City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 27, 1999

James Domenick, P.E.
Parsons Brinckerhoff, Inc.
5801 Osuna Road NE, Suite 200
Albuquerque, New Mexico 87109

RE: Change Order Plans for the Cascading Pond for the South Detention Pond, Vista Del Norte Subdivision (D16/D1) Engineer's Stamp Dated 10/15/99.
D2

Dear Mr. Domenick:

Based on the information provided the above referenced plans for the Cascading ponds are acceptable for approval of the Change Order.

As you are aware, County Public Works must accept the portion of the project within the County and City staff must accept the ponds within the City. Final acceptance from both agencies is required prior to release of financial guarantees for this project.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Elias Archuleta, Parsons Brinckerhoff
File

EASEMENT

This grant of Easement, between VISTA DEL NORTE DEVELOPMENT, LLC, a New Mexico limited liability company ("Grantor"), whose address is c/o Brown and Associates, Carlisle Comanche Center 3804 Carlisle, NE, Albuquerque, New Mexico 87107 and the CITY OF ALBUQUERQUE, a New Mexico municipal corporation ("City"), whose address is P.O. Box 1293, Albuquerque, New Mexico 87103, is made in Albuquerque Bernalillo County, New Mexico, and is entered into as of the date Grantor signs this Easement.

1. Recital. Grantor is the owner of certain real property within the Vista del Norte subdivisions, Albuquerque, New Mexico, Bernalillo County, New Mexico.

2 Grant of Easement. The Grantor grants to the City a non-exclusive, permanent easement for vehicular and pedestrian access, ingress and egress over and across the property as described and shown on Exhibit A attached hereto ("Easement Property"), together with the right of the City to improve the property with roadway improvements and to enter upon the Easement Property at any time for the inspection, installation, maintenance, repair or modification of the roadway improvements and the right to remove trees, bushes, undergrowth and any other obstacles upon the Easement Property if the City determines they interfere with the appropriate use of the easement.

3. Purpose. The purpose of this Easement is to provide to the City access to maintain the storm drainage improvements constructed, or to be constructed, at the western end of the Easement Property.

4 Warranty. Grantor covenants and warrants that it is the owner in fee simple of the Easement Property and that is has a good lawful right to convey the Easement Property or any part thereof, that the Easement Property is free from all encumbrances except encumbrances of record in the Bernalillo County, New Mexico real estate records

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Mary Herrera Bern. Co. EASE R 13.00

(the "Record Encumbrances") and taxes due and owing the Treasurer of Bernalillo County, and that the Grantor will forever warrant and defend the title to the Easement Property against all claims from all persons or entities, except the Record Encumbrances.

5. Disclosure. The Grantor has disclosed to the Grantee that the Easement Property is encumbered with a prior easement for an underground natural gas line (the "Gasline Easement"). This Easement is subject to and subordinate to the Gasline Easement as well as all other Record Encumbrances.

6 Binding on Grantor's Property. The grant and other provisions of this Easement constitute covenants running with the Easement Property for the benefit of the City and its successors and assigns until terminated.

Witness my hand and seal this 22nd day of August, 2005.

VISTA DEL NORTE DEVELOPMENT, LLC, a New Mexico limited liability company

By: _____
John A. Myers
Assistant Manager Pro Tem

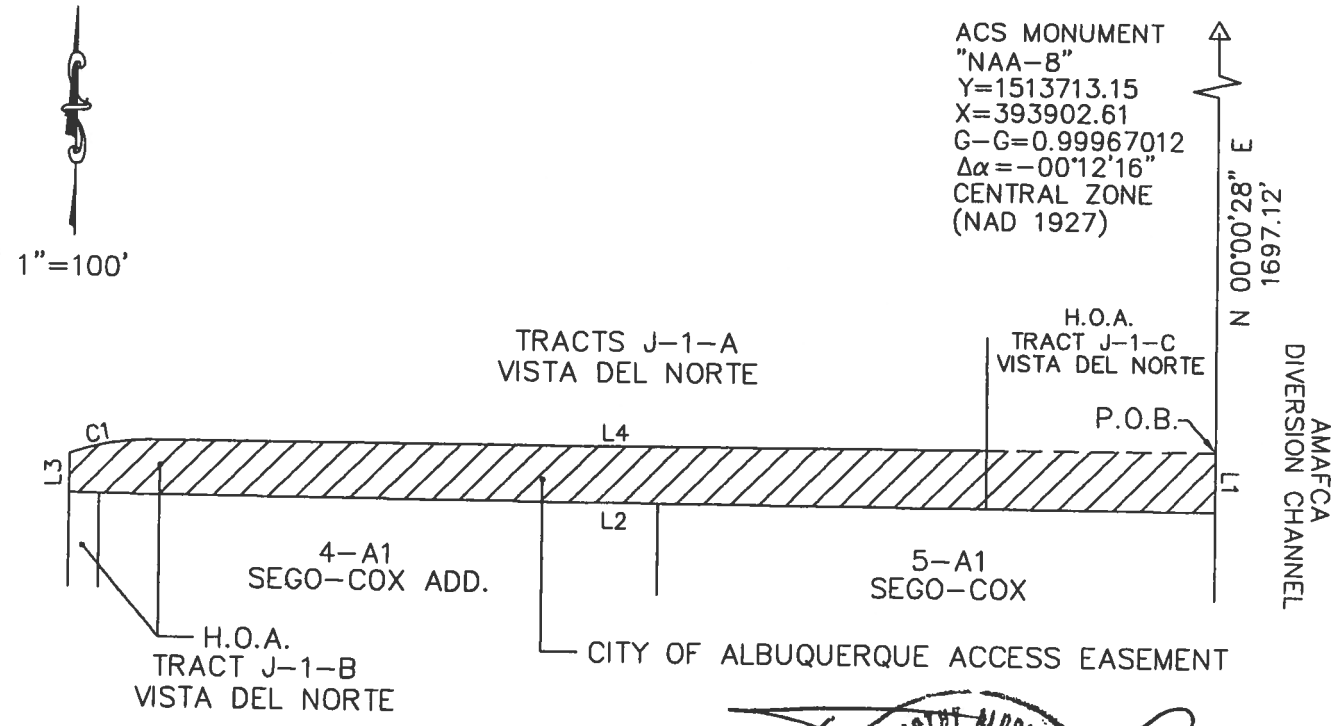
STATE OF NEW MEXICO)
) ss.:
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on August 22, 2005, by John A. Myers, Assistant Manager Pro Tem, of Vista del Norte Development, LLC, a New Mexico limited liability company.

_____
Notary Public

My commission expires: 11-18-2005

"EXHIBIT FOR"
CITY OF ALBUQUERQUE ACCESS EASEMENT



NUMBER	DIRECTION	DISTANCE
L1	S 00°00'24" W	30.98'
L2	N 89°42'03" W	593.91'
L3	N 00°00'00" E	20.02'
L4	N 90°00'00" E	552.22'

NUMBER	DELTA ANGLE	CHORD DIRECTION	RADIUS	ARC LENGTH	CHORD LENGTH
C1	21°22'58"	N 79°18'58" E	114.33'	42.67'	42.42'

TIMOTHY ALDRICH
NEW MEXICO
08-24-05

DESCRIPTION

A City of Albuquerque Access Easement within the Elena Gallegos Grant, projected Section 27, Township 11 North, Range 3 East, New Mexico Pricipal Meridian, City of Albuquerque Bernalillo County, New Mexico being within TRACTS J-1-B AND J-1-C, VISTA DEL NORTE, as the same is shown and designated on said plat filed for record in the office of the County Clerk of Bernalillo County, New Mexico on March 31, 2003 in Book 2003C, Page 87 and being more particularly described as follows:

BEGINNING at the northeast corner of the herein described Easement from whence the Albuquerque Control Survey Monument "NAA-8" bears N 00°00'28" E 1697.12 feet;

THENCE S 00°00'24" W, 30.98 feet to the southeast corner;

THENCE N 89°42'03" W, 593.91 feet to the southwest corner;

THENCE N 00°00'00" E, 20.02 feet to a point;

THENCE 42.67 feet along a curve to right, whose radius is 114.33 feet through a central angle of 21°22'58" and whose chord bears N 79°18'58" E, 42.42 feet to a point;

THENCE S 90°00'00" E, 552.22 feet to the point of beginning and containing 0.3988 acres more or less.

Mary Herrera Bern. Co. EASE R 13.00
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Original delivered 8/21/00 to Roberta Deloss at AWD

THIS DOCUMENT RE-RECORDED TO ATTACH EXHIBIT "C".

AGREEMENT AND GRANT OF EASEMENT

THIS AGREEMENT AND GRANT OF EASEMENT is entered into as of the ____ day of December, 1998, by and among SUNDT CONSTRUCTION, INC., an Arizona corporation ("Sundt"), the CITY OF ALBUQUERQUE, a New Mexico municipal corporation (the "City"), and the COUNTY OF BERNALILLO, a political subdivision of the State of New Mexico (the "County").

Background Information:

1. Sundt is the owner of Vista del Norte subdivision (the "Project");

2. Sundt is the owner of a ±13 acre tract of property, more particularly described on Exhibit "A" attached hereto and incorporated herein (the "Property"), which Property is an approximately 250-foot wide strip of property running from the Project to Edith Boulevard;

3. The Property will be graded to fulfill two functions, storm water detention and sedimentation basins (the "Drainage Function"), and athletic fields (the "Recreational Function"), pursuant to the site development plan conceptual pond/park layout, Vista del Norte (the "Site Plan"), a copy of which is attached hereto as Exhibit "B". The Property is served with access from Tyler Road by way of a 30-foot wide access road (the "Access Road") created pursuant to the Access Easement Agreement recorded in the

Bernalillo County, New Mexico, real estate records on December 14, 1993, in Book 93-35, Pages 8729-8735 (the "Easement Agreement").

4. The parties desire to establish certain rights and responsibilities with respect to the Property.

NOW, THEREFORE, the parties agree as follows:

1. Sundt agrees as follows:

1.1. Drainage Improvements. Sundt agrees to grade the Property and construct the Drainage Improvements as shown on the Site Plan, in accordance with constructions plans prepared by Sundt's consultants, and approved and accepted by the City and County pursuant to City and County requirements (the "Drainage Improvements");

1.2. Pavement. To pave the parking area, shown on the Site Plan, and the Access Road, to paving standards acceptable to the County (the "Paving Improvements");

1.3. Recreational Improvements. To install an irrigation system for the athletic fields, to seed the fields, and to crimp straw into the fields, as shown on the Landscape Plan attached as Exhibit "C" (the "Recreational Improvements");

1.4. Conveyance of Property. To convey the Property to the County, subject to the easement described herein, within 30 days after completion, inspection and acceptance by the City and the County (including specifically the County Parks and Recreation Department) of the Drainage Improvements, the Recreational Improvements, and the Paving Improvements.

2. Grant of Easement. Sundt grants to the City and the

County an exclusive (except that the easements are non-exclusive to the extent that both the City and the County are granted an easement) permanent easement ("Easement") in, over, upon and across the Property for the construction, installation, maintenance, repair, modification, replacement, and operation of the Drainage Improvements, including the right to remove trees, bushes, undergrowth, and any other obstacle upon the Property that the City or the County determines interfere with the use of the Easement for the purposes set out herein. Provided, however, that the City shall repair, at the City's expense, any damages to the Property, including but not limited to the athletic fields 1, 2 and 3 resulting from its activities. Sundt shall be permitted to grant additional easements within the Easement with prior written approval of the City Engineer and the County.

Sundt covenants and warrants that Sundt is the owner in fee simple of the Property, that Sundt has a good and lawful right to convey the Property and that Sundt will forever warrant and defend the title to the Property against all claims from all persons or entities.

This Grant of Easement and the provisions contained herein constitute covenants running with the land for the benefit of the City and its successors and assigns until terminated.

2.1. Maintenance Responsibilities. The City accepts the responsibility to maintain the portions of the Drainage Facilities identified on the Site Plan as follows (the "City Facilities"):

(a) Proposed storm sewer inlet,

(b) Sedimentation basin,

(c) Detention basin,

(d) Biofilter area,

(e) 8-inch drain pipe; and

(f) 12-inch drain pipe.

The County shall maintain the facilities identified on the Site Plan as follows (the "County Facilities"):

(a) Athletic fields 1, 2 and 3, NO

(b) Parking area, NO

(c) Access road, yes

(d) Control release pond, and / yes

(e) Storm sewer outlet to Edith Pond No. 6. NO

Pursuant to the Easement granted herein, both the City and the County have the right to maintain any of the Facilities to be maintained by the other party (the "Defaulting Party") in the event that the Defaulting Party fails to adequately maintain its Facilities, however, such right by the City or the County does not relieve the Defaulting Party of its responsibility to maintain its Facilities.

3. Governing Laws. Except as otherwise specifically provided herein, this Agreement shall be governed by, construed and enforced in accordance with the laws of the State of New Mexico.

4. Notices. All notices with respect to this agreement shall be in writing and shall be delivered personally, sent via confirmed telefax, or sent postage prepaid by United States Mail, certified mail, return receipt requested, to the addresses set

forth below or such other addresses as hereafter specified in writing by one party to the other:

SUNDT CONSTRUCTION, INC.
P. O. Box 26685
Tucson, Arizona 85726

City of Albuquerque
c/o Chief Executive Officer
P. O. Box 1293
Albuquerque, New Mexico 87103

County of Bernalillo
c/o County Manager
One Civic Plaza, 10th Floor
Albuquerque, New Mexico 87102

5. Entire Agreement. This Agreement contains the entire agreement between the parties hereto and all prior understandings, oral or in writing, by the parties hereto with respect to this agreement. No variations, modifications, supplements, waivers or changes herein or hereof shall be binding upon any party hereto unless set forth in a document duly executed by or on behalf of such party.

6. Severability. If any provision of this Agreement or the application thereof to any person or circumstance shall be invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provisions to other persons or circumstance shall not be affected thereby and such provisions shall be enforced to the greatest extent permitted by law.

7. Binding Agreement. This Agreement shall inure to the benefit of and be binding upon the undersigned parties and their respective successors and assigns. Whenever in this Agreement a reference to any party or Partnership is made, such reference shall

be deemed to include a reference to the successors and permitted assigns of such Partner.

8. Authority. Each individual signing for each of the parties hereunder, warrants and represents that he/she is an authorized agent of such party, on whose benefit he/she is executing this Agreement, and is authorized to execute the same.

9. Further Assurances. Each party agrees to execute such other and further instruments and documents as may be necessary or proper in order to complete the transactions contemplated by this Agreement.

10. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and said counterparts shall constitute but one and the same instrument which may sufficiently be evidenced by one counterpart.

11. City/County Third Party Beneficiary. It is specifically agreed between the City and the County that this Agreement does not, and is not intended to, create in the public, or any member thereof, any rights whatsoever, such as but not limited to, the rights of a third party beneficiary, nor to authorize anyone not a party to this Agreement to maintain a suit for wrongful death or any other claim whatsoever.

12. Tort Claims. It is specifically agreed between the City and the County that each shall be solely responsible for any and all liability from personal injury, including death, or damage to property, arising from any negligent or intentional act or failure to act of either the City or the County, its officials, agents,

contractors or employees, pursuant to this Agreement. Liabilities of the City or County shall be subject to the immunities and limitations of the Tort Claims Act, §§41-4-1, et seq., NMSA, 1978, and any amendments thereto. By entering into this Agreement, the County and its "public employees" as defined in the New Mexico Tort Claims Act, and the City and its "public employees" as defined in the New Mexico Tort Claims Act, do not waive sovereign immunity, do not waive any defense and/or do not waive any limitation of liability pursuant to law. No provision in this Agreement modifies and/or waives any provision of the New Mexico Tort Claims Act.

SUNDT CONSTRUCTION, INC., an Arizona corporation

By: _____
Its: Sr. Vice President

CITY OF ALBUQUERQUE, a New Mexico municipal corporation

By: _____
Lawrence Rael
Chief Executive Officer

12/14/98

SUPPLEMENTAL SHEET

Motion to approve the agreement and grant of easement among Bernalillo County, the City of Albuquerque and Sundt Construction Inc. that grants a multipurpose easement and defines responsibilities for drainage and park facilities maintenance related to Vista del Norte subdivision was approved by the Board of County Commissioners at the December 15, 1998 Commission Meeting.

APPROVED AS TO FORM ONLY:

County Attorney

BOARD OF COUNTY COMMISSIONERS

EXCUSED

Steve D. Gallegos, Chairman

Ken Sanchez, Vice Chairman

Les Houston, Member

Tom Rutherford, Member

Barbara J. Seward

Barbara J. Seward, Member

ATTEST:

Judy D. Woodward

Judy D. Woodward, County Clerk

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Judy D. Woodward Bern. Co. AGRE R 27.00
1

STATE OF ~~NEW MEXICO~~ ARIZONA)
) ss.
COUNTY OF ~~BERNALILLO~~ PIMA)

This instrument was acknowledged before me on December 4, 1998 by PETER JOHNSON, SR. VICE PRESIDENT of Sundt Construction, Inc., an Arizona corporation.

Jan Irwin
Notary Public

My Commission Expires:
July 30, 2002

OFFICIAL SEAL
JAN IRWIN
NOTARY PUBLIC
Pima Co., Arizona
My Comm. Exp. July 30, 2002

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

14 This instrument was acknowledged before me on December , 1998, by Lawrence Rael, as Chief Executive Officer of the City of Albuquerque, a New Mexico municipal corporation.

Roberta Duran
Notary Public

My Commission Expires:
July 8, 2002

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 7/8/02

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on December _____, 1998, by _____, _____ of the County of Bernalillo, a political subdivision of the State of New Mexico.

_____
Notary Public

My Commission Expires:

_____

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Judy D. Woodward Bern. Co. AGRE R 27.00

A tract of land situate within the Elena Gallegos Grant, Bernalillo County, New Mexico, being and comprising Tract 9 as shown on the Middle Rio Grande Conservancy District Property Map No. 29, and being also designated as Tract "C" on that certain plat entitled Plat Showing Lands of Albert G. Simms, within the Elena Gallegos Grant, Bernalillo County, New Mexico, for assessment purposes, filed in the Office of the County Clerk of Bernalillo County, New Mexico, on the 14th day of November, 1955; and being more particularly described as follows:

Beginning at the Northwest Corner No. 1 of the tract herein set forth, a point on the Easterly right-of-way line of Edith Boulevard NE whence the Section Corner common to Sections 14, 15, 22 and 23 (as projected), Township 11 North, Range 3 East, N.M.P.M., bears N.40°48'08"E., 7716.77 feet distant; and running thence, S.80°21'E., 2393.73 feet to the Northeast Corner No. 2 of the tract herein set forth, a point on the Westerly boundary of the Lands of the Albuquerque Gravel Products Company; Thence, S.26°17'E., 147.10 feet along said Westerly boundary to the Southeast Corner No. 3 of the tract herein set forth; Thence, leaving said Westerly boundary and running N.80°39'20"W., 2496.70 feet to the Southwest Corner No. 4 of the tract herein set forth, a point on said Easterly right of way line of Edith Boulevard NE; Thence, N.16°48'E., 133.47 feet along said Easterly right of way line of Edith Boulevard NE to the Northwest Corner No. 1 and the place of beginning.

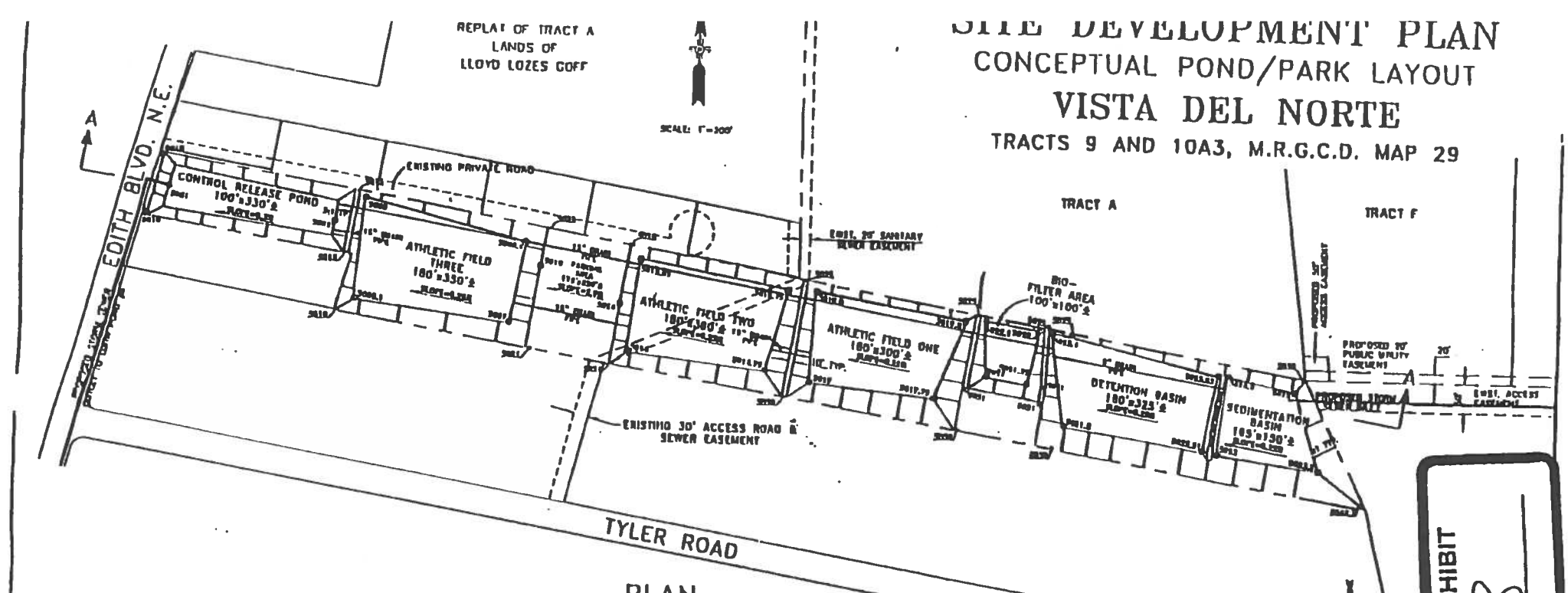
PARCEL 10-A-3:

A certain parcel of land situate within Section 27, Township 11 North, Range 3 East, N.M.P.M., Bernalillo County, New Mexico, and being identified as the Easterly 5.7757 acres, more or less of Tract 10-A, Middle Rio Grande Conservancy District Property Map No. 29 and being more particularly described as follows:

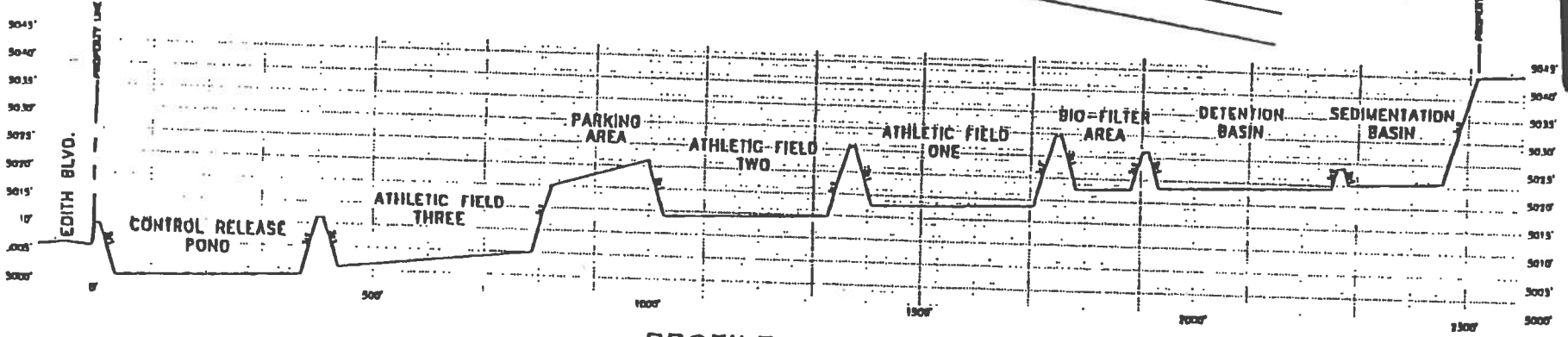
Beginning at the Southeast corner of the tract herein described, said corner being common to the Northeast corner of Sunnymeade Subdivision, as the same is shown and designated on the plat of said Subdivision, filed in the Office of the County Clerk of Bernalillo County, New Mexico, on April 19, 1955; Thence, running N.80°36'31"W., 893.15 feet distance to a point; Thence, N.80°34'58"W., 699.67 feet distance to a point; Thence, N.80°26'23"W., 364.19 feet distance to a point; Thence, N.80°26'23"W., 200.25 feet distance to the Southwest corner; Thence, N.16°01'49"E., 119.05 distance to the Northwest corner; Thence, S.80°39'20"E., 186.30 feet distance to a point; Thence, S.80°36'52"E., 742.50 feet distance to a point; Thence, S.80°32'29"E., 1129.40 feet distance to the Northeast corner; Thence, S.26°17'00"E., 146.23 feet distance to the Southeast corner and point of beginning.

EXHIBIT
A

SITE DEVELOPMENT PLAN
CONCEPTUAL POND/PARK LAYOUT
VISTA DEL NORTE
TRACTS 9 AND 10A3, M.R.G.C.D. MAP 29



PLAN

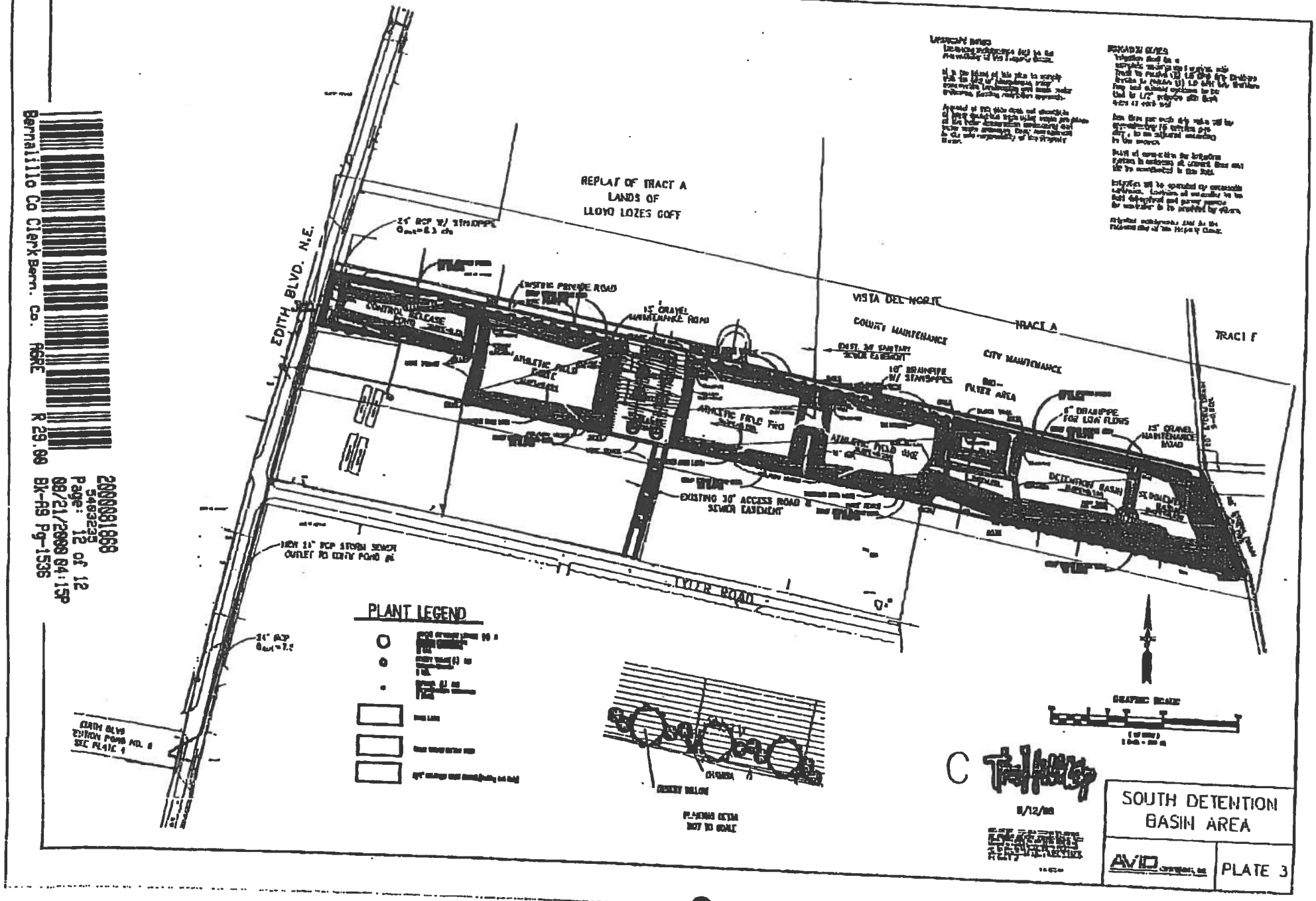


PROFILE A-A

EXHIBIT B

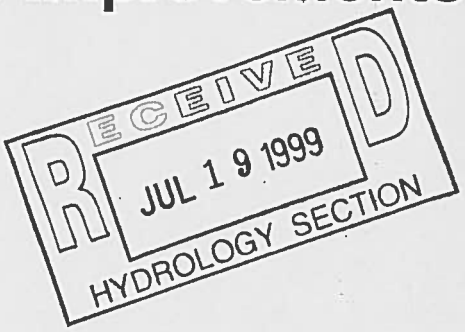
AVID

SHEET NO. 1 OF 1



Specifications for Construction of the Middle Detention Pond

Vista Del Norte Subdivision Back Bone Infrastructure Improvements



July 16, 1999

Prepared by:
Parsons Brinckerhoff, Inc.
5801 Osuna Rd. NE, Suite 200
Albuquerque, NM 87109

Vista Del Norte

Specifications for Construction of Middle Detention Pond

Site Conditions & Product Description

Due to the presence of moisture sensitive soils present within the Middle Detention Pond at the proposed Vista Del Norte Subdivision, a synthetic liner is necessary to prevent moisture migration to homes on all sides of the pond.

A "Rufco® 2010B" mono-layer membrane shall be used. Specifications for the Rufco® 2010B are included in this package as Appendix A. A comparable equivalent liner may be used provided it meets the product specifications and is accepted by the City Inspector.

Installation of Liner

The liner shall be installed per the manufacture's specifications and under the supervision of a Geotechnical Engineer. The liner shall extend six feet (6') below the pond bottom on all sides of the pond, and the sides of the pond shall be lined to a height of four feet (4') on the North, East and South slopes of the pond and to a height of six feet (6') along the West slope of the pond. The liner shall be anchored at the top by dropping the liner a minimum of two feet (2') down vertically into slope. The liner shall be covered with a minimum of one-foot (1') of soil. The liner shall be installed in soil compacted in accordance with procedures defined in these specifications and all soil disturbed in the installation process shall be re-compacted to specified densities.

Construction and Compaction Side Slopes

The side slopes of the pond shall not be steeper that 3:1 (horizontal:vertical). Any uncontrolled existing fill on the slope shall be removed and replaced with compacted fill. All slopes shall be heavily benched as the fill is being placed. The benches shall be spaced at no more than two-foot (2') vertical intervals. The fill shall be placed in horizontal lifts with a maximum loose thickness of eight inches (8"). All fill shall be compacted to 90% of maximum density as determined by ASTM D-1557. All fill slopes shall be overfilled and cut back to properly compacted material. Procedures for fill placement and compaction are included in this package as Appendix B.

Vegetation may be placed in the bottom of the pond upon written approval from the City Storm Drain Maintenance Engineer and the owner' representative. The vegetation will be beneficial in reducing moisture migration beyond the pond's limits.

A 12' wide maintenance access road shall be constructed along the top of the pond. The road shall have a cross slope of 2.0% on the North side of the pond and a 4.0% cross slope on the West, East, and South sides of the ponds. The cross slope on the access road shall slope towards the pond.

Three displays detailing the pond are included in this package. Plate 1 shows the pond in plan view; Plate 2 shows dimensions of the pond bottom and Plate 3 shows two cross sections of the pond.

Quality Control and Construction Inspection

Construction of the pond and installation of the liner shall be completed under the supervision of a Geotechnical Engineer. The Geotechnical Engineer will be responsible for the complete inspection and testing of the pond construction and liner installation. The extent and frequency of testing shall be at the discretion of the Geotechnical Engineer.

Procedure for Controlling Storm Runoff during Construction of Pond

No developed drainage runoff shall be stored or detained in the Middle Detention Pond prior to or during the construction of the pond and the placement of the synthetic liner. Flows occurring in the sixty-inch (60") RCP storm drain which enters the pond in the Southeast corner shall be diverted directly to the pond's thirty-inch (30") RCP storm drain outfall located in the Southwest corner of the pond. This shall be achieved by connecting the two RCP pipes with a thirty-inch (30") *HDPE Polymeric Pipe* also known as "Trench Coat®". This is a flexible corrugated plastic pipe that can be easily placed and fitted. The "Trench Coat®" shall be thoroughly secured into the thirty-inch (30") RCP pipe outfall ensuring no runoff leakage. Likewise, the thirty-inch (30") "Trench Coat®" pipe shall be placed into the sixty-inch (60") storm drain and the open area between the thirty-inch (30") "Trench Coat®" and the sixty-inch (60") RCP shall be sealed with sand bags and manually compacted soil to ensure no runoff leakage.

Flow occurring in the sixty-inch (60") RCP storm drain which enters the pond along the Eastern slope, shall be controlled by sealing the catch basins and preventing the flows from entering this storm drain. The catch basins shall be filled with sandbags from the base of the catch basins to the flowline of the curb. The street flow intercepted by these inlets are not yet fully developed flows and can be contained in the street until the pond is constructed.

All interim construction measures shall be inspected and approved by the City Inspector before pond construction may begin.

APPENDIX B

EARTHWORK PROCEDURES

General

The Geotechnical Engineer shall be the Owner's representative to observe and evaluate the earthwork operations. The Contractor shall cooperate with the Geotechnical Engineer in the performance of the Engineer's duties.

Clearing and Grubbing

Prior to placing structural fill, all borrow areas and areas to receive structural fill shall be stripped of vegetation and deleterious materials. Strippings shall be hauled off-site or stockpiled for subsequent use in landscaped areas or non-structural fill areas as designated by the Owner or his representative and approved by the Geotechnical Engineer.

Site Preparation – Fill Areas

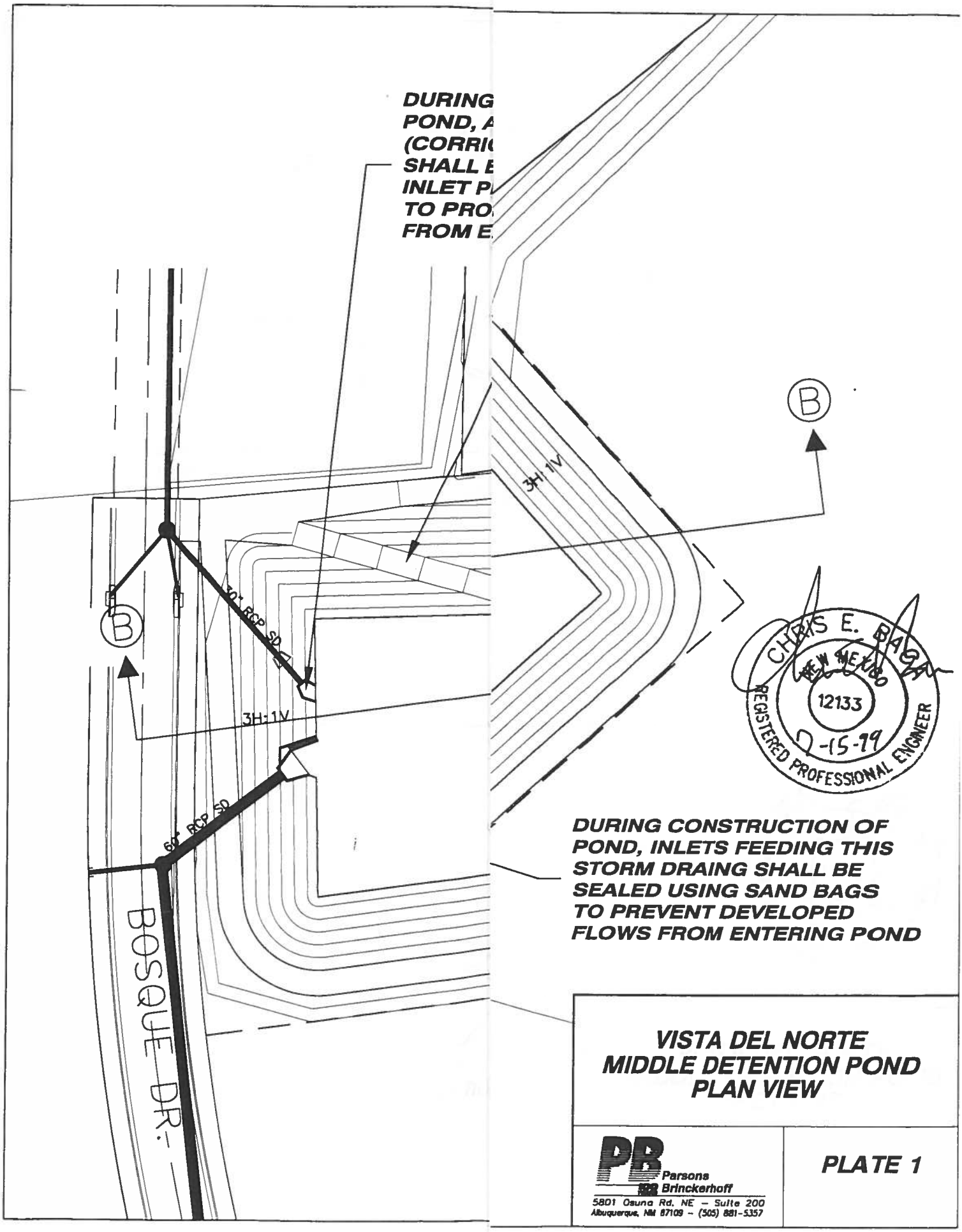
Prior to placing structural fill, the areas to be filled shall be scarified to a depth of eight inches and moisture conditioned as described below. The area to be filled shall then be compacted to a minimum of 90 percent of maximum density as determined by ASTM D-1557. If vibratory compaction techniques pose a threat to the structural integrity of nearby facilities, a static compactor shall be used. Any soft or "spongy" areas shall be removed as directed by the Geotechnical Engineer and replaced with structural fill as described herein.

Site Preparation – Cut Areas

Following excavation to rough grade, all fill areas shall be scarified to a depth of eight inches and moisture conditioned as described below. All fill areas shall be compacted to a minimum of 90 percent of maximum density as determined by ASTM D-1557. If vibratory compaction techniques pose a threat to the structural integrity of nearby facilities, a static compactor shall be used. Any soft or "spongy" areas shall be removed s directed by the Geotechnical Engineer and replaced with structural fill as described herein.

Fill Material

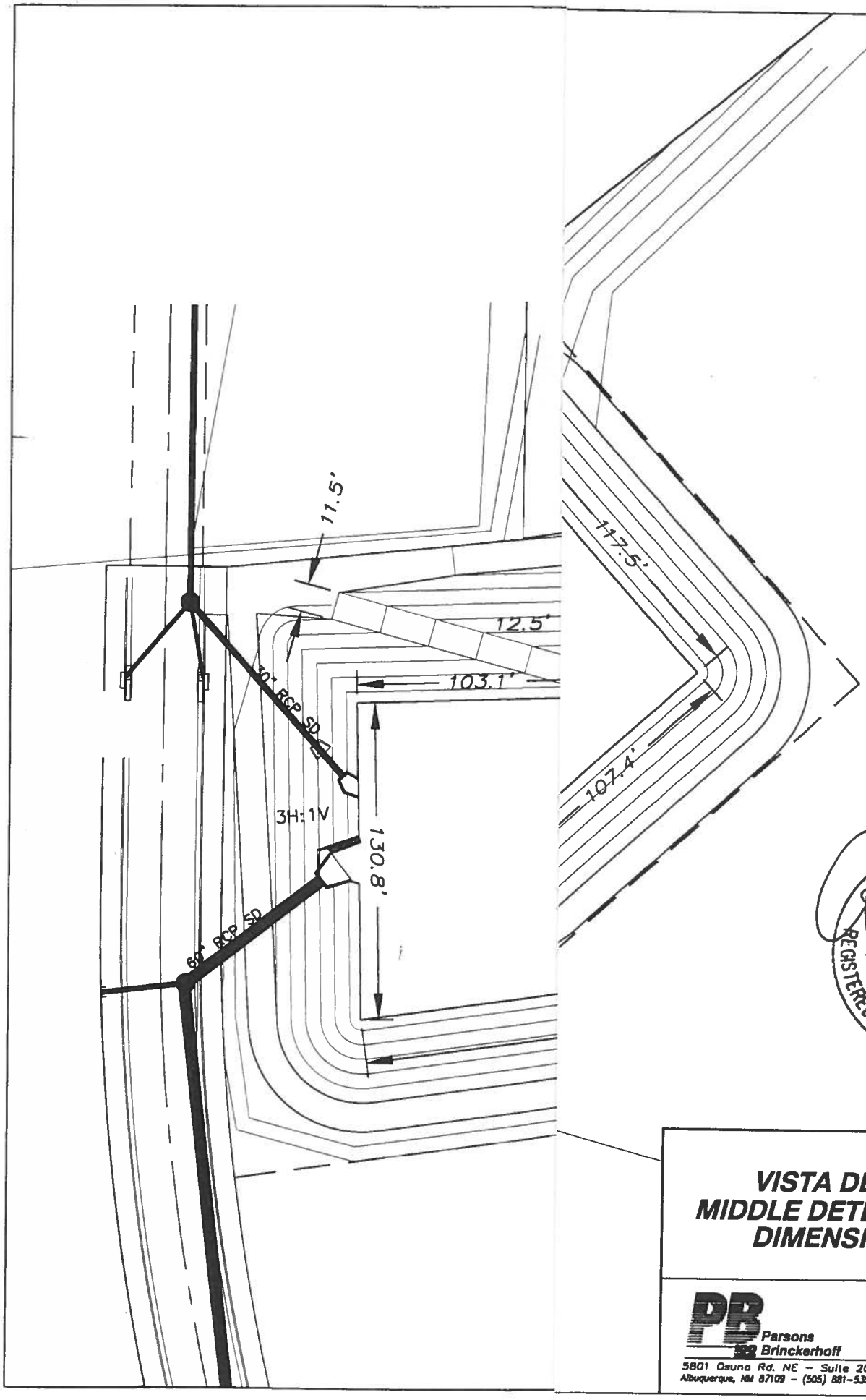
Fill material shall be non-expansive soil which may be gravel, sand, silt or clay or a combination thereof.



VISTA DEL NORTE MIDDLE DETENTION POND PLAN VIEW

PB Parsons Brinckerhoff
5801 Osuna Rd. NE – Suite 200
Albuquerque, NM 87109 – (505) 881-5357

PLATE 1



CHRIS E. BACA
NEW MEXICO
12133
REGISTERED PROFESSIONAL ENGINEER
7-15-99

VISTA DEL NORTE
MIDDLE DETENTION POND
DIMENSION PLAN

PB Parsons Brinckerhoff
5801 Osuna Rd. NE – Suite 200
Albuquerque, NM 87109 – (505) 881-5357

PLATE 2

Vista Del Norte

Supplemental Specifications for Construction of

Detention Ponds and Park

1.0 Introduction

These specifications are to serve as a supplement to the *Construction Plans for Vista Del Norte Unit 1,* City Project # 5970.81. Plans for the location, dimensions, grades, cross-sections and details for the pond system are included in the original plans-set on sheets 51-56. These specifications will encompass the installation of an impermeable liner and earthwork procedures for the compaction of the pond side-slopes. These specifications are based on the geotechnical recommendation set forth in the Geotechnical Investigation Report prepared by Vineyard and Associates prepared Jan. 22, 1998 and revised July 6, 1999. A copy of that report accompanies these specifications.

2.0 Existing Conditions

The existing site conditions are relatively flat bounded by a residential development and vacant land on the north, a residential development, vacant land and the Osuna Nursery on the south, Edith Blvd. on the west, and the proposed Vista Del Norte Subdivision on the east. The eastern most 500 feet of the site contains a roughly circular depression that is approximately 20 to 25 feet deep.

Subsurface conditions consist of fine and medium silty sand ranging from depths of 5 to 10 feet, sandy silt extended to approximately 17 feet, and sandy clay and clayey sand at depths greater than 17 feet. Maximum depth of exploration was 30 feet. The sandy silt and sandy clay will consolidate substantially upon an increase in moisture content, and measures need to be taken to control this condition.

3.0 Proposed Conditions

The developed conditions for this site will consist of a series of storm water detention ponds and a wetland pond. This system receives storm water run-off from the proposed Vista Del Norte Subdivision and releases it at the historical runoff rate. The pond system, shown on Figure 1, consists of (from east to west) a sedimentation basin, a detention basin, a bio-filter (wet-land) pond, three athletic fields which serve as detention ponds, and a control release basin. The ponds will be excavated, below grade structures with no above grade berms or dams. Due to the presence of moisture sensitive soils on the site, which will consolidate upon an increase in moisture, it is necessary to control offsite migration of water to adjoining properties. To control the migration of water, some of the basins will require some order of artificial lining.

The basins and fields are connected with a series of storm drainpipes and spillways that regulate the rate of discharge from the site. As a result of this, the various basins and fields receive a variable amount of runoff based on the type of rainstorm. The sedimentation, detention basin bio-filter and controlled release ponds are the only ponds that will receive runoff with all storms. The athletic fields will receive runoff on a less frequent basis. Athletic Field One will receive runoff with the 2-year storm, Field Two will receive runoff with the 10-year storm, and Field Three will receive runoff with the 50-year storm. Since there is variation in runoff depth in the basins, each basin requires a different lining solution.

4.0 Installation of Liner

The geotechnical report requires measures be utilized to control offsite migration of water in order to prevent moisture induced settlement in the adjoining properties. The measures required for the individual basins are based on the soil conditions and the duration of runoff present in the basin.

The impermeable liner to be used shall be a "Rufco® 2010B" monolayer membrane or comparable equivalent, as approved by the City Inspector. The specifications for the liner are included as Appendix A. The liner shall be installed per the manufacturer's specifications and under the supervision of a Geotechnical Engineer. In all cases where a liner is installed, the liner shall be installed in soil compacted in accordance with procedures defined in these specifications, and all soil disturbed in the installation process shall be re-compacted to specified densities.

4.1 Bio-Filter

The bio-filter (wetland) basin will accommodate the nuisance flows from the Vista Del Norte Subdivision. Suitable vegetation will be planted in the bio-filter to absorb the nuisance flows. Since water will be constantly present in the bio-filter, an impermeable liner will be required for the entire basin. The liner shall be installed on the bottom of the basin and on all sides. A minimum of 3 feet of fill shall be placed over the liner on the bottom of the pond to enable the vegetation to root and to prevent damage to the liner during maintenance operations. On the side-slopes a minimum of 1 feet of cover is required to prevent damage during maintenance operations. The liner shall be anchored at the top by dropping the liner a minimum of 2 feet down vertically into the top of the slope.

4.2 Sedimentation Basin and Detention Basin

These basins will receive runoff on a regular basis but will drain rapidly. The possibility of offsite migration exists in this basin therefore lining is necessary. The basins shall be lined on all sides to a height of 6.5 feet above the pond bottom with an impermeable liner. The liner shall extend a minimum of 6 feet below the bottom of the pond. On the side-slopes a minimum of 1 foot of cover is required to prevent damage during maintenance operations. The liner shall be anchored at the top of the slope by dropping the liner a minimum of 2 feet vertically into the compacted slope. The soil disturbed by anchoring the liner into the slope shall be replaced and re-compacted to a minimum of

90% of maximum density. The bottom of the pond does not require lining. Vegetation and cottonwood trees may be planted in the pond bottom upon approval of the City Storm Drain Maintenance Engineer.

4.3 Athletic Fields One and Two

These basins receive runoff infrequently and drain rapidly. Therefore, offsite migration is unlikely, and a liner is unnecessary.

4.4 Athletic Field Three

This basin will receive a significant runoff during the 50-year, 24-hour storm. The maximum water depth during the 50-year storm is 7 feet. Due to the amount of water stored in the pond during the 50-year storm and the existence of a structure near the southwest corner of the pond, an impermeable liner shall be installed to prevent offsite migration of water to the structure. The liner shall be placed along the entire length of the western slope of the pond and the western half (1/2) of the southern slope of the pond. See Figure 2 for extents of lining required in Athletic Field 3. The liner shall extend to a height of 7 feet above the pond bottom and a minimum of 3 feet vertically below the bottom of the pond. On the side-slopes a minimum of 1 foot of cover is required to prevent damage during maintenance operations. The liner shall be anchored at the top of the slope by dropping the liner a minimum of 2 feet vertically into the compacted slope. The soil disturbed by anchoring the liner into the slope shall be replaced and re-compacted to a minimum of 90% of maximum density.

4.5 Controlled Release Basin

This basin will receive runoff regularly and shall be completely lined. The impermeable liner shall be installed on the bottom of the basin and on all sides to a height of 8 feet from the bottom of the pond. A minimum of 3 feet of fill shall be placed over the liner on the bottom of the pond to enable the vegetation to root and to prevent damage to the liner during maintenance operations. On the side-slopes a minimum of 1 foot of cover is required to prevent damage during maintenance operations. The liner shall be anchored at the top by dropping the liner a minimum of 2 feet down vertically into the top of the slope.

4.6 Observation and Testing

A qualified Geotechnical Engineer or his representative shall observe installation of the impermeable liner. The observation is to confirm that the installation is in accordance with the manufacturer's specifications. Testing will be at the discretion of the Geotechnical Engineer or his representative.

5.0 Earthwork

Earthwork shall be performed in accordance with procedures outlined in these specifications and Appendix B. Side slopes in the ponds shall be no steeper than 3:1 (horizontal:vertical). The following are earthwork specifications for the site. Detailed earthwork procedures are presented in Appendix B.

5.1 Clearing and Grubbing

Prior to placing structural fill, all borrow and fill areas shall be stripped of vegetation and deleterious materials. All strippings shall be hauled offsite or utilized in landscaped areas.

5.2 Excavation

It is anticipated that on site soils can be excavated with conventional earthwork equipment. Occasional cobbles or boulders may be encountered during excavation. Cobbles and boulders should be disposed of offsite or utilized for landscaping. Cobbles and boulders shall not be placed in structural fill.

5.3 Natural Ground Preparation

Prior to placing structural fill and subsequent to final grading in cut areas, the exposed soils shall be scarified to a depth of 8 inches and moisture conditioned to a near optimum (±3%) moisture content. The exposed soils shall then be compacted to 90% of maximum density as determined by ASTM D-1557. If vibratory compaction poses a threat to nearby structures, static compaction shall be utilized.

5.4 Fill Placement and Compaction

Structural fill shall be placed in horizontal lifts a maximum of 8 inches in loose thickness, moisture shall be conditioned to near optimum moisture content and mechanically compacted. Fill shall be compacted to a minimum of 90% of maximum dry density as determined by ASTM D-1557. Fill above the synthetic liner shall be compacted to 90% of maximum density as determined by ASTM D-1557.

5.5 Fill Material

Fill material over the liner shall conform to the vendor's specifications.

5.6 Trenches and Excavations

All trenches greater than 4 feet in depth shall be sloped, shored or braced or otherwise supported according to OSHA Construction and Safety Standards. Material excavated from the trench or spoil shall be placed a minimum of two feet from the edge of the excavation. The spoil shall be retained in an effective manner such that no loose material can fall into the excavation.

Temporary construction excavations less that eight feet in depth shall be sloped no steeper than 1-1/2:1 (horizontal:vertical). If deeper excavations are required, the

Geotechnical Engineer shall be contacted for recommendations. Limited raveling of slopes will occur particularly as the exposed soils dry out. Heavy equipment and material stockpiles shall be located a minimum of 5 feet from the top of the slope.

5.7 Observation and Testing

Placement and compaction of structural fill should be observed and tested by a qualified Geotechnical Engineer or his representative. The Geotechnical Engineer shall be responsible for implementing a testing regimen that will ensure the ponds are constructed in accordance with these specifications. The extent and frequency of the testing shall be at the discretion of the Geotechnical Engineer.

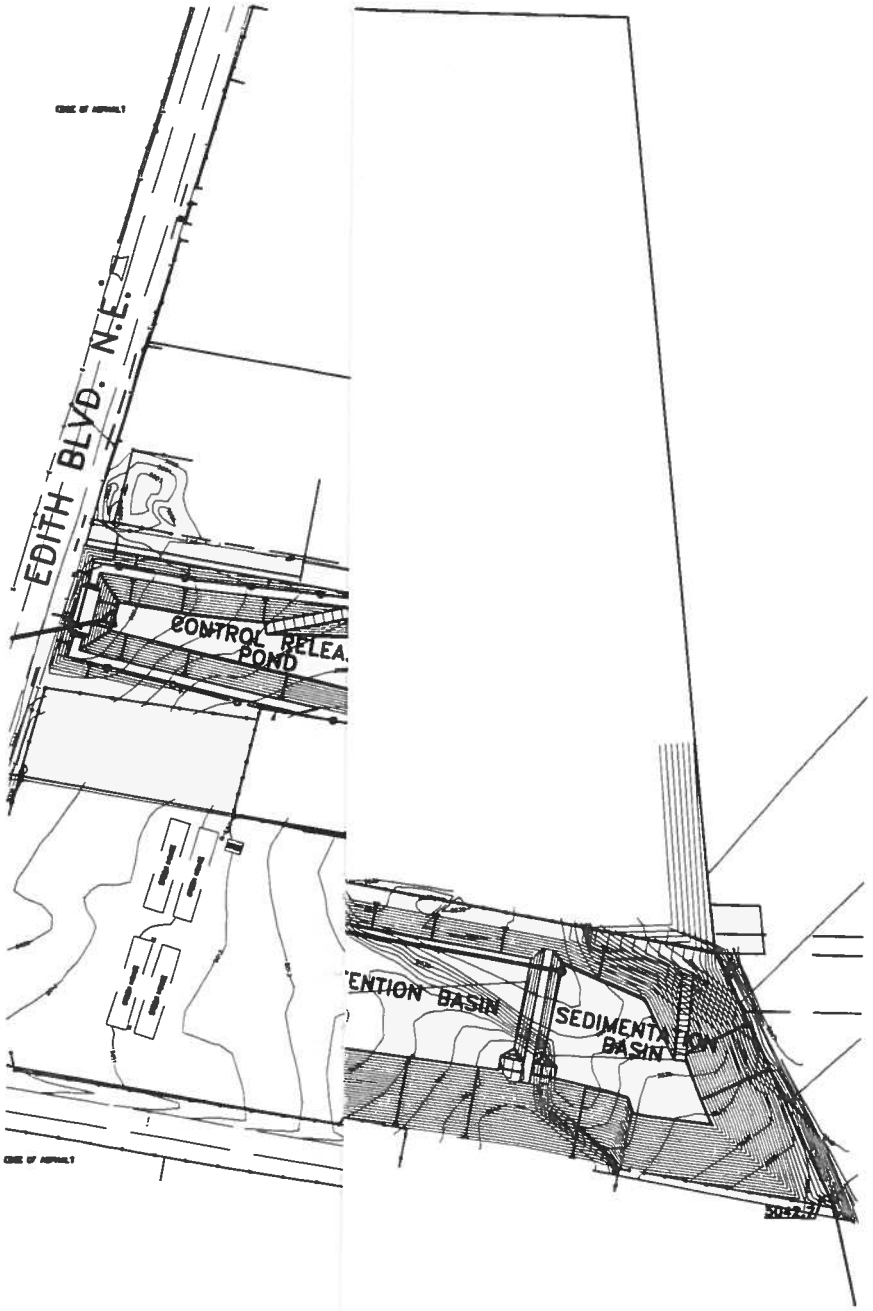


FIGURE 1
SITE PLAN

PB Parsons Brinckerhoff

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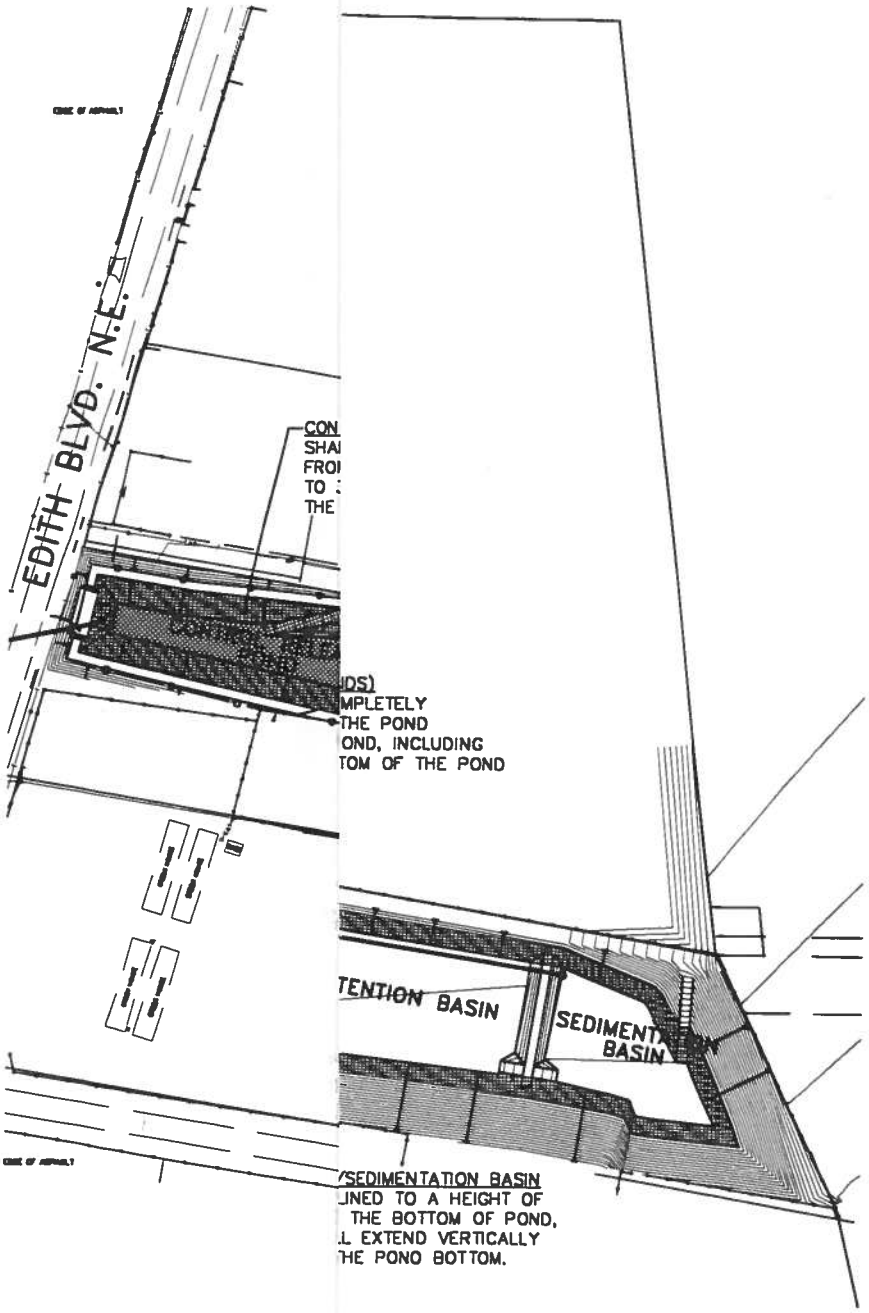

FIGURE 2

LINER PLACEMENT DISPLAY

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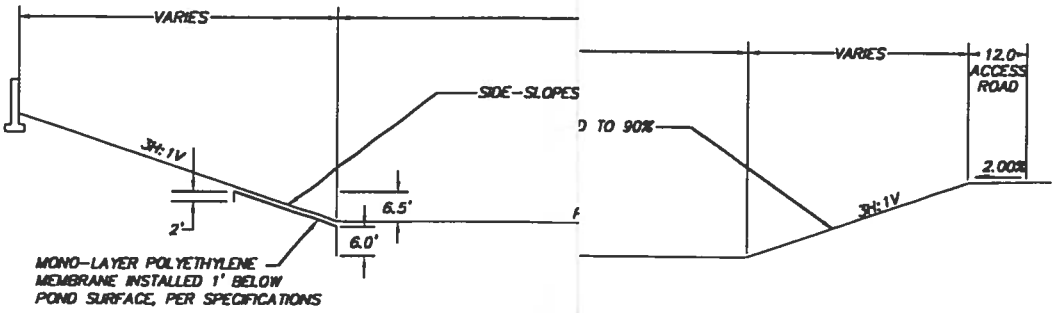

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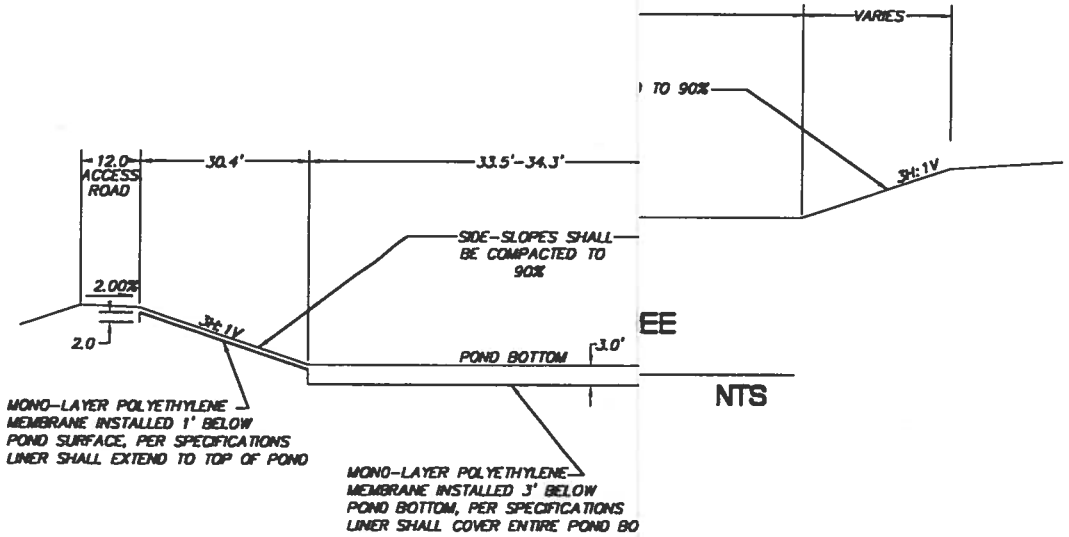

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BIO-FILTER (WETLANDS)
LOOKING WEST

FIGURE 3
POND CROSS SECTIONS

PB Parsons Brinckerhoff
5801 Osuna Rd. NE – Suite 200
Albuquerque, NM 87109 - (505) 881-5357

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APPENDIX B

EARTHWORK PROCEDURES

General

The Geotechnical Engineer shall be the Owner's representative to observe and evaluate the earthwork operations. The Contractor shall cooperate with the Geotechnical Engineer in the performance of the Engineer's duties.

Clearing and Grubbing

Prior to placing structural fill, all borrow areas and areas to receive structural fill shall be stripped of vegetation and deleterious materials. Strippings shall be hauled off-site or stockpiled for subsequent use in landscaped areas or non-structural fill areas as designated by the Owner or his representative and approved by the Geotechnical Engineer.

Site Preparation – Fill Areas

Prior to placing structural fill, the areas to be filled shall be scarified to a depth of eight inches and moisture conditioned as described below. The area to be filled shall then be compacted to a minimum of 90 percent of maximum density as determined by ASTM D-1557. If vibratory compaction techniques pose a threat to the structural integrity of nearby facilities, a static compactor shall be used. Any soft or "spongy" areas shall be removed as directed by the Geotechnical Engineer and replaced with structural fill as described herein.

Site Preparation – Cut Areas

Following excavation to rough grade, all fill areas shall be scarified to a depth of eight inches and moisture conditioned as described below. All fill areas shall be compacted to a minimum of 90 percent of maximum density as determined by ASTM D-1557. If vibratory compaction techniques pose a threat to the structural integrity of nearby facilities, a static compactor shall be used. Any soft or "spongy" areas shall be removed s directed by the Geotechnical Engineer and replaced with structural fill as described herein.

Natural Ground Preparation

Prior to placing fill or the synthetic liner soils shall be prepared, moisture conditioned and compacted as described herein.

Observation and Testing

The Geotechnical Engineer or his representative shall perform field density tests with a frequency and at the locations he feels appropriate. The Geotechnical Engineer or his representative will perform Proctor tests on representative samples of all fill material. To minimize delays the Earthwork Contractor is encouraged to submit soil samples prior to use for proctor testing.

Manufacturer's Specifications

The specifications of the synthetic liner vendor shall take precedence over this report.

				South Detention Pond System											
	Middle Detention Pond			Detention/Sedimentation Pond			Athletic Field #1		Athletic Field #2		Athletic Field #3		Control Release Pond		
Storm Event	Depth (ft)	Time (hrs.)	Volume' (ac-ft)	Depth (ft)	Time (hrs.)	Volume (ac-ft)	Depth (ft)	Volume (ac-ft)	Depth (ft)	Volume (ac-ft)	Depth (ft)	Volume (ac-ft)	Depth (ft)	Time (hrs.)	Volume (ac-ft)
1yr-24hr (0.87")	1.25	31	3.81	4.23	44	3.91	0	0	0	0	0	0	4.16	52	1.63
2yr –24hr (1.128")	1.76	–	5.44	5.02	–	5.07	1.38	0.39	0	0	0	0	5.09	–	2.18
5yr-24hr (1.474")	2.60	–	8.17	5.19	–	5.35	4.93	3.75	0	0	0	0	5.69	–	2.57
10yr-24hr (1.734")	3.26	–	10.41	5.42	–	5.71	7.01	6.17	0.40	0.16	0	0	6.16	–	2.89
25yr-24hr (2.080)	4.17	–	13.58	5.61	–	6.02	7.08	6.25	4.48	1.08	0	0	7.03	–	3.52
50yr-24hr (2.340")	5.33	–	16.09	5.86	–	6.41	7.10	6.28	5.05	5.99	2.10	1.24	7.44	–	3.81
100yr-24hr (2.600")	5.69	–	18.67	6.08	–	6.77	7.39	6.64	6.13	6.10	7.00	7.96	7.87	–	4.15