00 |
| 0.30 | 0.30 | 1.2 | 4.8 | 10.8 | 4.0 | 10.50 |
| 0.35 | 0.35 | 1.8 | 8.1 | 13.4 | 4.6 | 13.00 |
| 0.40 | 0.40 | 2.5 | 12.7 | 15.9 | 5.1 | 15.50 |
| 0.45 | 0.45 | 3.3 | 18.6 | 18.5 | 5.6 | 18.00 |
| 0.50 | 0.50 | 4.3 | 26.0 | 21.0 | 6.1 | 20.50 |
| 0.55 | 0.55 | 5.4 | 35.1 | 23.6 | 6.5 | 23.00 |
| 0.60 | 0.60 | 6.6 | 46.0 | 26.1 | 7.0 | 25.50 |
| 0.65 | 0.65 | 7.9 | 58.9 | 28.7 | 7.4 | 28.00 |
| 0.70 | 0.70 | 9.4 | 71.8 | 32.7 | 7.6 | 32.00 |
| 0.75 | 0.75 | 11.1 | 86.3 | 37.8 | 7.7 | 37.00 |
| 0.80 | 0.80 | 13.1 | 104.2 | 42.8 | 7.9 | 42.00 |
| 0.85 | 0.85 | 15.3 | 125.6 | 47.9 | 8.2 | 47.00 |
| 0.87 | 0.87 | 16.3 | 135.2 | 49.9 | 8.3 | 49.00 |

$Q = 9.2$ cfs

$D_N = .36'$

$Q_{Grate} = 5.6$ cfs (Type "A")

$Q_{Remaining} = 3.6$ cfs

BASIN B-16: STD CURB -- 2% CROSS SLOPE

MANNING'S N = .0170 SLOPE = .0100

| POINT | DIST | ELEV | POINT | DIST | ELEV | POINT | DIST | ELEV |
|---|---|---|---|---|---|---|---|---|
| 1 | -10.00 | 0.87 | 3 | 0.00 | 0.00 | 5 | 40.00 | 0.89 |
| 2 | 0.00 | 0.67 | 4 | 2.00 | 0.13 | | | |

| WSEL (FT) | DEPTH INC | FLOW AREA (SQ FT) | FLOW RATE (CFS) | WETTED PER (FT) | FLOW VEL (FPS) | TOP WID |
|---|---|---|---|---|---|---|
| 0.05 | 0.05 | 0.0 | 0.0 | 0.8 | 0.7 | 0.77 |
| 0.10 | 0.10 | 0.1 | 0.1 | 1.6 | 1.1 | 1.54 |
| 0.15 | 0.15 | 0.2 | 0.2 | 3.2 | 1.3 | 3.00 |
| 0.20 | 0.20 | 0.4 | 0.6 | 5.7 | 1.5 | 5.50 |
| 0.25 | 0.25 | 0.7 | 1.3 | 8.3 | 1.7 | 8.00 |
| 0.30 | 0.30 | 1.2 | 2.4 | 10.8 | 2.0 | 10.50 |
| 0.35 | 0.35 | 1.8 | 4.1 | 13.4 | 2.3 | 13.00 |
| 0.40 | 0.40 | 2.5 | 6.3 | 15.9 | 2.5 | 15.50 |
| 0.45 | 0.45 | 3.3 | 9.3 | 18.5 | 2.8 | 18.00 |
| 0.50 | 0.50 | 4.3 | 13.0 | 21.0 | 3.0 | 20.50 |
| 0.55 | 0.55 | 5.4 | 17.6 | 23.6 | 3.3 | 23.00 |
| 0.60 | 0.60 | 6.6 | 23.0 | 26.1 | 3.5 | 25.50 |
| 0.65 | 0.65 | 7.9 | 29.4 | 28.7 | 3.7 | 28.00 |
| 0.70 | 0.70 | 9.4 | 35.9 | 32.7 | 3.8 | 32.00 |
| 0.75 | 0.75 | 11.1 | 43.2 | 37.8 | 3.9 | 37.00 |
| 0.80 | 0.80 | 13.1 | 52.1 | 42.8 | 4.0 | 42.00 |
| 0.85 | 0.85 | 15.3 | 62.8 | 47.9 | 4.1 | 47.00 |
| 0.87 | 0.87 | 16.3 | 67.6 | 49.9 | 4.1 | 49.00 |

$Q = 3.6$ cfs

$D_N = .34'$

$Q_{Grate} = 2.5$ cfs (Type "C")

$Q_{Remaining}$ (flows to Basin D-1) $= 1.1$ cfs

## POND ANALYSIS

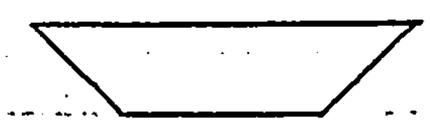

VOLUMES ..... A2-8
METHOD OF ANALYSIS ..... A2-9
POND A-1 ..... A2-12
POND A-2 ..... A2-13
POND A-6 ..... A2-14
POND A-7 ..... A2-15
POND A-8 ..... A2-16
POND A-9 ..... A2-17
POND A-11 ..... A2-18
POND A-12 ..... A2-19
POND A-17 ..... A2-20
POND B-1-C ..... A2-21
POND B-1-D ..... A2-22
POND B-3 ..... A2-23
POND B-7 ..... A2-24
POND B-8-A/B-8-B ..... A2-25
POND B-8-C ..... A2-26
POND B-9 ..... A2-27
POND B-13 ..... A2-28
POND B-14 ..... A2-29
POND B-15 ..... A2-30
POND B-22 ..... A2-31
POND B-26 ..... A2-32
POND D-1 ..... A2-38

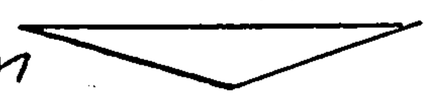
# POND ANALYSIS – VOLUMES

## POND CHARACTERISTICS

| POND # | DESCRIPTION | TOP AREA | BOTTOM AREA | DEPTH | VOL ft³ | VOL Ac-ft |
|---|---|---|---|---|---|---|
| B-26 | OUTLOT C-4 | 15,350 | 3,372 | 8' | 74,888 | 1.719 |
| B-6 | COTTONWOOD DR. W. | 4,550 | 775 | 5' | 13,312 | 0.306 |
| B-7 | COTTONWOOD DR. E. | 10,425 | 800 | 5' | 28,062 | 0.644 |
| B-9 | 7-BAR LOOP RD. | 4,975 | 375 | 5' | 13,375 | 0.307 |
| BD-1 | CORRALES RD BAR DITCH | 6,000 | 0 | 2' | 6,000 | 0.138 |
| PL | PARKING LOT (TYP OF 12) | 22,500 | 0 | 0.75' | ~~0,440~~ | ~~0.194~~ .129 ✱ |
| D-1 * | BASIN D-WARD T13A | 2,556 | 0 | 2' | 2,556 | 0.059 |

+ POND D-1 IS FOR AN OFF-SITE BASIN (D)

✱ For Ponds with section  $V = \frac{1}{2}(A_{Top} + A_{Bottom}) \times D$

✱ For Ponds with section  $V = \frac{1}{3}(A_{Top} + A_{Bottom}) \times D$
(Parking Lot Ponds)

✱ Each pond's characteristics are calculated and summarized on the following pages.

BOHANNAN-HUSTON INC.

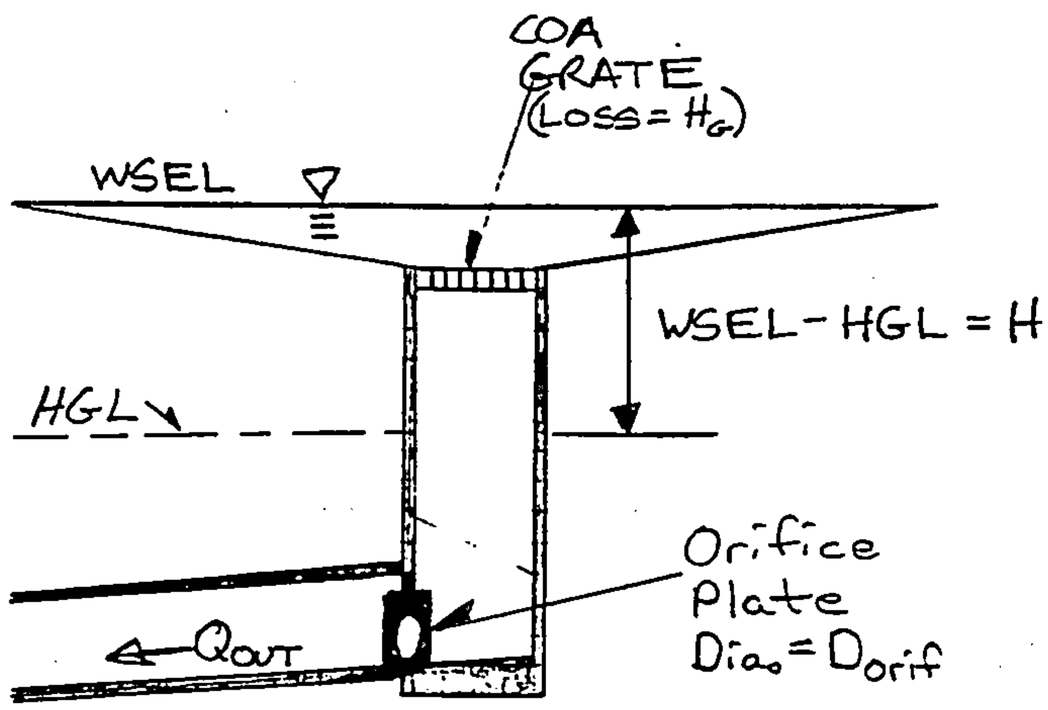
AZ-8

PROJECT NAME Cottonwood Mall SHEET ____ OF ____

PROJECT NO. 9013505 BY D.F. DATE 3/20/92

SUBJECT Drainage - Ponds ✱ Revised ~~CH'D~~ by MSJ DATE 7/94

# Method Used to Determine Stage-Discharge Relationships of a pond with a modified Type "D" Inlet




For Full Pipe Flow:

$$Head = WSEL - HGL - H_G$$

For Normal Depth Flow:

$$Head = WSEL - \left(Inv + \tfrac{1}{2} D_{orif}\right) - H_G$$

$H_G$ = Loss = Head Required to Push Flow (Q) thru Std Grate w/ 35% Clogging

$$Q_{ORIF} = .6\left(A_{ORIF}\right)\sqrt{64.4\,(Head)}$$

Note: This is an iterative solution.

$$Q_{OUT} = \begin{cases} Q_{Grate} & \text{when } Q_{Grate} < Q_{ORIF} \\ Q_{ORIF} & \text{when } Q_{ORIF} < Q_{GRATE} \end{cases}$$

| HEAD LOSS | AT | FLOW |
|---|---|---|
| 0.00 | | 0.00 |
| 0.01 | | 1.28 |
| 0.02 | | 1.81 |
| 0.03 | | 2.22 |
| 0.04 | | 2.57 |
| 0.05 | | 2.87 |
| 0.06 | | 3.14 |
| 0.07 | | 3.39 |
| 0.08 | | 3.63 |
| 0.09 | | 3.85 |
| 0.10 | | 4.06 |
| 0.11 | | 4.25 |
| 0.12 | | 4.44 |
| 0.13 | | 4.62 |
| 0.14 | | 4.80 |
| 0.15 | | 4.97 |
| 0.16 | | 5.13 |
| 0.17 | | 5.29 |
| 0.18 | | 5.44 |
| 0.19 | | 5.59 |
| 0.20 | | 5.74 |
| 0.21 | | 5.88 |
| 0.22 | | 6.02 |
| 0.23 | | 6.15 |
| 0.24 | | 6.28 |
| 0.25 | | 6.41 |
| 0.26 | | 6.54 |
| 0.27 | | 6.66 |
| 0.28 | | 6.79 |
| 0.29 | | 6.91 |
| 0.30 | | 7.03 |
| 0.31 | | 7.14 |
| 0.32 | | 7.26 |
| 0.33 | | 7.37 |
| 0.34 | | 7.48 |
| 0.35 | | 7.59 |
| 0.36 | | 7.70 |
| 0.37 | | 7.80 |
| 0.38 | | 7.91 |
| 0.39 | | 8.01 |
| 0.40 | | 8.11 |
| 0.41 | | 8.21 |
| 0.42 | | 8.31 |
| 0.43 | | 8.41 |
| 0.44 | | 8.51 |
| 0.45 | | 8.60 |
| 0.46 | | 8.70 |
| 0.47 | | 8.79 |
| 0.48 | | 8.89 |
| 0.49 | | 8.98 |
| 0.50 | | 9.07 |

BOHANNAN-HUSTON INC.

PROJECT NAME Cotton Wood Mall SHEET ____ OF A2-9

PROJECT NO. 90316.83 BY MSJ DATE 7/94

SUBJECT ____ CH'D ____ DATE ____

## Grate Capacity of COA STD Grate (Type "D" Inlet)

Weir Equation

$$Q = .65(2.68)\left(\frac{18.5'' + 31.9''}{12''/'}\right)(2)\,H^{1.5}$$

$$Q = 14.63\,H^{1.5}$$

Orifice Equation

$$Q = .65(.6)(4.10SF)\sqrt{64.4(H)}$$

$$Q = 1.6\sqrt{64.4(H)}$$

| H | Q | |
|---|---|---|
| .25 | 1.83 | weir |
| .50 | 5.20 | weir |
| .75 | 9.50 | weir |
| 1.00 | 12.84 | orifice |
| 2.00 | 18.16 | orifice |
| 3.00 | 22.24 | orifice |

## Capacity of Neenah R-2668 Type C Vented Lid

Open Area = 0.9SF

Open Perimeter $= \pi D = \pi\left(\frac{22\frac{1}{4}''}{12''/'}\right)\frac{1}{2} = 2.91'$

(consider only ½ Perimeter is open)

Weir Equation

$$Q = .65(2.68)(2.91')\,H^{1.5}$$

$$Q = 5.07\,H^{1.5}$$

Orifice Equation

$$Q = .65(.6)(.9SF)\sqrt{64.4(H)}$$

$$Q = .351\sqrt{64.4(H)}$$

| H | Q | |
|---|---|---|
| .25 | .63 | weir |
| .50 | 1.79 | weir |
| .75 | 2.44 | orifice |
| 1.00 | 2.82 | orifice |

BOHANNAN-HUSTON INC.

PROJECT NAME Cottonwood Mall SHEET ____ OF A2-10

PROJECT NO. 90316.83 BY MSJ DATE 7/94

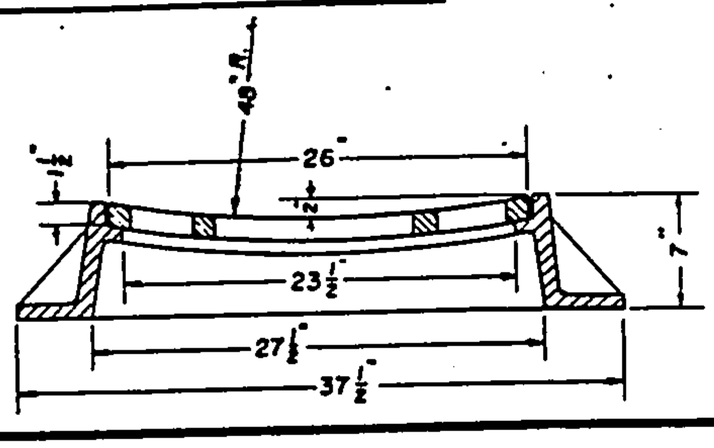
SUBJECT ____ CH'D ____ DATE ____

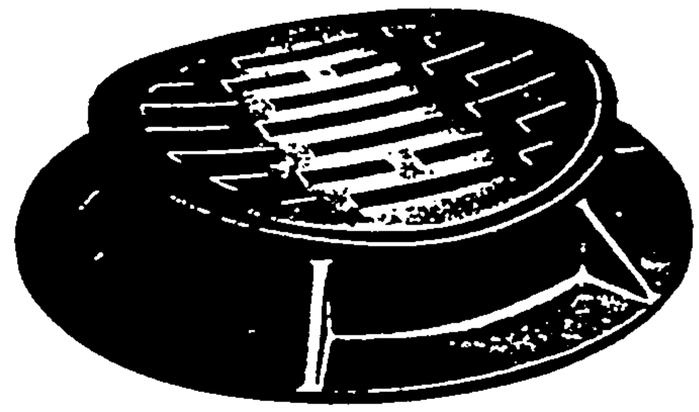
NEENAH FOUNDRY COMPANY

## R-2600 Catch Basin Frame and Concave Grate

**Heavy Duty**

Total Weight 365 Pounds



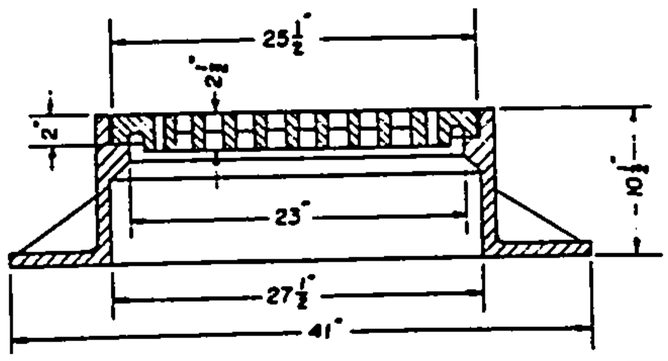



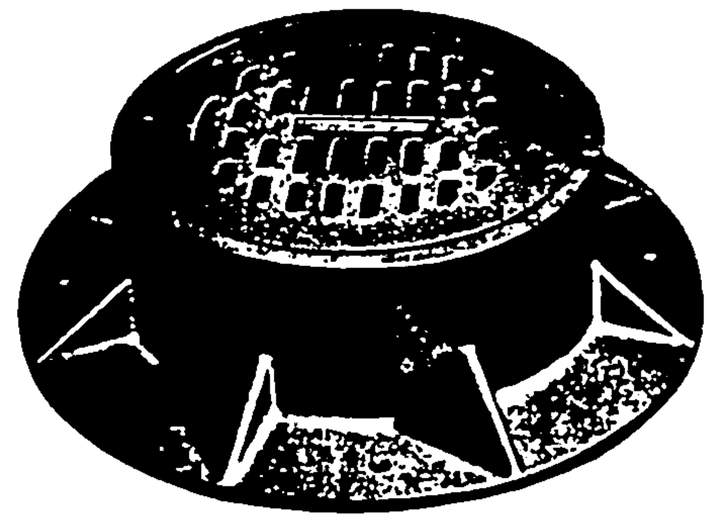
## R-2650 Catch Basin Frame and Grate

**Heavy Duty**

Total Weight 600 Pounds

Furnished with machined horizontal bearing surfaces.



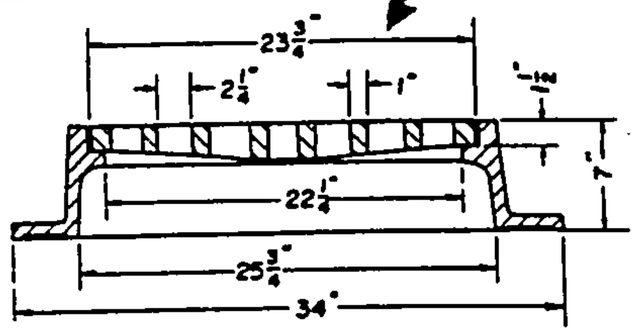
## R-2668 Catch Basin Frame and Type C Grate

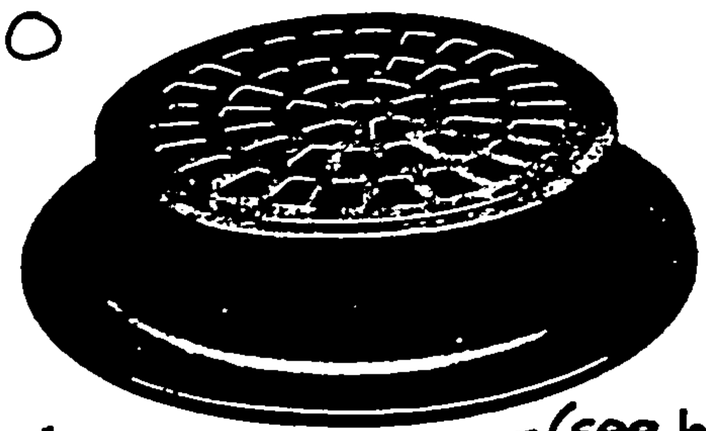
Closest match to COA STD DWG 2110

**Heavy Duty**

Total Weight 290 Pounds

Furnished with machined horizontal bearing surfaces.



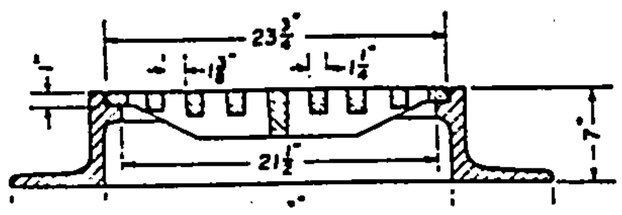
Open Area = 0.9SF (see below)

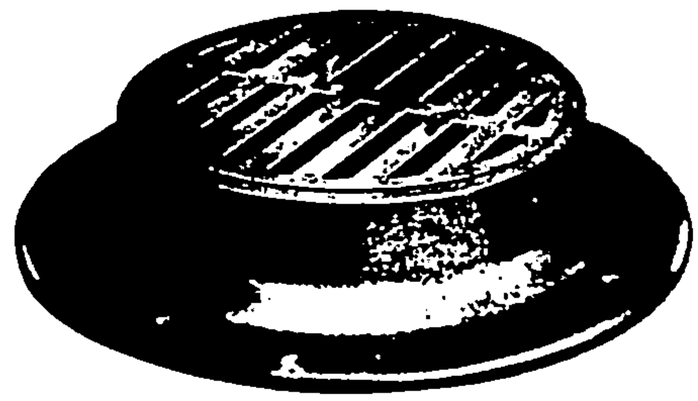
## R-2680 Catch Basin Frame and Grate

**Heavy Duty**

Total Weight 450 Pounds

Furnished with machined horizontal



Not recommended for bicycle traffic. For safety

| | | |
|---|---|---|
| [illegible] | [illegible] | 1.1 |
| R-2050 | F | 0.7 |
| R-2060 | A | 1.1 |
| R-2060 | B | 1.2 |
| R-2060 | C | 1.3 |
| [illegible] | G | 1.2 |
| R-2390 | B | 1.2 |
| R-2390 | C | 1.5 |
| R-2392 | C | 1.4 |
| R-2392 | G | 1.4 |
| R-2475 | A | 1.0 |
| R-2481 | A | 0.9 |
| R-2484 | D | 1.0 |
| R-2494 | G | 0.8 |
| R-2496 | E | 0.6 |
| R-2595 | D | 1.2 |
| R-2600 | K | 1.1 |
| R-2650 | G | 1.1 |
| R-2668 | C | 0.9 |
| R-2680 | G | 1.1 |

Type K indicates "Special" grate style and is not among standard types as illustrated.

| POND | A-1 | | MAX WSEL= | 61.25 | HGL in= | 57.62 | | LENGTH = | 150 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 60.25 | DELT WSEL= | 0.25 | | WIDTH = | 150 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 12.75 | 0.532 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 12.75 | 0.532 | 2.88 | 0.00 | 2.88 | 7.24 | 1.83 | 0.005 | 0.25 |
| 12.75 | 0.532 | 3.13 | 0.00 | 3.13 | 7.55 | 5.20 | 0.038 | 0.50 |
| 12.75 | 0.532 | 3.38 | 0.34 | 3.04 | 7.44 | 7.44 | 0.129 | 0.75 |
| 12.75 | 0.532 | 3.63 | 0.36 | 3.27 | 7.72 | 7.72 | 0.306 | 1.00 |

```
                    HYDROGRAPH NUMBER          A1

          RUNOFF VOLUME =        0.547 ACRE-FT
          PEAK DISCHARGE RATE =          12.0 CFS
          PEAK OCCURRED AT  1.50 HRS.


     ** ROUTE FLOW THROUGH PARKING LOT POND TYPE "D" INLET
     ** 12.75" ORIFICE CONTROLS AT ELEV 100.75 Q=7.44 NOT Q=9.50(GRATE)
     ROUTE RESERVOIR      ID=1   HYD=A1      INFLOW ID=1  CODE=00
                          OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                               0.00            0.000       100.00
                               1.83            0.005       100.25
                               5.20            0.038       100.50
                               7.44            0.129       100.75
                               7.72            0.306       101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                 INFLOW       WATER      WATER      TOTAL
   TIME        DISCHARGE     ELEV      VOLUME     OUTFLOW
   (HRS)        (CFS)        (FT)      (A-F)      (CFS)


     0.0          0.0       100.0        0.0
PEAK DISCHARGE =        6.73 CFS.
MAXIMUM WATER ELEVATION =  100.7 FT.
MAXIMUM RESERVOIR STORAGE =     0.10 ACRE-FT.
    PRINT HYD              ID=1   CODE=0

                    HYDROGRAPH NUMBER          A1


          RUNOFF VOLUME =        0.412 ACRE-FT
          PEAK DISCHARGE RATE =           6.7 CFS
          PEAK OCCURRED AT  1.65 HRS.
```

| POND | A-2 | | MAX WSEL= | 59.25 | HGL in= | 54.80 | | LENGTH = | 150 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 58.25 | DELT WSEL= | 0.25 | | WIDTH = | 150 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 18 | 1.060 | 0.00 | 0.00 | .0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 18 | 1.060 | 3.70 | 0.00 | 3.70 | 16.37 | 1.83 | 0.005 | 0.25 |
| 18 | 1.060 | 3.95 | 0.00 | 3.95 | 16.91 | 5.20 | 0.038 | 0.50 |
| 18 | 1.060 | 4.20 | 0.00 | 4.20 | 17.44 | 9.50 | 0.129 | 0.75 |
| 18 | 1.060 | 4.45 | 0.00 | 4.45 | 17.95 | 12.83 | 0.306 | 1.00 |

HYDROGRAPH NUMBER A2

RUNOFF VOLUME = 1.174 ACRE-FT
PEAK DISCHARGE RATE = 25.3 CFS
PEAK OCCURRED AT 1.50 HRS.

```
** ROUTE FLOW THROUGH PARKING LOT POND TYPE "D" INLET
** NO ORIFICE
ROUTE RESERVOIR      ID=19   HYD=A2:POND     INFLOW ID=19  CODE=00
                     OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                          0.00            0.000        100.00
                          1.83            0.005        100.25
                          5.20            0.038        100.50
                          9.50            0.129        100.75
                         12.84            0.306        101.00
```

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

| TIME (HRS) | INFLOW DISCHARGE (CFS) | WATER ELEV (FT) | WATER VOLUME (A-F) | TOTAL OUTFLOW (CFS) |
|---|---|---|---|---|
| 0.0 | 0.0 | 100.0 | 0.0 | |

```
PEAK DISCHARGE =      12.17 CFS.
MAXIMUM WATER ELEVATION =  100.9 FT.
MAXIMUM RESERVOIR STORAGE =    0.27 ACRE-FT.
    PRINT HYD              ID=19   CODE=0
```

HYDROGRAPH NUMBER A2:POND

RUNOFF VOLUME = 0.897 ACRE-FT
PEAK DISCHARGE RATE = 12.2 CFS
PEAK OCCURRED AT 1.70 HRS.

| POND | A-6 | | MAX WSEL= | 45.25 | HGL in= | 43.95 | | LENGTH = | 170 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 44.25 | DELT WSEL= | 0.25 | | WIDTH = | 100 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 7.25 | 0.172 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 7.25 | 0.172 | 0.55 | 0.01 | 0.54 | 1.01 | 1.01 | 0.004 | 0.25 |
| 7.25 | 0.172 | 0.80 | 0.01 | 0.79 | 1.23 | 1.23 | 0.029 | 0.50 |
| 7.25 | 0.172 | 1.05 | 0.01 | 1.04 | 1.41 | 1.41 | 0.098 | 0.75 |
| 7.25 | 0.172 | 1.30 | 0.01 | 1.29 | 1.57 | 1.57 | 0.231 | 1.00 |

```
                    HYDROGRAPH NUMBER          A6

     RUNOFF VOLUME =        0.316 ACRE-FT
     PEAK DISCHARGE RATE =          7.0 CFS
     PEAK OCCURRED AT  1.50 HRS.


**
** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
** 7.25" ORIFICE
ROUTE RESERVOIR:     ID=13   HYD=A6:POND     INFLOW ID=13  CODE=00
                     OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                          0.00            0.000        100.00
                          1.01            0.004        100.25
                          1.23            0.029        100.50
                          1.41            0.098        100.75
                          1.57            0.231        101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


            INFLOW       WATER      WATER      TOTAL
  TIME     DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)      (CFS)       (FT)      (A-F)      (CFS)


    0.0        0.0      100.0       0.0
PEAK DISCHARGE =       1.46 CFS.
MAXIMUM WATER ELEVATION =  100.8 FT.
MAXIMUM RESERVOIR STORAGE =     0.14 ACRE-FT.
    PRINT HYD              ID=13    CODE=0

                    HYDROGRAPH NUMBER     A6:POND


     RUNOFF VOLUME =        0.250 ACRE-FT
     PEAK DISCHARGE RATE =          1.5 CFS
     PEAK OCCURRED AT  2.05 HRS.
```

| POND | A-7 | | MAX WSEL= | 45.25 | HGL in= | 43.90 | | LENGTH = | 100 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 44.25 | DELT WSEL= | 0.25 | | WIDTH = | 100 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 2.75 | 0.025 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 2.75 | 0.025 | 0.60 | 0.00 | 0.60 | 0.15 | 0.15 | 0.002 | 0.25 |
| 2.75 | 0.025 | 0.85 | 0.00 | 0.85 | 0.18 | 0.18 | 0.017 | 0.50 |
| 2.75 | 0.025 | 1.10 | 0.00 | 1.10 | 0.21 | 0.21 | 0.057 | 0.75 |
| 2.75 | 0.025 | 1.35 | 0.00 | 1.35 | 0.23 | 0.23 | 0.136 | 1.00 |

```
                    HYDROGRAPH NUMBER          A7

        RUNOFF VOLUME =       0.126 ACRE-FT
        PEAK DISCHARGE RATE =         2.7 CFS
        PEAK OCCURRED AT  1.50 HRS.


    **
    ** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
    ** 2.75" ORIFICE
    ROUTE RESERVOIR      ID=5   HYD=A7:POND     INFLOW ID=5  CODE=00
                         OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                              0.00            0.000       100.00
                              0.15            0.002       100.25
                              0.18            0.017       100.50
                              0.21            0.057       100.75
                              0.23            0.136       101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


            INFLOW       WATER      WATER      TOTAL
  TIME     DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)      (CFS)       (FT)       (A-F)      (CFS)


    0.0          0.0      100.0        0.0
PEAK DISCHARGE =       0.21 CFS.
MAXIMUM WATER ELEVATION =  100.8 FT.
MAXIMUM RESERVOIR STORAGE =    0.08 ACRE-FT.
    PRINT HYD              ID=5   CODE=0

                    HYDROGRAPH NUMBER     A7:POND


        RUNOFF VOLUME =       0.017 ACRE-FT
        PEAK DISCHARGE RATE =         1.0 CFS
        PEAK OCCURRED AT  1.50 HRS.
```

| POND | A-8 | | MAX WSEL= | 44.25 | HGL in= | 42.58 | | LENGTH = | 130 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 43.25 | DELT WSEL= | 0.25 | | WIDTH = | 100 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 18 | 1.060 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 18 | 1.060 | 0.92 | 0.00 | 0.92 | 8.16 | 1.83 | 0.003 | 0.25 |
| 18 | 1.060 | 1.17 | 0.00 | 1.17 | 9.20 | 5.20 | 0.022 | 0.50 |
| 18 | 1.060 | 1.42 | 0.00 | 1.42 | 10.14 | 9.50 | 0.075 | 0.75 |
| 18 | 1.060 | 1.67 | 0.00 | 1.67 | 11.00 | 11.00 | 0.177 | 1.00 |

```
                    HYDROGRAPH NUMBER          A8

        RUNOFF VOLUME =       0.646 ACRE-FT
        PEAK DISCHARGE RATE =        14.1 CFS
        PEAK OCCURRED AT  1.50 HRS.


    ** ROUTE FLOW THROUGH PARKING LOT POND TYPE "D" INLET
    ** NO ORIFICE
    ROUTE RESERVOIR      ID=15   HYD=A8:POND     INFLOW ID=15  CODE=00
                         OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                              0.00            0.000       100.00
                              1.83            0.003       100.25
                              5.20            0.022       100.50
                              9.50            0.075       100.75
                             12.84            0.177       101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


          INFLOW       WATER      WATER      TOTAL
  TIME    DISCHARGE    ELEV       VOLUME     OUTFLOW
  (HRS)     (CFS)      (FT)       (A-F)      (CFS)


    0.0        0.0     100.0        0.0
PEAK DISCHARGE =       9.87 CFS.
MAXIMUM WATER ELEVATION =  100.8 FT.
MAXIMUM RESERVOIR STORAGE =     0.09 ACRE-FT.
    PRINT HYD              ID=15   CODE=0

                    HYDROGRAPH NUMBER     A8:POND


        RUNOFF VOLUME =       0.485 ACRE-FT
        PEAK DISCHARGE RATE =         9.9 CFS
        PEAK OCCURRED AT  1.60 HRS.
```

| POND | A-9 | | MAX WSEL= | 44.25 | HGL in= | 41.46 | | LENGTH = | 150 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 43.25 | DELT WSEL= | 0.25 | | WIDTH = | 100 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 5.75 | 0.108 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 5.75 | 0.108 | 2.04 | 0.01 | 2.03 | 1.24 | 1.24 | 0.003 | 0.25 |
| 5.75 | 0.108 | 2.29 | 0.01 | 2.28 | 1.31 | 1.31 | 0.026 | 0.50 |
| 5.75 | 0.108 | 2.54 | 0.01 | 2.53 | 1.38 | 1.38 | 0.086 | 0.75 |
| 5.75 | 0.108 | 2.79 | 0.01 | 2.78 | 1.45 | 1.45 | 0.204 | 1.00 |

```
                    HYDROGRAPH NUMBER          A9

          RUNOFF VOLUME =       0.279 ACRE-FT
          PEAK DISCHARGE RATE =         6.2 CFS
          PEAK OCCURRED AT  1.50 HRS.


     ** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
     ** 5.75" ORIFICE
     ROUTE RESERVOIR      ID=14   HYD=A9:POND      INFLOW ID=14  CODE=00
                          OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                               0.00            0.000       100.00
                               1.24            0.003       100.25
                               1.31            0.026       100.50
                               1.38            0.086       100.75
                               1.45            0.204       101.00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              INFLOW       WATER      WATER      TOTAL
  TIME      DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)       (CFS)       (FT)      (A-F)      (CFS)


    0.0          0.0      100.0       0.0
PEAK DISCHARGE =       1.39 CFS.
MAXIMUM WATER ELEVATION =  100.8 FT.
MAXIMUM RESERVOIR STORAGE =    0.11 ACRE-FT.
    PRINT HYD              ID=14   CODE=0

                    HYDROGRAPH NUMBER     A9:POND


          RUNOFF VOLUME =       0.221 ACRE-FT
          PEAK DISCHARGE RATE =         1.4 CFS
          PEAK OCCURRED AT  2.00 HRS.
```

POND A-11

MAX WSEL= 44.25 HGL in= 40.79
GRT ELEV= 43.25 DELT WSEL= 0.25

LENGTH = 130
WIDTH = 100
@ DEPTH = 0.75

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 2.125 | 0.015 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 2.125 | 0.015 | 2.71 | 0.00 | 2.71 | 0.20 | 0.20 | 0.003 | 0.25 |
| 2.125 | 0.015 | 2.96 | 0.00 | 2.96 | 0.20 | 0.20 | 0.022 | 0.50 |
| 2.125 | 0.015 | 3.21 | 0.00 | 3.21 | 0.21 | 0.21 | 0.075 | 0.75 |
| 2.125 | 0.015 | 3.46 | 0.00 | 3.46 | 0.22 | 0.22 | 0.177 | 1.00 |

```
                    HYDROGRAPH NUMBER        A11


          RUNOFF VOLUME =       0.117 ACRE-FT
          PEAK DISCHARGE RATE =         2.7 CFS
          PEAK OCCURRED AT  1.50 HRS.


     **
     ** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
     ** 2.125" ORIFICE
     ROUTE RESERVOIR    ID=2   HYD=A11:POND     INFLOW ID=2  CODE=00
                        OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                              0.00            0.000       100.00
                              0.20            0.003       100.25
                              0.20            0.022       100.50
                              0.21            0.075       100.75
                              0.22            0.177       101.00


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              INFLOW       WATER      WATER      TOTAL
  TIME      DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)       (CFS)       (FT)      (A-F)      (CFS)


    0.0          0.0      100.0        0.0
PEAK DISCHARGE =       0.21 CFS.
MAXIMUM WATER ELEVATION =  100.7 FT.
MAXIMUM RESERVOIR STORAGE =     0.07 ACRE-FT.
    PRINT HYD              ID=2   CODE=0

                    HYDROGRAPH NUMBER   A11:POND


          RUNOFF VOLUME =       0.017 ACRE-FT
          PEAK DISCHARGE RATE =         1.0 CFS
          PEAK OCCURRED AT  1.50 HRS.
```

| POND | A-12 | | MAX WSEL= | 43.25 | HGL in= | 41.97 | | LENGTH = | 150 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 42.25 | DELT WSEL= | 0.25 | | WIDTH = | 150 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 18 | 1.060 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 18 | 1.060 | 0.53 | 0.00 | 0.53 | 6.19 | 0.63 | 0.005 | 0.25 |
| 18 | 1.060 | 0.78 | 0.00 | 0.78 | 7.51 | 1.79 | 0.038 | 0.50 |
| 18 | 1.060 | 1.03 | 0.00 | 1.03 | 8.64 | 2.45 | 0.129 | 0.75 |
| 18 | 1.060 | 1.28 | 0.00 | 1.28 | 9.63 | 2.82 | 0.306 | 1.00 |

OUTFLOW CONTROLLED BY VENTED LID

```
                    HYDROGRAPH NUMBER        A12

     RUNOFF VOLUME =       0.475 ACRE-FT
     PEAK DISCHARGE RATE =        10.3 CFS
     PEAK OCCURRED AT  1.50 HRS.


**
** ROUTE FLOW THROUGH PARKING LOT POND VENTED LID INLET (H=1.0'MAX)
** 8.75" ORIFICE 0.0 3.62 3.76 3.89 SUPERCEEDED
ROUTE RESERVOIR      ID=7   HYD=A12:POND     INFLOW ID=6  CODE=00
                     OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                          0.00            0.000       100.00
                          0.63            0.005       100.25
                          1.79            0.038       100.50
                          2.45            0.129       100.75
                          2.82            0.306       101.00


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              INFLOW       WATER      WATER      TOTAL
  TIME      DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)       (CFS)       (FT)      (A-F)      (CFS)


    0.0          0.0      100.0       0.0
PEAK DISCHARGE =       2.58 CFS.
MAXIMUM WATER ELEVATION =  100.8 FT.
MAXIMUM RESERVOIR STORAGE =     0.19 ACRE-FT.
    PRINT HYD              ID=7   CODE=0

                    HYDROGRAPH NUMBER    A12:POND


     RUNOFF VOLUME =       0.361 ACRE-FT
     PEAK DISCHARGE RATE =         2.6 CFS
     PEAK OCCURRED AT  2.00 HRS.
```

| POND | A-17 | | MAX WSEL= | 43.25 | HGL in= | 42.35 | | LENGTH = | 150 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 42.25 | DELT WSEL= | 0.25 | | WIDTH = | 150 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 18 | 1.060 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 18 | 1.060 | 0.15 | 0.00 | 0.15 | 3.30 | 0.63 | 0.005 | 0.25 |
| 18 | 1.060 | 0.40 | 0.00 | 0.40 | 5.38 | 1.79 | 0.038 | 0.50 |
| 18 | 1.060 | 0.65 | 0.00 | 0.65 | 6.86 | 2.28 | 0.129 | 0.75 |
| 18 | 1.060 | 0.90 | 0.00 | 0.90 | 8.07 | 2.68 | 0.306 | 1.00 |

OUTFLOW CONTROLLED BY VENTED LID

```
                    HYDROGRAPH NUMBER          A17

        RUNOFF VOLUME =       0.544 ACRE-FT
        PEAK DISCHARGE RATE =        11.8 CFS
        PEAK OCCURRED AT  1.50 HRS.


    **
    ** ROUTE FLOW THROUGH PARKING LOT POND VENTED LID INLET (H=0.9'MAX)
    ** 9.75" ORIFICE 0.0 4.50 4.67 4.83 5.00 SUPERCEEDED
    ROUTE RESERVOIR      ID=2   HYD=A17:POND      INFLOW ID=2  CODE=00
                         OUTFLOW(cfs)    STORAGE(ac-ft)    ELEV(ft)
                               0.00            0.000        100.00
                               0.63            0.005        100.25
                               1.79            0.038        100.50
                               2.27            0.129        100.75
                               2.67            0.308        101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


                INFLOW       WATER      WATER      TOTAL
   TIME       DISCHARGE     ELEV      VOLUME     OUTFLOW
   (HRS)        (CFS)       (FT)      (A-F)      (CFS)


     0.0          0.0      100.0       0.0
PEAK DISCHARGE =       2.51 CFS.
MAXIMUM WATER ELEVATION =  100.9 FT.
MAXIMUM RESERVOIR STORAGE =     0.24 ACRE-FT.
    PRINT HYD              ID=2   CODE=0

                    HYDROGRAPH NUMBER    A17:POND


        RUNOFF VOLUME =       0.418 ACRE-FT
        PEAK DISCHARGE RATE =         2.5 CFS
        PEAK OCCURRED AT  2.05 HRS.
```

| POND | B-1-C | | MAX WSEL= | 45.25 | HGL in= | 42.71 | | LENGTH = | 180 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 44.25 | DELT WSEL= | 0.25 | | WIDTH = | 50 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 9 | 0.265 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 9 | 0.265 | 1.79 | 0.00 | 1.79 | 2.85 | 1.83 | 0.002 | 0.25 |
| 9 | 0.265 | 2.04 | 0.05 | 1.99 | 3.00 | 3.00 | 0.015 | 0.50 |
| 9 | 0.265 | 2.29 | 0.06 | 2.23 | 3.18 | 3.18 | 0.052 | 0.75 |
| 9 | 0.265 | 2.54 | 0.07 | 2.47 | 3.34 | 3.34 | 0.122 | 1.00 |

```
                    HYDROGRAPH NUMBER          B1C

     RUNOFF VOLUME =       0.186 ACRE-FT
     PEAK DISCHARGE RATE =         4.0 CFS
     PEAK OCCURRED AT  1.50 HRS.


**
** ROUTE FLOW THROUGH PARKING LOT POND
** 9" ORIFICE
ROUTE RESERVOIR      ID=2   HYD=B1C:POND     INFLOW ID=1  CODE=00
                     OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                          0.00            0.000       100.00
                          1.83            0.002       100.25
                          2.99            0.015       100.50
                          3.18            0.052       100.75
                          3.35            0.122       101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


          INFLOW       WATER      WATER      TOTAL
  TIME    DISCHARGE    ELEV       VOLUME     OUTFLOW
  (HRS)     (CFS)      (FT)       (A-F)      (CFS)


    0.0        0.0     100.0        0.0
PEAK DISCHARGE =       3.00 CFS.
MAXIMUM WATER ELEVATION =  100.5 FT.
MAXIMUM RESERVOIR STORAGE =     0.02 ACRE-FT.
    PRINT HYD            ID=2   CODE=0

                    HYDROGRAPH NUMBER    B1C:POND


     RUNOFF VOLUME =       0.126 ACRE-FT
     PEAK DISCHARGE RATE =         3.0 CFS
     PEAK OCCURRED AT  1.60 HRS.
```

POND B-1-D

MAX WSEL= 45.25 HGL in= 43.03 LENGTH = 150
GRT ELEV= 44.25 DELT WSEL= 0.25 WIDTH = 150
@ DEPTH = 0.75

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 10 | 0.327 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 10 | 0.327 | 1.47 | 0.06 | 1.41 | 3.12 | 1.83 | 0.005 | 0.25 |
| 10 | 0.327 | 1.72 | 0.07 | 1.65 | 3.37 | 3.37 | 0.038 | 0.50 |
| 10 | 0.327 | 1.97 | 0.08 | 1.89 | 3.61 | 3.61 | 0.129 | 0.75 |
| 10 | 0.327 | 2.22 | 0.09 | 2.13 | 3.83 | 3.83 | 0.306 | 1.00 |

```
                    HYDROGRAPH NUMBER        B1D

      RUNOFF VOLUME =       0.529 ACRE-FT
      PEAK DISCHARGE RATE =        11.5 CFS
      PEAK OCCURRED AT  1.50 HRS.


**
** ROUTE FLOW THROUGH PARKING LOT POND TYPE "D" INLET
** 10" ORIFICE
ROUTE RESERVOIR    ID=7   HYD=B1D:POND     INFLOW ID=7  CODE=00
                   OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                        0.00            0.000       100.00
                        1.83            0.005       100.25
                        3.36            0.038       100.50
                        3.61            0.129       100.75
                        3.84            0.306       101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


          INFLOW      WATER      WATER      TOTAL
  TIME   DISCHARGE    ELEV      VOLUME     OUTFLOW
  (HRS)   (CFS)       (FT)      (A-F)      (CFS)


    0.0        0.0      100.0       0.0
PEAK DISCHARGE =       3.65 CFS.
MAXIMUM WATER ELEVATION =  100.8 FT.
MAXIMUM RESERVOIR STORAGE =    0.16 ACRE-FT.
    PRINT HYD              ID=7   CODE=0

                    HYDROGRAPH NUMBER   B1D:POND


      RUNOFF VOLUME =       0.409 ACRE-FT
      PEAK DISCHARGE RATE =         3.7 CFS
      PEAK OCCURRED AT  1.85 HRS.
```

| POND | B-3 | | MAX WSEL= | 45.25 | HGL in= | 42.63 | | LENGTH = | 200 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 44.25 | DELT WSEL= | 0.25 | | WIDTH = | 100 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 7.25 | 0.172 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 7.25 | 0.172 | 1.87 | 0.02 | 1.85 | 1.88 | 1.83 | 0.004 | 0.25 |
| 7.25 | 0.172 | 2.12 | 0.02 | 2.10 | 2.00 | 2.00 | 0.034 | 0.50 |
| 7.25 | 0.172 | 2.37 | 0.03 | 2.34 | 2.11 | 2.11 | 0.115 | 0.75 |
| 7.25 | 0.172 | 2.62 | 0.03 | 2.59 | 2.22 | 2.22 | 0.272 | 1.00 |

```
                    HYDROGRAPH NUMBER          B3

     RUNOFF VOLUME =       0.427 ACRE-FT
     PEAK DISCHARGE RATE =         9.6 CFS
     PEAK OCCURRED AT  1.50 HRS.


**
** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
** 7.25" ORIFICE
ROUTE RESERVOIR      ID=6   HYD=B3:POND      INFLOW ID=6  CODE=00
                     OUTFLOW(cfs)    STORAGE(ac-ft)    ELEV(ft)
                          0.00            0.000        100.00
                          1.83            0.004        100.25
                          2.00            0.034        100.50
                          2.12            0.115        100.75
                          2.23            0.272        101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


            INFLOW       WATER      WATER      TOTAL
  TIME     DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)      (CFS)       (FT)      (A-F)      (CFS)


    0.0          0.0      100.0        0.0
PEAK DISCHARGE =       2.16 CFS.
MAXIMUM WATER ELEVATION =  100.8 FT.
MAXIMUM RESERVOIR STORAGE =     0.17 ACRE-FT.
    PRINT HYD              ID=6   CODE=0

                    HYDROGRAPH NUMBER     B3:POND


     RUNOFF VOLUME =       0.339 ACRE-FT
     PEAK DISCHARGE RATE =         2.2 CFS
     PEAK OCCURRED AT  2.00 HRS.
```

POND B-7

MAX WSEL= 47.00 HGL in= 42.53
GRT ELEV= 42.00 DELT WSEL= 1.00

LENGTH = ----
WIDTH = ----
@ DEPTH = 5

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 10.25 | 0.344 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 10.25 | 0.344 | 0.47 | 0.02 | 0.45 | 1.85 | 1.85 | 0.028 | 1.00 |
| 10.25 | 0.344 | 1.47 | 0.07 | 1.40 | 3.26 | 3.26 | 0.090 | 2.00 |
| 10.25 | 0.344 | 2.47 | 0.11 | 2.36 | 4.24 | 4.24 | 0.200 | 3.00 |
| 10.25 | 0.344 | 3.47 | 0.15 | 3.32 | 5.03 | 5.03 | 0.374 | 4.00 |
| 10.25 | 0.344 | 4.47 | 0.20 | 4.27 | 5.70 | 5.70 | 0.628 * | 5.00 |

* HAND ENTERED: DETERMINED IN PREVIOUS REPORT

```
                    HYDROGRAPH NUMBER    B7:PND:T


     RUNOFF VOLUME =       0.992 ACRE-FT
     PEAK DISCHARGE RATE =        27.8 CFS
     PEAK OCCURRED AT  1.50 HRS.


**
** ROUTE FLOW THROUGH POND B7
** 10.25" ORIFICE
ROUTE RESERVOIR      ID=13   HYD=B7:PND:R   INFLOW ID=12  CODE=00
                     OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                          0.00            0.0          100.0
                          1.85            0.028        101.02
                          3.26            0.090        102.02
                          4.24            0.200        103.02
                          5.03            0.374        104.02
                          5.70            0.628        105.0


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


              INFLOW       WATER      WATER      TOTAL
  TIME      DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)       (CFS)       (FT)      (A-F)      (CFS)


    0.0          0.0      100.0       0.0
PEAK DISCHARGE =       5.56 CFS.
MAXIMUM WATER ELEVATION =  104.8 FT.
MAXIMUM RESERVOIR STORAGE =     0.58 ACRE-FT.
    PRINT HYD              ID=13   CODE=0

                    HYDROGRAPH NUMBER    B7:PND:R


     RUNOFF VOLUME =       0.955 ACRE-FT
     PEAK DISCHARGE RATE =         5.6 CFS
     PEAK OCCURRED AT  2.07 HRS.
```

POND B-8A/B-8-B

MAX WSEL= 46.25 HGL in= 41.00
GRT ELEV= 45.25 DELT WSEL= 0.25

LENGTH = 150
WIDTH = 150
@ DEPTH = 0.75

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 11 | 0.396 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 11 | 0.396 | 4.50 | 0.27 | 4.23 | 6.54 | 1.83 | 0.005 | 0.25 |
| 11 | 0.396 | 4.75 | 0.28 | 4.47 | 6.72 | 5.20 | 0.038 | 0.50 |
| 11 | 0.396 | 5.00 | 0.29 | 4.71 | 6.90 | 6.90 | 0.129 | 0.75 |
| 11 | 0.396 | 5.25 | 0.30 | 4.95 | 7.07 | 7.07 | 0.306 | 1.00 |

HYDROGRAPH NUMBER B8A:B8B

RUNOFF VOLUME = 0.554 ACRE-FT
PEAK DISCHARGE RATE = 11.9 CFS
PEAK OCCURRED AT 1.50 HRS.

```
**
** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
** 11" ORIFICE
ROUTE RESERVOIR     ID=6   HYD=B8:POND   INFLOW ID=4  CODE=00
                    OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                         0.00            0.000        100.00
                         1.83            0.005        100.25
                         6.72            0.038        100.50
                         6.90            0.129        100.75
                         7.07            0.306        101.00
```

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

| TIME (HRS) | INFLOW DISCHARGE (CFS) | WATER ELEV (FT) | WATER VOLUME (A-F) | TOTAL OUTFLOW (CFS) |
|---|---|---|---|---|
| 0.0 | 0.0 | 100.0 | 0.0 | |

PEAK DISCHARGE = 6.81 CFS.
MAXIMUM WATER ELEVATION = 100.6 FT.
MAXIMUM RESERVOIR STORAGE = 0.08 ACRE-FT.
PRINT HYD ID=6 CODE=0

HYDROGRAPH NUMBER B8:POND

RUNOFF VOLUME = 0.411 ACRE-FT
PEAK DISCHARGE RATE = 6.8 CFS
PEAK OCCURRED AT 1.65 HRS.

POND B-8-C

MAX WSEL= 43.25 HGL in= 40.01
GRT ELEV= 42.25 DELT WSEL= 0.25

LENGTH = 150
WIDTH = 150
@ DEPTH = 0.75

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 11.75 | 0.452 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 11.75 | 0.452 | 2.49 | 0.18 | 2.31 | 5.51 | 1.83 | 0.005 | 0.25 |
| 11.75 | 0.452 | 2.74 | 0.20 | 2.54 | 5.78 | 5.20 | 0.038 | 0.50 |
| 11.75 | 0.452 | 2.99 | 0.22 | 2.77 | 6.03 | 6.03 | 0.129 | 0.75 |
| 11.75 | 0.452 | 3.24 | 0.24 | 3.00 | 6.28 | 6.28 | 0.306 | 1.00 |

```
                    HYDROGRAPH NUMBER          B8C

          RUNOFF VOLUME =       0.566 ACRE-FT
          PEAK DISCHARGE RATE =        12.3 CFS
          PEAK OCCURRED AT  1.50 HRS.


     **
     ** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
     ** 11.75" ORIFICE
     ROUTE RESERVOIR      ID=10   HYD=B8C      INFLOW ID=9  CODE=00
                          OUTFLOW(cfs)    STORAGE(ac-ft)    ELEV(ft)
                                0.00             0.000       100.00
                                1.83             0.005       100.25
                                5.78             0.038       100.50
                                6.03             0.129       100.75
                                6.28             0.306       101.00


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            INFLOW       WATER      WATER      TOTAL
  TIME     DISCHARGE     ELEV       VOLUME     OUTFLOW
  (HRS)      (CFS)       (FT)       (A-F)      (CFS)


    0.0          0.0      100.0        0.0
PEAK DISCHARGE =       5.98 CFS.
MAXIMUM WATER ELEVATION =  100.7 FT.
MAXIMUM RESERVOIR STORAGE =     0.11 ACRE-FT.
    PRINT HYD              ID=10   CODE=0

                    HYDROGRAPH NUMBER          B8C


          RUNOFF VOLUME =       0.425 ACRE-FT
          PEAK DISCHARGE RATE =         6.0 CFS
          PEAK OCCURRED AT  1.70 HRS.
```

| POND | B-9 | | MAX WSEL= | 42.50 | HGL in= | 40.06 | | LENGTH = | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 37.50 | DELT WSEL= | 1.00 | | WIDTH = | ---- |
| | | | | | | | | @ DEPTH = | 5 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 7.5 | 0.184 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 7.5 | 0.184 | 0.00 | -0.41 | 0.41 | 0.95 | 0.95 | 0.012 | 1.00 |
| 7.5 | 0.184 | 0.00 | -0.42 | 0.42 | 0.96 | 0.96 | 0.025 | 2.00 |
| 7.5 | 0.184 | 0.44 | 0.01 | 0.43 | 0.97 | 0.97 | 0.097 | 3.00 |
| 7.5 | 0.184 | 1.44 | 0.02 | 1.42 | 1.76 | 1.76 | 0.197 | 4.00 |
| 7.5 | 0.184 | 2.44 | 0.03 | 2.41 | 2.29 | 2.29 | 0.308 | 5.00 |

* HAND ENTERED: DETERMINED IN PREVIOUS REPORT

```
                    HYDROGRAPH NUMBER          B9


        RUNOFF VOLUME =       0.443 ACRE-FT
        PEAK DISCHARGE RATE =         9.7 CFS
        PEAK OCCURRED AT  1.50 HRS.


    **
    ** ROUTE FLOW THROUGH POND B9
    ** 7.5" ORIFICE
    ROUTE RESERVOIR     ID=11   HYD=B9     INFLOW ID=7   CODE=00
                        OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                              0.00            0.0         100.0
                              0.95            0.012       100.76
                              0.96            0.025       101.76
                              0.97            0.097       102.76
                              1.76            0.197       103.76
                              2.29            0.308       105.0


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              INFLOW       WATER      WATER      TOTAL
  TIME      DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)       (CFS)       (FT)      (A-F)      (CFS)


    0.0          0.0      100.0       0.0
PEAK DISCHARGE =       1.86 CFS.
MAXIMUM WATER ELEVATION =  104.0 FT.
MAXIMUM RESERVOIR STORAGE =    0.22 ACRE-FT.
    PRINT HYD              ID=11   CODE=0

                    HYDROGRAPH NUMBER          B9


        RUNOFF VOLUME =       0.251 ACRE-FT
        PEAK DISCHARGE RATE =         1.9 CFS
        PEAK OCCURRED AT  2.05 HRS.
```

**POND B-13**

| | | | | | |
|---|---|---|---|---|---|
| MAX WSEL= | 40.25 | HGL in= | 38.99 | LENGTH = | 150 |
| GRT ELEV= | 39.25 | DELT WSEL= | 0.25 | WIDTH = | 150 |
| | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 27 | 2.386 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 27 | 2.386 | 0.51 | 0.00 | 0.51 | 13.67 | 0.63 | 0.005 | 0.25 |
| 27 | 2.386 | 0.76 | 0.00 | 0.76 | 16.69 | 1.79 | 0.038 | 0.50 |
| 27 | 2.386 | 1.01 | 0.00 | 1.01 | 19.24 | 2.45 | 0.129 | 0.75 |
| 27 | 2.386 | 1.26 | 0.00 | 1.26 | 21.49 | 2.82 | 0.306 | 1.00 |

OUTFLOW CONTROLLED BY VENTED LID

```
                    HYDROGRAPH NUMBER        B13


          RUNOFF VOLUME =       0.366 ACRE-FT
          PEAK DISCHARGE RATE =         8.0 CFS
          PEAK OCCURRED AT  1.50 HRS.


     **
     ** ROUTE FLOW THROUGH PARKING LOT POND VENTED LID INLET
     **
     ROUTE RESERVOIR    ID=1   HYD=B13     INFLOW ID=1  CODE=00
                       OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                             0.00            0.000      100.00
                             0.63            0.005      100.25
                             1.79            0.038      100.50
                             2.45            0.129      100.75
                             2.82            0.306      101.00


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                INFLOW      WATER      WATER      TOTAL
  TIME        DISCHARGE    ELEV      VOLUME     OUTFLOW
  (HRS)         (CFS)      (FT)      (A-F)      (CFS)


    0.0          0.0      100.0       0.0
PEAK DISCHARGE =       2.45 CFS.
MAXIMUM WATER ELEVATION =  100.7 FT.
MAXIMUM RESERVOIR STORAGE =     0.13 ACRE-FT.
    PRINT HYD              ID=1   CODE=0

                    HYDROGRAPH NUMBER        B13


          RUNOFF VOLUME =       0.274 ACRE-FT
          PEAK DISCHARGE RATE =         2.4 CFS
          PEAK OCCURRED AT  1.85 HRS.
```

POND B-14

MAX WSEL= 41.25 HGL in= 38.76
GRT ELEV= 40.25 DELT WSEL= 0.25

LENGTH = 150
WIDTH = 150
@ DEPTH = 0.75

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 5.25 | 0.090 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 5.25 | 0.090 | 1.74 | 0.01 | 1.73 | 0.95 | 0.95 | 0.005 | 0.25 |
| 5.25 | 0.090 | 1.99 | 0.01 | 1.98 | 1.02 | 1.02 | 0.038 | 0.50 |
| 5.25 | 0.090 | 2.24 | 0.01 | 2.23 | 1.08 | 1.08 | 0.129 | 0.75 |
| 5.25 | 0.090 | 2.49 | 0.01 | 2.48 | 1.14 | 1.14 | 0.306 | 1.00 |

```
                    HYDROGRAPH NUMBER        B14


          RUNOFF VOLUME =       0.386 ACRE-FT
          PEAK DISCHARGE RATE =         8.6 CFS
          PEAK OCCURRED AT  1.50 HRS.


     **
     ** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
     ** 5.25" ORIFICE
     ROUTE RESERVOIR     ID=4   HYD=B14:POND     INFLOW ID=4  CODE=00
                         OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                               0.00            0.000      100.00
                               0.95            0.005      100.25
                               1.02            0.038      100.50
                               1.08            0.129      100.75
                               1.14            0.306      101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


                INFLOW      WATER      WATER      TOTAL
   TIME       DISCHARGE    ELEV      VOLUME     OUTFLOW
   (HRS)        (CFS)      (FT)       (A-F)      (CFS)


     0.0          0.0      100.0       0.0
PEAK DISCHARGE =       1.11 CFS.
MAXIMUM WATER ELEVATION =  100.9 FT.
MAXIMUM RESERVOIR STORAGE =    0.21 ACRE-FT.
    PRINT HYD              ID=4   CODE=0

                    HYDROGRAPH NUMBER    B14:POND


          RUNOFF VOLUME =       0.288 ACRE-FT
          PEAK DISCHARGE RATE =         1.1 CFS
          PEAK OCCURRED AT  2.15 HRS.
```

| POND | B-15 | | MAX WSEL= | 43.25 | HGL in= | 39.58 | | LENGTH = | 150 |
|---|---|---|---|---|---|---|---|---|---|
| | | | GRT ELEV= | 42.25 | DELT WSEL= | 0.25 | | WIDTH = | 150 |
| | | | | | | | | @ DEPTH = | 0.75 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 7.5 | 0.184 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 7.5 | 0.184 | 2.92 | 0.04 | 2.88 | 2.51 | 1.83 | 0.005 | 0.25 |
| 7.5 | 0.184 | 3.17 | 0.04 | 3.13 | 2.61 | 2.61 | 0.038 | 0.50 |
| 7.5 | 0.184 | 3.42 | 0.04 | 3.38 | 2.72 | 2.72 | 0.129 | 0.75 |
| 7.5 | 0.184 | 3.67 | 0.05 | 3.62 | 2.81 | 2.81 | 0.306 | 1.00 |

```
                    HYDROGRAPH NUMBER          B15

          RUNOFF VOLUME =       0.342 ACRE-FT
          PEAK DISCHARGE RATE =         7.5 CFS
          PEAK OCCURRED AT  1.50 HRS.


     **
     ** ROUTE FLOW THROUGH PARKING LOT POND 3' DEEP INLET
     ** 7.5" ORIFICE
     ROUTE RESERVOIR      ID=5   HYD=B15:POND     INFLOW ID=5  CODE=00
                          OUTFLOW(cfs)   STORAGE(ac-ft)   ELEV(ft)
                               0.00            0.000       100.00
                               1.83            0.007       100.25
                               2.61            0.057       100.50
                               2.72            0.194       100.75
                               2.81            0.306       101.00


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                 INFLOW      WATER      WATER      TOTAL
  TIME         DISCHARGE    ELEV      VOLUME     OUTFLOW
  (HRS)         (CFS)       (FT)       (A-F)      (CFS)


    0.0          0.0       100.0        0.0
PEAK DISCHARGE =       2.64 CFS.
MAXIMUM WATER ELEVATION =  100.6 FT.
MAXIMUM RESERVOIR STORAGE =     0.10 ACRE-FT.
    PRINT HYD              ID=5   CODE=0

                    HYDROGRAPH NUMBER    B15:POND


          RUNOFF VOLUME =       0.264 ACRE-FT
          PEAK DISCHARGE RATE =         2.6 CFS
          PEAK OCCURRED AT  1.80 HRS.
```

| POND | B-22 | | MAX WSEL= | 45.00 | HGL in= | 43.04 | | LENGTH = | 60 |
|---|---|---|---|---|---|---|---|---|---|
| | DOCK | | GRT ELEV= | 42.00 | DELT WSEL= | 1.00 | | WIDTH = | 40 |
| | | | | | | | | @ DEPTH = | 3 |

| ORIFICE DIAMETER | 0.6*A orif | H | - H grate | =HEAD | Q orif (MAX) | OUTFLOW | STORAGE | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| 15 | 0.736 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 |
| 15 | 0.736 | 0.50 | 0.09 | 0.41 | 3.78 | 3.78 | 0.003 | 1.00 |
| 15 | 0.736 | 0.96 | 0.17 | 0.79 | 5.25 | 5.25 | 0.024 | 2.00 |
| 15 | 0.736 | 1.96 | 0.35 | 1.61 | 7.50 | 7.50 | 0.083 | 3.00 |

```
                    HYDROGRAPH NUMBER     B22:DOCK

          RUNOFF VOLUME =       0.427 ACRE-FT
          PEAK DISCHARGE RATE =         9.2 CFS
          PEAK OCCURRED AT  1.50 HRS.


     **
     ** ROUTE FLOW THROUGH DOCK POND
     ** 15" ORIFICE
     ROUTE RESERVOIR      ID=4   HYD=B22:DOCK      INFLOW ID=3  CODE=00
                          OUTFLOW(cfs)    STORAGE(ac-ft)    ELEV(ft)
                               0.00             0.000        42.0
                               3.78             0.003        43.0
                               5.25             0.024        44.0
                               7.50             0.083        45.0


* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *


              INFLOW       WATER      WATER      TOTAL
  TIME      DISCHARGE     ELEV      VOLUME     OUTFLOW
  (HRS)       (CFS)       (FT)      (A-F)      (CFS)


    0.0          0.0       42.0       0.0
PEAK DISCHARGE =       6.17 CFS.
MAXIMUM WATER ELEVATION =   44.4 FT.
MAXIMUM RESERVOIR STORAGE =    0.05 ACRE-FT.
    PRINT HYD            ID=4   CODE=0

                    HYDROGRAPH NUMBER     B22:DOCK


          RUNOFF VOLUME =       0.314 ACRE-FT
          PEAK DISCHARGE RATE =         6.2 CFS
          PEAK OCCURRED AT  1.60 HRS.
```

## Pond B-26:

HYDROGRAPH NUMBER POND

RUNOFF VOLUME = 5.553 ACRE-FT
PEAK DISCHARGE RATE = 101.9 CFS
PEAK OCCURRED AT 1.53 HRS.

```
**
** ROUTE FLOW THROUGH POND B26
** 25.50" ORIFICE
ROUTE RESERVOIR     ID=20   HYD=B26:POND     INFLOW ID=19  CODE=5
```

| OUTFLOW(cfs) | STORAGE(ac-ft) | ELEV(ft) |
|---|---|---|
| 0.0 | 0.0 | 29.2 |
| 4.9 | 0.0011 | 30.2 |
| 15.1 | 0.0021 | 32.0 |
| 26.3 | 0.0066 | 34.95 |
| 28.7 | 0.096 | 36.10 |
| 31.1 | 0.212 | 37.10 |
| 33.5 | 0.359 | 38.10 |
| 35.9 | 0.542 | 39.10 |
| 38.2 | 0.765 | 40.10 |
| 40.6 | 1.034 | 41.10 |
| 43.0 | 1.353 | 42.10 |
| 45.4 | 1.726 | 43.10 |

(see the following pages for more information on the design of this pond.)

****** POND B-26 CONTINUED ******

| TIME (HRS) | INFLOW DISCHARGE (CFS) | WATER ELEV (FT) | WATER VOLUME (A-F) | TOTAL OUTFLOW (CFS) |
|---|---|---|---|---|
| 0.0 | 0.0 | 29.2 | 0.0 | |
| 0.2 | 0.0 | 29.2 | 0.0 | 0.0 |
| 0.3 | 0.0 | 29.2 | 0.0 | 0.0 |
| 0.5 | 0.0 | 29.2 | 0.0 | 0.0 |
| 0.7 | 0.0 | 29.2 | 0.0 | 0.0 |
| 0.8 | 0.0 | 29.2 | 0.0 | 0.0 |
| 1.0 | 0.0 | 29.2 | 0.0 | 0.0 |
| 1.2 | 0.1 | 29.2 | 0.0 | 0.1 |
| 1.3 | 25.2 | 34.1 | 0.0 | 23.1 |
| 1.5 | 94.9 | 38.5 | 0.4 | 34.4 |
| 1.7 | 76.1 | 41.5 | 1.2 | 41.5 |
| 1.8 | 56.9 | 42.4 | 1.5 | 43.7 |
| 2.0 | 46.5 | 42.7 | 1.6 | 44.4 |
| 2.2 | 32.2 | 42.5 | 1.5 | 44.1 |
| 2.3 | 19.5 | 41.8 | 1.3 | 42.3 |
| 2.5 | 13.0 | 40.7 | 0.9 | 39.6 |
| 2.7 | 9.2 | 39.1 | 0.6 | 36.0 |
| 2.8 | 8.1 | 37.1 | 0.2 | 31.0 |
| 3.0 | 7.1 | 30.4 | 0.0 | 6.0 |
| 3.2 | 5.9 | 30.5 | 0.0 | 6.5 |
| 3.3 | 4.1 | 30.0 | 0.0 | 3.9 |
| 3.5 | 2.8 | 29.8 | 0.0 | 2.9 |
| 3.7 | 1.6 | 29.5 | 0.0 | 1.6 |

PEAK DISCHARGE = 44.45 CFS.
MAXIMUM WATER ELEVATION = 42.7 FT.
MAXIMUM RESERVOIR STORAGE = 1.58 ACRE-FT.
PRINT HYD ID=20 CODE=0

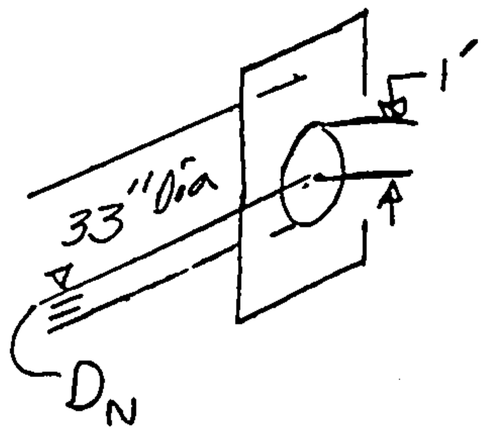
HYDROGRAPH NUMBER B26:POND

RUNOFF VOLUME = 5.529 ACRE-FT
PEAK DISCHARGE RATE = 44.4 CFS
PEAK OCCURRED AT 2.03 HRS.

# Backflow Pond: Basin B-26

Determine flow when Plate 1st becomes sealed

Assume 24"ϕ Orifice Plate




$$Q = .6\,\pi(1)^2\sqrt{64.4(1')} = 15.1\text{ cfs}$$

Preliminary Hydrology shows that

$$Q_{84''\,peak} = 164 \approx 4(44) = 4Q_{33''\,peak}$$

$$\therefore D_{N_{84''}} = 2.67'$$
$Q = 60$ cfs

MH12A Inv 33"  MH12 Inv 84"

$$D_{Flow_{33''}} = 2.67' - (29.18 - 28.32)$$
$Q = 15$ cfs
$$= 1.8'$$

$\therefore$ Water Surface required to achieve

$$1'\text{ Head} = 1.8' + 1.0' + 29.18$$
Head  Inv 33'
$$= 32.0'$$

Determine flow when 33" pipe becomes sealed

$$D_{N_{84''}} = 33'' + (29.18 - 28.32) = 43''$$

$$Q_{84''} = 105\text{ cfs} \qquad Q_{33''} = \tfrac{1}{4}\,105\text{ cfs} = 26.3\text{ cfs}$$

Head required to push 26.3 cfs

$$Q = .6\,\pi(1)^2\sqrt{64.4(H)} = 26.3\text{ cfs}$$
$$H = 3.02'$$

$$\therefore WSEL = 34.95' = 3.02' + \frac{33''}{12} + 29.18$$

BOHANNAN-HUSTON INC.

| | | | |
|---|---|---|---|
| PROJECT NAME | Cottonwood Mall | SHEET | OF A2-34 |
| PROJECT NO. | 90316.83 | BY MSJ | DATE 6/94 |
| SUBJECT | | CH'D | DATE |

# Back Flow Pond: Basin B-26

Determine Peak flow from pond assuming WSEL = 43.1
and $HGL_{dn}$ is calculated at peak flow in pipe
$HGL_{dn} = 36.0$ ⇒ (see HGL spreadsheet).

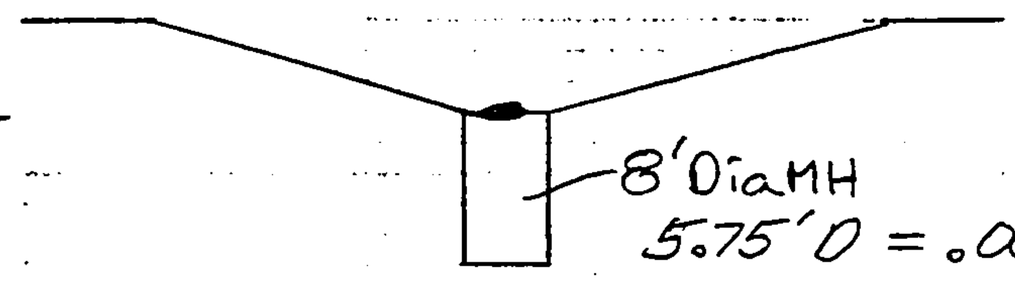
$$Q = .6(\pi)\left(\frac{25.5''}{24''}\right)^2\sqrt{64.4(43.1-36.0)} = 45.4\text{ cfs}$$

After some Preliminary design calcs it was determined that the orifice plate needed to be 25.5"$\phi$ and remaining calc's use this #.

All other Flows have been calculated linearly between 26.3 cfs and 45.4 cfs

Volumes between ELEV = 29.2 and ELEV = 34.95
are based on 8' Dia MH $\frac{(1'\text{Deep}) \times \pi (8/2)^2}{(43560\ \text{sqft/Ac})} = .00115\ \text{Ac-ft/ft}$

∴ Pond Volumes = Previously Calc'd Values + .0066 Ac-ft




BOHANNAN-HUSTON INC.

PROJECT NAME Cottonwood Mall SHEET ____ OF AZ-35
PROJECT NO. 90316.83 BY MSJ DATE 6/94
SUBJECT ____ CH'D ____ DATE ____

84"RCP -- SLOPE=0.1%

CULVERT RATING TABLE

84. INCH DIAMETER PIPE

N = 0.01300 INCREMENT = 2.00 SLOPE = 0.00100

| FLOW DEPTH (IN) | FLOW AREA (SQ FT) | DISCHARGE (CFS) | VELOCITY (FPS) |
|---|---|---|---|
| 2.00000 | 0.23829 | 0.19759 | 0.82919 |
| 4.00000 | 0.66910 | 0.87407 | 1.30633 |
| 6.00000 | 1.22013 | 2.07252 | 1.69861 |
| 8.00000 | 1.86437 | 3.80635 | 2.04163 |
| 10.00000 | 2.58559 | 6.07672 | 2.35023 |
| 12.00000 | 3.37238 | 8.87763 | 2.63245 |
| 14.00000 | 4.21600 | 12.19804 | 2.89327 |
| 16.00000 | 5.10941 | 16.02323 | 3.13603 |
| 18.00000 | 6.04667 | 20.33548 | 3.36309 |
| 20.00000 | 7.02266 | 25.11465 | 3.57623 |
| 22.00000 | 8.03285 | 30.33854 | 3.77681 |
| 24.00000 | 9.07316 | 35.98304 | 3.96588 |
| 26.00000 | 10.13984 | 42.02246 | 4.14429 |
| 28.00000 | 11.22943 | 48.42957 | 4.31274 |
| 30.00000 | 12.33868 | 55.17576 | 4.47177 |
| 32.00000 | 13.46450 | 62.23108 | 4.62186 |
| 34.00000 | 14.60395 | 69.56429 | 4.76339 |
| 36.00000 | 15.75418 | 77.14294 | 4.89666 |
| 38.00000 | 16.91244 | 84.93329 | 5.02194 |
| 40.00000 | 18.07602 | 92.90043 | 5.13943 |
| 42.00000 | 19.24224 | 101.00813 | 5.24929 |
| 44.00000 | 20.40847 | 109.21883 | 5.35164 |
| 46.00000 | 21.57204 | 117.49366 | 5.44657 |
| 48.00000 | 22.73030 | 125.79224 | 5.53412 |
| 50.00000 | 23.88053 | 134.07257 | 5.61430 |
| 52.00000 | 25.01998 | 142.29097 | 5.68709 |
| 54.00000 | 26.14580 | 150.40170 | 5.75242 |
| 56.00000 | 27.25504 | 158.35677 | 5.81018 |
| 58.00000 | 28.34463 | 166.10571 | 5.86022 |
| 60.00000 | 29.41131 | 173.59471 | 5.90231 |
| 62.00000 | 30.45162 | 180.76646 | 5.93619 |
| 64.00000 | 31.46181 | 187.55875 | 5.96147 |
| 66.00000 | 32.43781 | 193.90344 | 5.97770 |
| 68.00000 | 33.37506 | 199.72458 | 5.98425 |
| 70.00000 | 34.26847 | 204.93535 | 5.98029 |
| 72.00000 | 35.11209 | 209.43343 | 5.96471 |
| 74.00000 | 35.89888 | 213.09303 | 5.93592 |
| 76.00000 | 36.62010 | 215.74968 | 5.89156 |
| 78.00000 | 37.26435 | 217.16789 | 5.82777 |
| 80.00000 | 37.81537 | 216.95769 | 5.73729 |
| 82.00000 | 38.24619 | 214.26642 | 5.60229 |
| 84.00000 | 38.48450 | 202.01634 | 5.24929 |

@ $D_N = 2.67'$

$Q \simeq 60$ cfs

HYDROGRAPH NUMBER B26

RUNOFF VOLUME = 0.116 ACRE-FT
PEAK DISCHARGE RATE = 2.5 CFS
PEAK OCCURRED AT 1.50 HRS.

```
**
** ADD FLOW FROM PREVIOUS BASINS
ADD HYD          ID=19    HYD=POND    ID  I=17  ID  II=18
PRINT HYD        ID=19    CODE=5
```

HYDROGRAPH NUMBER POND

RUNOFF VOLUME = 5.527 ACRE-FT
PEAK DISCHARGE RATE = 105.0 CFS
(1) PEAK OCCURRED AT 1.53 HRS.

Since the Hydrograph peaks at approx. 1.5 hrs, determine the maximum flow out of Pond B-26 at this time (see (2))

```
**
** ROUTE FLOW THROUGH POND B26
** 25.50" ORIFICE
ROUTE RESERVOIR     ID=20   HYD=B26:POND     INFLOW ID=19  CODE=00
```

| OUTFLOW(cfs) | STORAGE(ac-ft) | ELEV(ft) |
|---|---|---|
| 0.0 | 0.0 | 29.2 |
| 4.9 | 0.0011 | 30.2 |
| 15.1 | 0.0021 | 32.0 |
| 26.3 | 0.0066 | 34.95 |
| 28.7 | 0.096 | 36.10 |
| 31.1 | 0.212 | 37.10 |
| 33.5 | 0.359 | 38.10 |
| 35.9 | 0.542 | 39.10 |
| 38.2 | 0.765 | 40.10 |
| 40.6 | 1.034 | 41.10 |
| 43.0 | 1.353 | 42.10 |
| 45.4 | 1.726 | 43.10 |

(3) @Q=35

WSEL = 38.73

This WSEL becomes the new HGLup and it has been assumed that HGL = EGL (standing water in pond). A new HGL begins at this point.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

| TIME (HRS) | INFLOW DISCHARGE (CFS) | WATER ELEV (FT) | WATER VOLUME (A-F) | TOTAL OUTFLOW (CFS) |
|---|---|---|---|---|
| 0.0 | 0.0 | 29.2 | 0.0 | |

PEAK DISCHARGE = 45.18 CFS.
MAXIMUM WATER ELEVATION = 43.0 FT.
MAXIMUM RESERVOIR STORAGE = 1.69 ACRE-FT.

| | | | |
|---|---|---|---|
| * | 45.3 | 2.183 | 109.00 |
| * | 46.9 | 2.877 | 110.00 |

PRINT HYD ID=20 CODE=5

HYDROGRAPH NUMBER B26:POND

| TIME HRS | FLOW CFS | TIME HRS | FLOW CFS | TIME HRS | FLOW CFS |
|---|---|---|---|---|---|
| 0.000 | 0. | 1.333 | 24. | 2.667 | 37. |
| 0.167 | 0. | 1.500 | 35. | 2.833 | 31. |
| 0.333 | 0. | 1.667 | 42. | 3.000 | 2. |
| 0.500 | 0. | 1.833 | 44. | 3.167 | 5. |
| 0.667 | 0. | 2.000 | 45. | 3.333 | 2. |
| 0.833 | 0. | 2.167 | 45. | 3.500 | 2. |
| 1.000 | 0. | 2.333 | 43. | | |

@1.5

Q=35cfs

(2) From this flow is determined Pond WSEL at the cross section in time for which HGL has been calculated (see (3))

# POND D-1 - WARD TBA

## VOLUME COMPARISON

### ORIGINAL CONDITION

BASINS B-10 & D-1 - FLOWING INTO 7-BAR LOOP RD, TOTAL = 2.33 AC

B-10 = 0.76 AC, PAVED = 0.47 AC

LANDSCAPED = 0.29 AC

D-1 = 1.57 AC, PAVED = 1.47 AC

LANDSCAPED = 0.10 AC

$$CN = \frac{(98)(.47+1.47)+(61)(.29+.10)}{2.33} = 91.8$$

$$S = 0.89, \quad Q = \frac{((2.2-.2(.89))^2}{2.2+.8(.89)} = 1.40''$$

$$V = QA = (1.40)(2.33) = 3.27 \text{ IN-AC} = \boxed{11,861 \text{ ft}^3}$$

$Q_{TOTAL} = 9.7$ cfs

### PROPOSED CONDITION

BASIN D-1 INTO POND, D-2 & D-3 INTO 7-BAR LOOP ROAD, TOTAL = 2.84 AC

D-1 = 1.85 AC, PAVED = 1.63

Q = 7.7 cfs, $Q_{PONDED}$ = 4.1 cfs L/SCP = 0.22

D-2 = 0.68 AC, PAVED = 0.45 TOTAL PAVED = 2.26 AC

Q = 2.5 cfs L/SCP = 0.23 TOTAL L/SCP = 0.58 AC

D-3 = 0.31 AC, PAVED = 0.17

Q = 0.9 cfs L/SCP = 0.14

$$CN = \frac{(98)(2.26)+(61)(0.58)}{2.84} = 90.44$$

$$S = 1.06, \quad Q = \frac{((2.2-0.2(1.06))^2}{2.2+0.8(1.06)} = 1.30$$

$$V = QA = (1.30)(2.84) = 3.69 \text{ IN-AC} = 13,388 \text{ ft}^3 \text{ - WITHOUT POND}$$

$$V_{PONDED} = 2,126 \text{ ft}^3, \quad 13,388 - 2,126 = 11,262 \text{ ft}^3 \text{ - WITH POND}$$

$Q_{TOTAL\ PONDED} = 7.5$ cfs

BOHANNAN-HUSTON INC.

AZ-38

PROJECT NAME Cottonwood Mall SHEET 8 OF 10

PROJECT NO. 9013505 BY D.F. DATE 4/13/92

SUBJECT Drainage - Ponds CH'D DATE

POND D-1 HYDROGRAPH

- OFF SITE BASIN

- INFLOW BASIN: D-1, Q = 7.6 cfs

OUTFLOW: 4" ϕ DRAIN &

12" SIDEWALK CULVERT

BASIN AREA = 1.85 AC

PAVED = 1.63 AC

L/SCAPED = 0.22 AC

$$CN = \frac{(98)(1.63) + (61)(0.22)}{1.85} = 93.6$$

$$S = 0.68, \quad q = \frac{(2.2 - .2(S))^2}{(2.2 + .8(S))} = 1.55$$

$$V = qA = (1.55)(1.85) = 10{,}407 \text{ ft}^3$$

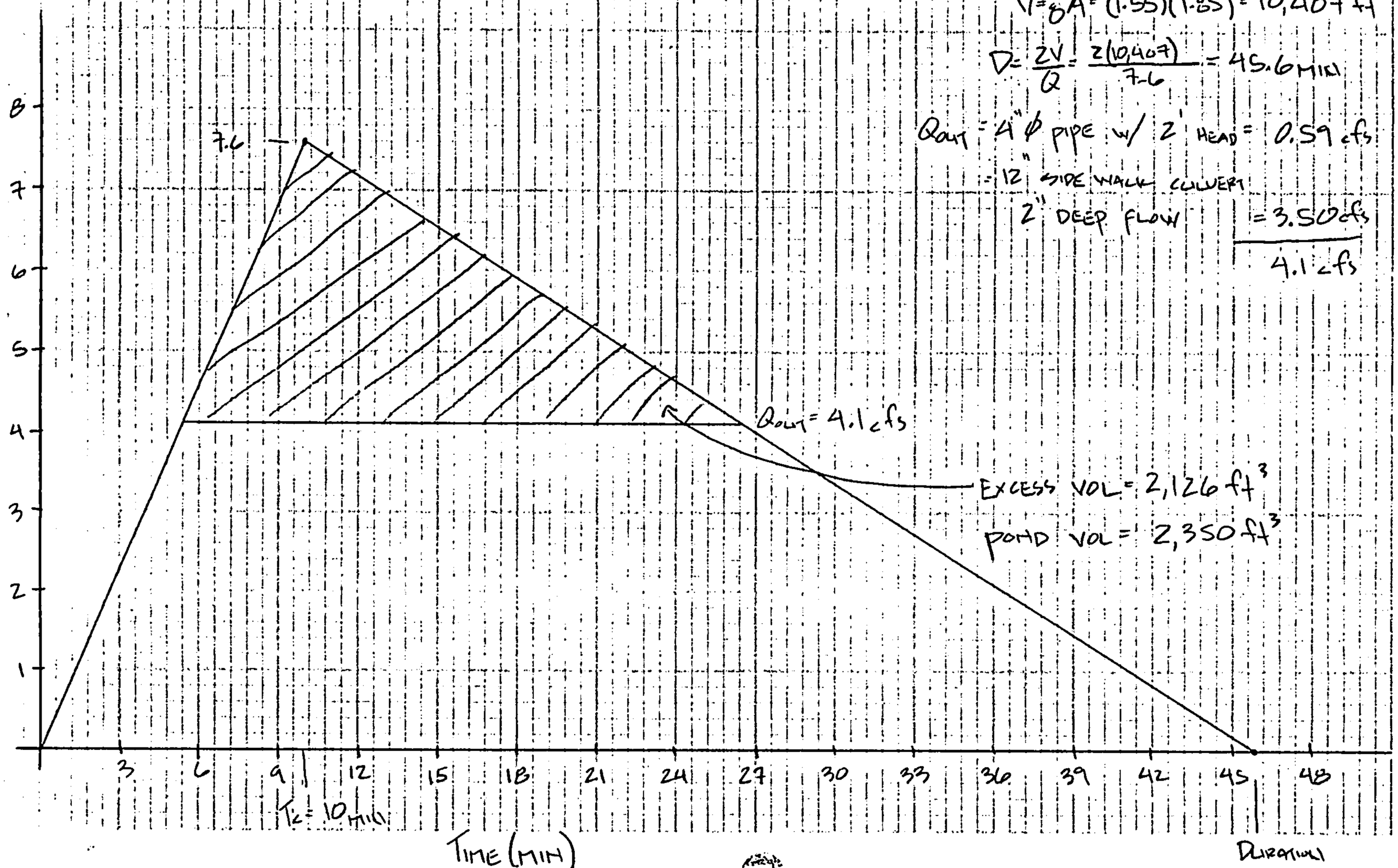
$$D = \frac{2V}{Q} = \frac{2(10{,}407)}{7.6} = 45.6 \text{ MIN}$$

$Q_{OUT}$ = 4" ϕ pipe w/ 2' HEAD = 0.59 cfs

+ 12" SIDE WALK CULVERT

2" DEEP FLOW = 3.50 cfs

4.1 cfs




BOHANNAN-HUSTON INC.

A2-39

SHEET 9 OF 10

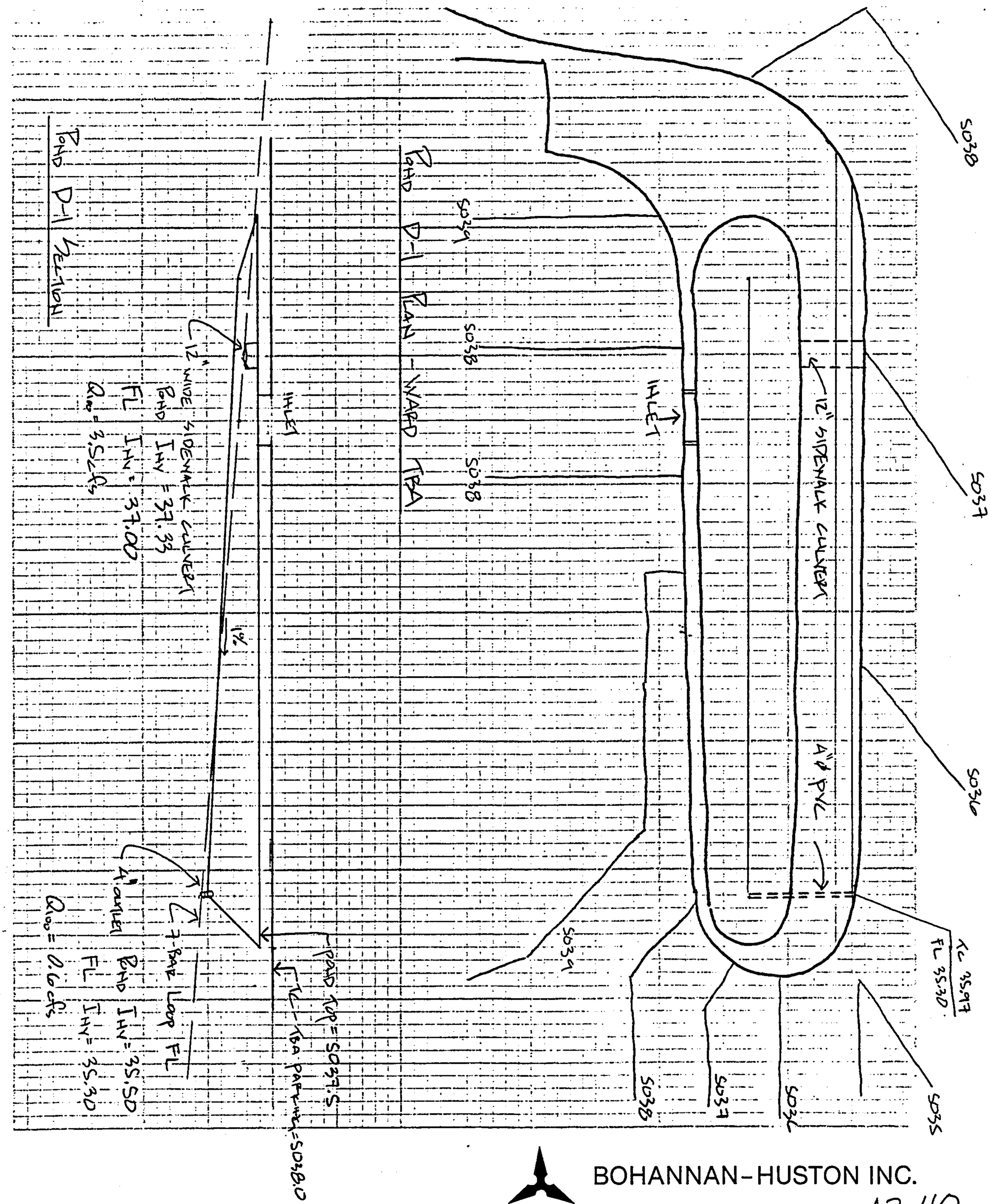
BY DF DATE 4/13/02

CH'D DATE

PROJECT NAME Cottonwood Mall

PROJECT NO. 1013505

SUBJECT Drainage - Ponds




BOHANNAN-HUSTON INC.

A2-40

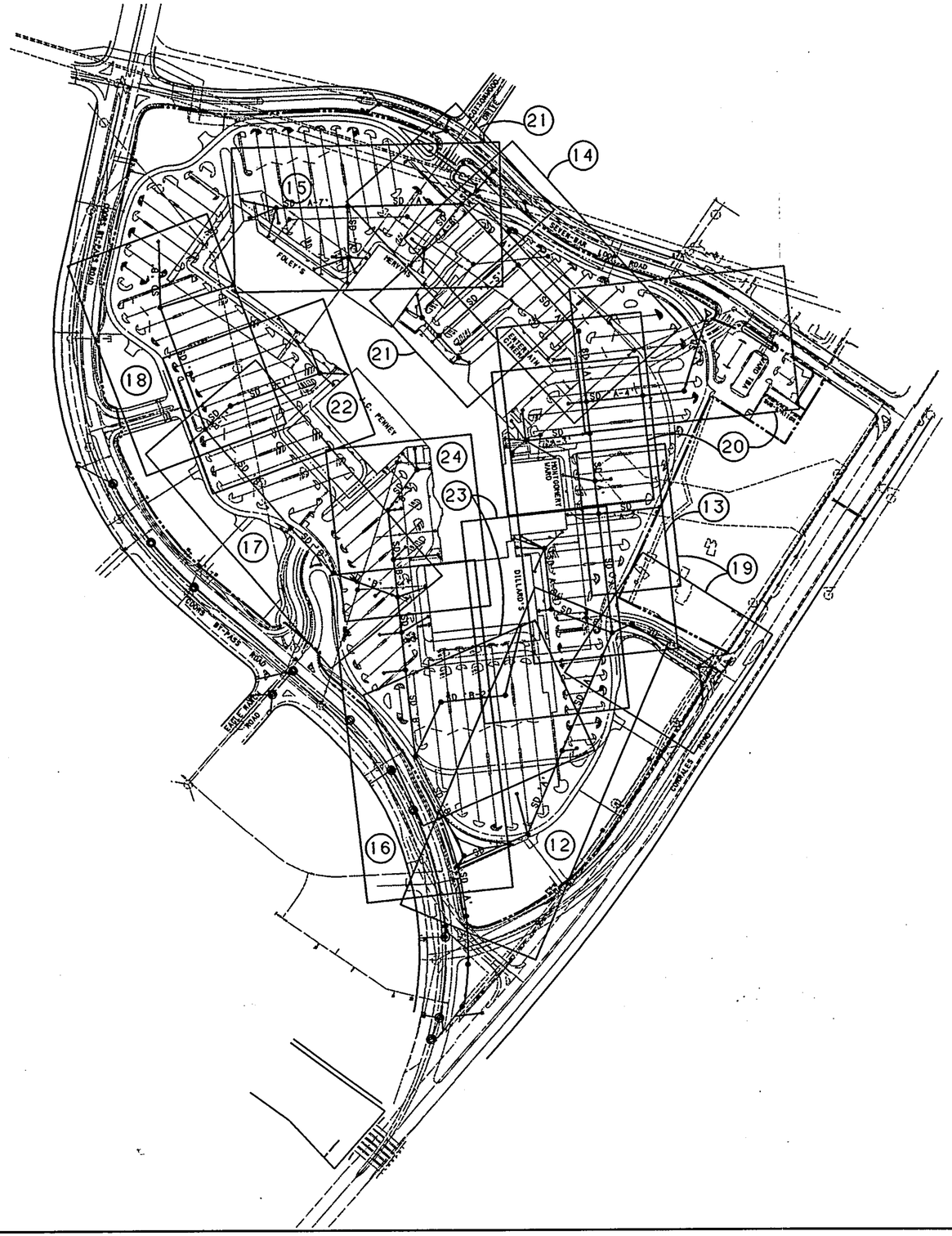
PROJECT NAME Cottonwood Mall SHEET 10 OF 10

PROJECT NO. 9013505 BY D.F. DATE 4/13/92

SUBJECT Drainage - Ponds CH'D DATE

## HGL COMPUTATIONS


STORM DRAIN LAYOUT . . . . . A2-42
STORM DRAIN PLANS & PROFILES W/HGL INFORMATION . . . . . A2-43
HGL SPREADSHEET . . . . . A2-57
NORMAL DEPTH CALCULATIONS . . . . . A2-60




## LEGEND

- PROJECT BOUNDARY
- EXISTING SANITARY SEWER LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING GATE VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING STORM DRAIN LINE
- EXISTING STORM DRAIN MANHOLE
- EXISTING STORM DRAIN INLET
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED WATER LINE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED FIRELINE
- PROPOSED WATER METER
- PROPOSED STORM DRAIN LINE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN INLET
- FUTURE STORM DRAIN LINE
- FUTURE STORM DRAIN INLET
- (10) SHEET NUMBER

N

200 100 0 200

SCALE: 1" = 200'

AS BUILT INFORMA

CONTRACTOR

WORK STAKED BY

INSPECTOR'S ACCEPTANCE BY

VERIFICATION BY

DRAWINGS CORRECTED BY

MICRO-FILM INFORM

RECORDED BY

NO.

SURVEY INFORMATION

FIELD NOTES

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

BENCH MARKS

THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

ENGINEERS SEAL

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

REVISIONS

DESIGN

DESIGNED BY KLD.MSJ DATE 6/94

DRAWN BY TSG.SAR DATE 6/94

7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000

BOHANNAN HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS

5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN LAYOUT SHEET

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

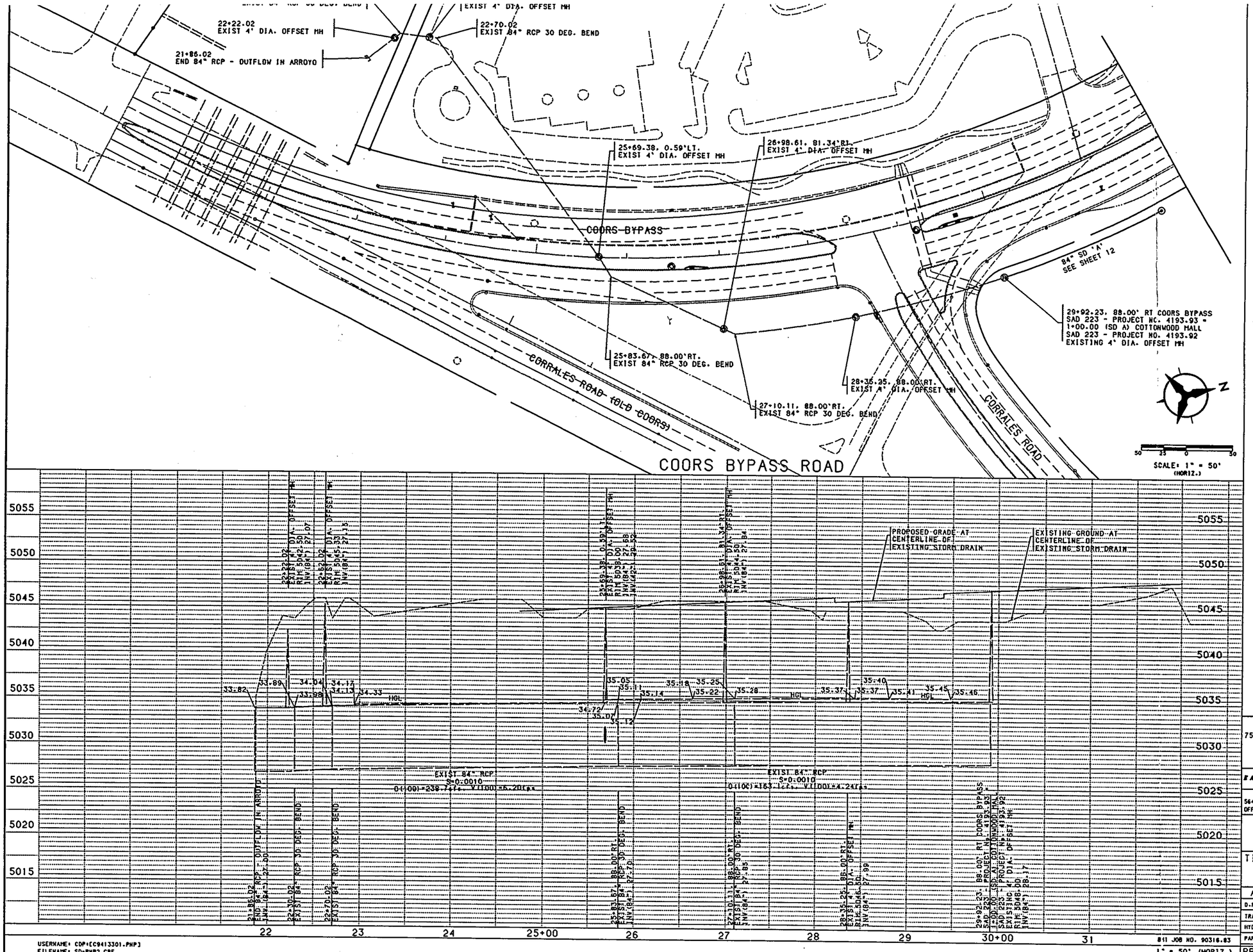
PROJECT NO. 4193.92 | MAP NO. A13&14 B13&14 | SHEET 4 OF 30

BHI JOB NO. 90316.83

USERNAME: CDP:C9413301.PAD
FILENAME: SDLAYOUT.GRF

A2-42

7/27




AS BUILT INFORM

| NO. | BY | DATE | REMARKS |
|---|---|---|---|
| | | | CONTRACTOR |
| | | | SEWER STAKED BY |
| | | | INSPECTOR'S STAKING CHECKED BY |
| | | | FIELD VERIFICATION BY |
| | | | DRAWINGS CORRECTED BY |
| | | | MICRO-FILM INFOR |

BENCH MARKS

THE BENCHMARK IS THE ACS STATION I-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION

FIELD NOTES

ENGINEERS SEAL

REVISIONS

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | DESIGN | |


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
BOHANNAN HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

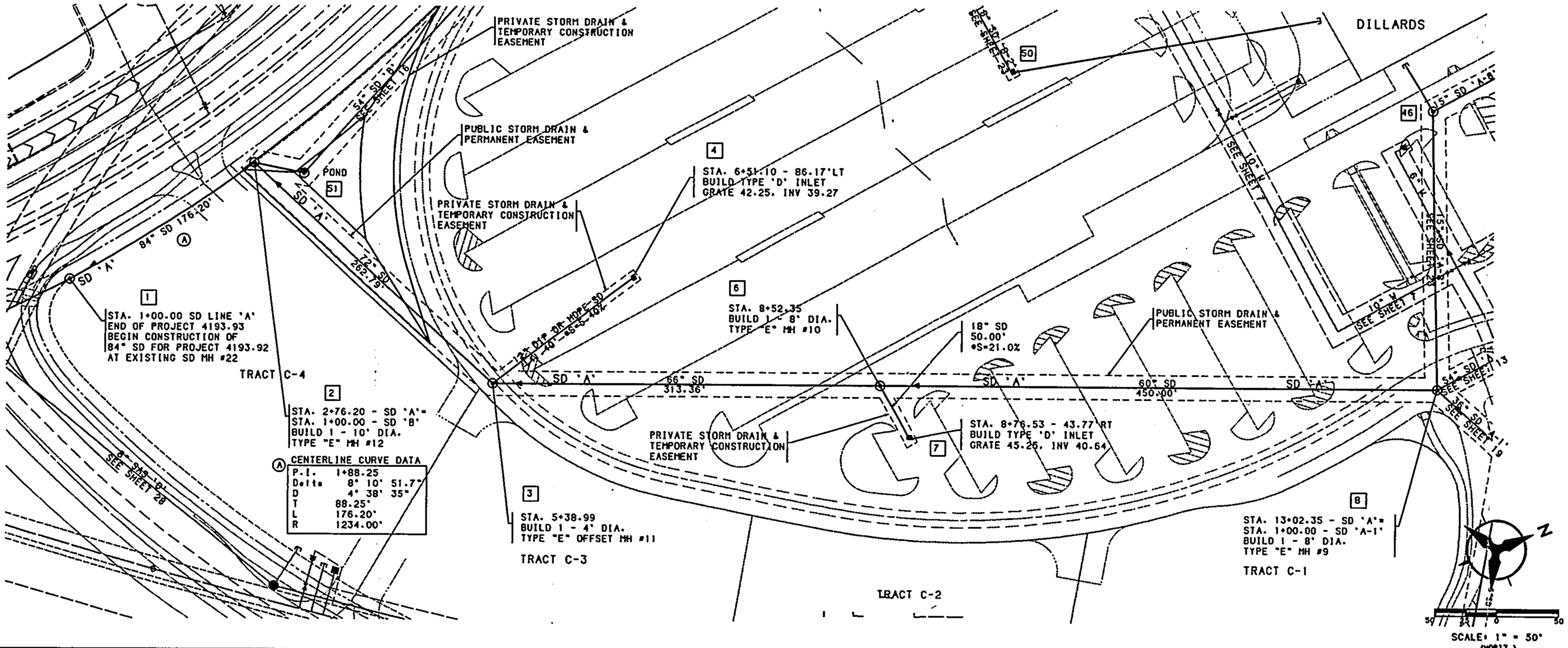

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

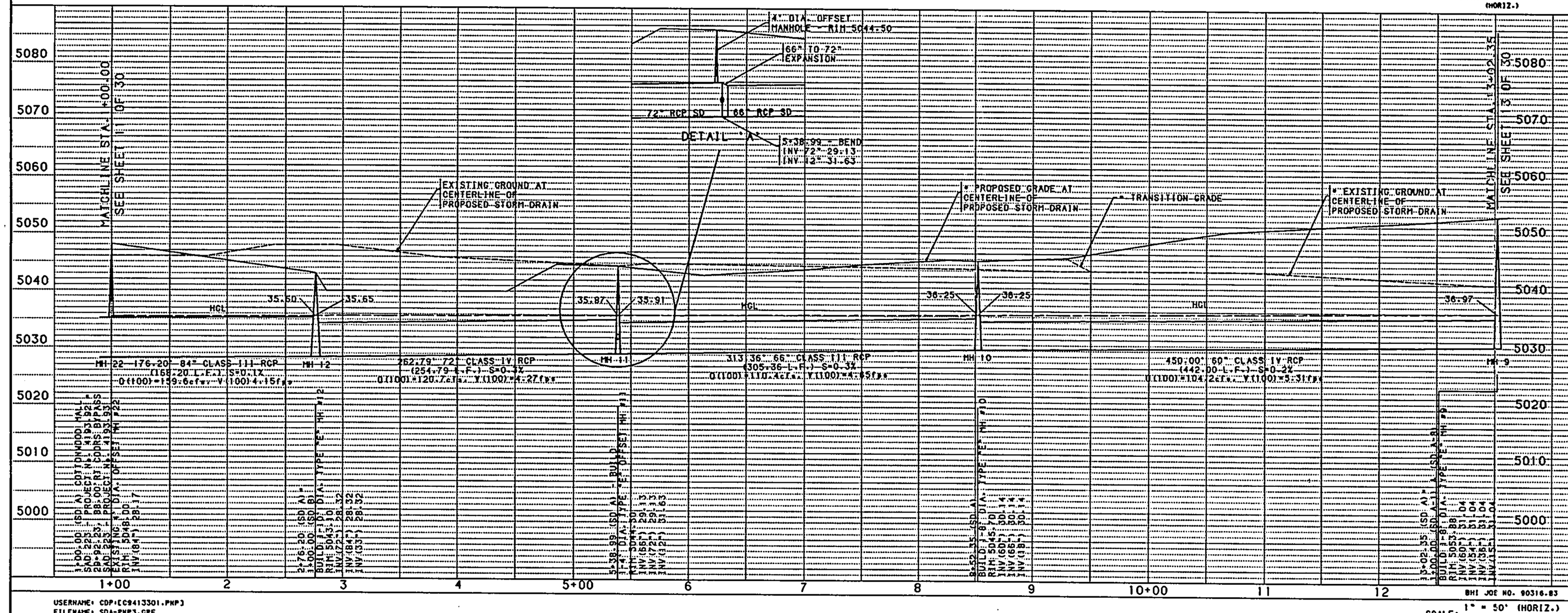
TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
EXISTING STORM DRAIN CONDITIONS

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER |
|---|---|---|---|---|
| D.R.C. Chair | | | WATER | |
| TRANS. DEV. | | | WASTE WATER | |
| HYDROLOGY | | | NHUI | |
| PARKS | | | CODE/MECH | |

| PROJECT NO. | MAP | SHEET |
|---|---|---|
| 4193.92 | A13&14 NO. B13&14 | 11 |

A2-43




USERNAME: CDP:[C9413301.PKP]
FILENAME: SDA-PKP3.CRF

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 1 | 78758.30 | 25839.63 | MANHOLE |
| 2 | 78728.86 | 26013.20 | MANHOLE |
| 3 | 78968.12 | 26121.90 | MANHOLE |
| 4 | 78932.39 | 26258.71 | 'D' INLET |
| 6 | 79090.11 | 26410.54 | MANHOLE |
| 7 | 79139.84 | 26415.76 | 'D' INLET |
| 8 | 79265.30 | 26825.04 | MANHOLE |
| 46 | 79055.17 | 26908.55 | MANHOLE |
| 50 | 78895.80 | 26506.79 | 'D' INLET |
| 51 | 78752.17 | 26047.18 | MANHOLE |

* SURFACE GRADE AT TIME OF PIPE INSTALLATION

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
INSPECTOR'S ACCEPTANCE BY
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES

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

ENGINEERS SEAL

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

REVISIONS

DESIGN
DESIGNED BY KLD.MSJ DATE 6/94
DRAWN BY TSG.SAR DATE 6/94

7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
ROMANAK STANLEY INC.
EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

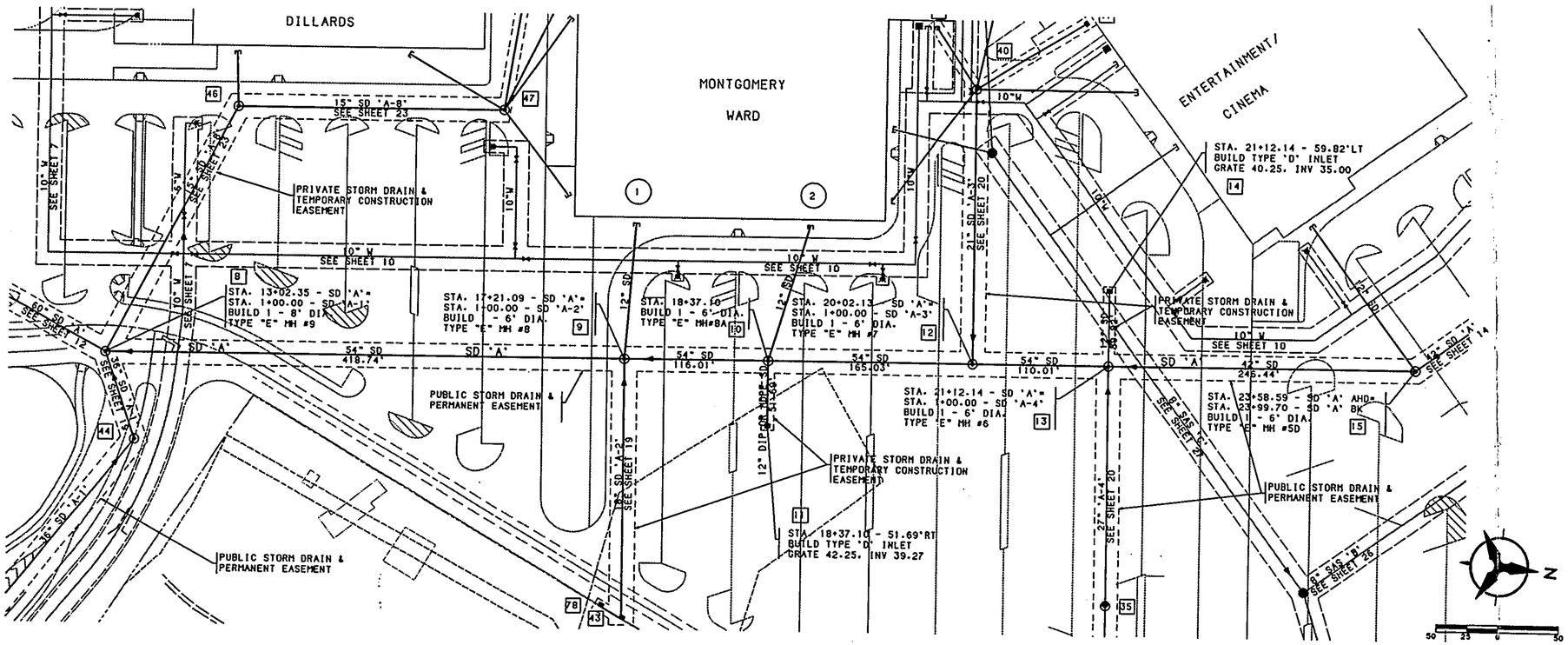
TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'A' 1+00.00 TO 13+02.35

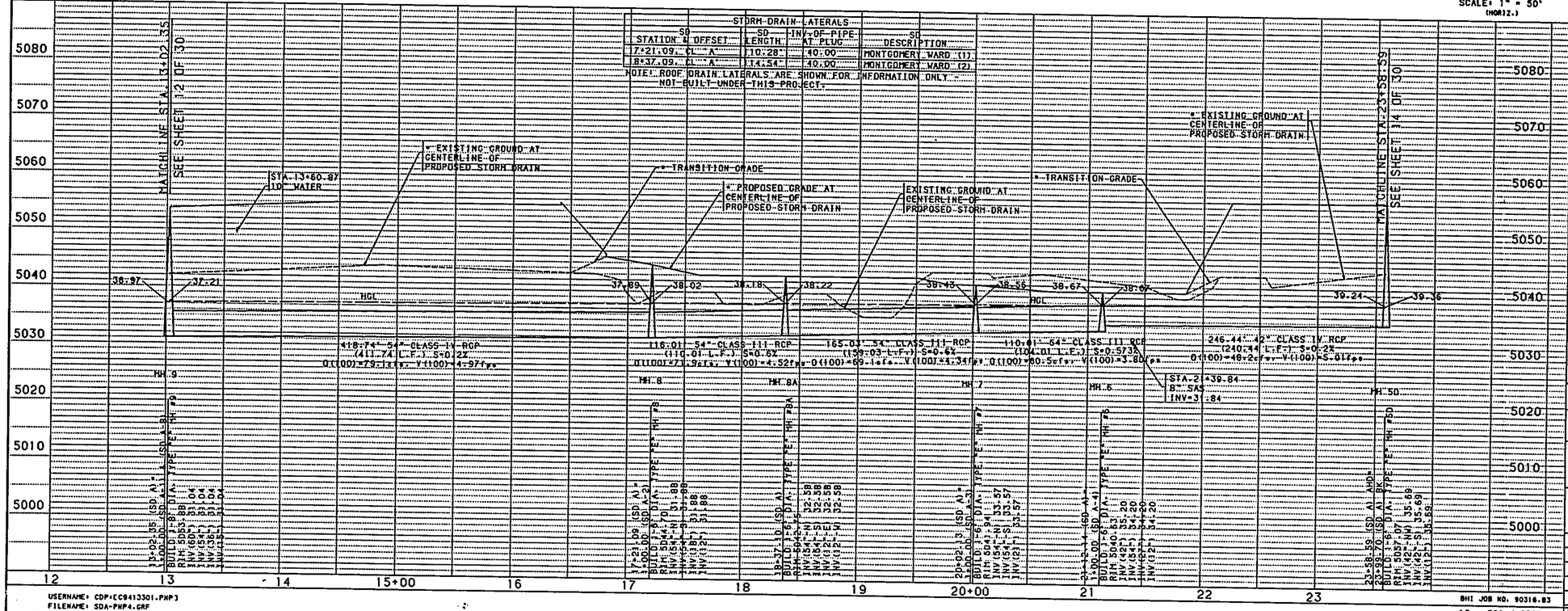
| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

BHI JOB NO. 90316.83

| PROJECT NO. | MAP A13&14 NO. B13&14 | SHEET 12 OF 30 |
|---|---|---|
| 4193.92 | | |

A2-44




USERNAME: CDP:CC9413301.PKP3
FILENAME: SDA-PKP4.GRF

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

BHI JOB NO. 90316.83

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 8 | 79265.30 | 26825.04 | MANHOLE |
| 9 | 79221.53 | 27241.48 | MANHOLE |
| 10 | 79209.41 | 27356.85 | MANHOLE |
| 11 | 79260.81 | 27362.25 | 'D' INLET |
| 12 | 79192.16 | 27520.98 | MANHOLE |
| 13 | 79180.66 | 27630.39 | MANHOLE |
| 14 | 79121.16 | 27624.14 | 'D' INLET |
| 15 | 79154.90 | 27875.48 | MANHOLE |
| 35 | 79374.69 | 27650.78 | MANHOLE |
| 40 | 78970.44 | 27497.68 | MANHOLE |
| 41 | 78904.78 | 27580.33 | 'D' INLET |
| 42 | 78922.70 | 27459.36 | 'D' INLET |
| 43 | 79431.57 | 27263.56 | 'D' INLET |
| 44 | 79333.02 | 26856.59 | MANHOLE |
| 46 | 79055.17 | 26908.55 | MANHOLE |
| 47 | 79032.84 | 27121.02 | MANHOLE |
| 78 | 79423.20 | 27245.39 | 'A' INLET |

* SURFACE GRADE AT TIME OF PIPE INSTALLATION

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
INSPECTOR'S ACCEPTANCE BY
VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.08B. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEERS SEAL

REVISIONS
NO. | DATE | REMARKS | BY

DESIGNED BY KLD.MSJ DESIGN DATE 6/94
DRAWN BY TSG.SAR DATE 6/94


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
ROMAN ANTON INC.
EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

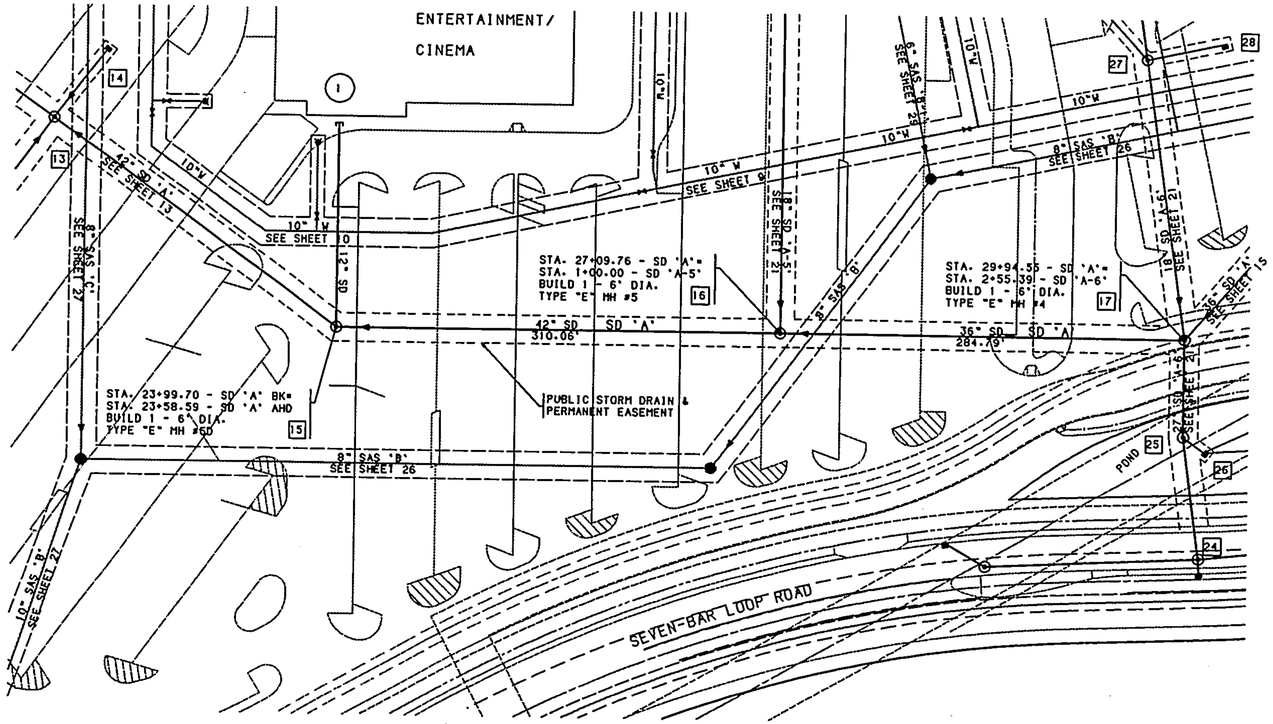

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'A' 13+02.35 TO 23+58.59

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH. | | |

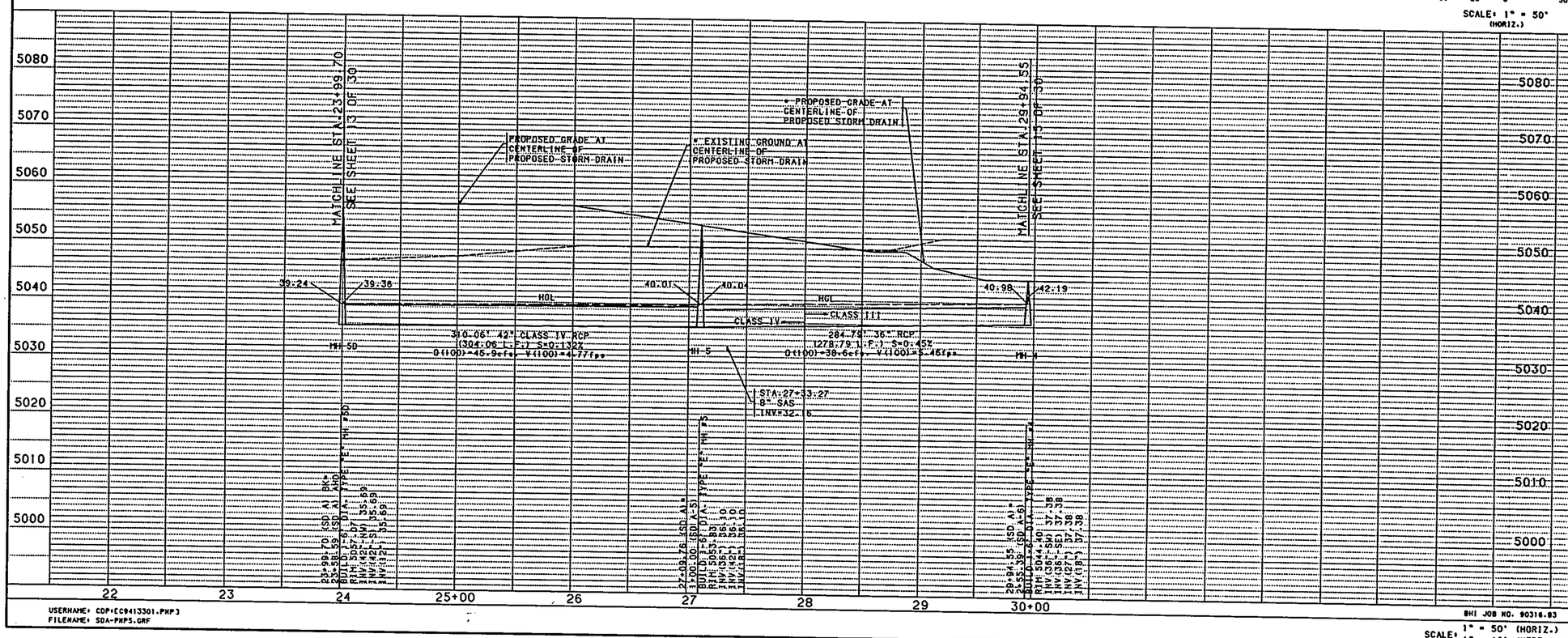
PROJECT NO. 4193.92 | MAP NO. A13&14 B13&14 | SHEET 13 OF 30

A2-45




| STORM DRAIN LATERALS | | | |
|---|---|---|---|
| SD STATION & OFFSET | SD LENGTH | INV. OF PIPE AT PLUG | SD DESCRIPTION |
| 23+99.70, CL 'A' | 143.92' | 60.25 | ENTER./CINEMA (1) |

NOTE: ROOF DRAIN LATERALS ARE SHOWN FOR INFORMATION ONLY - NOT BUILT UNDER THIS PROJECT.




USERNAME: COP=EC9413301.PMP3
FILENAME: SDA-PMP5.GRF

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 13 | 79180.66 | 27630.39 | MANHOLE |
| 14 | 79121.16 | 27624.14 | 'D' INLET |
| 15 | 79154.90 | 27875.48 | MANHOLE |
| 16 | 78947.43 | 28105.90 | MANHOLE |
| 17 | 78756.87 | 28317.54 | MNAHOLE |
| 24 | 78864.06 | 28429.56 | MANHOLE |
| 25 | 78808.06 | 28363.63 | MANHOLE |
| 26 | 78806.18 | 28381.31 | 'D' INLET |
| 27 | 78629.37 | 28163.49 | MANHOLE |
| 28 | 78584.68 | 28195.31 | 'D' INLET |

• SURFACE GRADE AT TIME OF PIPE INSTALLATION


7500 JEFFERSON NE, COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
BOHMAN HUSTON INC.

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'A' 23+99.70 TO 29+94.55

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | REVISIONS | |

DESIGNED BY KLD.MSJ DESIGN DATE 6/94
DRAWN BY TSG.SAR DATE 6/94

ENGINEERS SEAL

SURVEY INFORMATION
FIELD NOTES

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

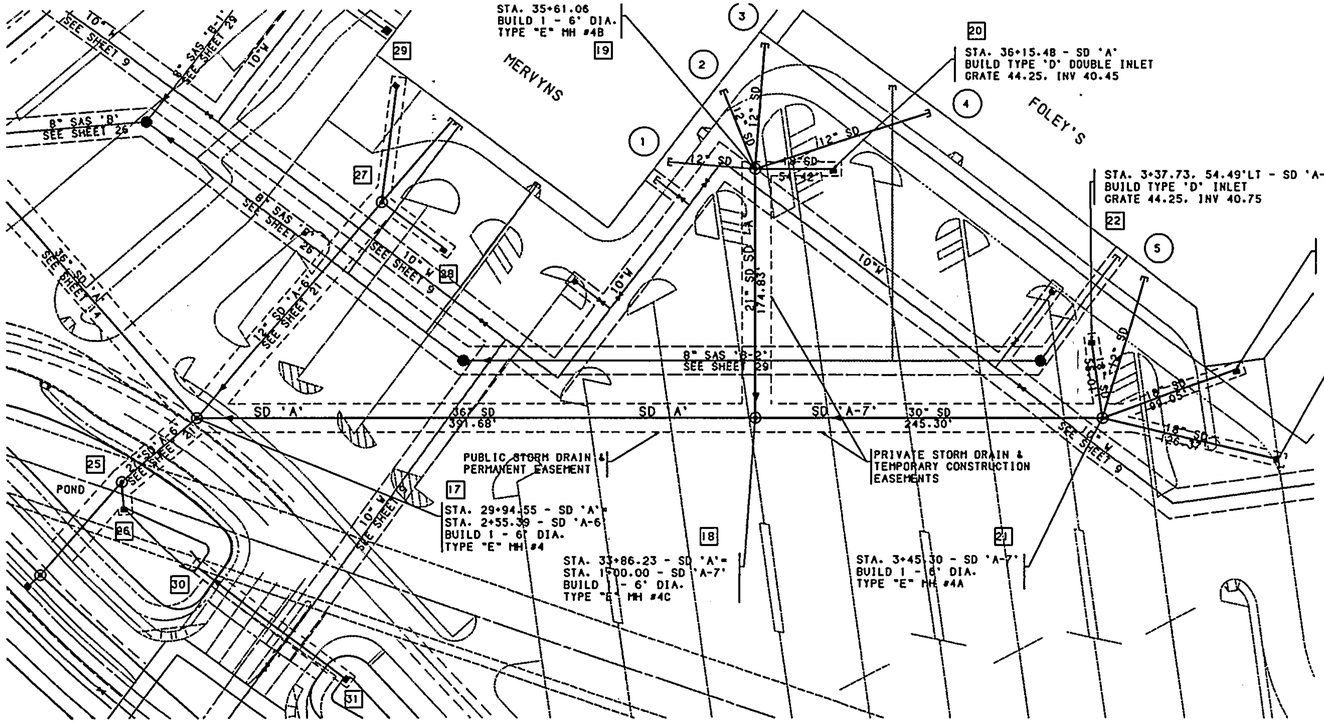
BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF CORRS RD. N.W. AND IRVING BLVD. N.W.

AS BUILT INFORMA

| | |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | |
| INSPECTOR'S ACCEPTANCE BY | |
| VERIFICATION BY | |
| DRAWINGS CORRECTED BY | |
| MICRO-FILM INFORM | |
| RECORDED BY | |
| NO. | |

PROJECT NO. 4193.92 | MAP NO. A13&14 B13&14 | SHEET 14 OF 30

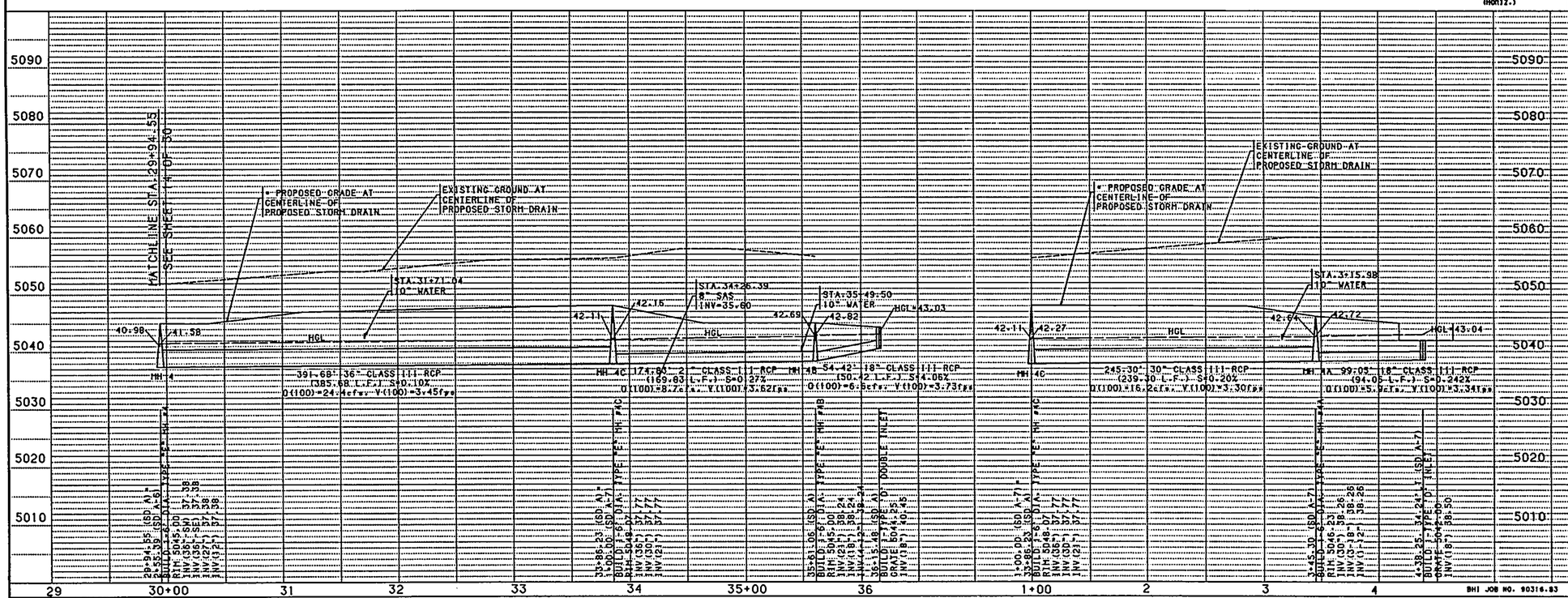
AZ-46




| STORM DRAIN LATERALS | | | |
|---|---|---|---|
| SD STATION & OFFSET | SD LENGTH | INV. OF PIPE AT PLUG | SD DESCRIPTION |
| 35+61.06, CL 'A' | 61.05' | 38.51 | MERVYN'S (1) |
| 35+61.06, CL 'A' | 60.21' | 38.51 | MERVYN'S (2) |
| 35+61.06, CL 'A' | 89.49' | 38.52 | MALL SERVICE (3) |
| 35+61.06, CL 'A' | 128.01' | 40.00 | FOLEY'S (4) |
| 3+45.30, CL 'A-7' | 103.30' | 40.00 | FOLEY'S (5) |

NOTE: ROOF DRAIN LATERALS ARE SHOWN FOR INFORMATION ONLY - NOT BUILT UNDER THIS PROJECT.

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 17 | 78756.87 | 28317.54 | MANHOLE |
| 18 | 78365.25 | 28310.11 | MANHOLE |
| 19 | 78368.57 | 28135.31 | MANHOLE |
| 20 | 78314.16 | 28134.28 | 'D' INLET |
| 21 | 78119.99 | 28305.46 | MANHOLE |
| 22 | 78128.60 | 28251.12 | 'D' INLET |
| 23 | 78027.71 | 28269.46 | 'D' INLET |
| 24 | 77996.50 | 28332.27 | 'A' INLET |
| 25 | 78808.06 | 28363.63 | MANHOLE |
| 26 | 78806.18 | 28381.31 | 'D' INLET |
| 27 | 78629.37 | 28163.49 | MANHOLE |
| 28 | 78584.68 | 28195.31 | 'D' INLET |
| 29 | 78620.32 | 28079.46 | 'D' INLET |
| 30 | 78754.52 | 28422.19 | OUTLET |
| 31 | 78649.83 | 28498.38 | 'D' INLET |




| AS BUILT INFORMATION | |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | |
| INSPECTOR'S ACCEPTANCE BY | |
| VERIFICATION BY | |
| DRAWINGS CORRECTED BY | |
| MICRO-FILM INFORMATION | |
| RECORDED BY | |
| NO. | |

BENCH MARKS

THE BENCHMARK IS THE ACS STATION 1-B-13, ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION

FIELD NOTES

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

ENGINEERS SEAL

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

REVISIONS

DESIGN

DESIGNED BY KLD,MSJ DATE 6/94
DRAWN BY TSG,SAR DATE 6/94

* SURFACE GRADE AT TIME OF PIPE INSTALLATION


7500 JEFFERSON NE, COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
DOLMAN, HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5843 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

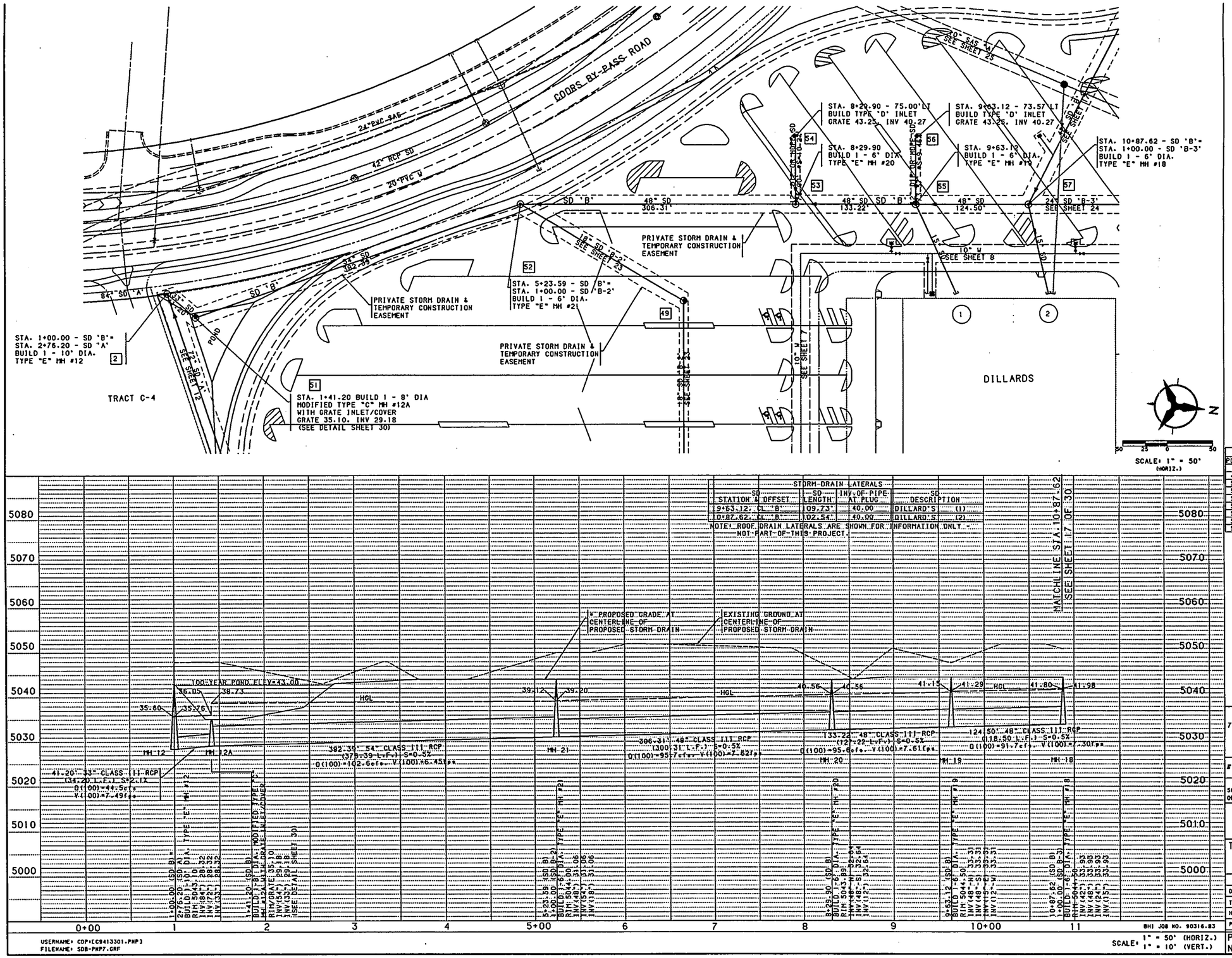

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'A' 29+94.55 TO 35+61.06 & 'A-7'

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NHUI | | |
| PARKS | | | CODE / MECH. | | |

| PROJECT NO. | 4193.92 | MAP NO. A13&14 B13&14 | SHEET 15 OF 30 |
|---|---|---|---|

A2-47







USERNAME: CDP=EC9413301.PMP3
FILENAME: SDB-PMP7.CRF

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 2 | 78728.86 | 26013.20 | MANHOLE |
| 49 | 78677.01 | 26583.79 | MANHOLE |
| 51 | 78752.17 | 26047.18 | MANHOLE |
| 52 | 78588.53 | 26392.78 | MANHOLE |
| 53 | 78556.51 | 26697.41 | MANHOLE |
| 54 | 78482.00 | 26688.85 | 'D' INLET |
| 55 | 78542.59 | 26829.90 | MANHOLE |
| 56 | 78467.79 | 26824.08 | 'D' INLET |
| 57 | 78529.57 | 26953.72 | MANHOLE |

• SURFACE GRADE AT TIME OF PIPE INSTALLATION


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
BOHLMAN HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'B' 1+00.00 TO 10+87.62

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

| REVISIONS | | | |
|---|---|---|---|
| NO. | DATE | REMARKS | BY |
| DESIGNED BY | KLD-MSJ | DATE | 6/94 |
| DRAWN BY | TSG.SAR | DATE | 6/94 |

AS BUILT INFORMATION
CONTRACTOR
SURVEYED BY
STAKED BY
INSPECTOR'S CHANGES BY
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
DATE
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

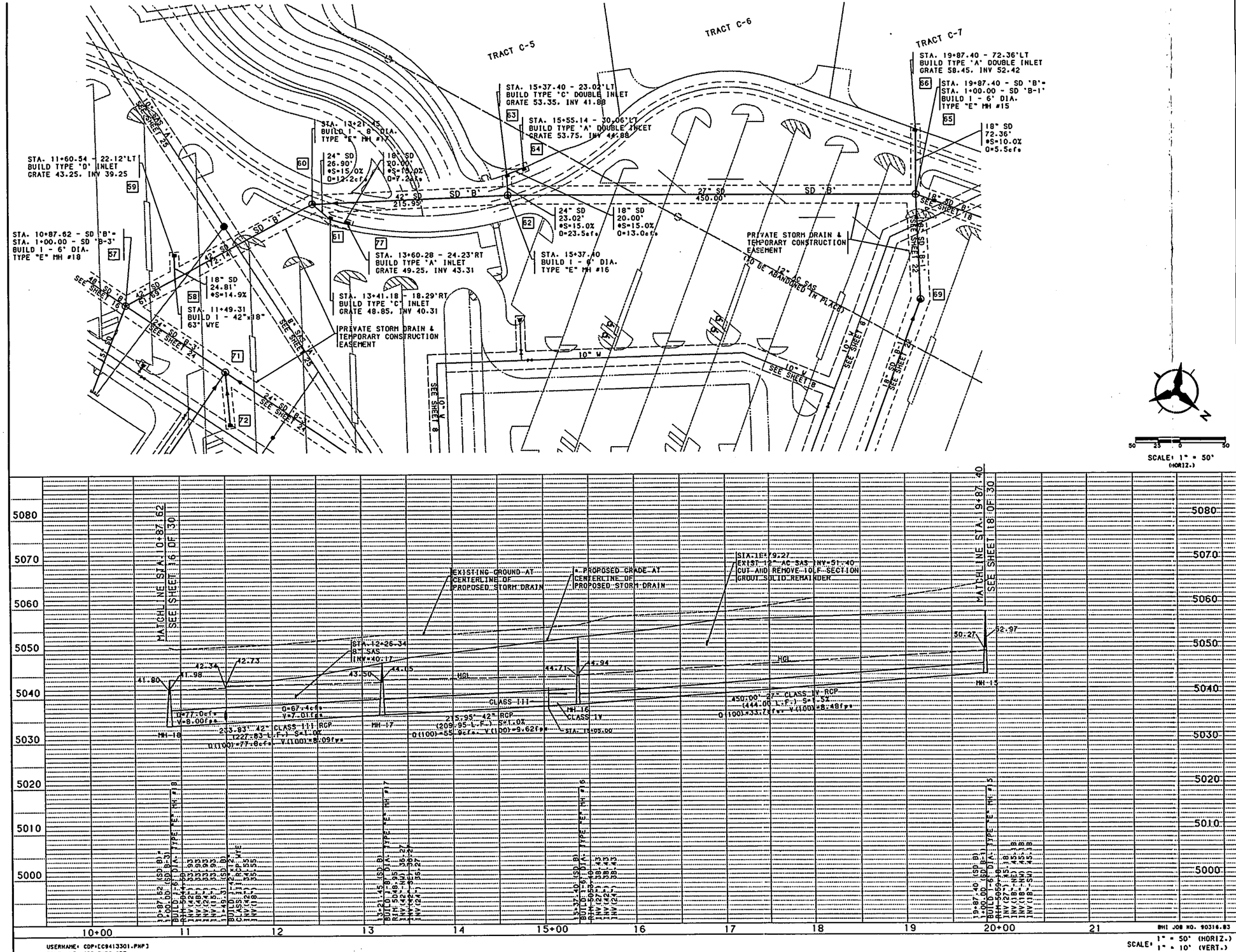
SURVEY INFORMATION
FIELD NOTES

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

ENGINEERS SEAL

PROJECT NO. 4193.92 | MAP NO. A13&14 B13&14 | SHEET 16 OF 30

AZ-48




| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 57 | 78529.57 | 26953.72 | MANHOLE |
| 58 | 78472.01 | 26975.90 | WYE |
| 59 | 78453.57 | 26959.30 | 'D' INLET |
| 60 | 78311.37 | 27037.79 | MANHOLE |
| 61 | 78311.45 | 27064.70 | 'C' INLET |
| 62 | 78165.02 | 27196.59 | MANHOLE |
| 63 | 78148.10 | 27181.00 | 'C' INLET |
| 64 | 78130.63 | 27190.72 | 'A' INLET |
| 65 | 77874.42 | 27540.18 | MANHOLE |
| 66 | 77819.17 | 27493.45 | 'A' INLET |
| 69 | 77960.76 | 27519.47 | MANHOLE |
| 71 | 78515.81 | 27084.68 | MANHOLE |
| 72 | 78556.45 | 27125.94 | 'D' INLET |
| 77 | 78302.88 | 27082.76 | 'A' INLET |




USERNAME: CDP*EC9413301.PNP3
FILENAME: SDB-PNP8.GRF

* SURFACE GRADE AT TIME OF PIPE INSTALLATION


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
BOHANNAN HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5843 PARADISE BLVD. N.W.
OFFICE (505) 898-8021
ALBQ., N.M., 87114
FAX (505) 898-8501


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'B' 10+87.62 TO 19+87.40

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | REVISIONS | |

DESIGN
DESIGNED BY KLD.HSJ DATE 6/94
DRAWN BY TSG.SAR DATE 6/94

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
STAKING CHECKED BY
ACCEPTANCE BY
CERTIFICATION BY
DRAWINGS CHECKED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

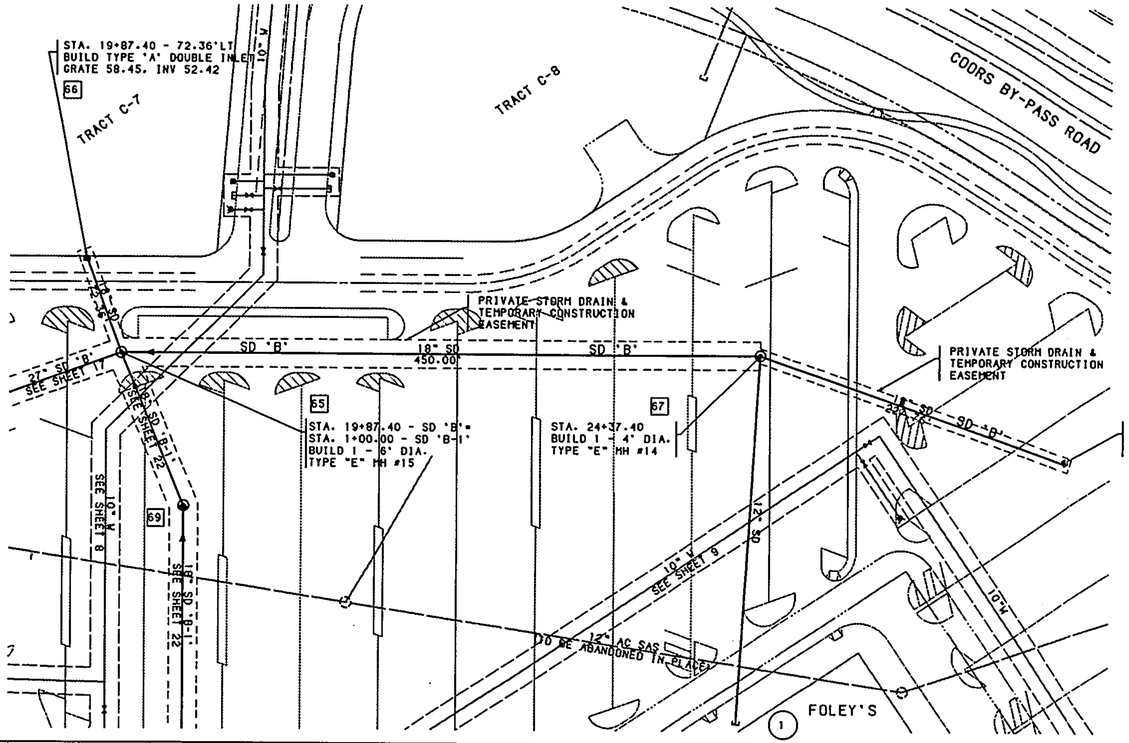
BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEERS SEAL

PROJECT NO. 4193.92
MAP NO. A13&14 B13&14
SHEET 17 OF 30

AZ-49

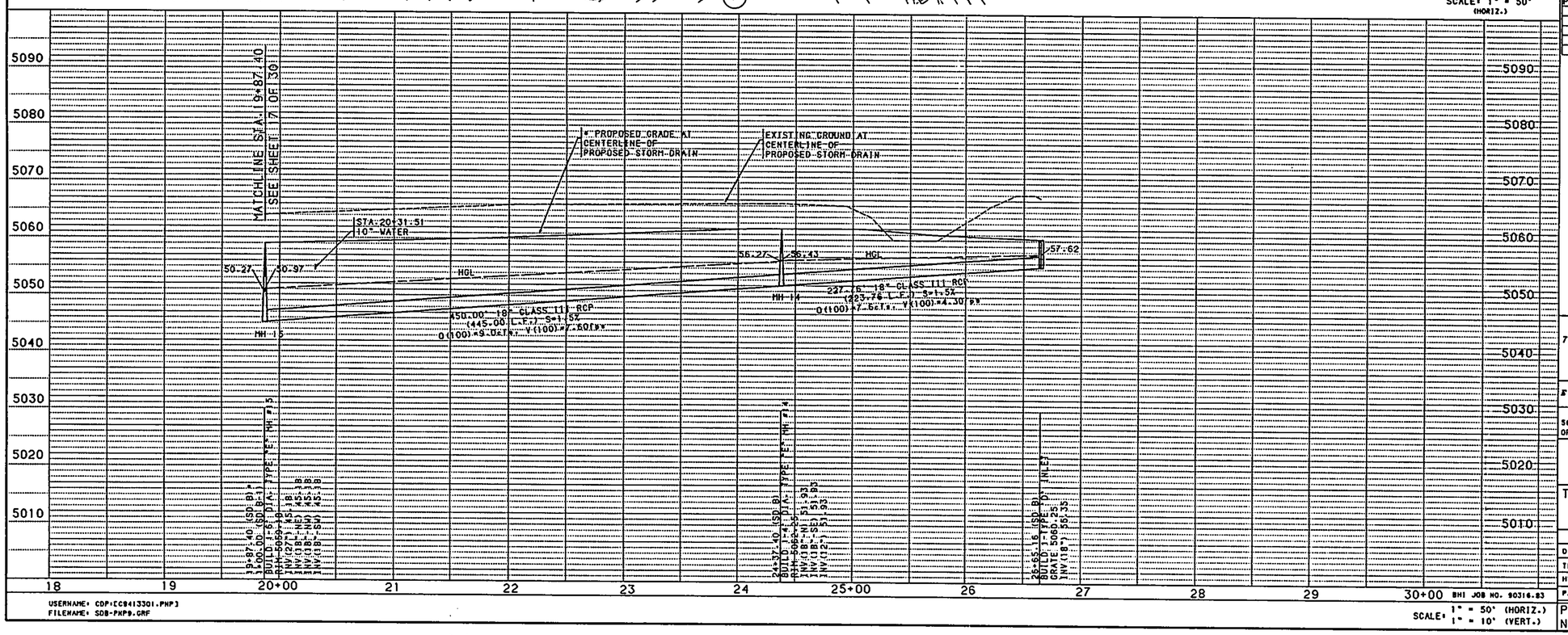



| STORM DRAIN LATERALS | | | |
|---|---|---|---|
| SD STATION & OFFSET | SD LENGTH | INV.OF PIPE AT PLUG | SD DESCRIPTION |
| 24+37.40, CL 'B' | 262.29' | 57.50 | FOLEY'S (1) |

NOTE: ROOF DRAIN LATERALS ARE SHOWN FOR INFORMATION ONLY - NOT BUILT UNDER THIS PROJECT.

SCALE: 1" = 50' (HORIZ.)

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 65 | 77874.42 | 27540.18 | MANHOLE |
| 66 | 77819.17 | 27493.45 | 'A' INLET |
| 67 | 77718.87 | 27962.44 | MANHOLE |
| 68 | 77715.09 | 28190.17 | 'D' INLET |
| 69 | 77960.76 | 27619.47 | MANHOLE |




USERNAME: CDP:EC9413301.PMP3
FILENAME: SDB-PMP9.CRF

* SURFACE GRADE AT TIME OF PIPE INSTALLATION

7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000

BOHANNAN HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'B' 19+87.40 TO 26+65.16

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

| PROJECT NO. | MAP NO. | SHEET | OF |
|---|---|---|---|
| 4193.92 | A13&14 B13&14 | 18 | 30 |

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
INSPECTOR'S ACCEPTANCE BY
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
HICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES

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

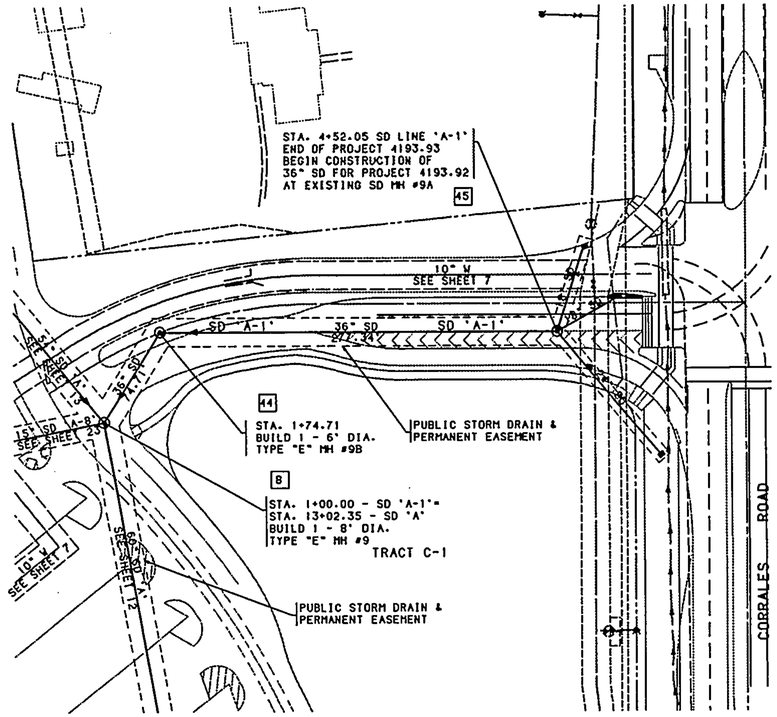
ENGINEERS SEAL

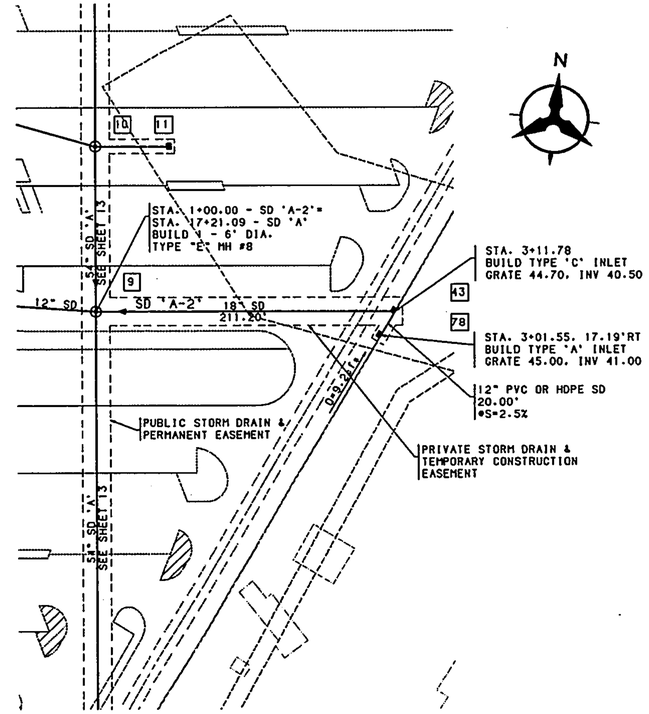
REVISIONS

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

DESIGNED BY KLD.MSJ DESIGN DATE 6/94
DRAWN BY TSG.SAR DATE 6/94

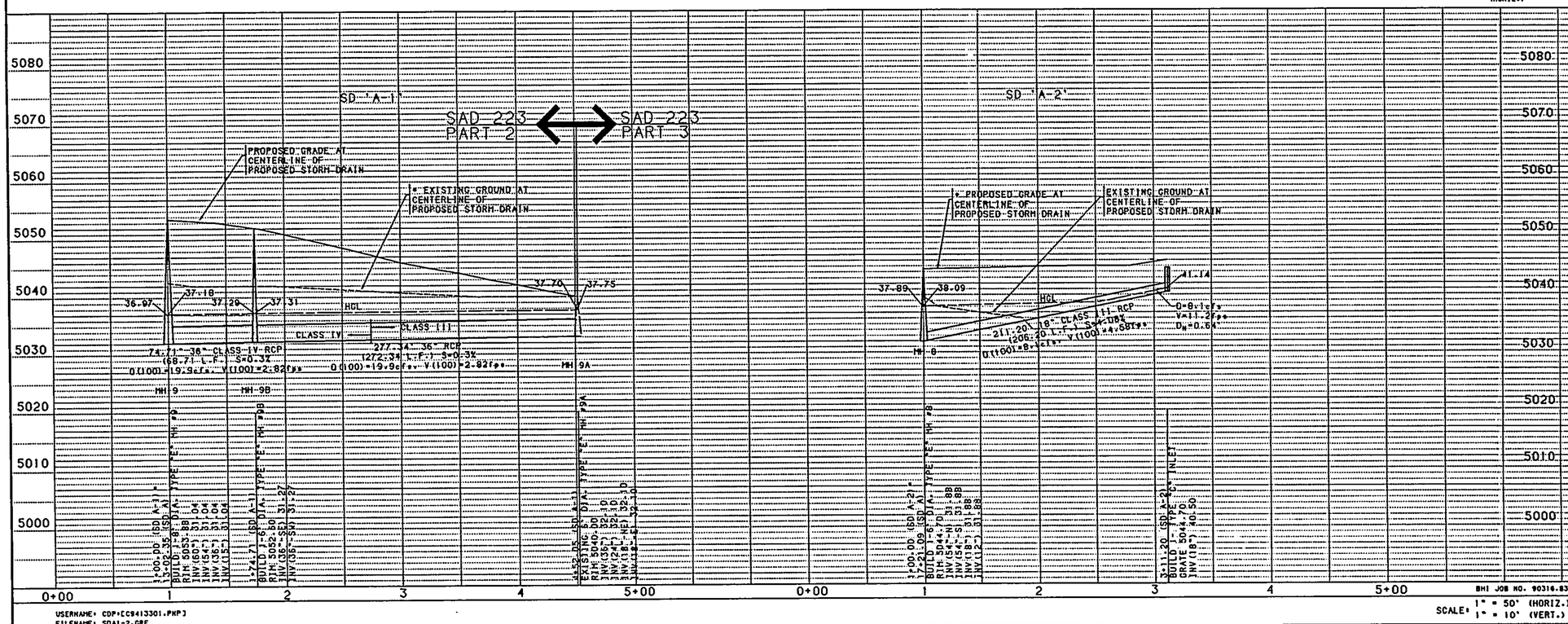
AZ-50




SCALE: 1" = 50' (HORIZ.)

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 8 | 79265.30 | 26825.04 | MANHOLE |
| 9 | 79221.53 | 27241.48 | MANHOLE |
| 10 | 79209.41 | 27356.85 | MANHOLE |
| 11 | 79260.81 | 27362.25 | 'D' INLET |
| 43 | 79431.57 | 27263.56 | 'C' INLET |
| 44 | 79333.02 | 26856.59 | MANHOLE |
| 45 | 79565.61 | 26705.54 | MANHOLE |
| 78 | 79423.20 | 27245.39 | 'A' INLET |




USERNAME: CDP+[C9413301.PNP]
FILENAME: SDA1-2.GRF

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

BHI JOB NO. 90316.83

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
WORK INSPECTED BY
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13.
ELEVATION 5045.088. THE BRASS TABLET IS SET
IN THE TOP OF A CONCRETE POST LOCATED 170 FT.
SOUTHWEST OF THE JUNCTION OF CORRS RD. N.W.
AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES

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

ENGINEERS SEAL

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

REVISIONS

DESIGN
DESIGNED BY KLD.MSJ DATE 6/94
DRAWN BY TSG.SAR DATE 6/94

* SURFACE GRADE AT TIME
OF PIPE INSTALLATION


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
BOHANNAN HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

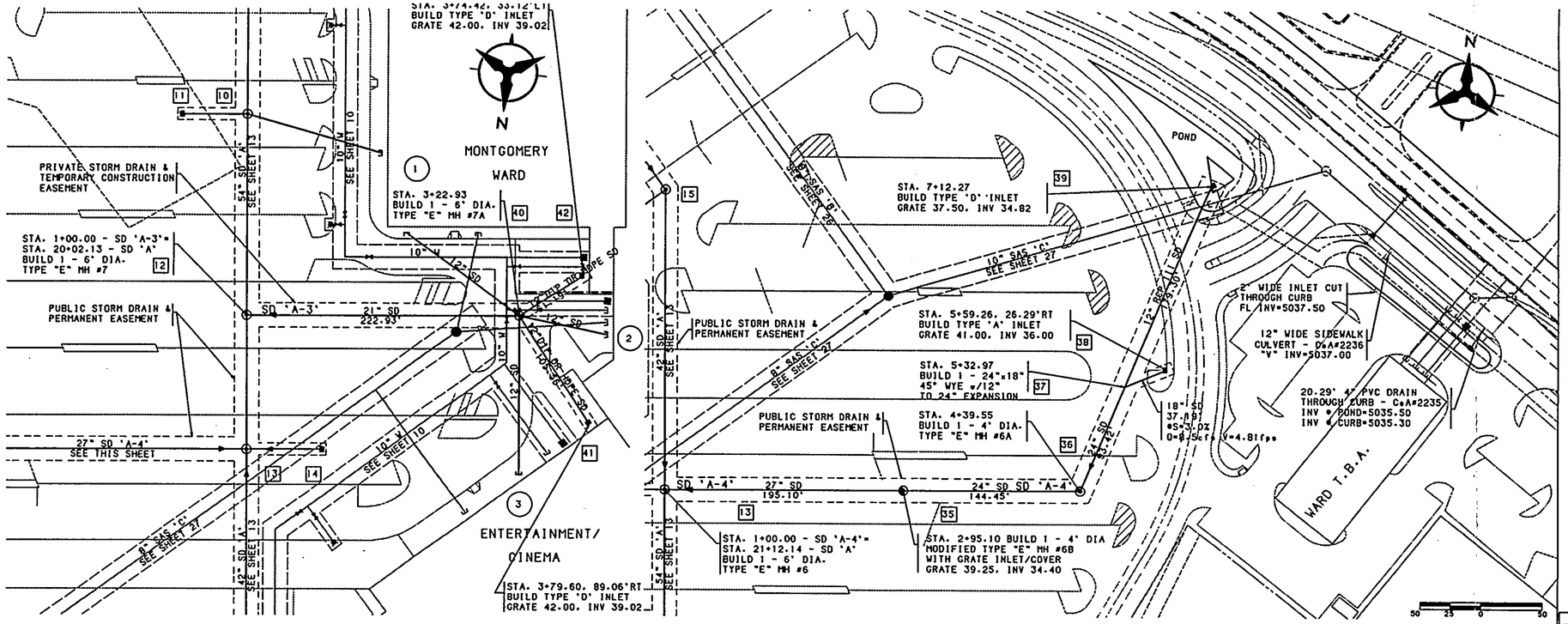

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

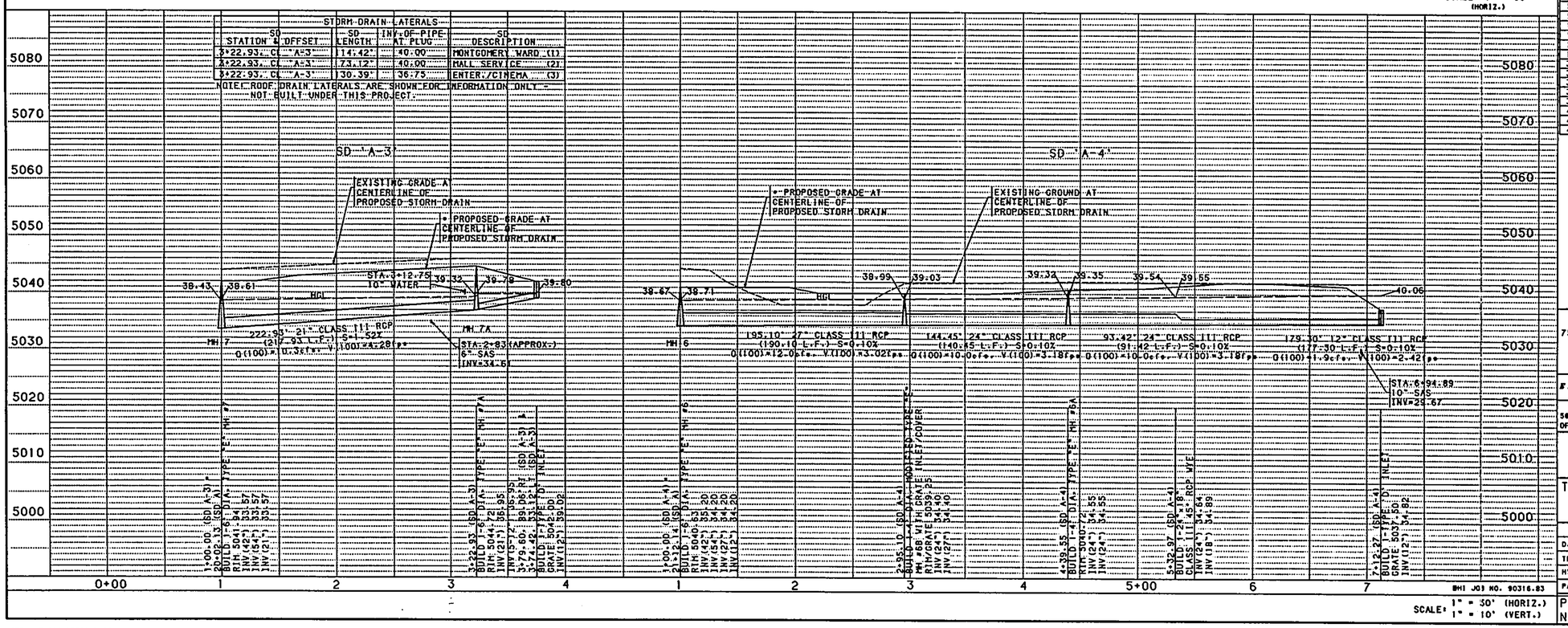
TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAINS 'A-1' & 'A-2'

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

PROJECT NO. 4193.92
MAP NO. A13&14 B13&14
SHEET 19 OF 30

A2-51




| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 10 | 79209.41 | 27356.85 | MANHOLE |
| 11 | 79260.81 | 27362.25 | 'D' INLET |
| 12 | 79192.16 | 27520.98 | MANHOLE |
| 13 | 79180.66 | 27630.39 | MANHOLE |
| 14 | 79121.16 | 27624.14 | 'D' INLET |
| 15 | 79154.90 | 27875.48 | MANHOLE |
| 35 | 79374.69 | 27650.78 | MANHOLE |
| 36 | 79518.35 | 27665.87 | MANHOLE |
| 37 | 79545.70 | 27755.20 | WYE |
| 38 | 79570.54 | 27772.64 | 'A' INLET |
| 39 | 79598.18 | 27926.65 | 'D' INLET |
| 40 | 78970.44 | 27497.68 | MANHOLE |
| 41 | 78904.78 | 27580.33 | 'D' INLET |
| 42 | 78922.70 | 27459.36 | 'D' INLET |

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
WORK INSPECTED BY
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEERS SEAL

REVISIONS
NO. | DATE | REMARKS | BY

DESIGNED BY KLD,MSJ DESIGN DATE 6/94
DRAWN BY TSG-SAR DATE 6/94

* SURFACE GRADE AT TIME OF PIPE INSTALLATION


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
BOHLMAN HUSTON INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAINS 'A-3' & 'A-4'

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | MRGD | | |
| PARKS | | | CODE / MECH | | |

PROJECT NO. 4193.92 | MAP NO. A13&14 B13&14 | SHEET 20 OF 30

AZ-52

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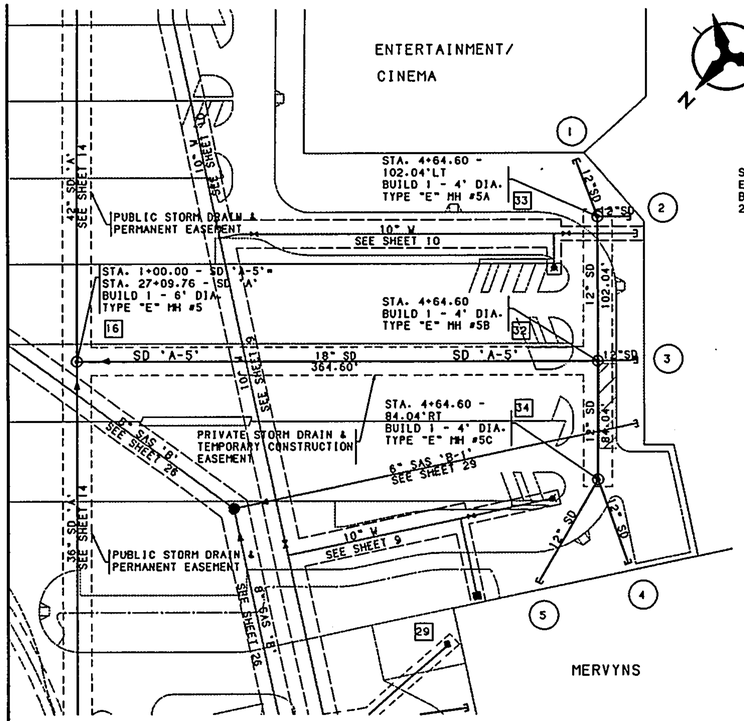
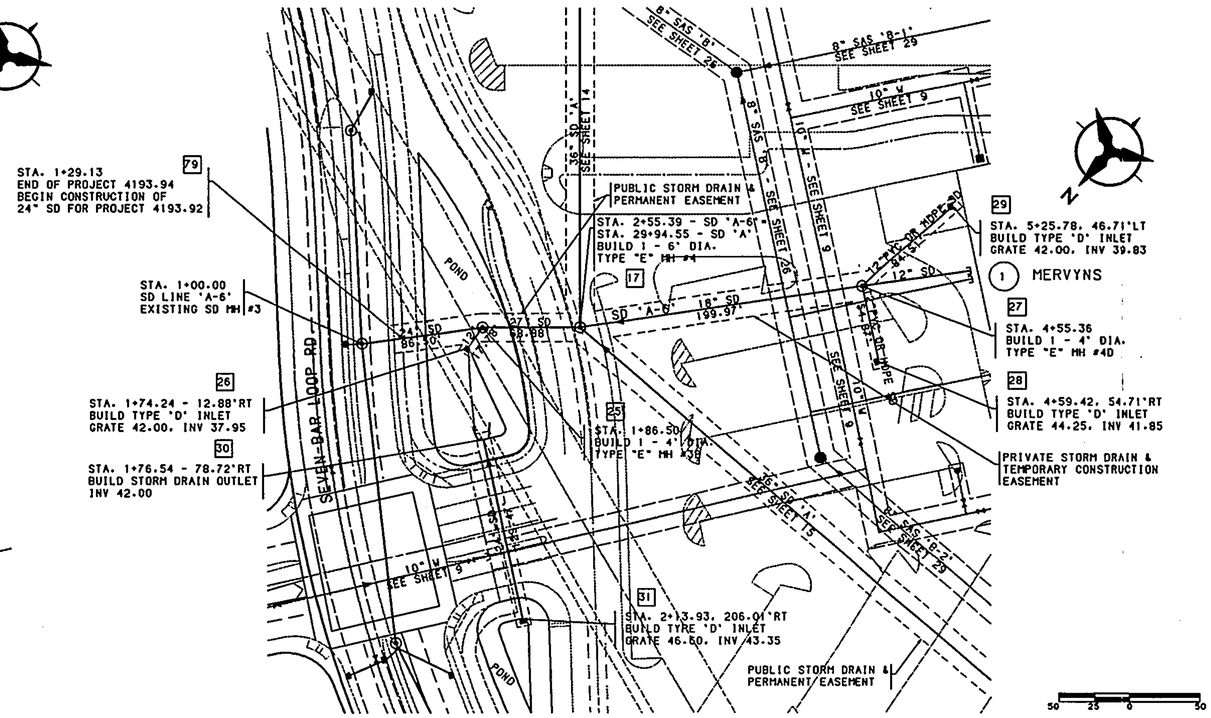
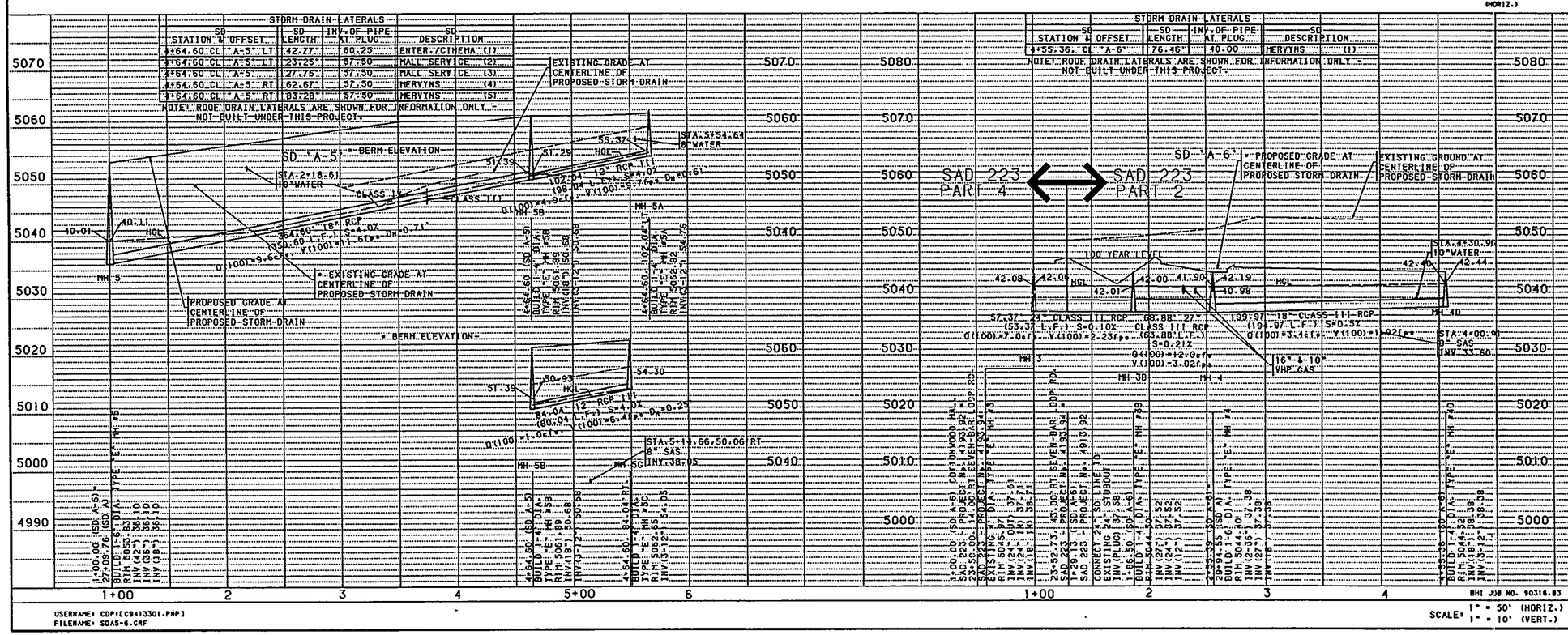



SCALE: 1" = 50' (HORIZ.)

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 16 | 78947.43 | 28105.90 | MANHOLE |
| 17 | 78756.87 | 28317.54 | MANHOLE |
| 79 | 78845.20 | 28407.36 | MATCH PLUG |
| 25 | 78808.06 | 28363.63 | MANHOLE |
| 26 | 78806.18 | 28381.31 | 'D' INLET |
| 27 | 78629.37 | 28163.49 | MANHOLE |
| 28 | 78584.68 | 28195.31 | 'D' INLET |
| 29 | 78620.32 | 28079.46 | 'D' INLET |
| 30 | 78754.52 | 28422.19 | OUTLET |
| 31 | 78649.83 | 28498.38 | 'D' INLET |
| 32 | 78676.48 | 27861.93 | MANHOLE |
| 33 | 78744.86 | 27786.20 | MANHOLE |
| 34 | 78620.24 | 27924.39 | MANHOLE |




USERNAME: CDP:EC9413301.PHPJ
FILENAME: SDA5-6.GRF

AS BUILT INFORMATION
CONTRACTOR
WORK INSPECTED BY
INSPECTOR'S ACCEPTANCE BY
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS

THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION

FIELD NOTES

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

ENGINEERS SEAL

REVISIONS

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

DESIGNED BY KLD.MSJ DESIGN DATE 6/94
DRAWN BY TSG.SAR DATE 6/94

• SURFACE GRADE AT TIME OF PIPE INSTALLATION


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
ROMANIAK JUSTICE INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

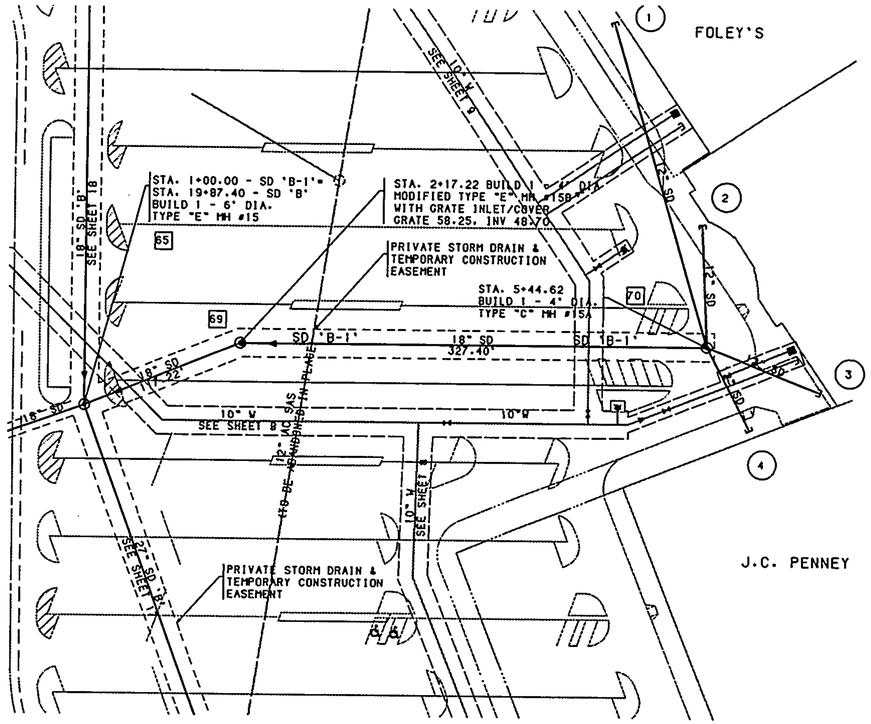

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAINS 'A-5' & 'A-6'

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

PROJECT NO. 4193.92 | MAP NO. A13&14 B13&14 | SHEET 21 OF 30

A2-53



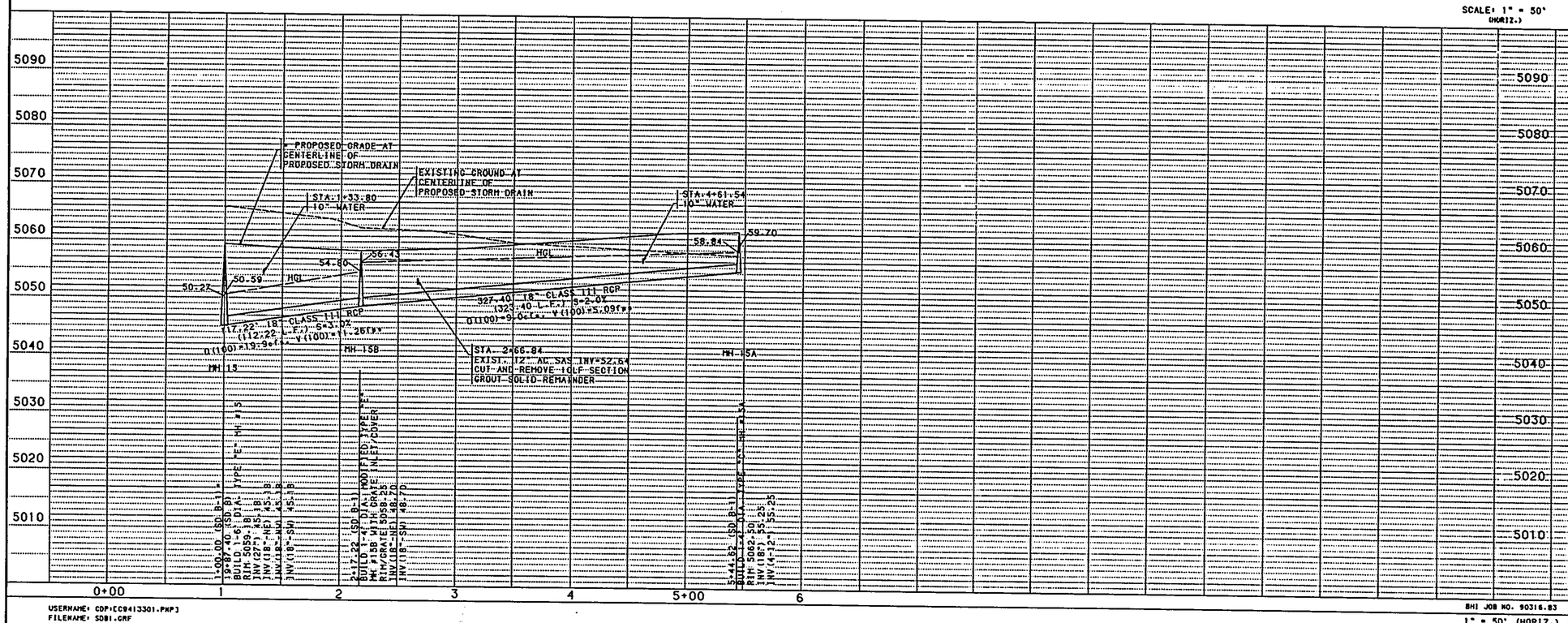

| STORM DRAIN LATERALS | | | |
|---|---|---|---|
| SD STATION & OFFSET | SD LENGTH | INV. OF PIPE AT PLUG | SD DESCRIPTION |
| 5+44.62, CL 'B-1' | 239.22' | 57.50 | FOLEY'S (1) |
| 5+44.62, CL 'B-1' | 86.20' | 57.50 | MALL SERVICE (2) |
| 5+44.62, CL 'B-1' | 86.03' | 57.50 | MALL SERVICE (3) |
| 5+44.62, CL 'B-1' | 66.20' | 57.50 | J.C. PENNEY (4) |

NOTE: ROOF DRAIN LATERALS ARE SHOWN FOR INFORMATION ONLY - NOT BUILT UNDER THIS PROJECT.

N

50 25 0 50
SCALE: 1" = 50'
(HORIZ.)

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 65 | 77874.42 | 27540.18 | MANHOLE |
| 69 | 77960.76 | 27619.47 | MANHOLE |
| 70 | 78267.98 | 27732.64 | MANHOLE |




USERNAME: CDP:[C9413301.PMP]
FILENAME: SD01.CRF

BHI JOB NO. 90316.03

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

* SURFACE GRADE AT TIME OF PIPE INSTALLATION

7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000

ROMAINE JUSTICE INC.

EASTERLING & ASSOCIATES, INC
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'B-1' PLAN & PROFILE

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

| PROJECT NO. | 4193.92 | MAP NO. | A13&14 B13&14 | SHEET 22 | OF 30 |
|---|---|---|---|---|---|

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
INSPECTOR'S ACCEPTANCE BY
FIELD VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES

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

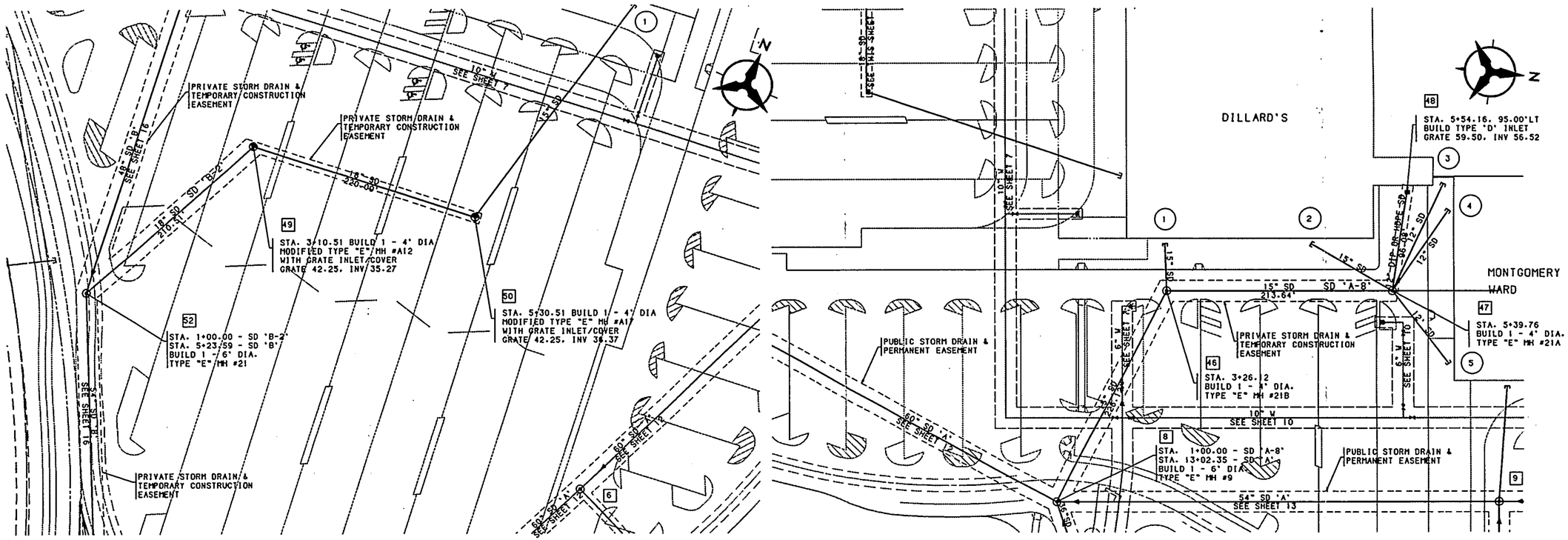
ENGINEERS SEAL

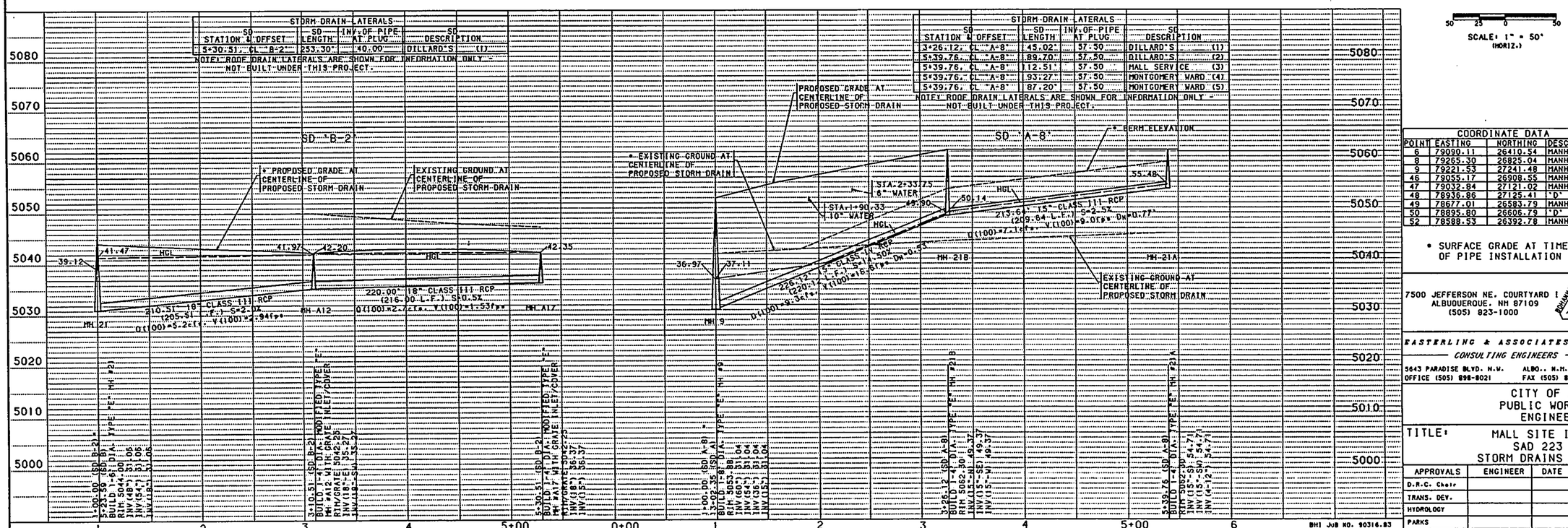
| NO. | DATE | REMARKS | BY |
|---|---|---|---|
| | | | |

REVISIONS

DESIGNED BY KLD.MSJ DESIGN DATE 6/94
DRAWN BY TSG.SAR DATE 6/94

A2-54




USERNAME: CDP:EC9413301.PMP3
FILENAME: SDB2-3.GRF

| AS BUILT INFORMATION | |
|---|---|
| CONTRACTOR | |
| WORK STAKED BY | |
| STAKES CHECKED & ACCEPTANCE BY | |
| FIELD VERIFICATION BY | |
| DRAWINGS CORRECTED BY | |
| MICRO-FILM INFORMATION | |
| RECORDED BY | |
| DATE | |
| NO. | |

**BENCH MARKS**

THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

**SURVEY INFORMATION**

FIELD NOTES

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

ENGINEERS SEAL

**COORDINATE DATA**

| POINT | EASTING | NORTHING | DESCRIPTION |
|---|---|---|---|
| 6 | 79090.11 | 26410.54 | MANHOLE |
| 8 | 79265.30 | 26825.04 | MANHOLE |
| 9 | 79221.53 | 27241.48 | MANHOLE |
| 46 | 79055.17 | 26908.55 | MANHOLE |
| 47 | 79032.84 | 27121.02 | MANHOLE |
| 48 | 78936.86 | 27125.41 | 'D' INLET |
| 49 | 78677.01 | 26583.79 | MANHOLE |
| 50 | 78895.80 | 26606.79 | 'D' INLET |
| 52 | 78588.53 | 26392.78 | MANHOLE |

• SURFACE GRADE AT TIME OF PIPE INSTALLATION


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
5643 PARADISE BLVD. N.W. ALBQ., N.M. 87114
OFFICE (505) 898-8021 FAX (505) 898-8501


| REVISIONS | | | |
|---|---|---|---|
| NO. | DATE | REMARKS | BY |
| | | | |

DESIGNED BY KLD,MSJ DESIGN DATE 6/94
DRAWN BY TSG,SAR DATE 6/94

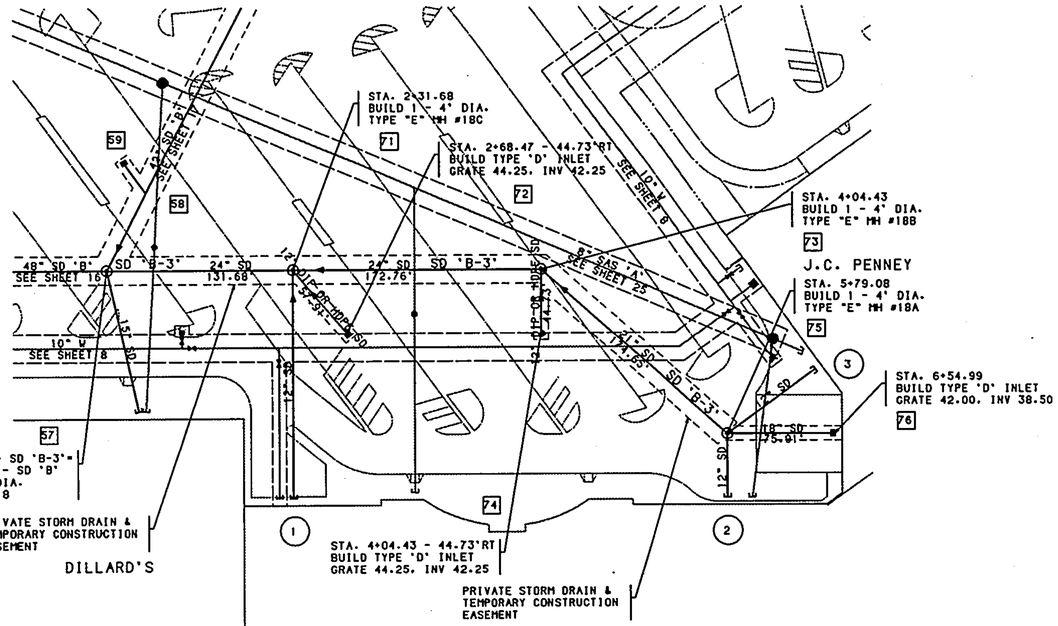
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAINS 'B-2' & 'A-8'

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

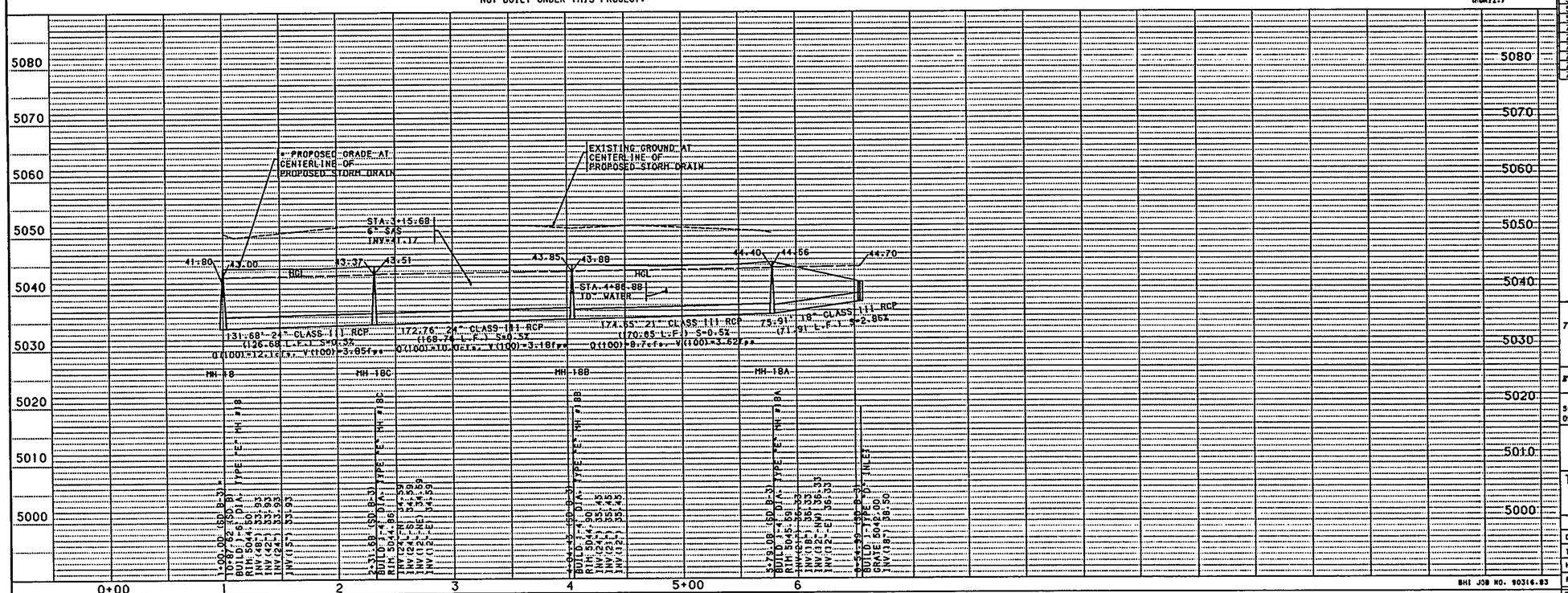
| PROJECT NO. | 4193.92 | MAP NO. A13&14 B13&14 | SHEET 23 | OF 30 |
|---|---|---|---|---|

A2-55




| STORM DRAIN LATERALS | | | |
|---|---|---|---|
| SD STATION & OFFSET | SD LENGTH | INV. OF PIPE AT PLUG | SD DESCRIPTION |
| 2+31.68, CL 'B-4' | 161.75' | 40.00 | MALL SERVICE (1) |
| 5+79.08, CL 'B-4' | 45.24' | 40.00 | MALL SERVICE (2) |
| 5+79.08, CL 'B-4' | 76.97' | 40.00 | J.C. PENNEY (3) |

NOTE: ROOF DRAIN LATERALS ARE SHOWN FOR INFORMATION ONLY - NOT BUILT UNDER THIS PROJECT.




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

BHI JOB NO. 90316.83

USERNAME: CDP*CC9413301.PNPJ
FILENAME: SDB4.GRF

N

SCALE: 1" = 50' (HORIZ.)

| COORDINATE DATA | | | |
|---|---|---|---|
| POINT | EASTING | NORTHING | DESCRIPTION |
| 57 | 78529.57 | 26953.72 | MANHOLE |
| 58 | 78472.01 | 26975.90 | WYE |
| 59 | 78453.57 | 26959.30 | 'D' INLET |
| 71 | 78515.81 | 27084.68 | MANHOLE |
| 72 | 78556.45 | 27125.94 | 'D' INLET |
| 73 | 78497.75 | 27258.49 | MANHOLE |
| 74 | 78542.24 | 27261.16 | 'D' INLET |
| 75 | 78600.02 | 27398.06 | MANHOLE |
| 76 | 78592.08 | 27473.56 | 'D' INLET |

• SURFACE GRADE AT TIME OF PIPE INSTALLATION

AS BUILT INFORMATION
CONTRACTOR
WORK STAKED BY
STAKING CHECKED BY
ACCEPTANCE BY
VERIFICATION BY
DRAWINGS CORRECTED BY
MICRO-FILM INFORMATION
RECORDED BY
NO.

BENCH MARKS
THE BENCHMARK IS THE ACS STATION 1-B-13. ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FT. SOUTHWEST OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEERS SEAL

REVISIONS
NO. | DATE | REMARKS | BY

DESIGN
DESIGNED BY KLD,MSJ DATE 6/94
DRAWN BY TSG,SAR DATE 6/94

7500 JEFFERSON NE. COURTYARD I
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(505) 823-1000

BOHANNAN HUSTON INC.

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5643 PARADISE BLVD. N.W. ALBQ., N.M., 87114
OFFICE (505) 898-8021 FAX (505) 898-8501

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: MALL SITE IMPROVEMENTS
SAD 223 - PART 2
STORM DRAIN 'B-3' PLAN & PROFILE

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| D.R.C. Chair | | | WATER | | |
| TRANS. DEV. | | | WASTE WATER | | |
| HYDROLOGY | | | NMUI | | |
| PARKS | | | CODE / MECH | | |

PROJECT NO. 4193.92 | MAP NO. A13&14 B13&14 | SHEET 24 OF 30

A2-56

SUMMARY OF HYDRAULIC CALCULATIONS
COTTONWOOD MALL TO CALABACILLAS ARROYO
FILENAME: CDP2:[C9413301.HYDRO] C_HGLMJ.WK4

| Station | Structure | Diam. | Q | Area | Vel. | HV | K | Sf | Length | MH Dia. | Angle | Hf | Hb | Hj | Hmh | Ht | Total Losses | HGL(dn) | HGL(up) | Grate Elevation | Low Point | EGL(dn) | EGL(up) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21+86.02 | ARROYO | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | 33.82 | | 1000 | 34.51 | 34.51 |
| | | 84 | 257.3 | 38.48 | 6.69 | 0.69 | 6388 | 0.0016 | 44.00 | | | 0.07 | | | | | | | | | | | |
| 22+30.02 | BEND | | | | | | | | | | 30 | | 0.08 | 0.00 | 0.00 | 0.00 | 0.08 | 33.89 | 33.98 | | 1000 | 34.59 | 34.67 |
| | | 84 | 255.9 | 38.48 | 6.65 | 0.69 | 6388 | 0.0016 | 40.00 | | | 0.06 | | | | | | | | | | | |
| 22+70.02 | BEND | | | | | | | | | | 30 | | 0.08 | 0.00 | 0.00 | 0.00 | 0.08 | 34.04 | 34.13 | | 1000 | 34.73 | 34.81 |
| | | 84 | 254.5 | 38.48 | 6.61 | 0.68 | 6388 | 0.0016 | 24.36 | | | 0.04 | | | | | | | | | | | |
| 22+94.38 | INLET 23-1 | | | | | | | | | | | | 0.00 | 0.08 | 0.00 | 0.00 | 0.08 | 34.17 | 34.33 | | 1000 | 34.85 | 34.93 |
| | | 84 | 238.7 | 38.48 | 6.20 | 0.60 | 6388 | 0.0014 | 275.00 | | | 0.38 | | | | | | | | | | | |
| 25+69.38 | JNC.IN 23 | | | | | | | | | | | | 0.00 | 0.05 | 0.00 | 0.00 | 0.05 | 34.72 | 35.05 | | 1000 | 35.31 | 35.37 |
| | | 84 | 174.1 | 38.48 | 4.52 | 0.32 | 6388 | 0.0007 | 25.76 | | | 0.02 | | | | | | | | | | | |
| 25+83.67 | BEND | | | | | | | | | | 30 | | 0.04 | 0.00 | 0.00 | 0.00 | 0.04 | 35.07 | 35.11 | | 1000 | 35.39 | 35.42 |
| | | 84 | 174.1 | 38.48 | 4.52 | 0.32 | 6388 | 0.0007 | 26.61 | | | 0.02 | | | | | | | | | | | |
| 26+07.83 | INLET E5 | | | | | | | | | | | | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 35.12 | 35.14 | | 1000 | 35.44 | 35.45 |
| | | 84 | 171.8 | 38.48 | 4.46 | 0.31 | 6388 | 0.0007 | 56.64 | | | 0.04 | | | | | | | | | | | |
| 26+64.47 | INLET E4 | | | | | | | | | | | | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 35.18 | 35.22 | | 1000 | 35.49 | 35.50 |
| | | 84 | 163.1 | 38.48 | 4.24 | 0.28 | 6388 | 0.0007 | 52.94 | | | 0.03 | | | | | | | | | | | |
| 27+10.11 | BEND | | | | | | | | | | 30 | | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 | 35.25 | 35.28 | | 1000 | 35.53 | 35.56 |
| | | 84 | 163.1 | 38.48 | 4.24 | 0.28 | 6388 | 0.0007 | 132.72 | | | 0.09 | | | | | | | | | | | |
| 28+42.83 | INLET E3 | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 35.37 | 35.37 | | 1000 | 35.65 | 35.65 |
| | | 84 | 162.9 | 38.48 | 4.23 | 0.28 | 6388 | 0.0007 | 37.65 | | | 0.02 | | | | | | | | | | | |
| 28+80.48 | INLET E2 | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 35.40 | 35.41 | | 1000 | 35.67 | 35.68 |
| | | 84 | 161.2 | 38.48 | 4.19 | 0.27 | 6388 | 0.0006 | 67.61 | | | 0.04 | | | | | | | | | | | |
| 29+48.09 | INLET E1 | | | | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 35.45 | 35.46 | | 1000 | 35.72 | 35.73 |
| | | 84 | 159.6 | 38.48 | 4.15 | 0.27 | 6388 | 0.0006 | 220.34 | | | 0.14 | | | | | | | | | | | |
| *BRANCH B: FLOWS COLLECTED ALONG SOUTHWEST SIDE OF MALL* | | | | | | | | | | | | | | | | | | | | | | | |
| 1+00.00 | MH 12 | | | | | | | | | 8 | 40 | | 0.07 | 0.66 | 0.00 | 0.03 | 0.77 | 35.60 | 35.76 | | 43.10 | 35.86 | 36.63 |
| | | 33 | 44.5 | 5.94 | 7.49 | 0.87 | 529 | 0.0071 | 41.20 | | | 0.29 | | | | | | | | | | | |
| 1+41.20 | MH 12A | | | | | | | | | 6 | 60 | | 0.12 | 0.00 | 0.00 | 0.00 | 0.12 | 36.05 | 38.73 | | 43.10 | 36.92 | 38.73 |
| | | 54 | 102.6 | 15.90 | 6.45 | 0.65 | 1966 | 0.0027 | 382.39 | | | 1.04 | | | | | | | 38.73 | 35.10 PONDING HGL =EGL | | | 38.73 |
| | | | | | | | | | | | | | | | | | | | (see page A2-37) | | | | |
| | BRANCH B-2: FLOWS FROM DILLARD'S PARKING LOT | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 21* | | | | | | | | | 6 | 30 | | 0.04 | 1.76 | 0.00 | 0.04 | 1.84 | 39.12 | 41.47 | | 44.66 | 39.77 | 41.61 |
| | | 18 | 5.2 | 1.77 | 2.94 | 0.13 | 105 | 0.0025 | 210.51 | | | 0.52 | | | | | | | | | | | |
| | *INLET A12* | | | | | | | | | 4 | 60 | | 0.01 | 0.10 | 0.00 | 0.00 | 0.11 | 41.99 | 42.20 | 42.25 | 42.25 | 42.12 | 42.23 |
| | | 18 | 2.7 | 1.77 | 1.53 | 0.04 | 105 | 0.0007 | 220.00 | | | 0.15 | | | | | | | | 42.25 | | | |
| 5+23.59 | MH 21 | | | | | | | | | 6 | 19 | | 0.07 | 0.25 | 0.00 | 0.00 | 0.33 | 39.12 | 39.20 | | 44.66 | 39.77 | 40.10 |
| | | 48 | 95.7 | 12.57 | 7.62 | 0.90 | 1436 | 0.0044 | 306.31 | | | 1.36 | | | | | | | | | | | |
| 8+29.90 | MH 20 | | | | | | | | | 6 | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 40.56 | 40.56 | 43.25 | 43.89 | 41.46 | 41.46 |
| | | 48 | 95.6 | 12.57 | 7.61 | 0.90 | 1436 | 0.0044 | 133.22 | | | 0.59 | | | | | | | | | | | |
| 9+63.12 | MH 19 | | | | | | | | | 6 | | | 0.00 | 0.07 | 0.00 | 0.00 | 0.07 | 41.15 | 41.29 | 43.25 | 44.50 | 42.05 | 42.12 |
| | | 48 | 91.7 | 12.57 | 7.30 | 0.83 | 1436 | 0.0041 | 124.50 | | | 0.51 | | | | | | | | | | | |
| | BRANCH B-3: FLOWS FROM MALL AND ASSOCIATED PARKING LOT | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 18* | | | | | | | | | 6 | | | 0.00 | 0.56 | 0.00 | 0.04 | 0.60 | 41.80 | 43.00 | | 44.50 | 42.63 | 43.23 |
| | | 24 | 12.1 | 3.14 | 3.85 | 0.23 | 226 | 0.0029 | 131.68 | | | 0.38 | | | | | | | | | | | |
| | *MH 18C* | | | | | | | | | 6 | | | 0.00 | 0.07 | 0.00 | 0.00 | 0.07 | 43.37 | 43.51 | 44.25 | 44.86 | 43.60 | 43.67 |
| | | 24 | 10.0 | 3.14 | 3.18 | 0.16 | 226 | 0.0020 | 172.76 | | | 0.34 | | | | | | | | | | | |
| | *MH 18B* | | | | | | | | | 6 | 42 | | 0.02 | 0.05 | 0.00 | 0.00 | 0.07 | 43.85 | 43.88 | 44.25 | 45.00 | 44.01 | 44.08 |
| | | 21 | 8.7 | 2.41 | 3.62 | 0.20 | 158 | 0.0030 | 174.65 | | | 0.53 | | | | | | | | | | | |
| | *MH 18A* | | | | | | | | | 6 | 45 | | 0.02 | 0.07 | 0.00 | 0.00 | 0.09 | 44.40 | 44.56 | | 45.59 | 44.61 | 44.70 |
| | | 18 | 5.2 | 1.77 | 2.94 | 0.13 | 105 | 0.0025 | 70.00 | | | 0.17 | | | | | | | | 42.00 | | | |
| 10+87.62 | MH 18 | | | | | | | | | 6 | 63 | | 0.15 | 0.19 | 0.00 | 0.00 | 0.35 | 41.80 | 41.98 | | 44.50 | 42.63 | 42.98 |
| | | 42 | 77.0 | 9.62 | 8.00 | 0.99 | 1006 | 0.0059 | 62.00 | | | 0.36 | | | | | | | | | | | |
| | *WYE* | | | | | | | | | | | | 0.00 | -0.51 | 0.00 | 0.02 | -0.49 | 42.34 | 42.36 | 44.25 | 45.00 | 43.34 | 42.85 |
| | | 18 | 9.9 | 1.77 | 5.60 | 0.49 | 105 | 0.0089 | 24.81 | | | 0.22 | | | | | | 42.58 | | 43.25 | 44.25 | | |
| | *INLET A8* | | | | | | | | | | | | | | | | | | | | | | |
| 11+49.62 | WYE | | | | | | | | | | | | 0.00 | 0.16 | 0.00 | 0.00 | 0.16 | 42.34 | 42.73 | 43.25 | 43.25 | 43.34 | 43.49 |
| | | 42 | 67.4 | 9.62 | 7.01 | 0.76 | 1006 | 0.0045 | 171.83 | | | 0.77 | | | | | | | | | | | |
| 13+21.45 | MH 17 | | | | | | | | | 6 | 26 | | 0.07 | 0.24 | 0.00 | 0.00 | 0.31 | 43.50 | 44.05 | 48.90 | 48.95 | 44.27 | 44.57 |
| | | 42 | 55.9 | 9.62 | 5.81 | 0.52 | 1006 | 0.0031 | 215.95 | | | 0.67 | | | | | | | | | | | |

SUMMARY OF HYDRAULIC CALCULATIONS
COTTONWOOD MALL TO CALABACILLAS ARROYO
FILENAME: CDP2:[C9413301.HYDRO] C_HGLMJ.WK4

| Station | Structure | Diam. | Q | Area | Vel. | HV | K | Sf | Length | MH Dia. | Angle | Hf | Hb | Hj | Hmh | Ht | Total Losses | HGL(dn) | HGL(up) | Grate Elevation | Low Point | EGL(dn) | EGL(up) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15+37.40 | MH 16 | | | | | | | | | 6 | 3 | | 0.03 | 0.77 | 0.00 | 0.02 | 0.82 | 44.71 | 44.94 | 53.45 | 53.94 | 45.24 | 46.06 |
| | | 27 | 33.7 | 3.98 | 8.48 | 1.12 | 310 | 0.0118 | 450.00 | | | 5.33 | | | | | | | | | | | |
| | BRANCH B-1: FLOWS FROM FOLEYS , JC PENNY AND PARKING LOT | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 15* | | | | | | | | | 6 | 85 | | 0.29 | 0.85 | 0.00 | 0.02 | 1.17 | 50.27 | 50.59 | | 59.00 | 51.39 | 52.56 |
| | | 18 | 19.9 | 1.77 | 11.26 | 1.97 | 105 | 0.0359 | 117.22 | | | 4.21 | | | | | | | | | | | |
| | *INLET A2* | | | | | | | | | 6 | 10 | | 0.07 | 0.00 | 0.00 | 0.00 | 0.07 | 54.80 | 56.43 | 58.25 | 58.25 | 56.77 | 56.84 |
| | | 18 | 9.0 | 1.77 | 5.09 | 0.40 | 105 | 0.0073 | 327.40 | | | 2.40 | | | | | | | | | | | |
| | *MH 15A* | | | | | | | | | 6 | 110 | | 0.05 | 0.50 | 0.00 | 0.02 | 0.57 | 58.84 | 59.70 | | 62.50 | 59.24 | 59.81 |
| | | 12 | 2.1 | 0.79 | 2.67 | 0.11 | 36 | 0.0035 | 200.00 | | | 0.69 | | | | | | | | | | | |
| 19+87.40 | MH 15 | | | | | | | | | 6 | 20 | | 0.07 | 1.88 | 0.00 | 0.04 | 1.98 | 50.27 | 52.97 | 58.60 | 59.50 | 51.39 | 53.37 |
| | | 18 | 9.0 | 1.77 | 5.09 | 0.40 | 105 | 0.0073 | 450.00 | | | 3.30 | | | | | | | | | | | |
| 24+37.40 | MH 14 | | | | | | | | | 6 | 28 | | 0.04 | 0.00 | 0.00 | 0.00 | 0.04 | 56.27 | 56.43 | | 62.25 | 56.67 | 56.71 |
| | | 18 | 7.6 | 1.77 | 4.30 | 0.29 | 105 | 0.0052 | 227.76 | | | 1.19 | | | | | | | | 60.25 | | | |
| *BRANCH A: FLOWS COLLECTED ALONG NORTHEAST SIDE OF MALL* | | | | | | | | | | | | | | | | | | | | | | | |
| 2+76.20 | MH 12 | | | | | | | | | 8 | 90 | | 0.05 | 0.02 | 0.00 | 0.00 | 0.07 | 35.60 | 35.65 | | 43.10 | 35.86 | 35.94 |
| | | 72 | 120.7 | 28.27 | 4.27 | 0.28 | 4235 | 0.0008 | 262.79 | | | 0.21 | | | | | | | | | | | |
| 5+38.99 | MH 11 | | | | | | | | | 8 | 42 | | 0.04 | 0.05 | 0.00 | 0.00 | 0.09 | 35.87 | 35.91 | 42.25 | 47.72 | 36.15 | 36.24 |
| | | 66 | 110.4 | 23.76 | 4.65 | 0.34 | 3358 | 0.0011 | 313.36 | | | 0.34 | | | | | | | | | | | |
| 8+52.35 | MH 10 | | | | | | | | | 6 | | | 0.00 | 0.10 | 0.00 | 0.00 | 0.10 | 36.25 | 36.25 | 45.80 | 46.17 | 36.58 | 36.69 |
| | | 60 | 104.2 | 19.63 | 5.31 | 0.44 | 2604 | 0.0016 | 450.00 | | | 0.72 | | | | | | | | | | | |
| | BRANCH A-1: FLOWS FROM DILLARDS AND MONTGOMERY WARD | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 9* | | | | | | | | | 6 | 90 | | 0.13 | 0.45 | 0.00 | 0.02 | 0.60 | 36.97 | 37.11 | | 53.88 | 37.41 | 38.01 |
| | | 15 | 9.3 | 1.23 | 7.58 | 0.89 | 65 | 0.0207 | 226.12 | | | 4.69 | | | | | | | | | | | |
| | *MH 21B* | | | | | | | | | 6 | 60 | | 0.11 | 0.23 | 0.00 | 0.00 | 0.34 | 41.80 | 42.51 | | 62.20 | 42.69 | 43.03 |
| | | 15 | 7.1 | 1.23 | 5.79 | 0.52 | 65 | 0.0121 | 213.64 | | | 2.58 | | | | | | | | | | | |
| | *MH 21A* | | | | | | | | | 6 | 150 | | 0.08 | 0.66 | 0.00 | 0.02 | 0.76 | 45.09 | 46.22 | | 59.50 | 45.61 | 46.37 |
| | | 12 | 2.5 | 0.79 | 3.18 | 0.16 | 36 | 0.0049 | 100.00 | | | 0.49 | | | | | | | | 59.50 | | | |
| | BRANCH A-2: FLOWS FROM C BASINS | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 9* | | | | | | | | | 6 | 45 | | 0.04 | -0.10 | 0.00 | 0.01 | -0.05 | 36.97 | 37.18 | | 53.88 | 37.41 | 37.36 |
| | | 33 | 19.8 | 5.94 | 3.33 | 0.17 | 529 | 0.0014 | 74.71 | | | 0.10 | | | | | | | | | | | |
| | *MH 9B* | | | | | | | | | 6 | 45 | | 0.02 | 0.00 | 0.00 | 0.00 | 0.02 | 37.29 | 37.31 | | 52.60 | 37.46 | 37.48 |
| | | 33 | 19.8 | 5.94 | 3.33 | 0.17 | 529 | 0.0014 | 277.34 | | | 0.39 | | | | | | | | | | | |
| | *MH 9A* | | | | | | | | | 6 | 45 | | 0.03 | 0.13 | 0.00 | 0.00 | 0.16 | 37.70 | 37.75 | 38.27 | 40.00 | 37.87 | 38.03 |
| | | 24 | 13.3 | 3.14 | 4.23 | 0.28 | 226 | 0.0035 | 50.26 | | | 0.17 | | | | | | | | 38.00 | | | |
| 13+02.35 | MH 9 | | | | | | | | | 6 | 20 | | 0.04 | 0.15 | 0.00 | 0.00 | 0.19 | 36.97 | 37.21 | | 53.88 | 37.41 | 37.59 |
| | | 54 | 79.1 | 15.90 | 4.97 | 0.38 | 1966 | 0.0016 | 418.74 | | | 0.68 | | | | | | | | | | | |
| | *MH 8* | | | | | | | | | 6 | 90 | | 0.06 | -0.01 | 0.00 | 0.00 | 0.05 | 37.89 | 38.09 | | 52.60 | 38.27 | 38.32 |
| | | 18 | 6.9 | 1.77 | 3.90 | 0.24 | 105 | 0.0043 | 211.00 | | | 0.91 | | | | | | | | | | | |
| 17+21.09 | MH 8 | | | | | | | | | 6 | | | 0.00 | 0.07 | 0.00 | 0.00 | 0.07 | 37.89 | 38.02 | | 48.90 | 38.27 | 38.34 |
| | | 54 | 71.9 | 15.90 | 4.52 | 0.32 | 1966 | 0.0013 | 116.01 | | | 0.16 | | | | | | | | | | | |
| 18+37.10 | MH 8A | | | | | | | | | 6 | | | 0.00 | 0.02 | 0.00 | 0.00 | 0.02 | 38.18 | 38.22 | 42.25 | 42.25 | 38.49 | 38.52 |
| | | 54 | 69.1 | 15.90 | 4.34 | 0.29 | 1966 | 0.0012 | 165.03 | | | 0.20 | | | | | | | | | | | |
| | BRANCH A-3: FLOWS FROM MONTGOMERY WARD AND ENTERTAINMENT CENTER | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 7* | | | | | | | | | 6 | 90 | | 0.05 | 0.06 | 0.00 | 0.00 | 0.11 | 38.43 | 38.61 | | 44.50 | 38.72 | 38.83 |
| | | 21 | 9.0 | 2.41 | 3.74 | 0.22 | 158 | 0.0032 | 220.00 | | | 0.71 | | | | | | | | | | | |
| | *MH 7A* | | | | | | | | | 6 | 30 | | 0.01 | 0.20 | 0.00 | 0.04 | 0.25 | 39.32 | 39.78 | 42.00 | 42.00 | 39.54 | 39.79 |
| | | 12 | 0.3 | 0.79 | 0.38 | 0.00 | 36 | 0.0001 | 61.19 | | | 0.00 | | | | | | | | 42.00 | | | |
| 20+02.13 | MH 7 | | | | | | | | | 6 | | | 0.00 | 0.07 | 0.00 | 0.00 | 0.07 | 38.43 | 38.56 | | 44.00 | 38.72 | 38.79 |
| | | 54 | 60.5 | 15.90 | 3.80 | 0.22 | 1966 | 0.0009 | 110.00 | | | 0.10 | | | | | | | | | | | |
| | BRANCH A-4: FLOWS FROM BASIN B-9, B-10, AND B-13 | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 6* | | | | | | | | | 6 | 90 | | 0.04 | -0.08 | 0.00 | 0.00 | -0.05 | 38.67 | 38.71 | | 40.60 | 38.89 | 38.85 |
| | | 27 | 12.0 | 3.98 | 3.02 | 0.14 | 310 | 0.0015 | 190.00 | | | 0.29 | | | | | | | | | | | |
| | *MH INLET* | | | | | | | | | 4 | | | 0.00 | 0.05 | 0.00 | 0.00 | 0.05 | 38.99 | 39.03 | 39.25 | 39.25 | 39.13 | 39.19 |
| | | 24 | 10.0 | 3.14 | 3.18 | 0.16 | 226 | 0.0020 | 150.00 | | | 0.29 | | | | | | | | | | | |

A2-58

SUMMARY OF HYDRAULIC CALCULATIONS
COTTONWOOD MALL TO CALABACILLAS ARROYO
FILENAME: CDP2:[C9413301.HYDRO] C_HGLMJ.WK4

| Station | Structure | Diam. | Q | Area | Vel. | HV | K | Sf | Length | MH Dia. | Angle | Hf | Hb | Hj | Hmh | Ht | Total Losses | HGL(dn) | HGL(up) | Grate Elevation | Low Point | EGL(dn) | EGL(up) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *MH 6A* | | | | | | | | | 6 | 70 | | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 | 39.32 | 39.35 | | 41.50 | 39.48 | 39.51 |
| | | 24 | 10.0 | 3.14 | 3.18 | 0.16 | 226 | 0.0020 | 95.00 | | | 0.19 | | | | | | | | | | | |
| | *WYE* | | | | | | | | | | | | 0.00 | -0.05 | 0.00 | 0.00 | -0.05 | 39.54 | 39.55 | 41.00 | 41.00 | 39.69 | 39.64 |
| | | 12 | 1.9 | 0.79 | 2.42 | 0.09 | 36 | 0.0028 | 180.00 | | | 0.51 | | | | | | | | 37.50 | | | |
| 21+12.14 | MH 6 | | | | | | | | | 6 | | | 0.00 | 0.17 | 0.00 | 0.00 | 0.17 | 38.67 | 38.67 | 40.25 | 49.81 | 38.89 | 39.06 |
| | | 42 | 48.2 | 9.62 | 5.01 | 0.39 | 1006 | 0.0023 | 245.00 | | | 0.56 | | | | | | | | | | | |
| 23+58.59 | MH 5D | | | | | | | | | 6 | 45 | | 0.05 | 0.04 | 0.00 | 0.00 | 0.09 | 39.24 | 39.36 | | 57.20 | 39.62 | 39.71 |
| | | 42 | 45.9 | 9.62 | 4.77 | 0.35 | 1006 | 0.0021 | 310.06 | | | 0.65 | | | | | | | | | | | |
| 27+09.76 | MH 5 | | | | | | | | | 6 | | | 0.00 | 0.14 | 0.00 | 0.00 | 0.14 | 40.01 | 40.04 | | 54.91 | 40.36 | 40.50 |
| | | 36 | 38.6 | 7.07 | 5.46 | 0.46 | 667 | 0.0033 | 281.97 | | | 0.94 | | | | | | | | | | | |
| | BRANCH A-6a: FLOWS FROM SEVEN BAR LOOP RD AND PONDS | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 4* | | | | | | | | | 6 | 90 | | 0.06 | 0.52 | 0.00 | 0.02 | 0.59 | 40.98 | 41.90 | | 46.56 | 41.44 | 42.04 |
| | | 27 | 12.0 | 3.98 | 3.02 | 0.14 | 310 | 0.0015 | 68.88 | | | 0.10 | | | | | | | | | | | |
| | *MH 3B* | | | | | | | | | 6 | 5 | | 0.00 | -0.07 | 0.00 | 0.00 | -0.06 | 42.00 | 42.01 | | 46.10 | 42.14 | 42.08 |
| | | 24 | 6.9 | 3.14 | 2.20 | 0.07 | 226 | 0.0009 | 57.37 | | | 0.05 | | | | | | | | 42.00 | | | |
| | *MH 3* | | | | | | | | | 6 | 90 | | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 42.06 | 42.08 | | 46.00 | 42.14 | 42.15 |
| | | 24 | 6.9 | 3.14 | 2.20 | 0.07 | 226 | 0.0009 | 210.00 | | | 0.20 | | | | | | | | | | | |
| | BRANCH A-6b: FLOWS FROM MERVYN'S AND PARKING LOT | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 4* | | | | | | | | | 6 | 90 | | 0.04 | 0.72 | 0.00 | 0.04 | 0.80 | 40.98 | 42.19 | | 46.56 | 41.44 | 42.25 |
| | | 18 | 3.4 | 1.77 | 1.92 | 0.06 | 105 | 0.0010 | 200.00 | | | 0.21 | | | | | | | | | | | |
| | *MH 4D* | | | | | | | | | 6 | 90 | | 0.02 | 0.08 | 0.00 | 0.00 | 0.09 | 42.40 | 42.44 | 42.80 | 45.00 | 42.46 | 42.55 |
| | | 12 | 2.1 | 0.79 | 2.67 | 0.11 | 36 | 0.0035 | 55.00 | | | 0.19 | | | | | | | | 44.25 | | | |
| 29+94.55 | MH 4 | | | | | | | | | 6 | 50 | | 0.05 | 0.28 | 0.00 | 0.00 | 0.32 | 40.98 | 41.58 | | 45.02 | 41.44 | 41.77 |
| | | 36 | 24.4 | 7.07 | 3.45 | 0.19 | 667 | 0.0013 | 391.68 | | | 0.52 | | | | | | | | | | | |
| | BRANCH A-7: FLOWS FROM FOLEY'S AND PARKING LOT | | | | | | | | | | | | | | | | | | | | | | |
| | *MH 4C* | | | | | | | | | 6 | | | 0.00 | 0.14 | 0.00 | 0.00 | 0.14 | 42.11 | 42.27 | | 48.07 | 42.29 | 42.44 |
| | | 30 | 16.2 | 4.91 | 3.30 | 0.17 | 410 | 0.0016 | 240.00 | | | 0.37 | | | | | | | | | | | |
| | *MH 4A* | | | | | | | | | 6 | 90 | | 0.03 | 0.05 | 0.00 | 0.00 | 0.08 | 42.64 | 42.72 | | 44.00 | 42.81 | 42.89 |
| | | 18 | 5.9 | 1.77 | 3.34 | 0.17 | 105 | 0.0032 | 99.00 | | | 0.31 | | | | | | | | 42.00 | | | |
| 33+86.23 | MH 4C | | | | | | | | | 6 | 90 | | 0.04 | 0.03 | 0.00 | 0.00 | 0.07 | 42.11 | 42.16 | | 48.07 | 42.29 | 42.37 |
| | | 21 | 8.7 | 2.41 | 3.62 | 0.20 | 158 | 0.0030 | 174.83 | | | 0.53 | | | | | | | | | | | |
| 35+61.06 | MH 4B | | | | | | | | | 6 | 90 | | 0.04 | 0.10 | 0.00 | 0.00 | 0.15 | 42.69 | 42.82 | | 44.50 | 42.89 | 43.04 |
| | | 18 | 6.6 | 1.77 | 3.73 | 0.22 | 105 | 0.0039 | 54.42 | | | 0.21 | | | | | | | | 44.25 | | | |

A2-59

Normal Depth Calc: 12" Connector – Basin B-16
Line "A-2"

12" RCP -- SLOPE=2.5%

CULVERT RATING TABLE

12. INCH DIAMETER PIPE

N = 0.01300 INCREMENT = 1.00 SLOPE = 0.02500

| FLOW DEPTH (IN) | FLOW AREA (SQ FT) | DISCHARGE (CFS) | VELOCITY (FPS) |
|---|---|---|---|
| 1.00000 | 0.03126 | 0.08009 | 2.56212 |
| 2.00000 | 0.08604 | 0.34015 | 3.95331 |
| 3.00000 | 0.15355 | 0.77166 | 5.02557 |
| 4.00000 | 0.22917 | 1.35047 | 5.89283 |
| 5.00000 | 0.30975 | 2.04469 | 6.60103 |
| 6.00000 | 0.39270 | 2.81664 | 7.17252 |
| 7.00000 | 0.47564 | 3.62334 | 7.61775 |
| 8.00000 | 0.55623 | 4.41582 | 7.93891 |
| 9.00000 | 0.63185 | 5.13687 | 8.12986 |
| 10.00000 | 0.69936 | 5.71468 | 8.17134 |
| 11.00000 | 0.75414 | 6.04087 | 8.01030 |
| 12.00000 | 0.78540 | 5.63329 | 7.17252 |

@Q=5.6cfs
$D_N$=.82'
V=8.1fps

Normal Depth Calc: 18" SD - Basin B-16
Line "A-Z"

18" RCP -- SLOPE=4.1%

CULVERT RATING TABLE

18. INCH DIAMETER PIPE

N = 0.01300 INCREMENT = 1.00 SLOPE = 0.04100

| FLOW DEPTH (IN) | FLOW AREA (SQ FT) | DISCHARGE (CFS) | VELOCITY (FPS) |
|---|---|---|---|
| 1.00000 | 0.03862 | 0.12788 | 3.31101 |
| 2.00000 | 0.10733 | 0.55387 | 5.16044 |
| 3.00000 | 0.19359 | 1.28429 | 6.63402 |
| 4.00000 | 0.29241 | 2.30344 | 7.87755 |
| 5.00000 | 0.40056 | 3.58568 | 8.95170 |
| 6.00000 | 0.51564 | 5.09899 | 9.88872 |
| 7.00000 | 0.63565 | 6.80639 | 10.70784 |
| 8.00000 | 0.75883 | 8.66669 | 11.42113 |
| 9.00000 | 0.88357 | 10.63482 | 12.03616 |
| 10.00000 | 1.00831 | 12.66170 | 12.55730 |
| 11.00000 | 1.13150 | 14.69394 | 12.98626 |
| 12.00000 | 1.25151 | 16.67287 | 13.32224 |
| 13.00000 | 1.36659 | 18.53295 | 13.56150 |
| 14.00000 | 1.47474 | 20.19851 | 13.69632 |
| 15.00000 | 1.57355 | 21.57698 | 13.71227 |
| 16.00000 | 1.65981 | 22.54187 | 13.58096 |
| 17.00000 | 1.72852 | 22.87300 | 13.23268 |
| 18.00000 | 1.76715 | 21.26965 | 12.03616 |

@ Q = 8.1 cfs
$D_N$ = .64'
V = 11.2 fps

Normal Depth Calc: 18" SO - Basin B-5
Line "A-5"

18" RCP -- SLOPE=4.0%

CULVERT RATING TABLE

18. INCH DIAMETER PIPE

N = 0.01300 INCREMENT = 1.00 SLOPE = 0.04000

| FLOW DEPTH (IN) | FLOW AREA (SQ FT) | DISCHARGE (CFS) | VELOCITY (FPS) |
|---|---|---|---|
| 1.00000 | 0.03862 | 0.12631 | 3.27038 |
| 2.00000 | 0.10733 | 0.54707 | 5.09712 |
| 3.00000 | 0.19359 | 1.26853 | 6.55262 |
| 4.00000 | 0.29241 | 2.27517 | 7.78089 |
| 5.00000 | 0.40056 | 3.54169 | 8.84186 |
| 6.00000 | 0.51564 | 5.03643 | 9.76739 |
| 7.00000 | 0.63565 | 6.72287 | 10.57645 |
| 8.00000 | 0.75883 | 8.56035 | 11.28098 |
| 9.00000 | 0.88357 | 10.50432 | 11.88847 |
| 10.00000 | 1.00831 | 12.50634 | 12.40322 |
| 11.00000 | 1.13150 | 14.51364 | 12.82692 |
| 12.00000 | 1.25151 | 16.46829 | 13.15877 |
| 13.00000 | 1.36659 | 18.30554 | 13.39510 |
| 14.00000 | 1.47474 | 19.95067 | 13.52826 |
| 15.00000 | 1.57355 | 21.31223 | 13.54402 |
| 16.00000 | 1.65981 | 22.26527 | 13.41431 |
| 17.00000 | 1.72852 | 22.59234 | 13.07032 |
| 18.00000 | 1.76715 | 21.00866 | 11.88848 |

@Q=9.6 cfs

$D_N = .71'$

V = 11.6 fps

AZ-62

Normal Depth Calc: 12"SD - Basin B-5, Line "A-5."

12" RCP -- SLOPE=4.0%

CULVERT RATING TABLE

12. INCH DIAMETER PIPE

N = 0.01300 INCREMENT = 1.00 SLOPE = 0.04000

| FLOW DEPTH (IN) | FLOW AREA (SQ FT) | DISCHARGE (CFS) | VELOCITY (FPS) |
|---|---|---|---|
| 1.00000 | 0.03126 | 0.10131 | 3.24085 |
| 2.00000 | 0.08604 | 0.43025 | 5.00058 |
| 3.00000 | 0.15355 | 0.97608 | 6.35690 |
| 4.00000 | 0.22917 | 1.70823 | 7.45391 |
| 5.00000 | 0.30975 | 2.58635 | 8.34972 |
| 6.00000 | 0.39270 | 3.56280 | 9.07260 |
| 7.00000 | 0.47564 | 4.58320 | 9.63577 |
| 8.00000 | 0.55623 | 5.58563 | 10.04202 |
| 9.00000 | 0.63185 | 6.49768 | 10.28355 |
| 10.00000 | 0.69936 | 7.22857 | 10.33602 |
| 11.00000 | 0.75414 | 7.64116 | 10.13232 |
| 12.00000 | 0.78540 | 7.12561 | 9.07261 |

@Q=1.0cfs
$D_N$=.25'
V=6.4fps

@Q=4.9cfs
$D_N$=.61'
V=9.7fps

Normal Depth Calc: 15"SD - Basin B-8-A
Line "A-8"

15" RCP -- SLOPE=14.5%

CULVERT RATING TABLE

15. INCH DIAMETER PIPE

N = 0.01300 INCREMENT = 1.00 SLOPE = 0.14500

| FLOW DEPTH (IN) | FLOW AREA (SQ FT) | DISCHARGE (CFS) | VELOCITY (FPS) |
|---|---|---|---|
| 1.00000 | 0.03513 | 0.21798 | 6.20421 |
| 2.00000 | 0.09727 | 0.93687 | 9.63163 |
| 3.00000 | 0.17472 | 2.15408 | 12.32848 |
| 4.00000 | 0.26271 | 3.82758 | 14.56950 |
| 5.00000 | 0.35808 | 5.89694 | 16.46815 |
| 6.00000 | 0.45839 | 8.28927 | 18.08344 |
| 7.00000 | 0.56155 | 10.92150 | 19.44895 |
| 8.00000 | 0.66564 | 13.70119 | 20.58359 |
| 9.00000 | 0.76879 | 16.52602 | 21.49603 |
| 10.00000 | 0.86910 | 19.28202 | 22.18614 |
| 11.00000 | 0.96447 | 21.83949 | 22.64398 |
| 12.00000 | 1.05246 | 24.04387 | 22.84542 |
| 13.00000 | 1.12991 | 25.69277 | 22.73871 |
| 14.00000 | 1.19205 | 26.45587 | 22.19360 |
| 15.00000 | 1.22718 | 24.59815 | 20.04438 |

@Q=9.3cfs
$D_N$=.53'
V=18.6fps

Normal Depth Calc: 15" SD - Basin B-16
Line "A-8"

15" RCP -- SLOPE=2.5%

CULVERT RATING TABLE

15. INCH DIAMETER PIPE

N = 0.01300 INCREMENT = 1.00 SLOPE = 0.02500

| FLOW DEPTH (IN) | FLOW AREA (SQ FT) | DISCHARGE (CFS) | VELOCITY (FPS) |
|---|---|---|---|
| 1.00000 | 0.03513 | 0.09051 | 2.57616 |
| 2.00000 | 0.09727 | 0.38902 | 3.99932 |
| 3.00000 | 0.17472 | 0.89443 | 5.11912 |
| 4.00000 | 0.26271 | 1.58931 | 6.04966 |
| 5.00000 | 0.35808 | 2.44857 | 6.83803 |
| 6.00000 | 0.45839 | 3.44193 | 7.50874 |
| 7.00000 | 0.56155 | 4.53491 | 8.07574 |
| 8.00000 | 0.66564 | 5.68911 | 8.54687 |
| 9.00000 | 0.76879 | 6.86205 | 8.92574 |
| 10.00000 | 0.86910 | 8.00642 | 9.21229 |
| 11.00000 | 0.96447 | 9.06835 | 9.40240 |
| 12.00000 | 1.05246 | 9.98367 | 9.48604 |
| 13.00000 | 1.12991 | 10.66834 | 9.44173 |
| 14.00000 | 1.19205 | 10.98520 | 9.21539 |
| 15.00000 | 1.22718 | 10.21383 | 8.32298 |

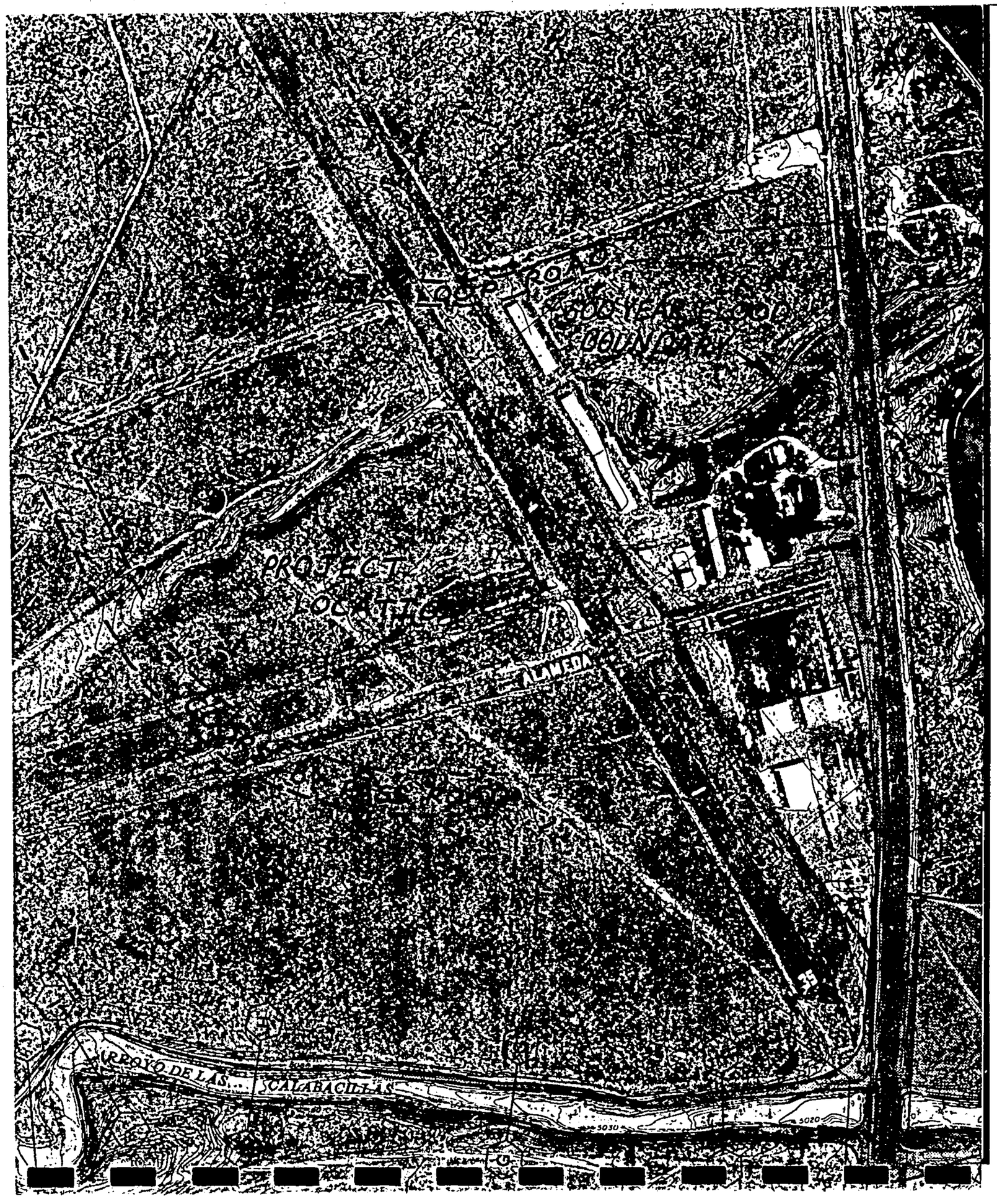
@Q=7.1cfs
$D_N$=.77'
V=9.0fps

PLATE 1

CONCEPTUAL GRADING AND DRAINAGE PLAN

PLATE 2

NFIP FLOOD BOUNDARY AND FLOODWAY MAP




NATIONAL FLOOD INSURANCE PROGRAM

*TAKEN FROM:*

# FLOODWAY

## FLOOD BOUNDARY AND FLOODWAY MAP

CITY OF

## ALBUQUERQUE, NEW MEXICO

BERNALILLO COUNTY

PANEL 2 OF 50

N

**COMMUNITY-PANEL NUMBER**

**350002 0002**

**EFFECTIVE DATE:**

**SEPTEMBER 15, 1983**

Federal Emergency Management Agency

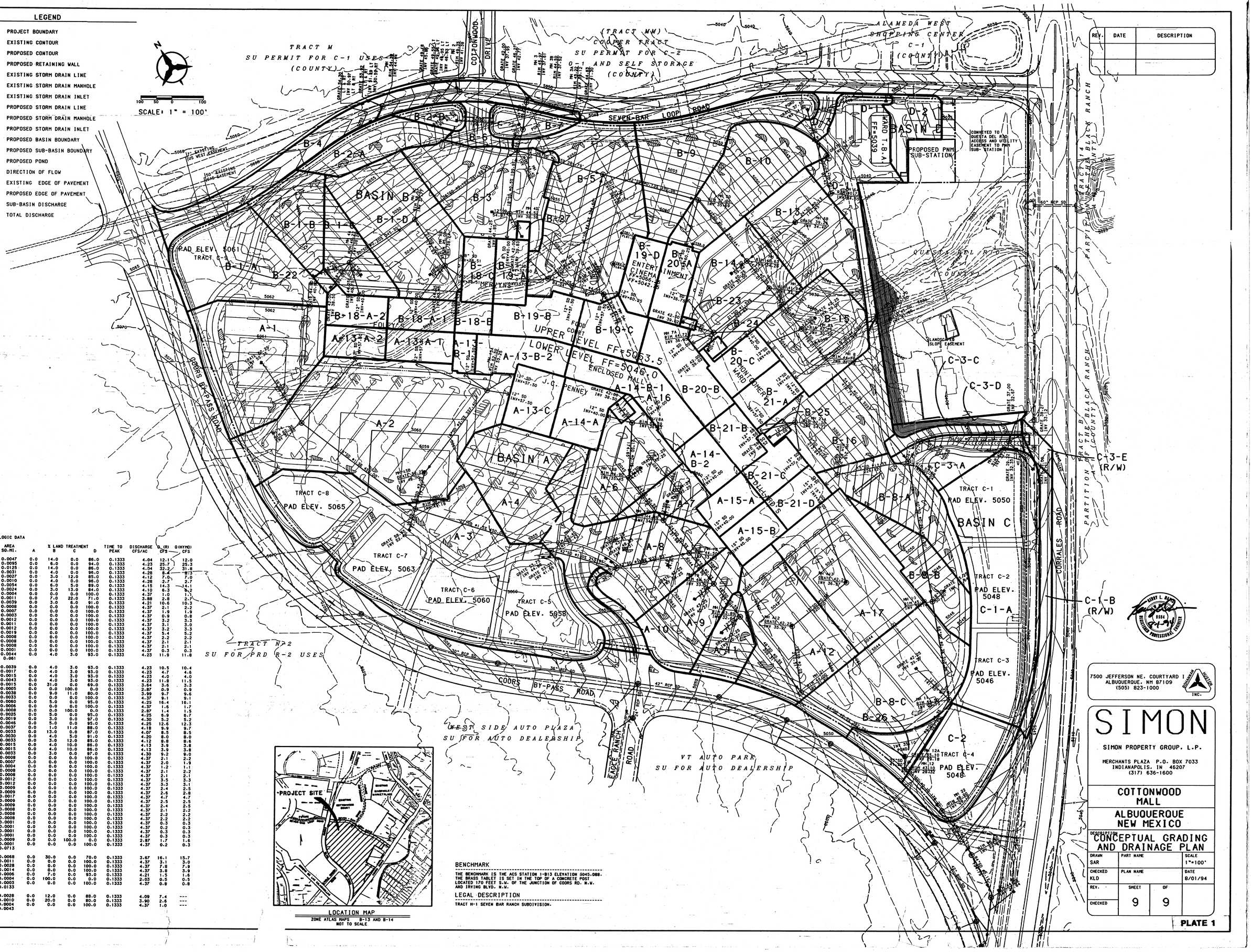
PLATE

## LEGEND

- PROJECT BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED RETAINING WALL
- SD — EXISTING STORM DRAIN LINE
- EXISTING STORM DRAIN MANHOLE
- EXISTING STORM DRAIN INLET
- SD — PROPOSED STORM DRAIN LINE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN INLET
- PROPOSED BASIN BOUNDARY
- PROPOSED SUB-BASIN BOUNDARY
- PROPOSED POND
- DIRECTION OF FLOW
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- Q = 15cfs — SUB-BASIN DISCHARGE
- $Q_T$ = 30cfs — TOTAL DISCHARGE

SCALE: 1" = 100'

| REV. | DATE | DESCRIPTION |
|---|---|---|
| | | |




SUMMARY OF HYDROLOGIC DATA

| BASIN ID | AREA AC | AREA SQ.MI. | A | % LAND TREATMENT B | C | D | TIME TO PEAK | DISCHARGE CFS/AC | Q (R) CFS | Q(HYMD) CFS |
|---|---|---|---|---|---|---|---|---|---|---|
| A-1 | 2.990 | 0.0047 | 0.0 | 14.0 | 0.0 | 86.0 | 0.1333 | 4.04 | 12.1 | 12.0 |
| A-2 | 6.070 | 0.0095 | 0.0 | 6.0 | 0.0 | 94.0 | 0.1333 | 4.23 | 25.7 | 25.3 |
| A-3 | 7.970 | 0.0125 | 0.0 | 14.0 | 0.0 | 86.0 | 0.1333 | 4.04 | 32.2 | 31.8 |
| A-4 | 1.970 | 0.0031 | 0.0 | 4.0 | 0.0 | 96.0 | 0.1333 | 4.28 | 8.4 | 8.3 |
| A-6 | 1.710 | 0.0027 | 0.0 | 3.0 | 12.0 | 85.0 | 0.1333 | 4.12 | 7.0 | 7.0 |
| A-7 | 0.640 | 0.0010 | 0.0 | 4.0 | 0.0 | 96.0 | 0.1333 | 4.28 | 2.7 | 2.7 |
| A-8 | 3.430 | 0.0054 | 0.0 | 6.0 | 5.0 | 89.0 | 0.1333 | 4.15 | 14.3 | 14.1 |
| A-9 | 1.530 | 0.0024 | 0.0 | 3.0 | 13.0 | 84.0 | 0.1333 | 4.10 | 6.3 | 6.2 |
| A-10 | 0.230 | 0.0004 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.0 | 1.1 |
| A-11 | 0.730 | 0.0011 | 0.0 | 7.0 | 22.0 | 71.0 | 0.1333 | 3.88 | 2.8 | 2.7 |
| A-12 | 2.520 | 0.0039 | 0.0 | 3.0 | 6.0 | 91.0 | 0.1333 | 4.21 | 10.6 | 10.3 |
| A-13-A-1 | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| A-13-A-2 | 0.440 | 0.0007 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.9 | 1.9 |
| A-13-B-1 | 0.200 | 0.0003 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.9 | 0.8 |
| A-13-B-2 | 0.740 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.2 | 3.3 |
| A-13-C | 0.720 | 0.0011 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.1 | 3.2 |
| A-14-A | 0.740 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.2 | 3.3 |
| A-14-B-1 | 1.230 | 0.0019 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 5.4 | 5.2 |
| A-14-B-2 | 0.510 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.2 | 2.2 |
| A-15-A | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.1 |
| A-15-B | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.1 |
| A-16 | 0.080 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| A-17 | 2.820 | 0.0044 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 11.9 | 11.8 |
| | 36.740 | 0.061 | | | | | | | | |
| B-1-A | 2.470 | 0.0039 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 10.5 | 10.4 |
| B-1-B | 1.100 | 0.0017 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 4.7 | 4.6 |
| B-1-C | 0.950 | 0.0015 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 4.0 | 4.0 |
| B-1-D | 2.780 | 0.0043 | 0.0 | 4.0 | 3.0 | 93.0 | 0.1333 | 4.23 | 11.8 | 11.5 |
| B-2-A | 0.990 | 0.0015 | 0.0 | 31.0 | 0.0 | 69.0 | 0.1333 | 3.64 | 3.6 | 3.3 |
| B-2-B | 0.310 | 0.0005 | 0.0 | 0.0 | 100.0 | 0.0 | 0.1333 | 2.87 | 0.9 | 0.9 |
| B-3 | 2.430 | 0.0038 | 0.0 | 9.0 | 11.0 | 80.0 | 0.1333 | 3.99 | 9.7 | 9.6 |
| B-4 | 2.080 | 0.0033 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 9.1 | 9.1 |
| B-5 | 3.860 | 0.0060 | 0.0 | 5.0 | 0.0 | 95.0 | 0.1333 | 4.25 | 16.4 | 16.1 |
| B-6 | 0.370 | 0.0006 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.6 | 1.7 |
| B-7 | 0.500 | 0.0008 | 0.0 | 0.0 | 100.0 | 0.0 | 0.1333 | 2.87 | 1.4 | 1.5 |
| B-8-A | 1.820 | 0.0025 | 0.0 | 5.0 | 0.0 | 95.0 | 0.1333 | 4.25 | 5.9 | 5.7 |
| B-8-B | 1.200 | 0.0019 | 0.0 | 3.0 | 0.0 | 97.0 | 0.1333 | 4.30 | 5.2 | 5.2 |
| B-8-C | 2.970 | 0.0046 | 0.0 | 5.0 | 0.0 | 95.0 | 0.1333 | 4.25 | 12.6 | 12.3 |
| B-9 | 2.370 | 0.0037 | 0.0 | 1.0 | 11.0 | 88.0 | 0.1333 | 4.18 | 9.9 | 9.7 |
| B-10 | 2.100 | 0.0033 | 0.0 | 13.0 | 0.0 | 87.0 | 0.1333 | 4.07 | 8.5 | 8.5 |
| B-13 | 1.900 | 0.0030 | 0.0 | 4.0 | 5.0 | 91.0 | 0.1333 | 4.20 | 8.0 | 8.0 |
| B-14 | 2.130 | 0.0033 | 0.0 | 3.0 | 12.0 | 85.0 | 0.1333 | 4.12 | 8.8 | 8.6 |
| B-15-A | 0.935 | 0.0015 | 0.0 | 4.0 | 10.0 | 86.0 | 0.1333 | 4.13 | 3.9 | 3.8 |
| B-15-B | 0.935 | 0.0015 | 0.0 | 4.0 | 10.0 | 86.0 | 0.1333 | 4.13 | 3.9 | 3.8 |
| B-16 | 2.140 | 0.0033 | 0.0 | 3.0 | 0.0 | 97.0 | 0.1333 | 4.30 | 9.2 | 9.0 |
| B-18-A-1 | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| B-18-A-2 | 0.460 | 0.0007 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.0 | 1.9 |
| B-18-B | 0.270 | 0.0004 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.2 | 1.1 |
| B-18-C | 0.480 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| B-19-A | 0.480 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.1 |
| B-19-B | 0.790 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.5 | 3.3 |
| B-19-C | 0.760 | 0.0012 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.3 | 3.1 |
| B-19-D | 0.560 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.4 | 2.5 |
| B-20-A | 0.590 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.6 | 2.8 |
| B-20-B | 1.080 | 0.0017 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 4.7 | 4.7 |
| B-20-C | 0.580 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.5 | 2.5 |
| B-21-A | 0.560 | 0.0009 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.4 | 2.5 |
| B-21-B | 0.490 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.1 | 2.2 |
| B-21-C | 0.505 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.2 | 2.2 |
| B-21-D | 0.505 | 0.0008 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 2.2 | 2.2 |
| B-22 | 0.060 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| B-23 | 0.040 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.2 | 0.3 |
| B-24 | 0.060 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| B-25 | 0.080 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.3 | 0.3 |
| B-26 | 0.600 | 0.0009 | 0.0 | 0.0 | 100.0 | 0.0 | 0.1333 | 2.87 | 1.7 | 1.6 |
| B-27 | 0.050 | 0.0001 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.2 | 0.3 |
| | 45.630 | 0.0713 | | | | | | | | |
| C-1-A | 4.380 | 0.0068 | 0.0 | 30.0 | 0.0 | 70.0 | 0.1333 | 3.67 | 16.1 | 15.7 |
| C-1-B | 0.710 | 0.0011 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.1 | 3.0 |
| C-2 | 1.780 | 0.0028 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 7.8 | 7.9 |
| C-3-A | 0.880 | 0.0014 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 3.8 | 3.9 |
| C-3-C | 0.360 | 0.0006 | 0.0 | 7.0 | 0.0 | 93.0 | 0.1333 | 4.21 | 1.5 | 1.6 |
| C-3-D | 0.250 | 0.0004 | 0.0 | 100.0 | 0.0 | 0.0 | 0.1333 | 2.03 | 0.5 | 0.5 |
| C-3-E | 0.180 | 0.0003 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 0.8 | 0.8 |
| | 8.540 | 0.0133 | | | | | | | | |
| D-1 | 1.820 | 0.0028 | 0.0 | 12.0 | 0.0 | 88.0 | 0.1333 | 4.09 | 7.4 | --- |
| D-2 | 0.670 | 0.0010 | 0.0 | 20.0 | 0.0 | 80.0 | 0.1333 | 3.90 | 2.6 | --- |
| D-3 | 0.240 | 0.0004 | 0.0 | 0.0 | 0.0 | 100.0 | 0.1333 | 4.37 | 1.0 | --- |
| | 2.730 | 0.0043 | | | | | | | | |
| TOTAL | 95.64 | | | | | | | | | |




LOCATION MAP
ZONE ATLAS MAPS B-13 AND B-14
NOT TO SCALE

BENCHMARK

THE BENCHMARK IS THE ACS STATION I-813 ELEVATION 5045.088. THE BRASS TABLET IS SET IN THE TOP OF A CONCRETE POST LOCATED 170 FEET S.W. OF THE JUNCTION OF COORS RD. N.W. AND IRVING BLVD. N.W.

LEGAL DESCRIPTION

TRACT H-1 SEVEN BAR RANCH SUBDIVISION.

USERNAME: C9413301.PAD
FILENAME: COTTONWOOD.GRF


7500 JEFFERSON NE. COURTYARD I
ALBUQUERQUE, NM 87109
(505) 823-1000
BOHANNAN HUSTON INC.


# SIMON


SIMON PROPERTY GROUP, L.P.

MERCHANTS PLAZA P.O. BOX 7033
INDIANAPOLIS, IN 46207
(317) 636-1600


COTTONWOOD MALL

ALBUQUERQUE NEW MEXICO

DESCRIPTION: CONCEPTUAL GRADING AND DRAINAGE PLAN

| DRAWN | PART NAME | | SCALE |
|---|---|---|---|
| SAR | | | 1"=100' |
| CHECKED | PLAN NAME | | DATE |
| KLD | | | 8/01/94 |
| REV. | SHEET | OF | |
| CHECKED | 9 | 9 | |

PLATE 1