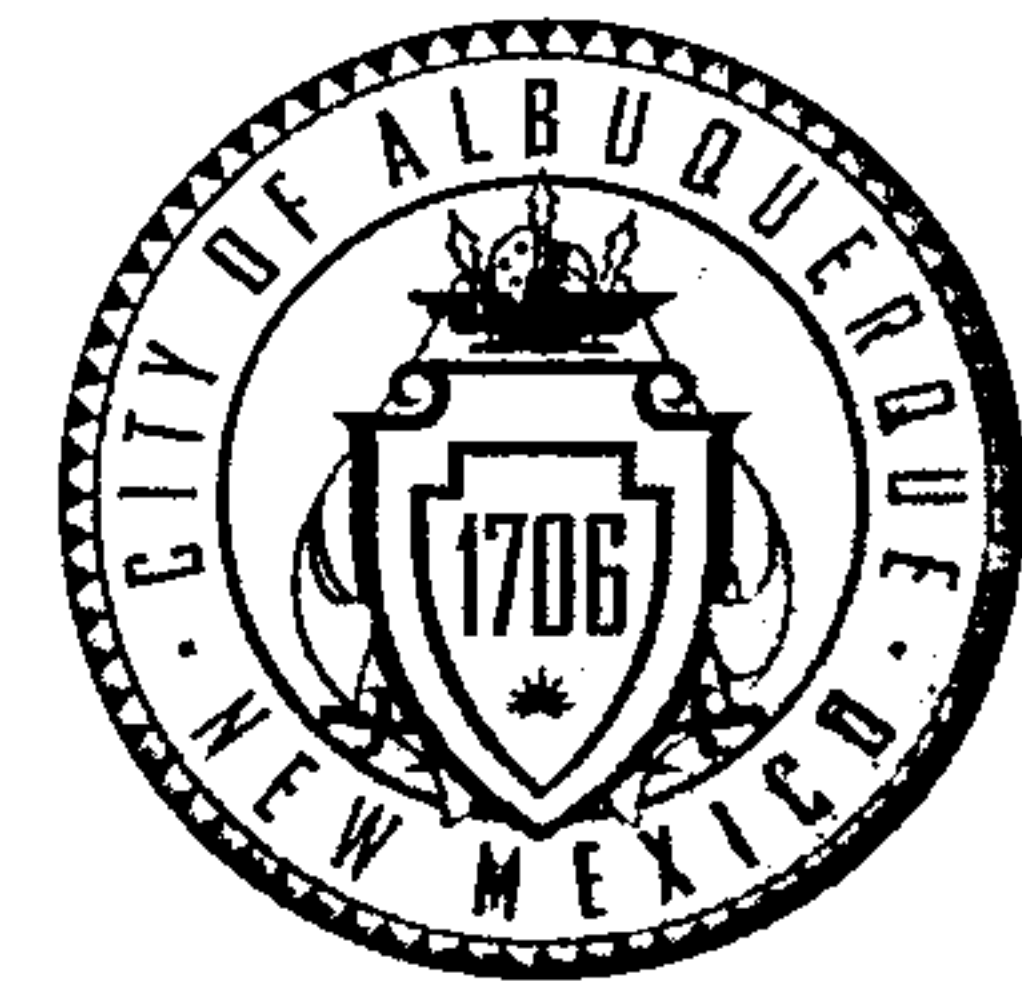


CITY OF ALBUQUERQUE



March 26, 2015

Patrick J. Conley, P.E.
Smith Engineering Company
2201 San Pedro NE
Albuquerque, New Mexico 87103

**RE: Sandia Prep School Running Track Reconstruction
532 Osuna Rd. NE
Grading and Drainage Plan
Engineers Stamp Date 3/13/15 (E16D012)**

Dear Mr. Conley,

Based upon the information provided in your submittal received 3/17/15, this plan is approved for Grading Permit and Paving Permit.

Please attach a copy of this approved plan to the construction sets in the permitting process prior to sign-off by Hydrology.

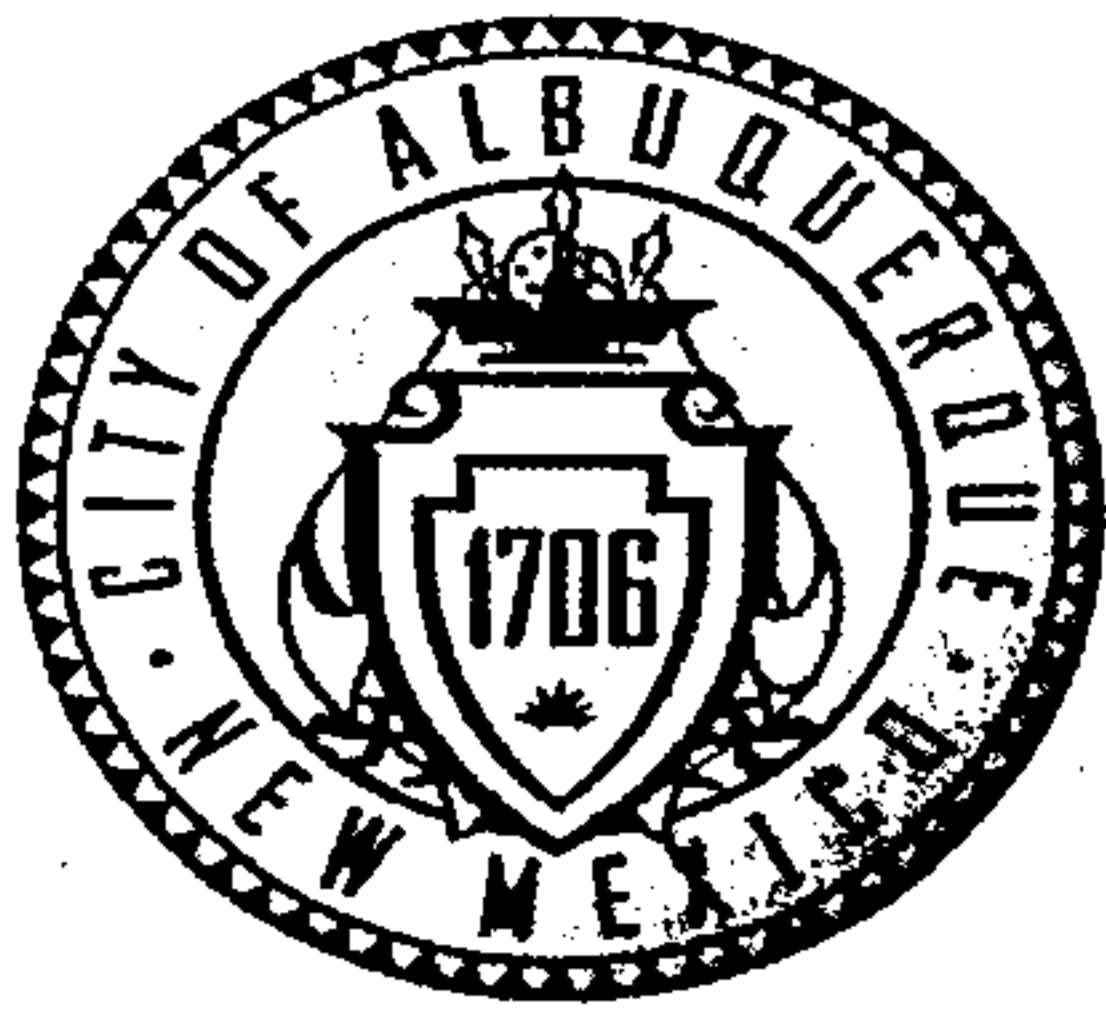
When completed please provide a copy of the as-build for our records.

If you have any questions, please contact me at 924-3695 or Rudy Rael at 924-3977.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

RR/RH
C: File



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

ELI 0012

Project Title: Sandia Prep. School Running Track Reconstruct Building Permit #: N/A City Drainage #: N/A
DRB#: Not applicable EPC#: Not applicable Work Order#: Not applicable

Legal Description: _____

City Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Engineering Firm: Smith Engineering Company

Contact: Patrick J. Conley, PE

Address: 2201 San Pedro NE, Bldg 4, Suite 200, Albuquerque, NM 87110

Phone#: 505-884-0700

Fax#: 505-884-2376

E-mail: patc@smithengineering.pro

Owner: Sandia Preparatory School

Contact: Jerry Lovato

Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Phone#: 505-338-3000

Fax#: 505-338-3099

E-mail: _____

Architect: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Surveyor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Contractor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

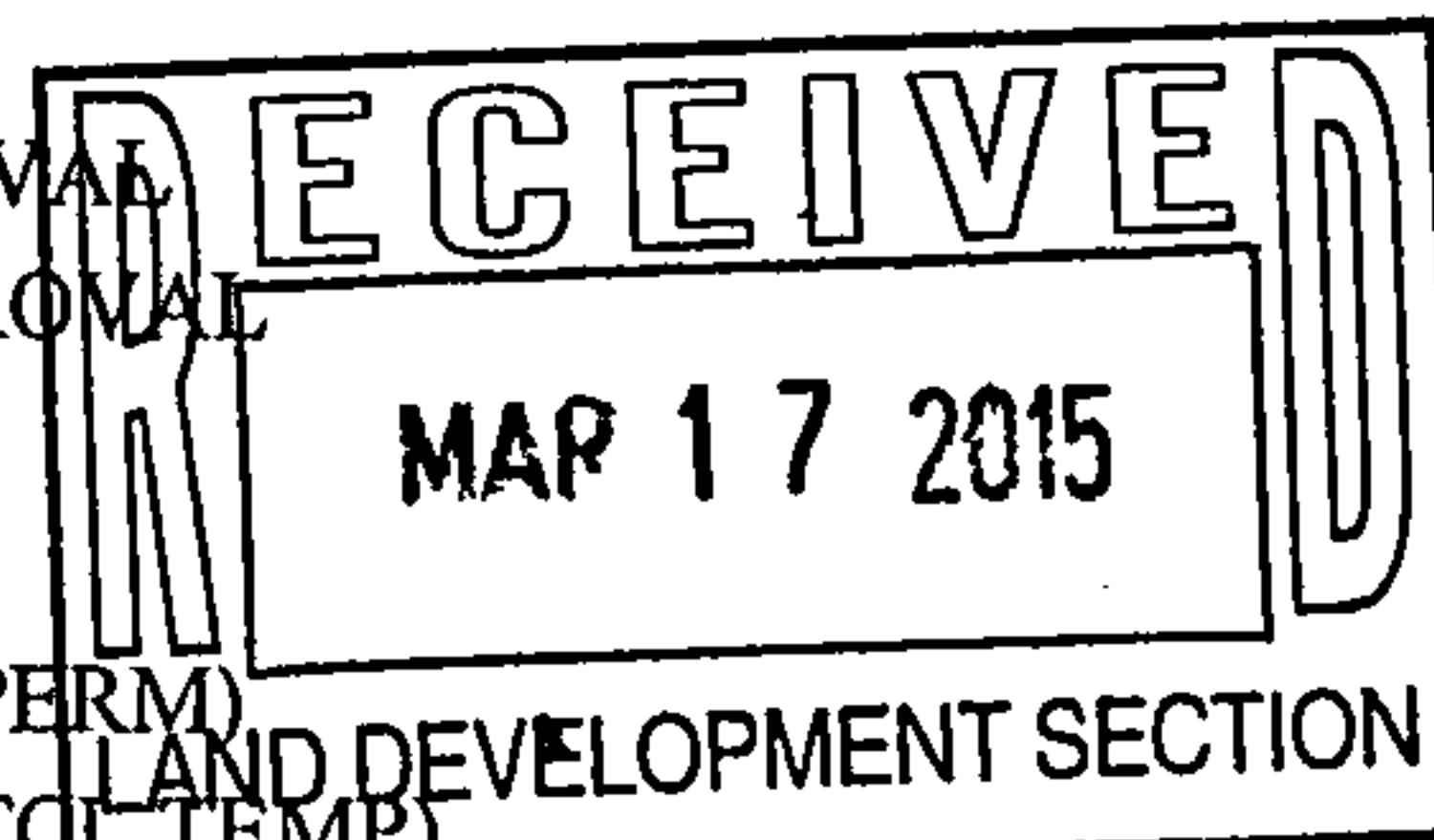
E-mail: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☒ GRADING PLAN
- ☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEER'S CERT (TCL)
- ☐ ENGINEER'S CERT (DRB SITE PLAN)
- ☐ ENGINEER'S CERT (ESC)
- ☐ SO-19
- ☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM)
- ☐ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ GRADING CERTIFICATION
- ☐ SO-19 APPROVAL
- ☐ ESC PERMIT APPROVAL
- ☐ ESC CERT. ACCEPTANCE
- ☐ OTHER (SPECIFY) _____



As verified

WAS A PRE-DESIGN CONFERENCE ATTENDED: Yes ☒ No ☐ Copy Provided

DATE SUBMITTED: 03/13/2015 By: Patrick J. Conley, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

DESCRIPTION	LAND USE, %				TOTAL AREA, AC	LAND USE AREA, ACRE				1.56	2.28	3.14	4.7	TOTAL CFS
	A	B	C	D		A	B	C	D	A	B	C	D	
NORTH SIDE TRACK	0	75	0	25	0.2	0.00	0.15	0.00	0.05	0.00	0.34	0.00	0.24	0.58
SOCCER/TRACK	0	49	0	51	2.14	0.00	1.05	0.00	1.09	0.00	2.39	0.00	5.13	7.52
NORTH SIDE TRACK	0	0	75	25	0.21	0.00	0.00	0.16	0.05	0.00	0.00	0.49	0.25	0.74
PAVING AND DIRT AREA	0	0	68	32	1.2	0.00	0.00	0.82	0.38	0.00	0.00	2.56	1.80	4.37
1.57										TOTAL FLOW AT WATER QUALITY BERM ON NORTH SIDE OF BASEBALL FIELD				
SOUTH SIDE														
SOCCER/TRACK	0	71	0	29	1.39	0.00	0.99	0.00	0.40	0.00	2.25	0.00	1.89	4.14
NORTH SIDE TRACK	0	0	93	7	0.79	0.00	0.00	0.73	0.06	0.00	0.00	2.31	0.26	2.57
										TOTAL FLOW TO SW CORNER OF TRACK				6.71

WILL BE RETAINED IN AN EXISTING PONDING AREA AND WILL PERCOLATE

TABLE 2: FIRST FLUSH RUNOFF CALCULATED FOR DIFFERENCE IN LAND USE

TOTAL INCREASE IN "D" AREA, SF	30,056
VOLUME OF RUNOFF FOR 0.34 INCHES OF RAINFALL, CU. FT.	852

Pat Conley

From: Unknown
Sent: Tuesday, March 17, 2015 9:28 AM
To: 'ccherne@cabq.gov'
Subject: Sandia Preparatory School Track Reconstruction G&D submittal
Attachments: excess volume calcs for 0.34 inches of rain.xlsx; grading permit resubmittal to coa 031315.pdf; runoff calcs.xlsx; Sandia Track Drainage Drawings 03132015.pdf; sps running track reconstruction drainage submittal 031315.pdf

Curtis,

Attached are the electronic files for the G&D re-submittal for the Sandia Prep Track Reconstruction. It includes excel spreadsheet for the calculations as well as pdf's of the plan sheets and the application for review.

Please let me know if you have any questions.

Thanks

Patrick J. Conley, P.E.
Principal Engineer
Tel: 505.884.0700 x5597 Fax: 505.884.2376
2201 San Pedro Drive NE, Bldg 4, Suite 200, Albuquerque, NM 87110

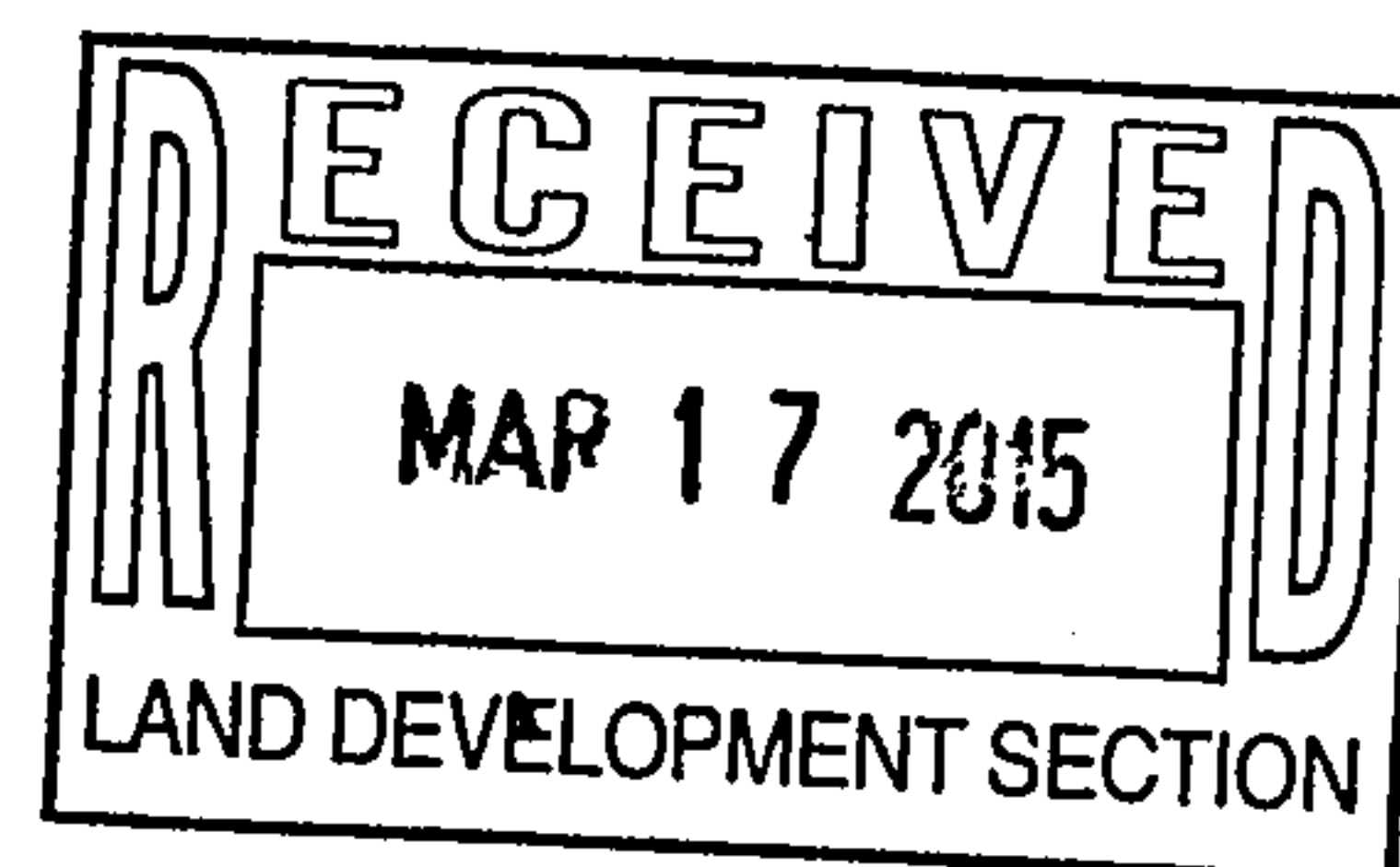


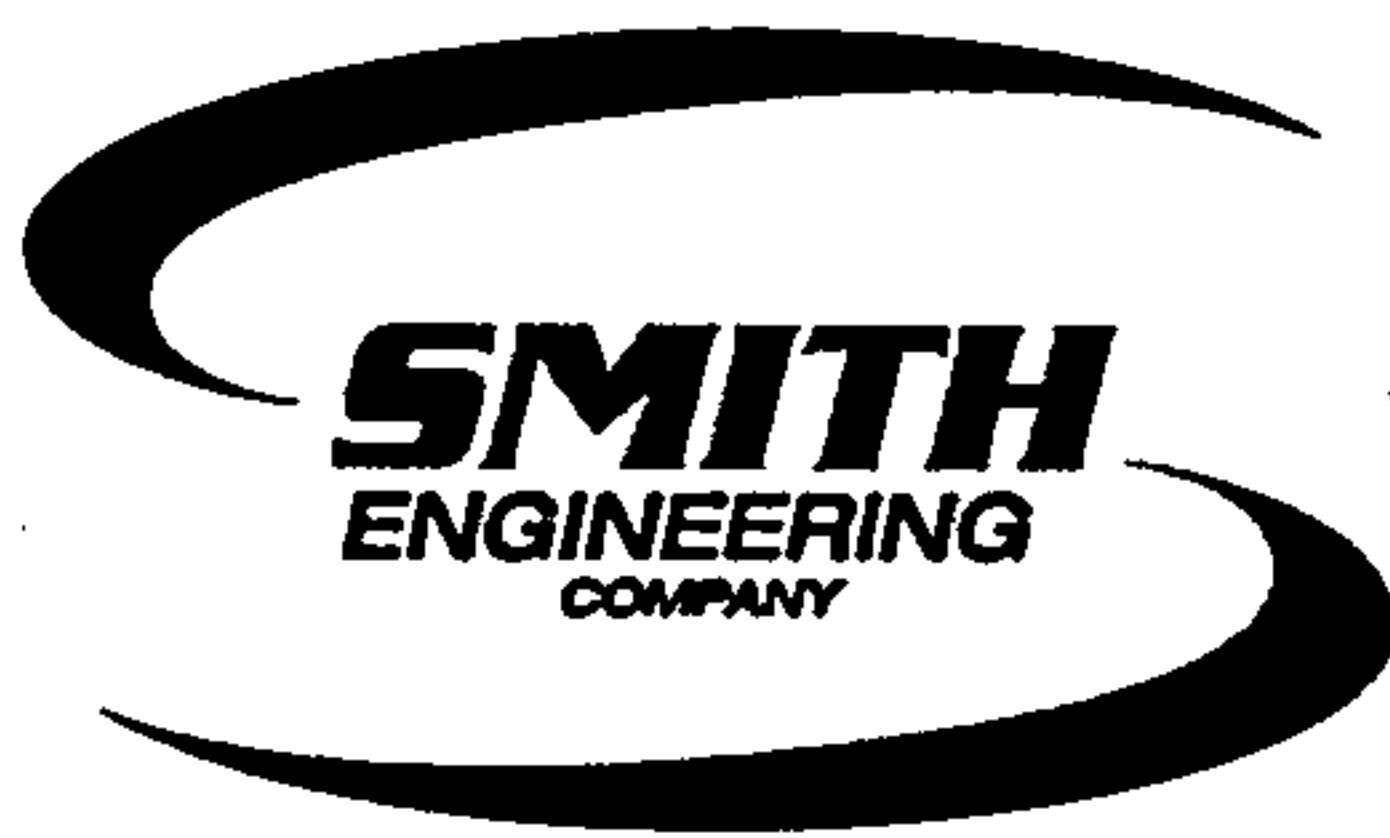
Solutions for Today... Vision for Tomorrow

* Water/Wastewater * Solid Waste * Drainage * Hydrology * Transportation * Structural * Surveying * Site Engineering * Materials Testing * Construction Management *

www.smithengineering.pro

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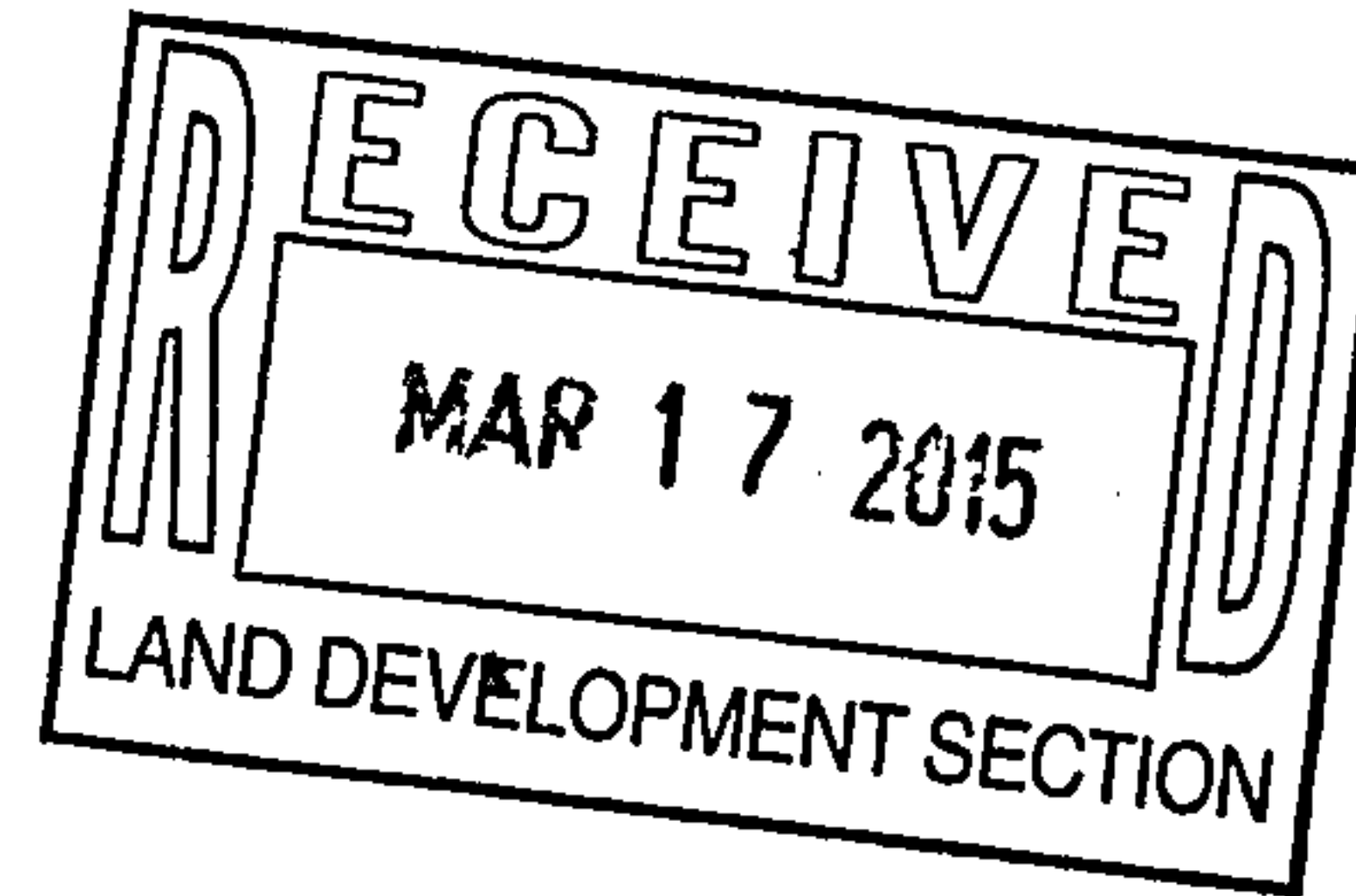


Solutions for Today...

Vision for Tomorrow

March 13, 2015

Mr. Curtis Cherne, PE
Principal Engineer, Planning Department
City of Albuquerque Planning Department
600 2nd Street NW, Suite 201
Albuquerque, NM 87102



**Re: Sandia Preparatory School Running Track Reconstruction
3rd Re-submittal
Smith Project #114653**

Dear Mr. Cherne:

Smith Engineering is providing this re-submittal for the grading plan for review and approval by the City of Albuquerque for a Grading Permit. The project includes the reconstruction of an existing running track on the grounds of the Sandia Preparatory School. There will not be any work within the City of Albuquerque right-of-way. We have reviewed the existing drainage file provided by the City and have modified the drainage plan based on the information in those files. This re-submittal addresses the items that you provided comments on in your February 11, 2015 review letter. These have been addressed as follows:

- We have included revised Sheet 4 and revised Sketch "A" to reflect the runoff moving to the existing pond at the Alameda drain and the associated calculations.
- We have included Sheet 6.2 showing the grading for the track and adjacent affected areas.
- We have included the Sheet 7 showing the piping under the shot put area. This also shows the layout of the headwalls in the shot put area.
- We have included the Sheet 10 showing the catch basins, pipe sizes and slopes that make up the drain system.
- We have included the Sheet 11 showing details for the headwalls for the north system. The south system will discharge directly to an existing concrete lined low flow swale.

We are providing electronic copies of the calculations with the email submittal for your use.

I have attached a Drainage and Transportation Information Sheet with one (1) copy each of the Drainage Plan, Sketch A, and Sheets 4, 6.2, 7, 10, and 11 for your review. Thank you in advance for your time and please let me know if you have any questions or if you need additional information.

Sincerely,

Smith Engineering Company

Patrick J. Conley, PE
Project Engineer

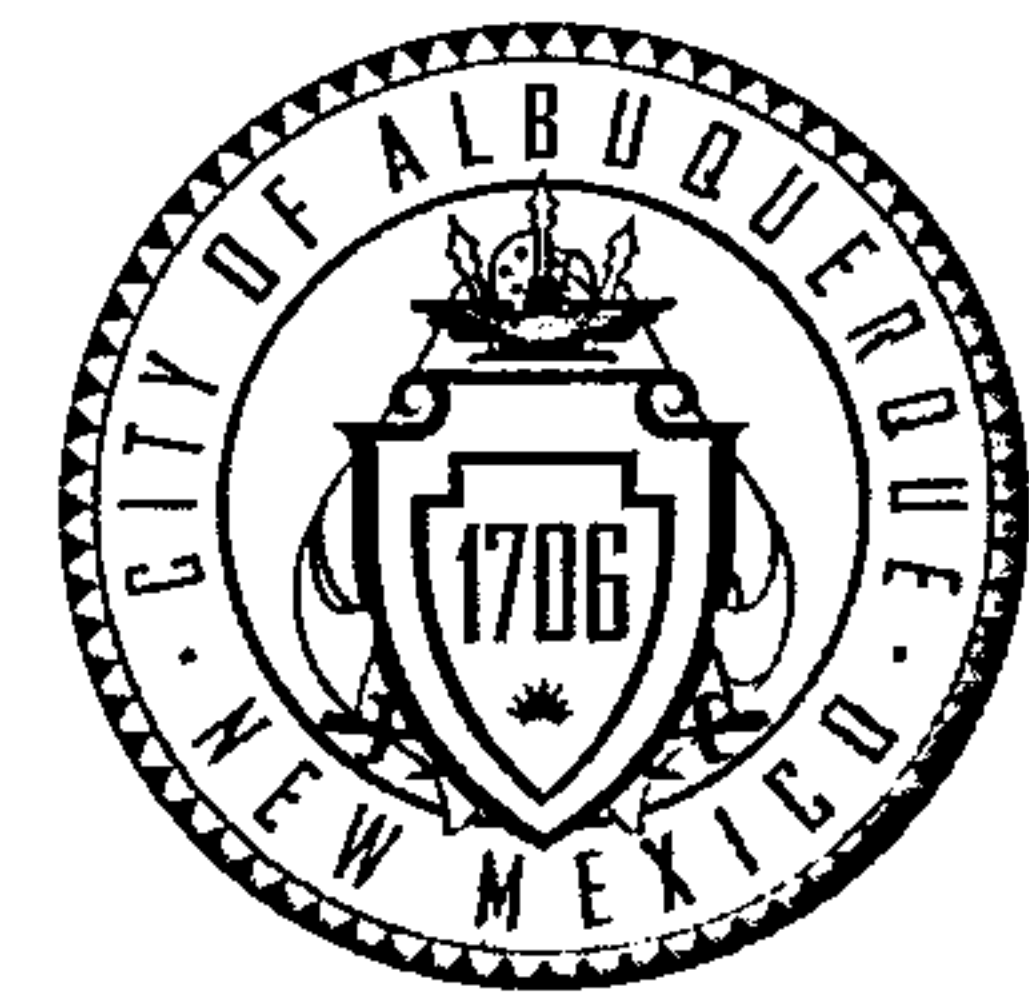
Enclosure

2201 San Pedro Drive, NE
Tel: 505.884.0700

Building 4, Suite 200
PatC@smithengineering.pro

Albuquerque, NM 87110
Fax: 505.884.2376

CITY OF ALBUQUERQUE



February 11, 2015

Patrick J. Conley, P.E.
Smith Engineering Company
2201 San Pedro NE, Bldg. 4 Suite 200
Albuquerque, New Mexico 87114

**RE: Sandia Prep School, Running Track Reconstruct
Grading and Drainage Plan
Engineers Stamp Date 1/21/15 (E16-D012)**

Dear Mr. Conley,

Based upon the information provided in your submittal received 1/21/2015, the above referenced Grading and Drainage Plan cannot be approved for Grading Permit until the following comments are addressed.

- Build notes are needed for the sizes of piping, inlets. Inverts are needed for theses inlets. Are the small dark squares inlets for the drainage system?
- Details are needed for the discharge points for the track drains in the north and south.
- Lighter fonts in the legend calling out existing drain systems or other existing items are needed.
- A build note is needed for the piping underneath the shot put area. It appears that the swale is in the middle of this area above ground.
- Details are needed for the head walls at the shot put area.
- Why is sub basin D-1-A at a 45 degree angle at the west end when the high point is in the middle of the soccer field extending through the entire field. Does this change the amount of runoff going into the two different ponds north and south of the baseball field?
- It appears as though a ponding area just to the north of the Concession/Restroom building. Is this ponding area needed?

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

If you have any questions please contact me at 924-3986 or Rudy Rael at 924-3977.

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Planning Department
Development and Review Services

RR/CC
C: File



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

E/L 0012

Project Title: Sandia Prep. School Running Track Reconstruct Building Permit #: N/A City Drainage #: N/A
DRB#: Not applicable EPC#: Not applicable Work Order#: Not applicable

Legal Description: _____

City Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Engineering Firm: Smith Engineering Company

Contact: Patrick J. Conley, PE

Address: 2201 San Pedro NE, Bldg 4, Suite 200, Albuquerque, NM 87110

Phone#: 505-884-0700

Fax#: 505-884-2376

E-mail: patc@smithengineering.pro

Owner: Sandia Preparatory School

Contact: Jerry Lovato

Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Phone#: 505-338-3000

Fax#: 505-338-3099

E-mail: _____

Architect: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Surveyor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Contractor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

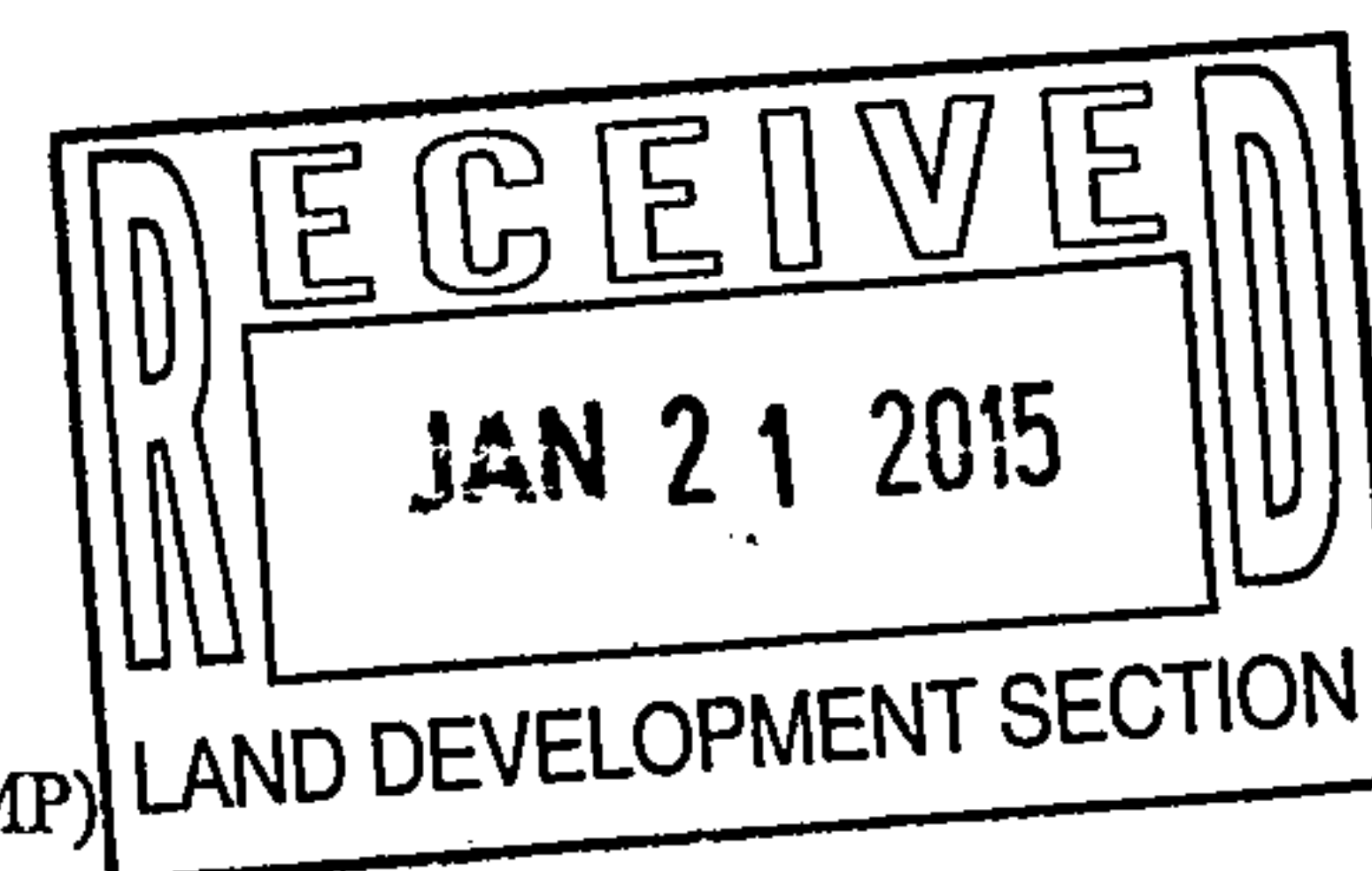
E-mail: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ ENGINEER'S CERT (ESC)
☐ SO-19
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TCL TEMP)
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ GRADING CERTIFICATION
☐ SO-19 APPROVAL
☐ ESC PERMIT APPROVAL
☐ ESC CERT. ACCEPTANCE
☐ OTHER (SPECIFY) _____



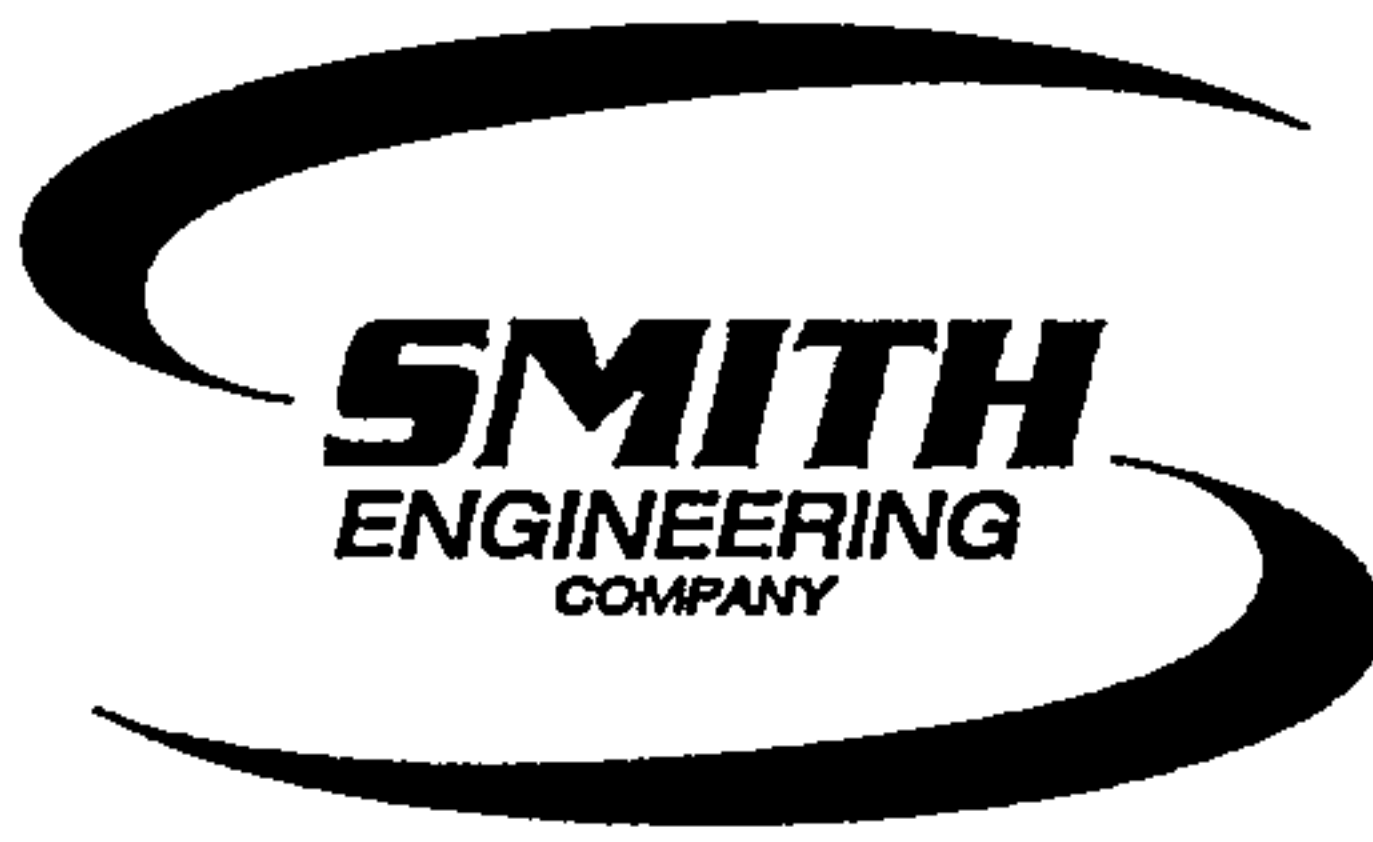
WAS A PRE-DESIGN CONFERENCE ATTENDED: Yes ☒ No ☐ Copy Provided ☐

DATE SUBMITTED: 01/20/2015

By: Patrick J. Conley, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development



Solutions for Today...

Vision for Tomorrow

January 20, 2015

Ms. Amy L. D. Niese, PE
Senior Engineer Hydrology
City of Albuquerque Planning Department
600 2nd Street NW, Suite 201
Albuquerque, NM 87102

**Re: Sandia Preparatory School Running Track Reconstruction
2nd Re-submittal
Smith Project #114653**

Dear Ms. Niese:

Smith Engineering is providing this re-submittal for the grading plan for review and approval by the City of Albuquerque for a Grading Permit. The project includes the reconstruction of an existing running track on the grounds of the Sandia Preparatory School. There will not be any work within the City of Albuquerque right-of-way. We have reviewed the existing drainage file provided by the City and have modified the drainage plan based on the information in those files. This re-submittal addresses the items that you provided comments on in your January 6, 2015 review letter. These have been addressed as follows:

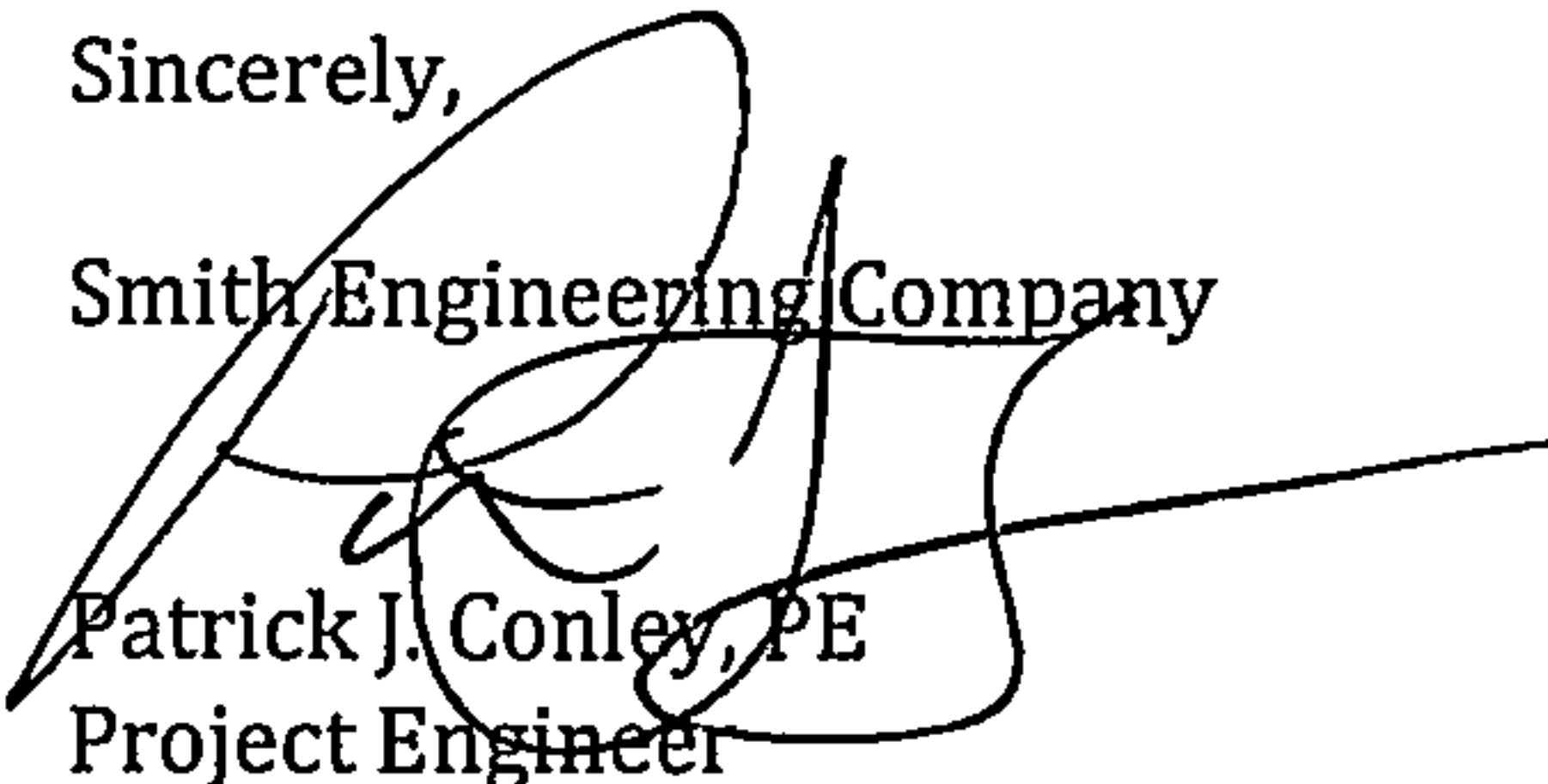
- Item 1: Runoff rates have been calculated for the total flow that will reach the proposed Water Quality Berm including the flows that will be generated from the existing baseball field.
- Item 2: Calculations are provided that show the flow depth over the berm during the 100-Year event. It should be noted that there will be some flow spread onto the baseball field but that this is acceptable to the school. That flow will be shallow sheet flow with low velocity on a turfed field and will not produce erosion.
- Item 3: We are providing electronic copies of the calculations with the email submittal for your use.

We have added a Sketch A that shows the flow patterns from the baseball field as well as to provide a runoff rate from the field that will be directed to the Water Quality Berm.

I have attached a Drainage and Transportation Information Sheet with one (1) copy each of the Drainage Plan and Sketch A for your review. Thank you in advance for your time and please let me know if you have any questions or if you need additional information.

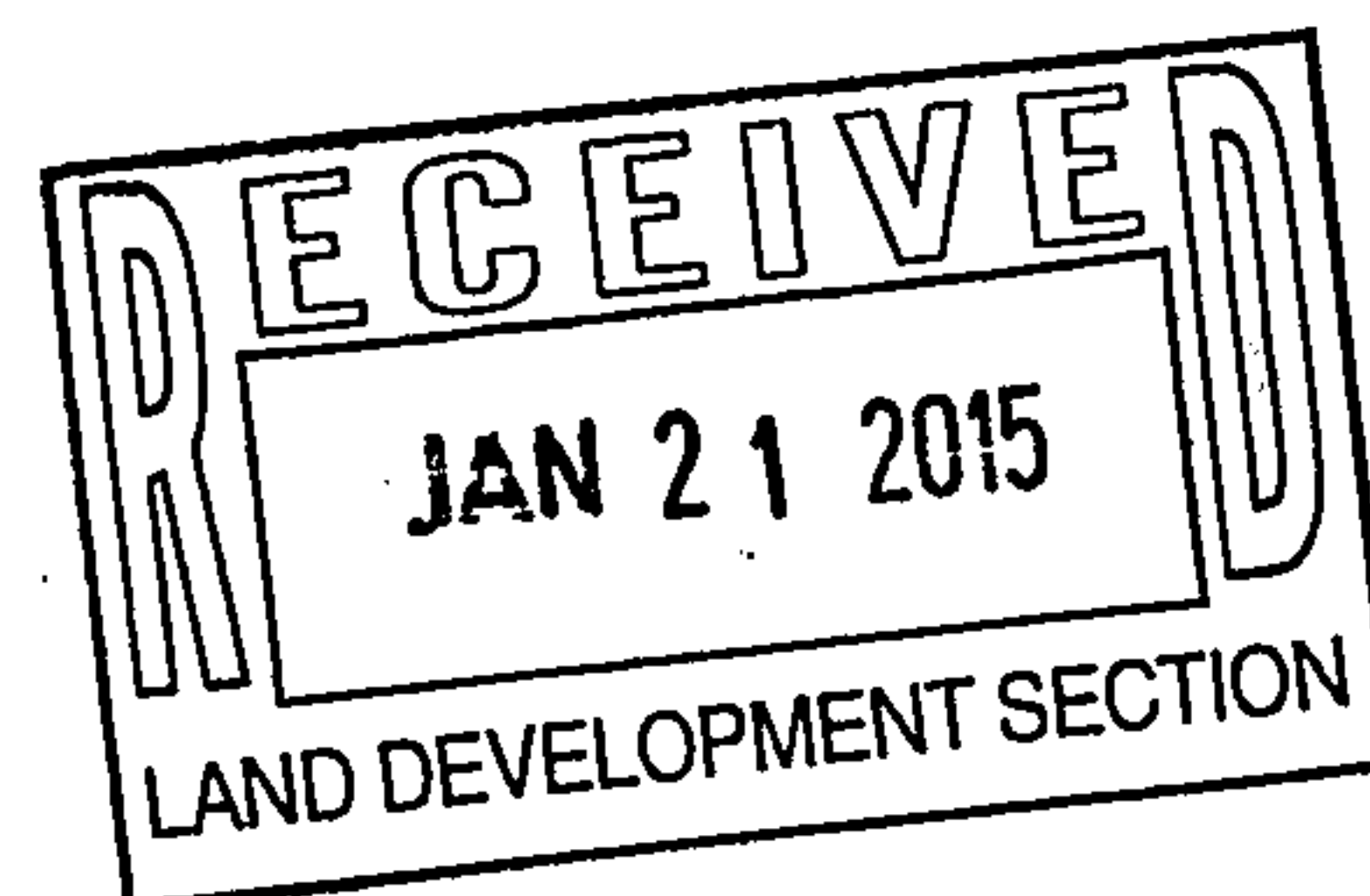
Sincerely,

Smith Engineering Company


Patrick J. Conley, PE
Project Engineer

Enclosure

cc: File



2201 San Pedro Drive, NE
Tel: 505.884.0700

Building 4, Suite 200
PatC@smithengineering.pro

Albuquerque, NM 87110
Fax: 505.884.2376

SANDIA PREPARATORY SCHOOL FIRST FLUSH BERM

NAVD 88 Contour Elevation (ft)	Contour Area (ft ²)	Incremental Depth (ft)	Cumulative Depth (ft)	Incremental Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ac-ft)
5005.21	0.00	0.00	0.00	0.00	0.00	0.0000
5006.00	432.00	0.79	0.79	170.64	170.64	0.0039
5007.00	1677.00	1.00	1.79	1054.50	1225.14	0.0281

Available storage at elevation 5007.00 exceeds required storage of 825 ft³.

Assume each 0.10 of a foot between 06 and 07 provides 124.5 ft² ((1677 ft² - 432 ft²)/10) of area to more precisely determine water surface elevation that will result in 825 ft³ of storage.

SANDIA PREPARATORY SCHOOL FIRST FLUSH BERM

NAVD 88 Contour Elevation (ft)	Contour Area (ft ²)	Incremental Depth (ft)	Cumulative Depth (ft)	Incremental Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ac-ft)
5005.21	0.00	0.00	0.00	0.00	0.00	0.0000
5006.00	432.00	0.79	0.79	170.64	170.64	0.0039
5006.10	556.50	0.10	0.89	49.43	220.07	0.0051
5006.20	681.00	0.10	0.99	61.87	281.94	0.0065
5006.30	805.50	0.10	1.09	74.33	356.27	0.0082
5006.40	930.00	0.10	1.19	86.77	443.04	0.0102
5006.50	1054.50	0.10	1.29	99.23	542.26	0.0124
5006.60	1179.00	0.10	1.39	111.68	653.94	0.0150
5006.70	1303.50	0.10	1.49	124.12	778.06	0.0179
5006.80	1428.00	0.10	1.59	136.58	914.64	0.0210
5006.90	1552.50	0.10	1.69	149.02	1063.66	0.0244
5007.00	1677.00	1.00	1.79	1054.50	1225.14	0.0281

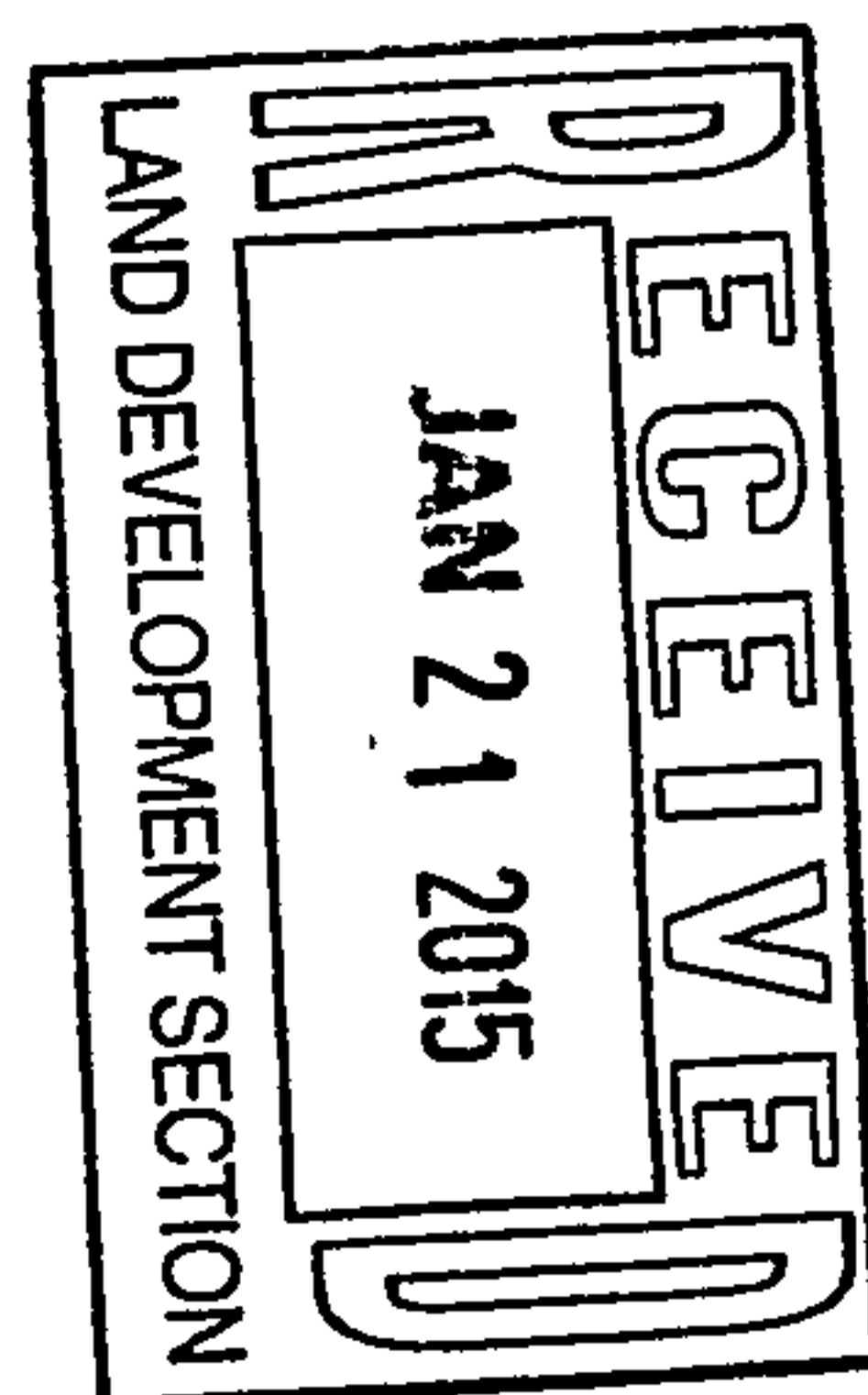
915 CF > 825 CF

Water surface elevation to store 825 ft³ is approximately 5006.80 ft.

TABLE 1: DEVELOPED FLOW CONDITIONS

BASIN NUMBER	AREA DESCRIPTION	LAND USE, %				TOTAL AREA, AC	LAND USE AREA, ACRE				RUNOFF, CFS PER ACRE PER COA DPM				TOTAL CFS	TOTAL FLOW REACHING WATER QUALITY BERM, CFS
											1.56	2.28	3.14	4.7		
NORTH SIDE		A	B	C	D		A	B	C	D	A	B	C	D		
D-1-C	NE CORNER OUTSIDE TRACK	0	0	100	0	0.15	0.00	0.00	0.15	0.00	0.00	0.00	0.47	0.00	0.47	0*
D-1-D	NORTH HALF SOCCER/TRACK	0	46	5	49	2.31	0.00	1.06	0.12	1.13	0.00	2.42	0.36	5.32	8.11	8.11
D-1-E	NW CORNER OUTSIDE TRACK	0	0	75	25	0.21	0.00	0.00	0.16	0.05	0.00	0.00	0.49	0.25	0.74	0.74
D-1-F	BASEBALL FIELD	0	85	15	0	0.87	0.00	0.74	0.13	0.00	0.00	1.69	0.41	0.00	2.10	2.10
D-2	NORTH SIDE PARKING AND DIRT AREA	0	0	64	36	1.08	0.00	0.00	0.69	0.39	0.00	0.00	2.17	1.83	4.00	4.00
TOTAL FLOW AT WATER QUALITY BERM ON NORTH SIDE OF BASEBALL FIELD																14.95
SOUTH SIDE																
D-1-A	SOUTH HALF SOCCER/TRACK	0	71	0	29	1.39	0.00	0.99	0.00	0.40	0.00	2.25	0.00	1.89	4.14	
D-1-B	SOUTH SIDE OUTSIDE TRACK	0	0	93	7	0.79	0.00	0.00	0.73	0.06	0.00	0.00	2.31	0.26	2.57	
TOTAL FLOW TO SW CORNER OF TRACK															6.71	

* RUNOFF GENERATED IN SUB-BASIN D-1-C WILL BE RETAINED IN AN EXISTING PONDING AREA AND WILL PERCOLATE



SANDIA PREPARATORY SCHOOL FIRST FLUSH BERM

NAVD 88 Contour Elevation (ft)	Contour Area (ft ²)	Incremental Depth (ft)	Cumulative Depth (ft)	Incremental Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ac-ft)
5005.21	0.00	0.00	0.00	0.00	0.00	0.0000
5006.00	432.00	0.79	0.79	170.64	170.64	0.0039
5007.00	1677.00	1.00	1.79	1054.50	1225.14	0.0281

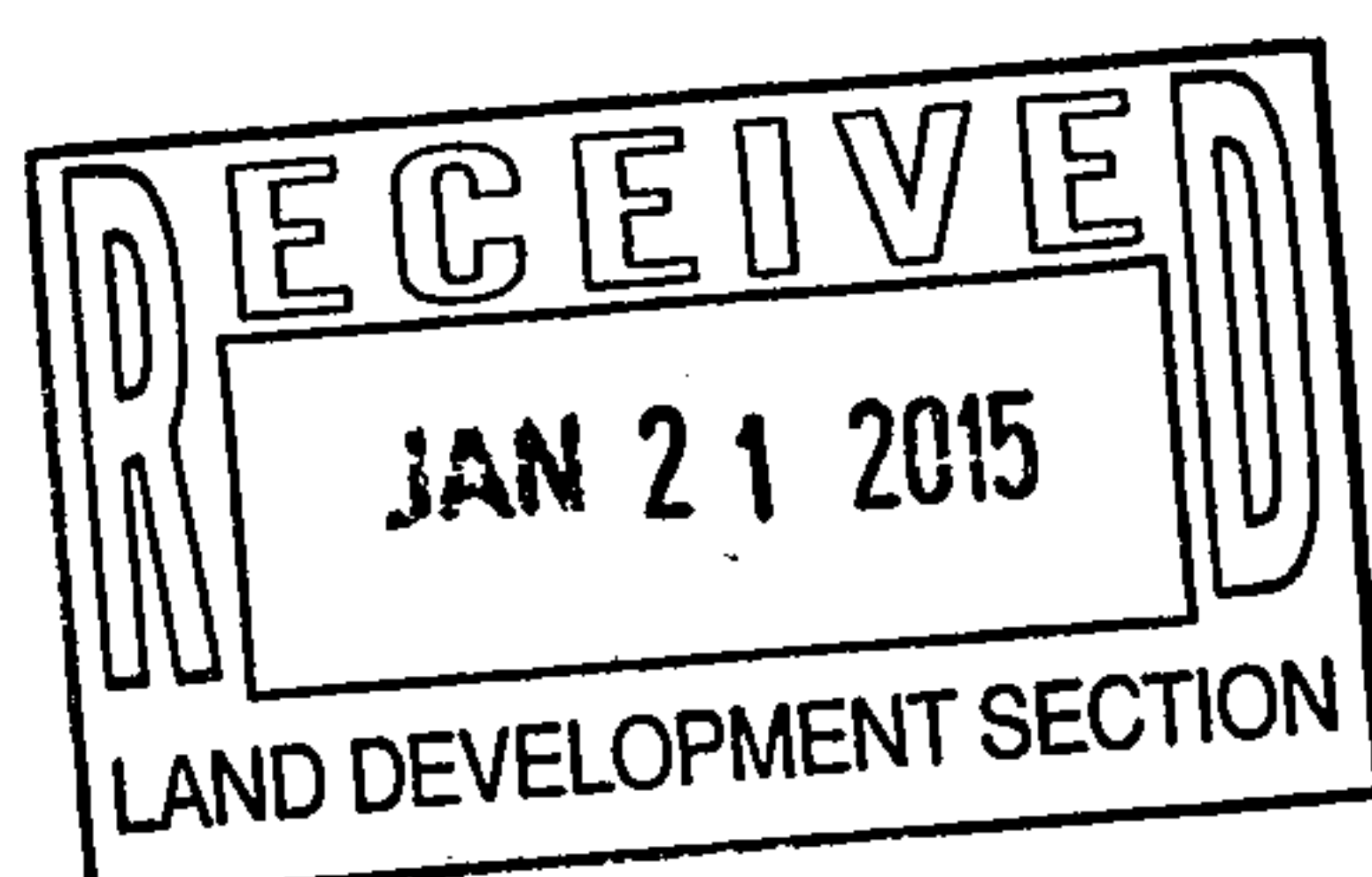
Available storage at elevation 5007.00 exceeds required storage of 825 ft³.

Assume each 0.10 of a foot between 06 and 07 provides 124.5 ft² $((1677 \text{ ft}^2 - 432 \text{ ft}^2)/10)$ of area to more precisely determine water surface elevation that will result in 825 ft³ of storage.

SANDIA PREPARATORY SCHOOL FIRST FLUSH BERM

NAVD 88 Contour Elevation (ft)	Contour Area (ft ²)	Incremental Depth (ft)	Cumulative Depth (ft)	Incremental Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ft ³)	Cumulative Average End Area Volume (ac-ft)
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5006.00	432.00	0.79	0.79	170.64	170.64	0.0039
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5006.20	681.00	0.10	0.99	61.87	281.94	0.0065
5006.30	805.50	0.10	1.09	74.33	356.27	0.0082
5006.40	930.00	0.10	1.19	86.77	443.04	0.0102
5006.50	1054.50	0.10	1.29	99.23	542.26	0.0124
5006.60	1179.00	0.10	1.39	111.68	653.94	0.0150
5006.70	1303.50	0.10	1.49	124.12	778.06	0.0179
5006.80	1428.00	0.10	1.59	136.58	914.64	0.0210
5006.90	1552.50	0.10	1.69	149.02	1063.66	0.0244
5007.00	1677.00	1.00	1.79	1054.50	1225.14	0.0281

Water surface elevation to store 825 ft³ is approximately 5006.80 ft.



Sandia Prep School Running Track Water Quality Weir

Project Description

Solve For Headwater Elevation

Input Data

Discharge	14.94	ft ³ /s
Crest Elevation	5006.80	ft
Tailwater Elevation	5005.00	ft
Crest Surface Type	Gravel	
Crest Breadth	8.00	ft
Crest Length	16.00	ft

Results

Headwater Elevation	5007.29	ft
Headwater Height Above Crest	0.49	ft
Tailwater Height Above Crest	-1.80	ft
Weir Coefficient	2.69	US
Submergence Factor	1.00	
Adjusted Weir Coefficient	2.69	US
Flow Area	7.90	ft ²
Velocity	1.89	ft/s
Wetted Perimeter	16.99	ft
Top Width	16.00	ft

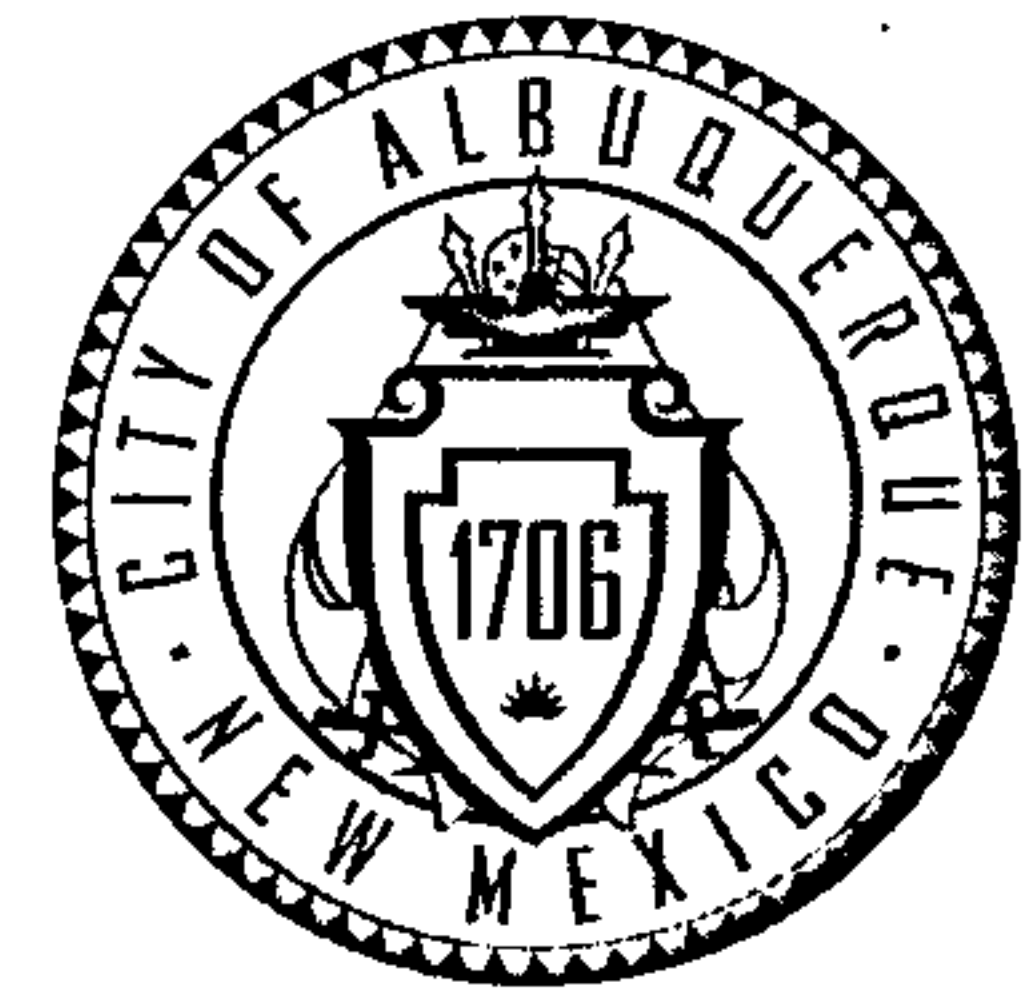


TABLE 2: FIRST FLUSH RUNOFF CALCULATED FOR DIFFERENCE IN LAND USE

TOTAL INCREASE IN "D" AREA, SF	30,056
VOLUME OF RUNOFF FOR 0.34 INCHES OF RAINFALL, CU. FT.	852



CITY OF ALBUQUERQUE



January 6, 2015

Mr. Patrick Conley, PE
Smith Engineering Company
2201 San Pedro NE,
Bldg 4, Suite 200
Albuquerque, NM 87110

**Re: Sandia Prep School Running Track Reconstruction
Drainage Plan with Engineer's Stamp Dated 12-23-14
(E16D012)**

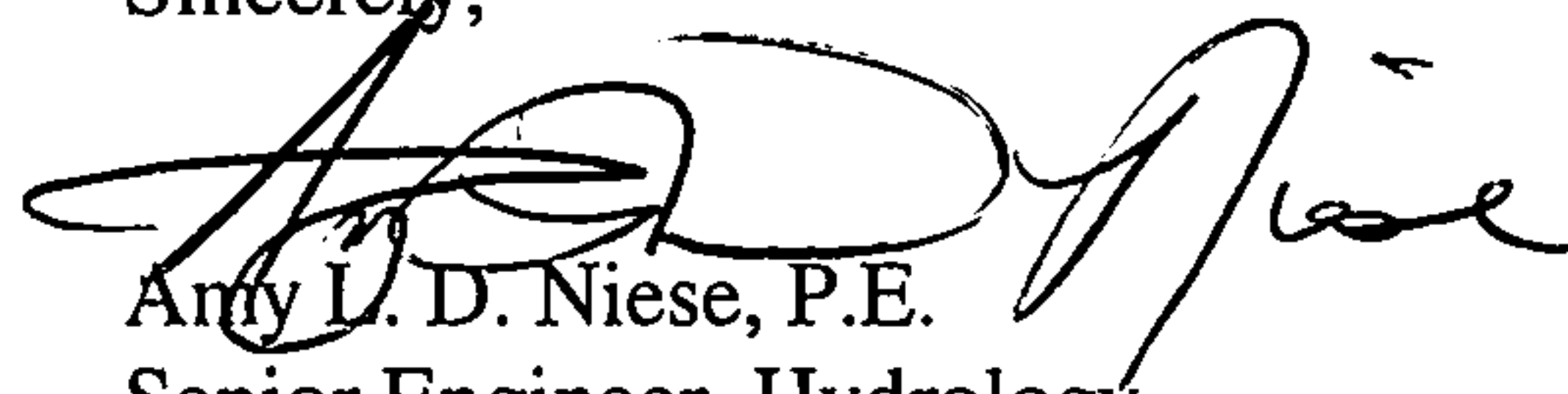
Dear Mr. Conley,

Based upon the information provided in your submittal received December 29, 2014, the above referenced plan is not approved for Grading Permit until the following comments are addressed:

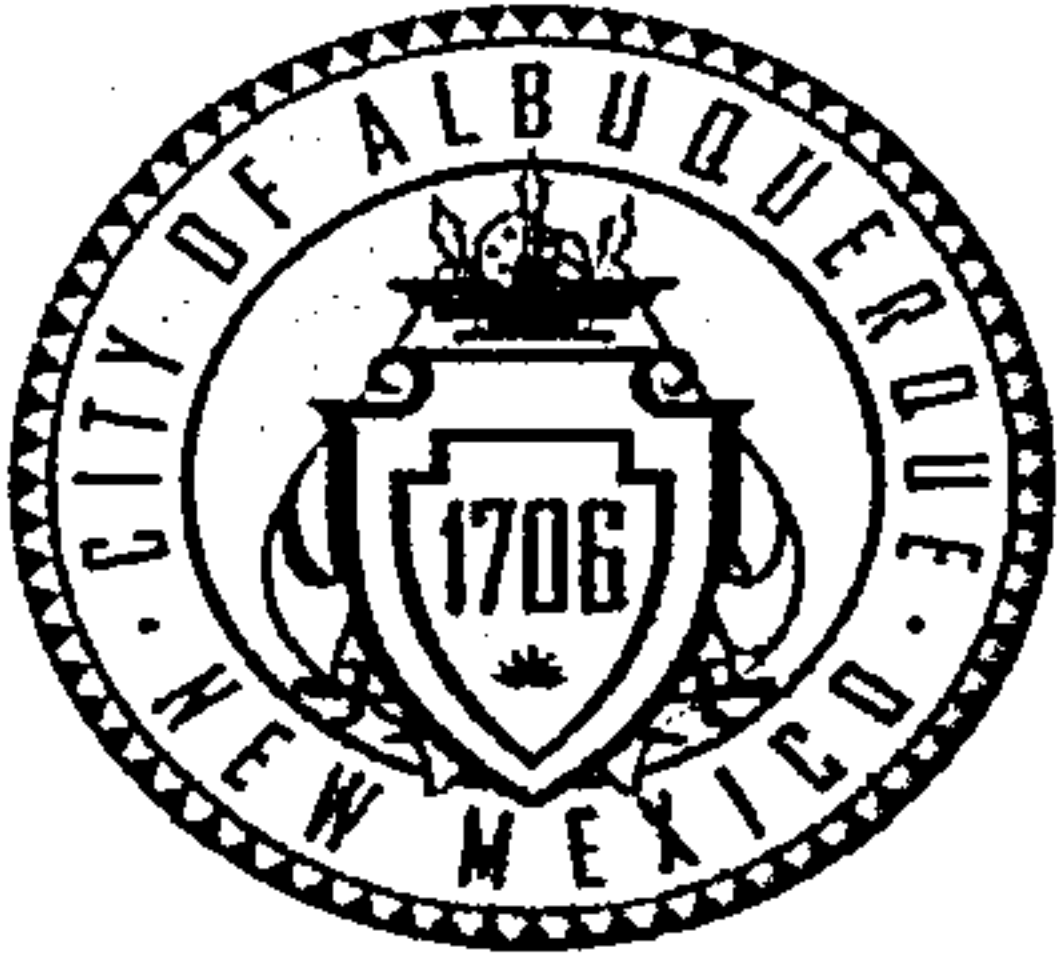
1. The 7.48 cfs is low for the northern swale. Currently, the calculations only account for the north parking lot and half the infield going into the existing swale. Although the plan shows the track itself draining to the infield, that area is not included in the flow for the infield system. The areas directly surrounding the track are not included in the flow for the swale. Although the berm is located 230 feet alongside the baseball field area, no flows are shown contributing toward swale before the proposed berm. Include a basin map and calculations that show flows from all these areas, not just the infield.
2. The proposed berm is blocking an existing swale. That was done to provide retention for the First Flush requirements. However, nothing has been provided to show once the flow tops the berm, the flow will still be contained in the remaining volume of the drainage swale as requested in the previous letter. Not enough contour information is provided on the south side of the berm to determine what will happen with the flow there. Will there be erosion of the baseball field?
3. For any additional hard copies of calculations included, provide electronic copies with the submittal as well.

If you have any questions, you can contact me at 924-3994.

Sincerely,


Amy L. D. Niese, P.E.
Senior Engineer, Hydrology
Planning Department

C: e-mail



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

E16D02

Project Title: Sandia Prep. School Running Track Reconstruct Building Permit #: N/A City Drainage #: N/A
DRB#: Not applicable EPC#: Not applicable Work Order#: Not applicable

Legal Description: _____

City Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Engineering Firm: Smith Engineering Company

Contact: Patrick J. Conley, PE

Address: 2201 San Pedro NE, Bldg 4, Suite 200, Albuquerque, NM 87110

Phone#: 505-884-0700

Fax#: 505-884-2376

E-mail: patc@smithengineering.pro

Owner: Sandia Preparatory School

Contact: Jerry Lovato

Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Phone#: 505-338-3000

Fax#: 505-338-3099

E-mail: _____

Architect: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Surveyor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Contractor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

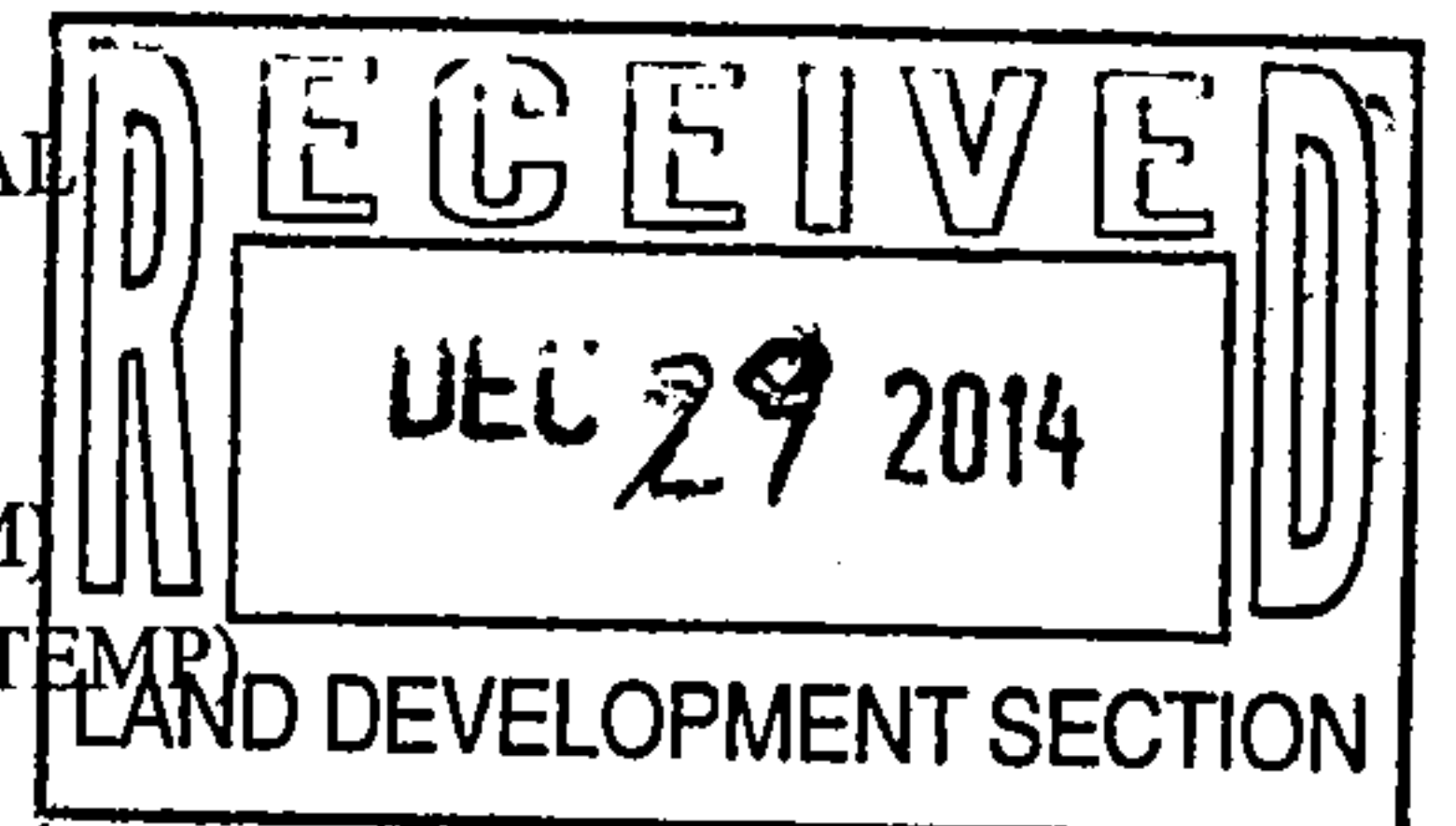
E-mail: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ ENGINEER'S CERT (ESC)
☐ SO-19
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TCL TEMP)
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ GRADING CERTIFICATION
☐ SO-19 APPROVAL
☐ ESC PERMIT APPROVAL
☐ ESC CERT. ACCEPTANCE
☐ OTHER (SPECIFY) _____



WAS A PRE-DESIGN CONFERENCE ATTENDED: _____ Yes ☒ No _____ Copy Provided

DATE SUBMITTED: 12/26/2014

By: Patrick J. Conley, PE

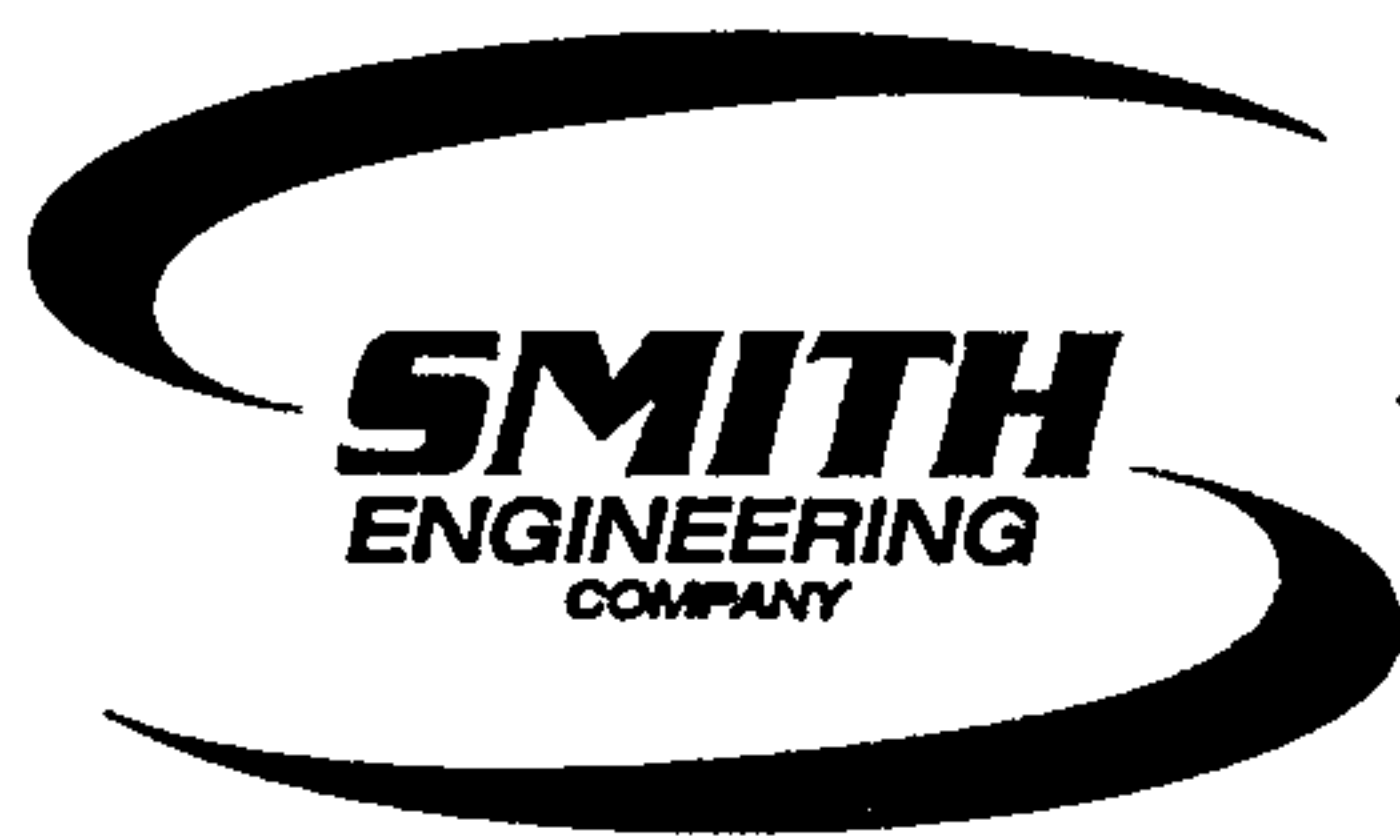
Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

$$A_0 = 0.69$$

$$Q_{out} = 36.51 \text{ CFS}$$

$$Q_{ADDL} = 1.67 \text{ CFS}$$



Solutions for Today...

Vision for Tomorrow

December 23, 2014

Ms. Amy L. D. Niese, PE
Senior Engineer Hydrology
City of Albuquerque Planning Department
600 2nd Street NW, Suite 201
Albuquerque, NM 87102

**Re: Sandia Preparatory School Running Track Reconstruction Re-submittal
114653**

Dear Ms. Niese:

Smith Engineering is providing this re-submittal for the grading plan for review and approval by the City of Albuquerque for a Grading Permit. The project includes the reconstruction of an existing running track on the grounds of the Sandia Preparatory School. There will not be any work within the City of Albuquerque right-of-way. We have reviewed the existing drainage file provided by the City and have modified the drainage plan based on the information in those files. This re-submittal addresses the items that you provided comments on in your December 19, 2014 review letter. These have been addressed as follows:

- Item 1: Discussion of 100-Year floodplain is included.
- Item 2: The first flush is re-calculated based on 0.34 inches rainfall.
- Item 3: The elevation of the WSE for the first flush is shown on the plan. Calculations in determining that elevation are provided with this letter.
- Item 4: We are not using the existing pond for retention of the first flush. The proposed berm will control the first flush.
- Item 5: The existing 10-inch storm pipe under the bleachers is shown.

I have attached a Drainage and Transportation Information Sheet with one (1) copy of the grading plan for your review. Thank you in advance for your time and please let me know if you have any questions or if you need additional information.

Sincerely,

Smith Engineering Company

Patrick J. Conley, PE
Project Engineer

Enclosure
cc: File

2201 San Pedro Drive, NE
Tel: 505.884.0700

Building 4, Suite 200
PatC@smithengineering.pro

Albuquerque, NM 87110
Fax: 505.884.2376

1/5/15

Flows to South Side of Track

1995
REPORT
MDP
BY
LORENO

AREA B (FROM G/M + EAST)	12.42
AREA C (NORTH OF BLDGS)	21.04
1/2 TRACK	2.34
PUMP HOUSE	0.07
1/2 LANDSCAPING	7.50
1/2 GRADED	<u>5.64</u>
	49.01

VIOL

G/M ADDITION + .47

HIGH MESA

DISCHARGE TO OSUNA - 6.9

2014

1/2 PROPOSED TRACK CHANGES + 0.84

43.42 CFS SOUTH SIDE TO PWD

Flows to North Side of Track

1/2 TRACK	2.34
PARKING	1.26
1/2 LANDSC	7.50
1/2 GRADING	<u>5.64</u>
	16.74 cfs v. 7.48

Sander Papp

8/15/15

If 852 mg what did he provide? (but also 750

33.29 CFS v 348?

Area C into north parking lot 21.04 CFS
Area B to Area A 12.42 CFS

33.29 CFS

Area D 26.71 CFS

Not accounting for all flow on north
including area from baseball field
(just drawing/parking lot + parking lot contribution)

the not demonstrated can pass
7.57 CFS / 16.74 CFS

TP Beam 7.50 BT 5.50 Pable of beam not
accurately representing what occurred to
D-1 should include track
Raiding some, be aware of these not
known to me can pass 7.57/16.74 CFS
they are interesting flows.

Discharge area not complete
Provide a better beam map

He needs to put air to flood baseball field
us flow called

Sandra Pupp E116 D012 Corley

12/18/14

FF

$$A_D = 0.69 \text{ AC}$$

$$0.34 \text{ IN (FT/12 IN)} (0.69 \text{ AC}) 43560 \text{ SF/AC} = 851 \text{ CF}$$

$$.44 \times A_D = 1102$$

P

He can do ~~bas~~ storage for FF

~~Why~~ ~~Term~~ ~~drawn~~ only goes to to S not 7.5

How much ~~4~~ guarding - for FF

C

Addtl 1.67 ~~4~~ not being detained

P

What zone is he using? Should be Zone 2

~~What is the~~ $P_{\text{inlet}} = 2.35$ $E_A = 0.53$ $E_B = 0.78$ $E_C = 1.13$ $E_D = 2.12$

P

Note FP

$$Q_A = 1.56 \quad Q_B = 2.28 \quad Q_C = 3.14 \quad Q_D = 4.72$$

Why not utilizing ~~and~~ exist 8" PVC drain? 94

No off-site flows

→

~~Is~~ Is berm blocking other ^{off} drainage? 33.29 ~~4~~ ⁵
Show WSE + give Vol of "

Any C areas?

+ cistern (reuse)
~~Per~~ Wetland already handling water quality

Wet Pond may have more room

Cistern ~~is~~ reducing flows to wet pond

What is going on w/ French Drain

$$\text{Dev } E_w = \frac{(0.53 \text{ in})(0) + (0.78 \text{ in})2.06 \text{ AC} + 1.13(0) + (2.12 \text{ in})(0.69)}{2.73}$$

$$= 1.463/2.73 = 1.12$$

$$V_{1006 \text{ AC}} = (E_w/12)A_T = (1.12/12)2.73 \text{ AC}(43560 \text{ SF/AC})$$

$$= 11,143 \text{ CF}$$

$$Q_p = (1.56 \text{ CFS/AC})(0) + 2.28 \text{ CFS/AC}(2.06) + 0 + 4.70(0.69)$$

$$= 7.93 \text{ CFS/AC} \sim 7.89$$

$$\text{EXIST } E_w = (0.78 \text{ in})2.73/2.73 = 10.78 \text{ in}$$

$$V_{100} = (0.78/12)2.73 \text{ AC}(43560 \text{ SF/AC}) = 7730 \text{ CF}$$

$$Q_p = 2.28 \text{ CFS/AC}(2.73 \text{ AC}) = 6.22 \text{ CFS} \checkmark$$

$$AV = 11,143 - 7730 = 3413 \text{ CF}$$

$$AQ = 1.67 \text{ CFS}$$

From MDP by handley 9/94

8" Discharge $\frac{T_0}{WV} = 8.00$ ^{10.00 surmount with}

[Carries $Q = 33.29 \text{ CFS}$] from Areas A+B

cap for 36.35 CFS

Det pond areas B, C, + D

$H_{\text{pond}} = 26,634 \text{ SF} > H_{\text{req}} 23,257$

Pond $Q_{\text{out}} \approx 36.51 \text{ CFS}$ Areas DISCHARGE

3' DEPTH FOR WETLAND SNAG

$Q_{\text{pin}} = 60.17 \text{ CFS}$

V_G + SW cul on N

V_G ON S

Runoff from Area B+C to be carried 33.29 CFS

Doesn't seem like proposed pipe was installed
not on duty to spend just short 10" + V_G

Jeff Mortensen

7/07

Field House east of current Bldg

Parking lot ~~will~~ has 37,500 ^{GAL} ~~CF~~ ^{CESTERN} (8000 CF)

Underneath. Increase 6650 CF, 3.4 CFS
Excess discharge to sewer from N basin

Art Blosser

10/17/01

2 Classroom addition (library + student center) ^{+ gym add}

E Bldg - Runoff goes to new ponding area S of Bldg

$Q_{\text{dis}} = .19 \text{ CFS}$ $V = 500 \text{ CF}$

gym Basin B $Q = .47 \text{ CFS}$ $V = .022 \text{ AC-FT}$ increase = 958 CF
Goes to west pond

Conclusions

- ① Exist pond probably has enough capacity
 3413 CF needed $26,634 - 23,257$ CF
 Field House that discharges to OSHA (6.9 CFS)
 also reduced flows

$$Q_{in\ pond} = 60.17 \text{ CFS} \quad Q_{out\ pond} = 36.51 \text{ CFS}$$

$H(CF)$

④

pond req

23,257 RSP

60.17 CFS to pond

gym

+ 958

+ .47 CFS from gym addition

water landscaping Fibers

+ 5000

- 6.9 CFS

discharges to OSHA (field house)

field house

+ 1650

53.74 CFS

TO POND ^{PRIOR TO} NEW PROJECT

+ 3413

1.67

INCR DUE TO TRACK

track

+ 1000

24,279 CF

55.41 STILL < 60.17 CFS

~~23,257~~

STILL < 26,634 CF

- ② FF

Have 3' wetland elev 93

Det pond bottom 96

$H = ?$

Have ~~300~~ 5000 CF storm used to water landscaping

Have long distances of overland flows to reduce pollutants. Also end up in wetland.

- ③ Don't build berm. Go to existing west det pond

CITY OF ALBUQUERQUE



December 19, 2014

Mr. Patrick Conley, PE
Smith Engineering Company
2201 San Pedro NE,
Bldg 4, Suite 200
Albuquerque, NM 87110

**Re: Sandia Prep School Running Track Reconstruction
Drainage Plan with Engineer's Stamp Dated 12-2-14
(E16D012)**

Dear Mr. Conley,

Based upon the information provided in your submittal received December 3, 2014, the above referenced plan is not approved for Grading Permit until the following comments are addressed:

- Open # of rep.*
- ✓ 1. Always discuss if the 100 year Flood Plain is on the site or not. Include a FIRM map or a narrative about it. Include all assumptions for your calculations such as what Zone the site is in. *OK*
 - ✓ 2. The First Flush for this site was based on 0.44 inches multiplied by the impervious area. Per the City Drainage ordinance, the 90th Percentile Storm Event, which is 44 inches, is to be managed. Reduce 0.44 inch by the 0.1 inch for the initial impervious abstraction in Table A-6 of Section 22 of the DPM. Multiply the remaining 0.34 inch by your impervious area. This is the portion to retain. *OK*
 3. State the volume that is being provided by the First Flush. Show the water surface elevation on the plan. The proposed berm is being placed in an existing drainage swale that should be carrying at least 33.29 cfs. Demonstrate that flow will still fit within the swale where the berm is located.
 - NA* 4. It appears the existing pond may have existing capacity for the new flows from the site. Consider taking the additional drainage directly to the existing pond instead. Account for the additions that have been done for this site since the original Master Drainage Plan. The retention / wetland portion of the pond can be counted toward the First Flush.
 - ✓ 5. Show the existing 10 inch storm pipe under the bleacher pad.

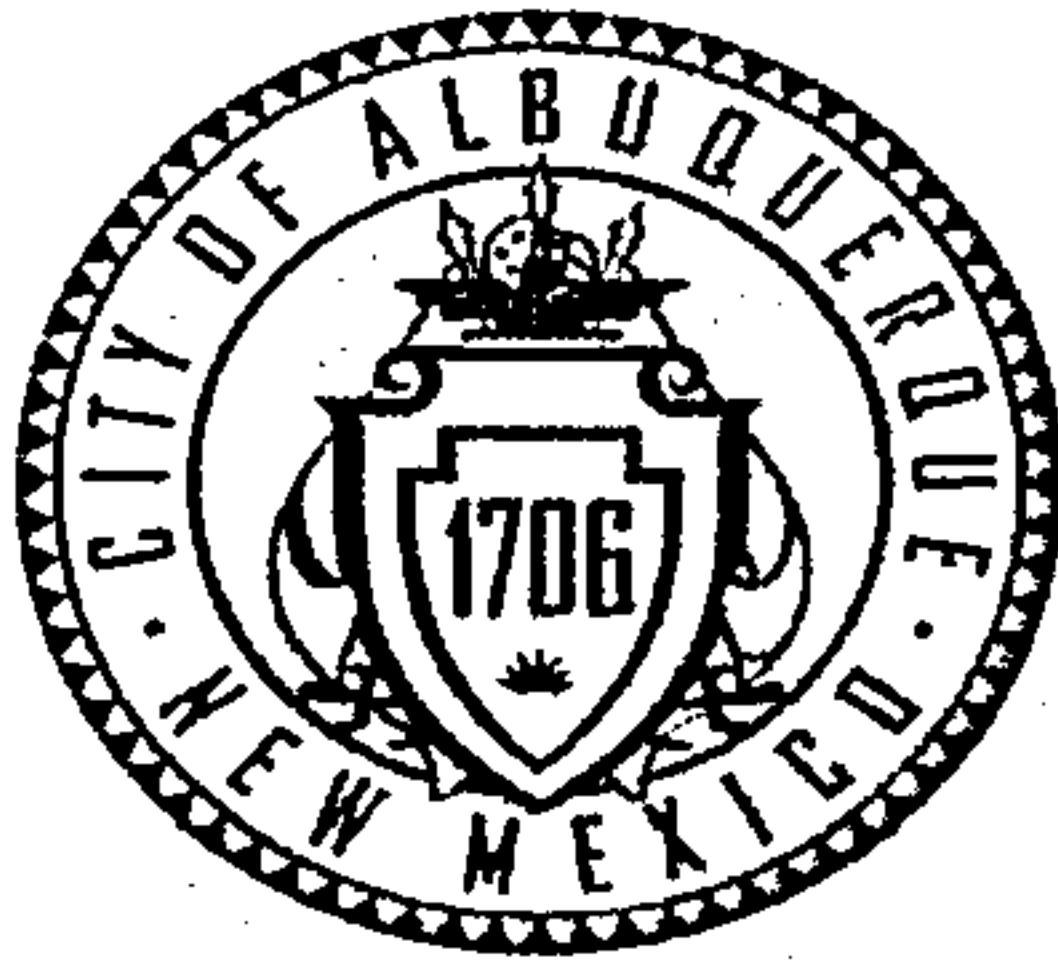
If you have any questions, you can contact me at 924-3994.

Sincerely,


Amy L. D. Niese, P.E.
Senior Engineer, Hydrology
Planning Department

C: e-mail

*Be there
2:50 today
or
3:50 tomorrow.*



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

E/6D012

Project Title: Sandia Prep. School Running Track Reconstruct Building Permit #: N/A City Drainage #: N/A
DRB#: Not applicable EPC#: Not applicable Work Order#: Not applicable

Legal Description: _____

City Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Engineering Firm: Smith Engineering Company

Contact: Patrick J. Conley, PE

Address: 2201 San Pedro NE, Bldg 4, Suite 200, Albuquerque, NM 87110

Phone#: 505-884-0700

Fax#: 505-884-2376

E-mail: patc@smithengineering.pro

Owner: Sandia Preparatory School

Contact: Jerry Lovato

Address: 532 Osuna Rd. NE, Albuquerque, NM 87113

Phone#: 505-338-3000

Fax#: 505-338-3099

E-mail: _____

Architect: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Surveyor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

E-mail: _____

Contractor: _____

Contact: _____

Address: _____

Phone#: _____

Fax#: _____

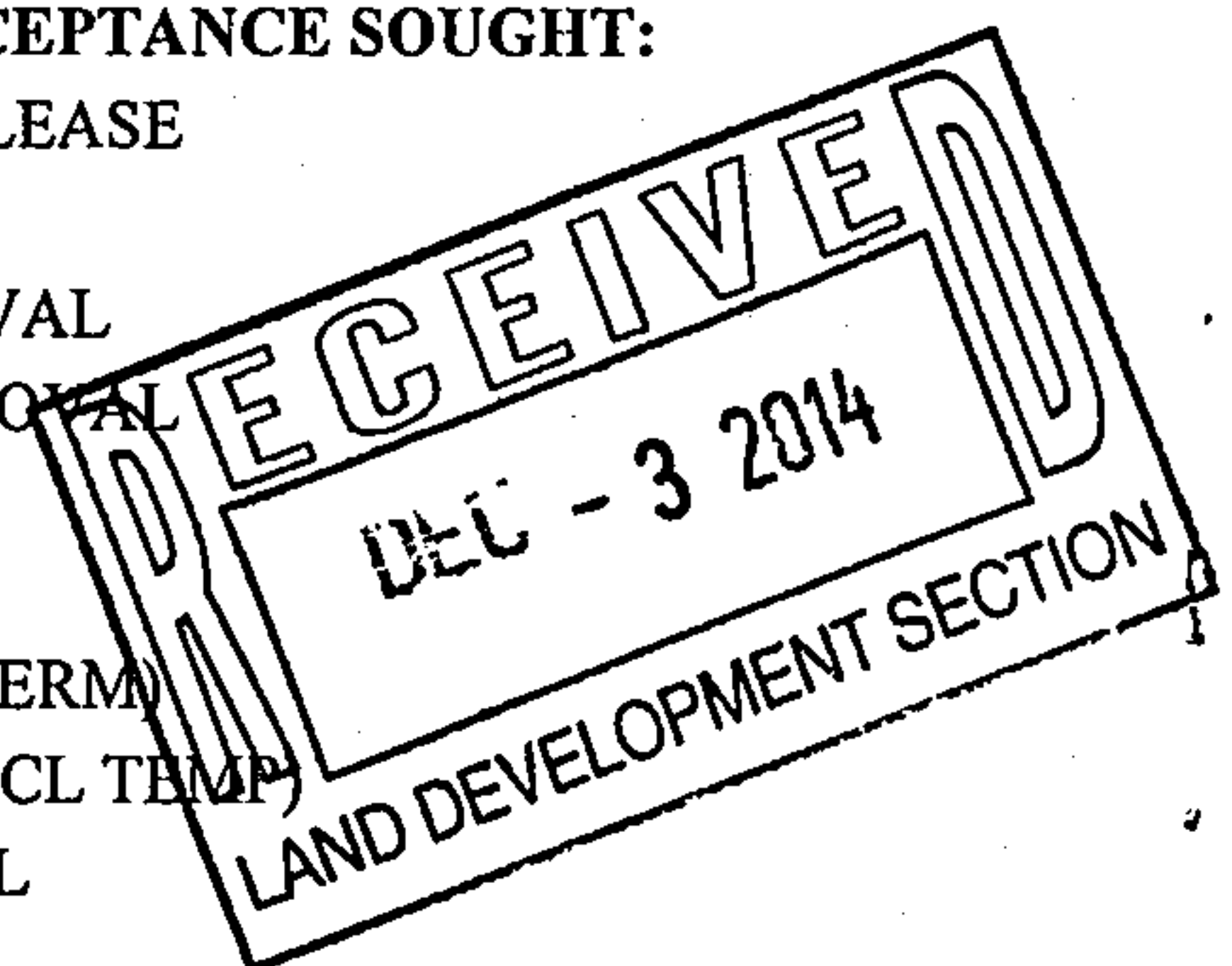
E-mail: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☒ GRADING PLAN
- ☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEER'S CERT (TCL)
- ☐ ENGINEER'S CERT (DRB SITE PLAN)
- ☐ ENGINEER'S CERT (ESC)
- ☐ SO-19
- ☐ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM)
- ☐ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ☐ FOUNDATION PERMIT APPROVAL
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- ☒ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ GRADING CERTIFICATION
- ☐ SO-19 APPROVAL
- ☐ ESC PERMIT APPROVAL
- ☐ ESC CERT. ACCEPTANCE
- ☐ OTHER (SPECIFY)



WAS A PRE-DESIGN CONFERENCE ATTENDED: _____

Yes ☒ No ☐ Copy Provided

DATE SUBMITTED: 12/03/2014

By: Patrick J. Conley, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

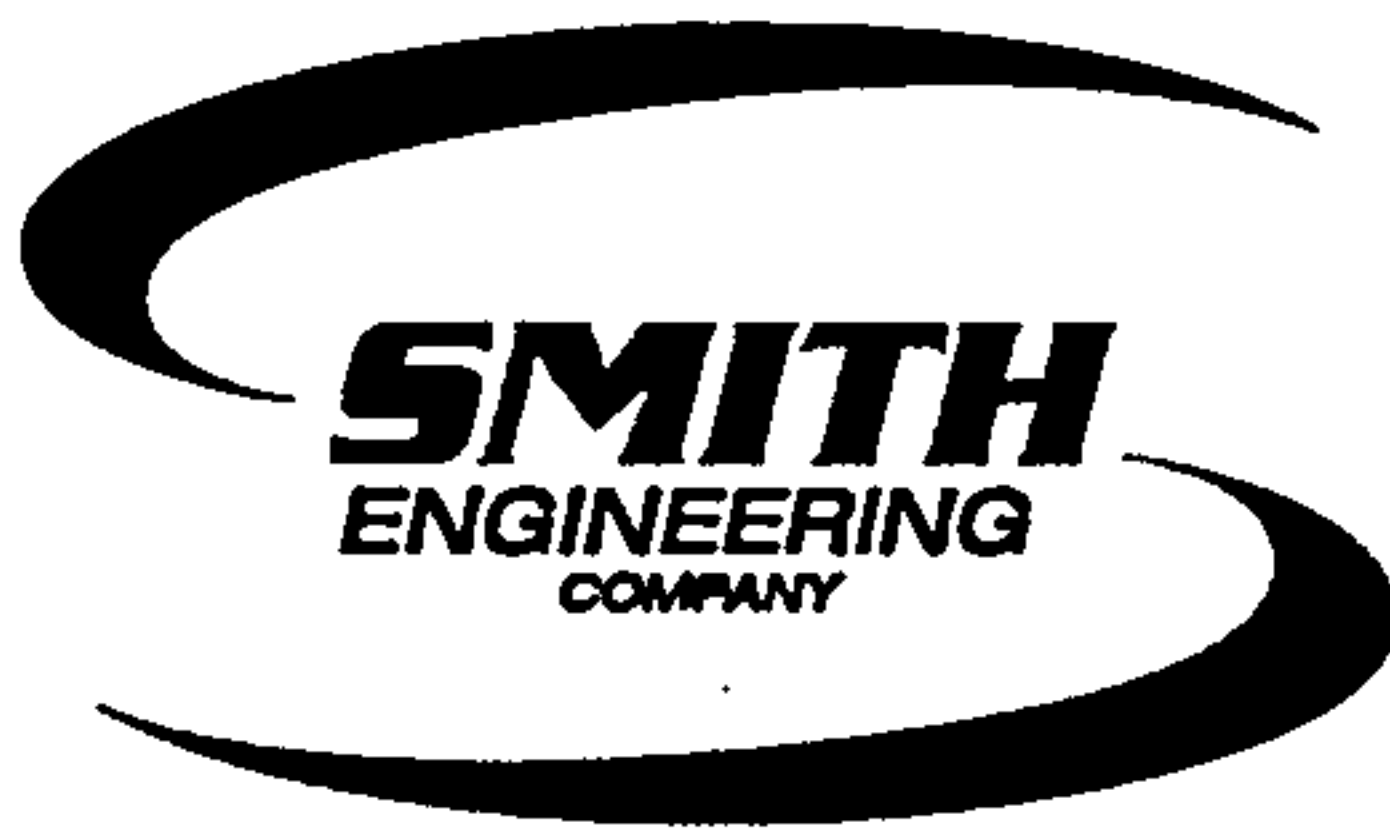
1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

$A_D = 0.69 \text{ Ac}$

Det

$Q_{out} = 36.51 \text{ cfs}$
 $Q = ?$

1.67 ADDL



Solutions for Today...

Vision for Tomorrow

December 3, 2014

Ms. Monica Ortiz
Plan Checker
Transportation Section
City of Albuquerque Planning Department
600 2nd Street NW, Suite 201
Albuquerque, NM 87102

**Re: Sandia Preparatory School Running Track Reconstruction
114653**

Dear Ms. Ortiz

Smith Engineering is submitting this grading plan for review and approval by the City of Albuquerque for a Grading Permit. The project includes the reconstruction of an existing running track on the grounds of the Sandia Preparatory School. There will not be any work within the City of Albuquerque right-of-way. I have attached a Drainage and Transportation Information Sheet with one (1) copy of the grading plan for your review. I have also forwarded a pdf of the grading plan and the review information sheet to you via email.

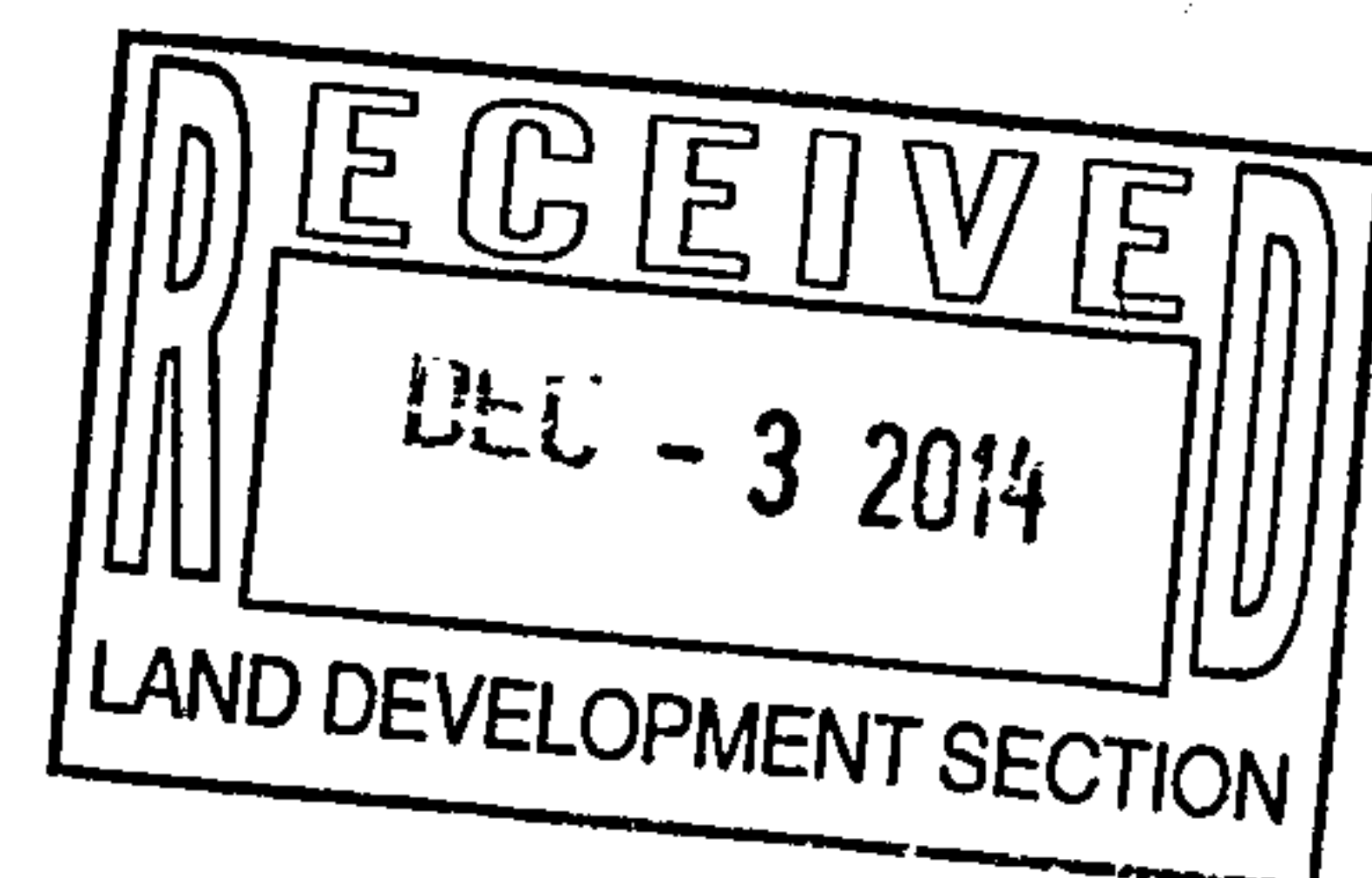
Thank you in advance for your time and please let me know if you have any questions or if you need additional information.

Sincerely,

Smith Engineering Company

A handwritten signature in black ink, appearing to read "P. Conley", is written over the company name.

Patrick J. Conley, PE
Project Engineer



Enclosure

cc: File

2201 San Pedro Drive, NE
Tel: 505.884.0700

Building 4, Suite 200
PatC@smithengineering.pro

Albuquerque, NM 87110
Fax: 505.884.2376

TABLE 1 - 100-YEAR VOLUME AND PEAK DISCHARGE

TYPE OF SURFACE	LAND TREAT.	AREA (SQ. FT.)	EX. PREC. (E) INCHES	VOLUME CF	AREA (ACRES)	DISCH. CFS/AC	
TRACT 1							
GRADED AREA	C	12,014	1.13	1,131	0.276	3.14	
TRACT 2							
AREA A							
SOCCER FIELD	B	213,120	0.78	13,853	4.893	2.28	11.16
LANDSCAPING	B	117,104	0.78	7,612	2.688	2.28	6.13
ASPHALT PARKING	D	12,200	2.12	2,155	0.280	4.70	1.32
SUBTOTALS		342,424		23,620	7.861		18.60
AREA B							
BUILDING	D	51,652	2.12	9,125	1.186	4.70	5.57
ASPHALT	D	9,470	2.12	1,673	0.217	4.70	1.02
SIDEWALKS	D	18,030	2.12	3,185	0.414	4.70	1.95
LANDSCAPING	B	70,800	0.78	4,602	1.625	2.28	3.71
GRADED AREAS	C	2,500	1.13	235	0.057	3.14	0.18
SUBTOTALS		152,452		18,821	3.499		12.42
AREA C							
BUILDING	D	45,560	2.12	8,049	1.046	4.70	4.92
ASPHALT	D	113,783	2.12	20,102	2.612	4.70	12.28
SIDEWALKS	D	17,015	2.12	3,006	0.391	4.70	1.84
LANDSCAPING	B	35,776	0.78	2,325	0.821	2.28	1.87
GRADED AREAS	C	1,870	1.13	176	0.043	3.14	0.14
SUBTOTALS		214,004		33,658	4.913		21.04
AREA D							
TRACK	D	43,400	2.12	7,667	0.996	4.70	4.68
PARKING	D	11,696	2.12	2,066	0.269	4.70	1.26
PUMPHOUSE	D	640	2.12	113	0.015	4.70	0.07
BLEACHERS	D	640	2.12	113	0.015	4.70	0.07
LANDSCAPING	B	286,321	0.78	18,611	6.573	2.28	14.99
GRADED AREAS	C	78,200	1.13	7,364	1.795	3.14	5.64
SUBTOTALS		420,897		35,934	9.663		26.71
TOTAL - TRACT 2		1,129,777		112,033	25.936		78.77
SITE TOTALS							
		1,141,791		113,165	26.212		79.64

NORTH
 Area C 21.04
 1/2 TRACK 2.34
 PARKING 1.26
 BLEACHERS 0.07
 1/2 LANDSCAP 7.50
 1/2 GRADED 2.80
 35.01 CFS

35.01
 1/2 VOW TRACK + 0.84
 @ TO POND - 6.90
 28.95 CFS NORTH
 13
 1/2 TRACK 2.34
 1/2 LAND 7.50
 1/2 GRADED 2.80
 1/2 VOW TRACK + 0.84 + 57 cfm ADD
 26.47 CFS SOUTH
 55.42 CFS

DRAINAGE INFORMATION SHEET

PROJECT TITLE: SANDIA PREPARATORY SCHOOL
PERFORMING ARTS CENTER ZONE ATLAS/DRNG. FILE #: E16/D12

ORB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACTS 1 & 2 LANDS OF THE ACADEMY FOR BOYS

CITY ADDRESS: 538 OSUNA ROAD NE 87113

ENGINEERING FIRM: Lovelady & Associates CONTACT: Frank D. Lovelady

ADDRESS: 300 ALAMOS A NW 87107 PHONE: 345-2267

OWNER: SANDIA PREPARATORY SCHOOL CONTACT: RICHARD HEATH, HEADMASTER

ADDRESS: 538 OSUNA RD. NE 87113 PHONE: 344-1671

ARCHITECT: CUSTER BASARICH LTD CONTACT: PHIL CUSTER

ADDRESS: 1400 CENTRAL SE 87106 PHONE: 765-1020

SURVEYOR: LOVELADY & ASSOCIATES CONTACT: FRANK LOVELADY

ADDRESS: 300 ALAMOS A NW PHONE: 345-2267

CONTRACTOR: JAYNES CORPORATION CONTACT: _____

ADDRESS: 2906 BROADWAY NE 87107 PHONE: 345-8591

TYPE OF SUBMITTAL:

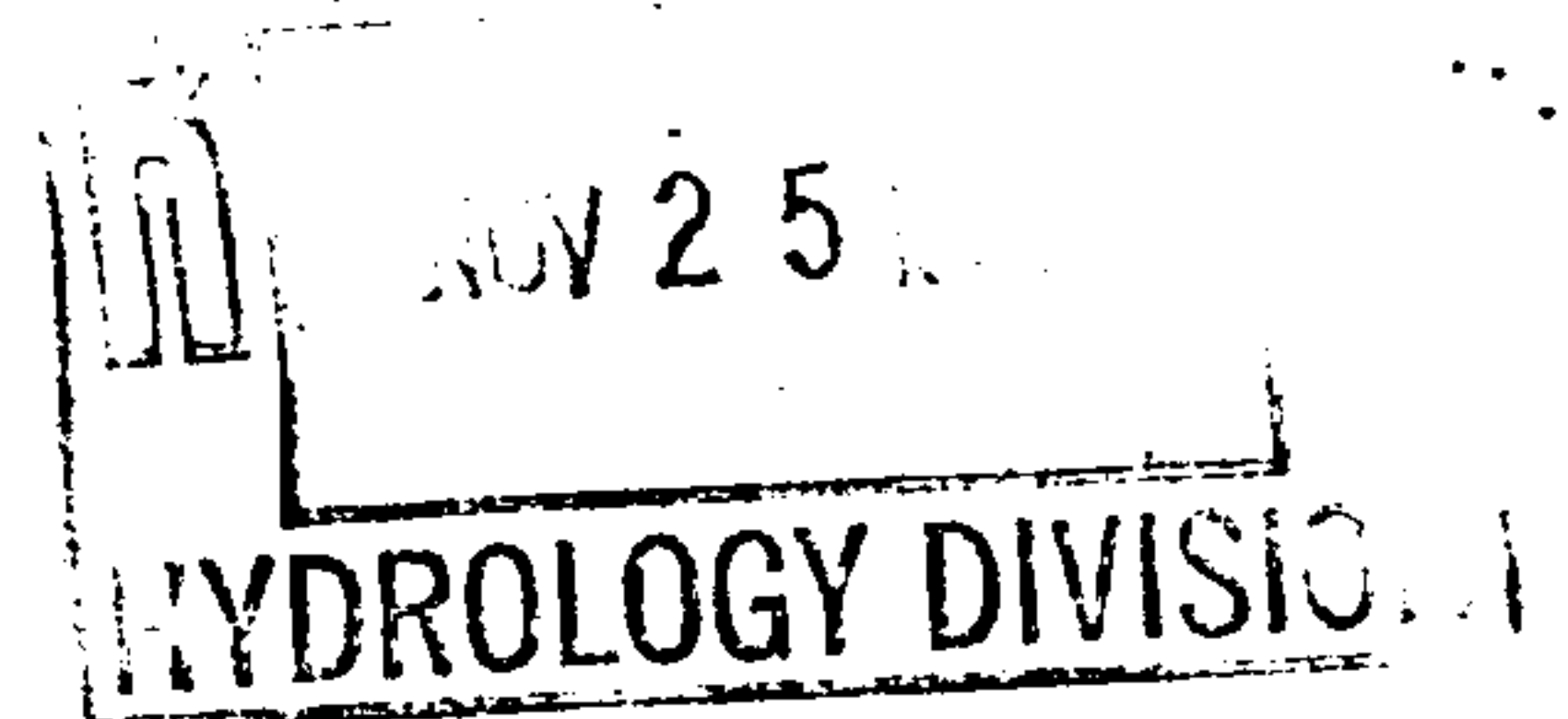
- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION
- ☐ OTHER

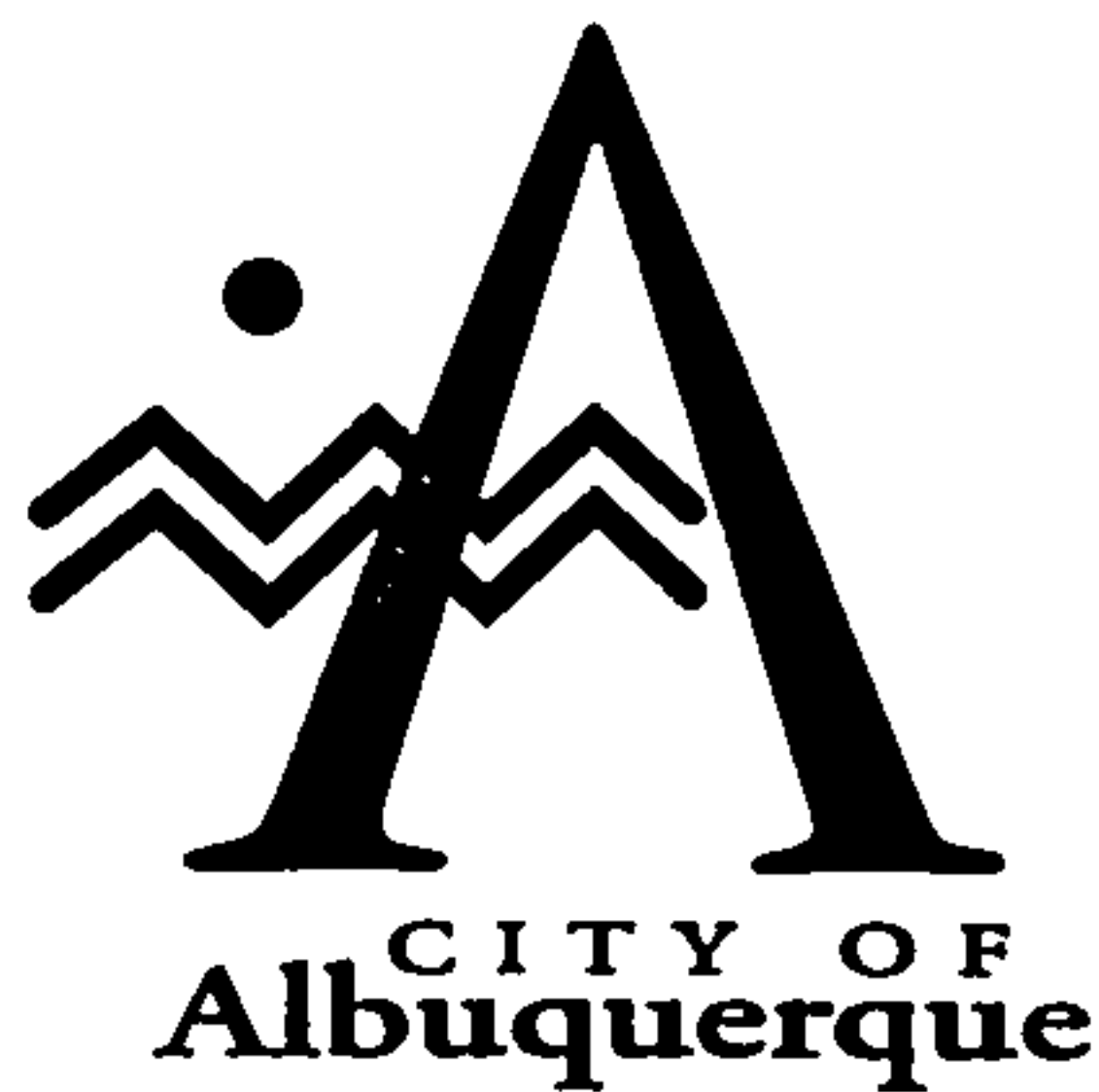
PRE-DESIGN MEETING:

- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: NOV 22 1996BY: Frank D. Lovelady



November 26, 1996

Martin J. Chávez, Mayor

Frank Lovelady
Lovelady & Associates
300 Alamosa NW
Albuquerque, NM 87107

**RE: ENGINEER CERTIFICATION FOR PERFORMING ARTS CENTER @ SANDIA
PREPARATORY SCHOOL (E16-D12) CERTIFICATION STATEMENT DATED
11/22/96.**

Dear Mr. Lovelady:

Based on the information provided on your November 25, 1996
submittal, Certification for the above referenced site is
acceptable.

Please be advised that only a temporary Certificate of Occupancy
will be released until the final out fall is approved and
constructed.

If I can be of further assistance, please feel free to contact me
at 768-2667.

Sincerely,

Bernie J. Montoya
Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File

Good for You, Albuquerque!



6-12-00
cc

Drainage is conveyed west in
to a low flow valley gutter at the
bottom of an earthen/grassy ditch channel

Capacity looks good until the far west
end before the channel turns north, where
the capacity is approx $\frac{1}{2}$ of upstream.
However, there is no evidence that runoff
leaves the channel.

The grate has been removed from the
pump outlet and set vertically in the
vault.

DESIGN ANALYSIS
FOR A
MASTER GRADING AND DRAINAGE PLAN

FOR THE

SANDIA PREPARATORY SCHOOL

532 OSUNA ROAD, N.E.
ALBUQUERQUE, NEW MEXICO

DECEMBER 17, 1990
(REVISED AUGUST 2, 1995)

Prepared by
Frank D. Lovelady, P.E.
300 Alamosa Road, N.W.
Albuquerque, NM 87107
(505) 898-0142

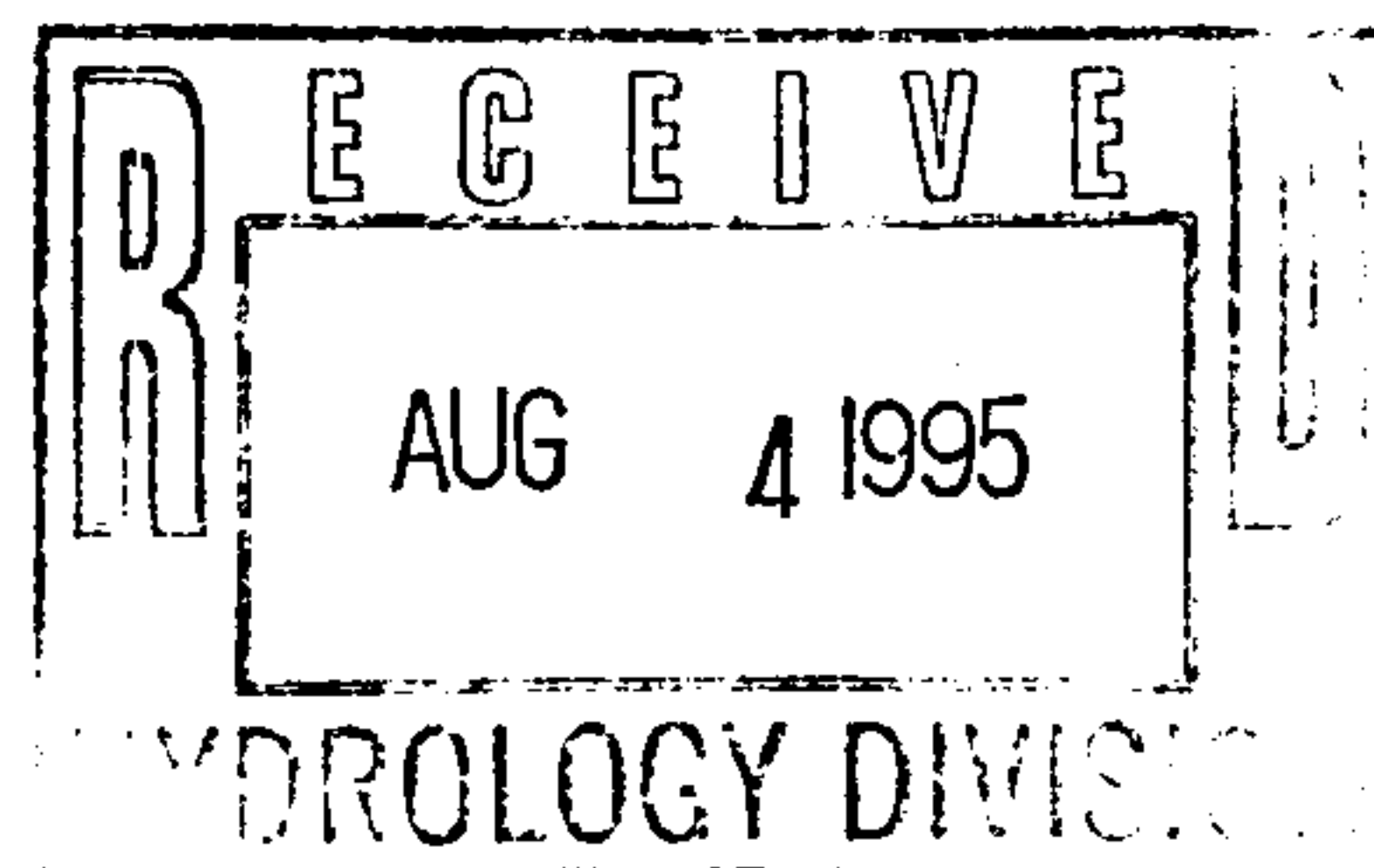


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I. INTRODUCTION

This report, with the enclosed maps, constitutes the Master Grading and Drainage Plan for the Sandia Preparatory School located on Tracts 1 and 2, Academy for Boys, Bernalillo County, New Mexico. The campus orientation upon which this report is based is as prepared by Custer-Basarich Ltd., Architects, Planners, A.I.A.

The Sandia Preparatory School campus is located at 532 Osuna Road N.E. The property is bounded on the north by Osuna Road N.E., on the east by Lot 1, Universal Industrial Park, on the south by El Paraiso Road N.E. and on the west by Edith Boulevard N.E.

For the location of the Sandia Preparatory School relative to major streets, see location map (Map No. 1) The site is located on Bernalillo County Zone Atlas Maps E-15 and E-16.

The report and plan sheets 1 and 2 originally submitted December 17, 1990 to Bernalillo County for review in connection with obtaining a building permit for a new library. Since that time, the plan has been revised several times. Other new buildings have been added to the campus including the science building, the gymnasium, and two classroom buildings. In addition, the soccer field/track/baseball field are complete. All of these are shown on the Master Grading and Drainage Plan. The site was recently annexed into the City of Albuquerque.

The plan also shows a revised and updated layout for the outdoor athletic complex. It is the purpose of this report to analyze on-site and off-site flow volumes and peak discharge rates and analyze downstream capacity to determine the required volume of detention ponding. It is also the purpose of this report to show calculations for the outfall pipe which is proposed to extend from

the pond to the Edith Boulevard Storm Drain, connecting to the existing manhole in Edith Boulevard at the Osuna Road intersection.

II. EXISTING CONDITIONS

A. GENERAL

The existing topographic conditions of the site have been prepared by aerial photogrammetric methods and are shown on the Master Grading and Drainage Plan, sheets one and two of two located in the pocket in the back of this report. With the exception of the outdoor athletic complex, these conditions have not changed significantly since the original photography was done.

B. OFF-SITE DRAINAGE

There is no off-site flow reaching this site. Osuna Road is paved with curb and gutter and storm drainage system. The system was designed for the 10-year undeveloped runoff rates. A small amount of runoff is generated by the portion of the right-of-way behind the curb and gutter. El Paraiso Road is paved with no curb and gutter. Drainage is by means of roadside ditches. There is a substantial ditch on the north side of El Paraiso road adjacent to the site. Edith Boulevard is lower than the site so there is no off-site flow from the west. It would appear that off-site flow might be generated by the property east of the site. However, there is a detention pond on the property with a positive discharge pipe and an overflow spillway directing flow to El Paraiso Road right-of-way. A berm near the westerly property line directs all runoff to the pond. A drainage plan for this property was prepared by Jeff Mortensen & Associates dated May 1990.

C. ON-SITE DRAINAGE

The site generally slopes from east to west at an average slope of roughly 1.5 percent. The site is presently divided into several drainage areas in accordance with existing and proposed land use.

The eastern-most area, designated as Area A, is developed as a soccer field complex. The next two areas, designated Areas B and C, are occupied by educational and administrative facilities and parking. Area B drains around the south side of the new gymnasium. Area C drains into the north parking lot. The two flows come together just west of the new gymnasium.

The fourth drainage area, designated Area D, is now occupied by the outdoor athletic complex. The fifth drainage area is the area west of the Alameda lateral and will be used for parking. The Alameda Lateral is under the jurisdiction of the Middle Rio Grande Conservancy District.

Area A is very flat. Since El Paraiso Road is lower than Osuna Road, runoff generated by all drainage areas naturally flow toward El Paraiso Road. However, Area A has minimal runoff due to the flat grades of the turf-covered playing fields.

A large part of the physical plant section drains to El Paraiso Road. The remainder of it drains to Area D and is directed to the existing pond. The runoff from Area D is also directed to the existing pond.

III. DEVELOPED CONDITIONS

A. OFF-SITE DRAINAGE

There are not likely to be any significant changes in the off-site drainage conditions affecting this property. There is essentially no off-site flow.

B. ON-SITE DRAINAGE

The site has been fully developed in accordance with the Master Plan. The playing field, physical plant and outdoor athletic complex, with minor additions and refinements, are in place and complete. Only the pond outfall and spillway remain to be constructed.

The playing field (Area A) will remain much as it is. A 34 space parking lot will be constructed which is the only improvement which will be impervious. When the parking lot is constructed, runoff from it will be discharged onto the adjacent soccer field. The runoff from the fields themselves can be contained by the construction of low-profile berms around the fields, if considered necessary.

The physical plant (Areas B and C) has had two new buildings added, a gymnasium and a new science building. New parking and access roads will be constructed. There are two additional classroom buildings now under construction in the northeast corner of the physical plant. In addition, a performing arts center is proposed to be constructed north of the new gymnasium. It is

proposed to convey all runoff from the physical plant section to a detention pond west of the outdoor athletic complex where it will be discharged into the Edith Boulevard storm sewer.

The outdoor athletic complex (Area D) has been totally redesigned as shown on sheet one of two of the master plan. The tract will be reoriented and a baseball field is proposed. West of the baseball field will be a detention pond sized as required by limited downstream capacity.

Tract 1, west of the Alameda Lateral will be graded as required for parking in connection with the outdoor athletic complex.

IV. ANALYSIS OF DOWNSTREAM CAPACITY

A. PREVIOUS STUDIES

Edith Boulevard Drainage Analysis, Boyle Engineering Corporation, November 1990.

B. ANALYSIS OF ALLOWABLE DISCHARGE RATE.

The Edith Boulevard Drainage Analysis shows that the site is included in Basin 12D. A small portion of Basin 12D lies south of El Paraiso Road. Calculations for Basin 12D from the above analysis are reproduced in the back of this report. A total of 58 cfs was calculated as the peak discharge from Basin 12D, 57cfs being intercepted by the first manhole east of Edith Boulevard and 0.5 cfs at each of the inlets at the NE and SE corners of the intersection of El Paraiso Road and Edith Boulevard. Basin 12D is shown by the calculations to have an area of 40.5 acres. The site area is 25.94 acres. The allowable discharge is prorated by multiplying the ratio of the two areas by the total discharge from Basin 12D, or 57 cfs. (See drainage calculations).

V. DRAINAGE CALCULATIONS

A. CRITERIA

1. GENERAL

These drainage calculations are based on Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, City of Albuquerque, New Mexico in cooperation with Bernalillo County, New Mexico and the Albuquerque Metropolitan Arroyo Flood Control Authority, January 1993. The simplified procedure, Part A, is used which is applicable to watersheds up to 40 acres in size.

2 ZONE

The site is located east of the Rio Grande River and west of San Mateo Blvd., and is, therefore, in Zone 2.

3. DESIGN STORM

A return period of 100 years is used for most calculations. The ten-year undeveloped runoff volumes and rates are also calculated and are shown in Table 2. Previously, no runoff was permitted to be discharged into El Paraiso Road due to the fact that there was no storm system in place. However, the recent construction of Edith Boulevard included a storm sewer system with a single manhole on El Paraiso Road approximately 320' east of the centerline of Edith Boulevard.

The depth in inches of the 100-year storm of various durations is tabulated below:

ZONE	P ₆₀	P ₃₆₀	P ₁₄₄₀	P _{4 days}	P _{10 days}
2	2.01	2.35	2.75	3.30	3.95

To calculate the above rainfall depths for a return period of ten years, multiply the above values by 0.667.

4. LAND TREATMENTS

Treatment A - Soil uncompacted by human activity. Probably, the entire site has been, at one time, disturbed by human activity. Therefore, Treatment A is really not applicable to the site except in calculating the 10-year undeveloped discharge rate.

Treatment B - Irrigated lawns, parks and golf courses. The playing fields are included in this treatment as well as landscaping.

Treatment C - Soil compacted by human activity. This is the condition of most undeveloped portions of the site.

Treatment D - Impervious areas, pavement and roofs.

5. EXCESS PRECIPITATION

For Zone 2, the excess precipitation for the 100-year and 10-year storms are shown for the various land treatments in the table below:

RETURN PERIOD	EXCESS PRECIPITATION FOR LAND TREATMENTS			
	A	B	C	D
100-Year	0.53	0.78	1.13	2.12
10-Year	0.13	0.28	0.52	1.34

6. PEAK DISCHARGE

For Zone 2, the peak discharge per acre for the 100-year and 10-year storms are shown for the various land treatments in the table below:

RETURN PERIOD	PEAK DISCHARGE PER ACRE FOR LAND TREAT. SHOWN			
	A	B	C	D
100-Year	1.56	2.28	3.14	4.70
10-Year	0.38	0.95	1.71	3.14

B. RUNOFF QUANTITIES (VOLUME AND PEAK DISCHARGE)

1. VOLUME

The runoff volume is the product of the area (sf) and the excess precipitation, E (in.), divided by 12 (in./ft.)

$$V = (AE)/12 \text{ (ft}^3\text{)}$$

TABLE 1 - 100-YEAR VOLUME AND PEAK DISCHARGE

TYPE OF SURFACE	LAND TREAT.	AREA (SQ. FT.)	EX. PREC. (E) INCHES	VOLUME CF	AREA (ACRES)	DISCH. CFS/AC	
TRACT 1							
GRADED AREA	C	12,014	1.13	1,131	0.276	3.14	
TRACT 2							
AREA A							
SOCCER FIELD	B	213,120	0.78	13,853	4.893	2.28	11.16
LANDSCAPING	B	117,104	0.78	7,612	2.688	2.28	6.13
ASPHALT PARKING	D	<u>12,200</u>	2.12	<u>2,155</u>	<u>0.280</u>	4.70	<u>1.32</u>
SUBTOTALS		342,424		23,620	7.861		18.60
AREA B							
BUILDING	D	51,652	2.12	9,125	1.186	4.70	5.57
ASPHALT	D	9,470	2.12	1,673	0.217	4.70	1.02
SIDEWALKS	D	18,030	2.12	3,185	0.414	4.70	1.95
LANDSCAPING	B	70,800	0.78	4,602	1.625	2.28	3.71
GRADED AREAS	C	<u>2,500</u>	1.13	<u>235</u>	<u>0.057</u>	3.14	<u>0.18</u>
SUBTOTALS		152,452		18,821	3.499		12.42
AREA C							
BUILDING	D	45,560	2.12	8,049	1.046	4.70	4.92
ASPHALT	D	113,783	2.12	20,102	2.612	4.70	12.28
SIDEWALKS	D	17,015	2.12	3,006	0.391	4.70	1.84
LANDSCAPING	B	35,776	0.78	2,325	0.821	2.28	1.87
GRADED AREAS	C	<u>1,870</u>	1.13	<u>176</u>	<u>0.043</u>	3.14	<u>0.14</u>
SUBTOTALS		214,004		33,658	4.913		21.04
AREA D							
TRACK	D	43,400	2.12	7,667	0.996	4.70	4.68
PARKING	D	11,696	2.12	2,066	0.269	4.70	1.26
PUMPHOUSE	D	640	2.12	113	0.015	4.70	0.07
BLEACHERS	D	640	2.12	113	0.015	4.70	0.07
LANDSCAPING	B	286,321	0.78	18,611	6.573	2.28	14.99
GRADED AREAS	C	<u>78,200</u>	1.13	<u>7,364</u>	<u>1.795</u>	3.14	<u>5.64</u>
SUBTOTALS		420,897		35,934	9.663		26.71
TOTAL - TRACT 2		1,129,777		112,033	25.936		78.77
SITE TOTALS							
		1,141,791		113,165	26.212		79.64

TABLE 2 - 10 YEAR VOLUME AND PEAK DISCHARGE

TYPE OF SURFACE	LAND TREAT.	AREA (SQ. FT.)	EX. PREC. (E) INCHES	VOLUME CF	AREA (ACRES)	DISCH. CFS/AC	DISCH. CFS
TRACT 1							
GRADED AREA	C	12,014	0.52	521	0.276	1.71	0.47
TRACT 2							
<u>AREA A</u>							
SOCCER FIELD	B	213,120	0.28	4,973	4.893	0.95	4.65
LANDSCAPING	B	117,104	0.28	2,732	2.688	0.95	2.55
ASPHALT PARKING	D	<u>12,200</u>	1.34	<u>1,362</u>	<u>0.280</u>	3.14	<u>0.88</u>
SUBTOTALS		342,424		9,068	7.861		8.08
<u>AREA B</u>							
BUILDING	D	51,652	1.34	5,768	1.186	3.14	3.72
ASPHALT	D	9,470	1.34	1,057	0.217	3.14	0.68
SIDEWALKS	D	18,030	1.34	2,013	0.414	3.14	1.30
LANDSCAPING	B	70,800	0.28	1,652	1.625	0.95	1.54
GRADED AREAS	C	<u>2,500</u>	0.52	<u>108</u>	<u>0.057</u>	1.71	<u>0.10</u>
SUBTOTALS		152,452		10,599	3.499		7.35
<u>AREA C</u>							
BUILDING	D	45,560	1.34	5,088	1.046	3.14	3.28
ASPHALT	D	113,783	1.34	12,706	2.612	3.14	8.20
SIDEWALKS	D	17,015	1.34	1,900	0.391	3.14	1.23
LANDSCAPING	B	35,776	0.28	835	0.821	0.95	0.78
GRADED AREAS	C	<u>1,870</u>	0.52	<u>81</u>	<u>0.043</u>	1.71	<u>0.07</u>
SUBTOTALS		214,004		20,609	4.913		13.57
<u>AREA D</u>							
TRACK	D	43,400	1.34	4,846	0.996	3.14	3.13
PARKING	D	11,696	1.34	1,306	0.269	3.14	0.84
PUMPHOUSE	D	640	1.34	71	0.015	3.14	0.05
BLEACHERS	D	640	1.34	71	0.015	3.14	0.05
LANDSCAPING	B	286,321	0.28	6,681	6.573	0.95	6.24
GRADED AREAS	C	<u>78,200</u>	0.52	<u>3,389</u>	<u>1.795</u>	1.71	<u>3.07</u>
SUBTOTALS		420,897		16,365	9.663		13.38
TOTAL - TRACT 2		1,129,777		56,640	25.936		42.38
SITE TOTALS		1,141,791		57,161	26.212		42.85

The 100-year and 10-year, 6, hour volumes for Tract 1 and Areas A through D, Tract 2, are shown in Tables 1 and 2, respectively.

2. PEAK DISCHARGE

The total peak discharge, Q (cfs) is the product of the peak discharge per acre, Q_p (cfs/acre), and the area (acres).

$$Q = Q_p A \text{ (cfs)}$$

The peak discharge quantities for Tract 1 and Areas A through D of Tract 2 are shown in Tables 1 and 2 for the 100-year and 10-year storms, respectively.

C. DRAINAGE IMPROVEMENTS

1. EASTERLY SECTION (AREA A)

It is possible to hold the excess precipitation where it falls by constructing low-profile, turf-covered berms around the perimeters of the westerly 340' of soccer fields on the south and west sides as required. There is approximately 0.8' of fall across the westerly 340' of soccer fields. Since runoff will be retained, the 100-year, 10-day volume will be used to calculate the berm height

$$V_{10 \text{ day}} = V_{360} + A_D(P_{10 \text{ day}} - P_{360}) / 12$$

$$A_D = 12,200 \text{ sf} \quad P_{10 \text{ day}} = 3.95 \text{ in.} \quad P_{360} = 2.35 \text{ in.}$$

$$V_{10 \text{ day}} = 23,620 + 12,200 (3.95 - 2.35) / 12 = 25,247 \text{ cf}$$

$$\text{Depth} = V_{10 \text{ day}} / \text{Area of westerly 340 feet of soccer field}$$

$$\text{Depth} = 25,247 / (340 \times 460) = 0.16 \text{ ft.}$$

This depth is added to the fall 0.8' to get the required height of berm.

Berm Height = $0.8 + 0.16 = 0.96'$ or approximately 1.0 ft.

Runoff from this area is fairly slow because of the flat grades so it is proposed that the berm not be constructed until the paved parking area is added.

2. PHYSICAL PLANT SECTION (AREAS B AND C)

Runoff from these areas will be conveyed to the detention pond and then discharged into the Edith Boulevard storm sewer at a controlled rate. Area C runoff will be conveyed through the parking lots. However, runoff from Area B must be conveyed by open ditch parallel to and just north of the south boundary line. Culverts will be required under access road crossings. The quantities at the Library access culverts are shown in the following table.

100-YEAR VOLUME AND PEAK DISCHARGE
PORTION OF AREA B DRAINING TO LIBRARY ACCESS CULVERT

TYPE OF SURFACE	LAND TREAT	AREA Ac.	"q" cfs/ac	"Q" cfs
Building	D	0.692	4.70	3.25
Sidewalk	D	0.404	4.70	1.90
Landscaping	B	1.375	2.28	3.14
Asphalt	D	0.017	4.70	0.08
Totals		2.488		8.37

- a. Drainage ditch east of Library access.

The proposed ditch section is trapezoidal with a 3' bottom, a 2' depth and 2:1 side slopes. For a depth of flow of 1'-0" the capacity is calculated as follows:

Use Manning's Equation, $Q = A(1.486/N)(R)^{2/3}(S)^{1/2}$ $A = 5 \text{ sf}$ $P = 7.47'$ $R = A/P = 5 / 7.47 = 0.67$ $S = (20.5 - 19.25) / 235 = 0.0053'/\text{ft.}$ $N = 0.045$

$$V = (1.486 / 0.045)(0.67)^{2/3}(0.0053)^{1/2} = 1.84 \text{ fps}$$

$$Q = AV = 5.0 \times 1.84 = 9.2 \text{ cfs} > 8.37 \text{ cfs} \text{ (Capacity is adequate.)}$$

- b. Culvert selection - Library access.

$Q_{100} = 8.37$ Use inlet control, Chart 5, BPR, Jan 1963, For a CMP pipe, projecting end, $HW/D = 1.0$, an 18" CMP will carry approximately 5.75 cfs and an 24" CMP will carry 11.5 cfs. Therefore, use 2-18" CMPs, $Q = 11.5 \text{ cfs} > 8.37 \text{ cfs}$ (Capacity is adequate.)

- c. Drainage ditch west of Library access culvert.

$Q = 11.0 \text{ cfs}$. The proposed ditch is trapezoidal with a 3.5' bottom, a 2' depth and 2:1 side slopes. For a depth of flow of 1'-0" the capacity is calculated as follows:

$$A = 5.5 \quad P = 7.97' \quad R = A/P = 5.5 / 7.97 = 0.69 \quad S = (19.0 - 17.2) / 165 = 0.0109'/\text{ft.} \quad N = 0.045$$

$$V = (1.486 / 0.045)(0.69)^{2/3}(0.0109)^{1/2} = 2.69 \text{ fps}$$

$$Q = AV = 5.5 \times 2.69 = 14.8 \text{ cfs} > 11.0 \text{ cfs} \text{ (Capacity is adequate.)}$$

- d. Culvert selection - Gymnasium east access.

Approx. 1.25 cfs of Area B peak discharge enters downstream from this culvert. $Q = 12.25 - 1.25 = 11.0 \text{ cfs}$. Use inlet control, Chart 5, BPR Jan. 1963. For a CMP pipe, projecting end, $HW/D = 1.0$, and 18" CMP will carry approximately 5.75 cfs and a 24" CMP will carry 11.5 cfs. Therefore, use 2-18" CMPs at 11.5 cfs or one 24" CMP at 11.5 cfs. (Capacity is adequate.)

3. TRACK/SOCCER FIELD

- a. Drainage ditch adjacent to Gymnasium

Design Q is Area B peak discharge = 12.25 cfs. The proposed ditch is trapezoidal with a 3.0' bottom a 2.0' depth and 2:1 side slopes. For a depth of flow of 1'-0" the capacity is calculated as follows:

$$A = 5.0 \quad P = 7.47 \quad R = A/P = 5/7.47 = 0.67 \quad S = (15.53 - 14.51)/78 = 0.0131 \text{ '}/\text{ft.} \quad N = 0.045$$

$$V = (1.486/0.045)(0.67)^{2/3}(0.0131)^{1/2} = 2.89 \text{ fps}$$

$$Q = AV = 5.0 \times 2.89 = 14.45 \text{ cfs} > 12.25 \text{ cfs} \text{ (Capacity is adequate with 1.0' freeboard.)}$$

- b. Culvert selection - Gymnasium west access.

$Q_{100} = 12.25 \text{ cfs}$ Use inlet control, Culvert is a 35" X 24" pipe arch culvert. Per Handbook of Steel Drainage & Highway Construction

Products, Fig. 4-20, Inlet Control and Headwater Depths for Corrugated Steel Pipe Arch Culverts. A 36" X 33" CMPA with projecting end, HW/D = 1.0, has a capacity of approximately 16 cfs > 12.25 cfs. (Capacity is adequate.)

- c. Open Swale - between Gymnasium access and pond. Initially it was proposed to convey runoff through this area in underground pipes. However, since Bernalillo County has a project programmed that will extend storm sewer east in El Paraiso Road, it was felt that the large expenditure required to construct the underground storm sewer might not be necessary. An open swale would serve the purpose for the interim and future direct connections to the El Paraiso System could result in a reduction of the diameter of the on-site storm sewer or eliminate it altogether.
- The runoff conveyed through this area is $Q = 12.25 + 21.04 = 33.29$ cfs.
- The swale section is approximately 16' wide with grass slopes and a 2' wide concrete gutter section. The slope is approximately 0.01 ft./ft. The depth is approximately 1.5 feet. A "V" shaped channel is assumed whereas the actual channel is more sinusoidal. $A = 12$ sf $P = 2(1.5^2 + 8^2)^{1/2} = 16.3$
- $R = A/P = 12.0 / 16.3 = 0.74$
- $N = 0.025$ (Turf) $V = (1.486 / 0.025)(0.74)^{2/3}(0.0100)^{1/2} = 4.86$ fps.
- $Q = AV = 12 \times 4.86 = 58.32$ cfs > 33.29 cfs Check Froude Number.
- $F = (V^2/gd)^{1/2} = (4.86^2 / [32.2 \times 1.5])^{1/2} = 0.69$ (Flow is Subcritical)

4. BASEBALL FIELD

The baseball field has been constructed level in the area of the diamond and with a 0.5% slope from the diamond to the outer edges so that very little

runoff will occur. What runoff does occur will drain directly to the detention pond.

D. ANALYSIS OF DOWNSTREAM CAPACITY

1. REFERENCE

Edith Boulevard Drainage Analysis, Boyle Engineering Corporation, November 1990.

2. ALLOWABLE DISCHARGE RATE

The site is a part of Basin 12D which has an area of 40.5 acres and has a peak discharge of 57 cfs. This area includes the site (25.94 acres), El Paraiso Road and a Triangular area south of El Paraiso Road. The latter two contain a total area of $40.5 - 25.94 = 14.56$ acres. The allowable site runoff is $(25.94 / 40.5)57 = 36.51$ cfs

3. REQUIRED DETENTION POND CAPACITY

The detention pond capacity is calculated using Section A.8 of Section 22.2 of the D.P.M. Only Areas B, C and D are included in the calculations.

$$t_B = (2.107 * E * A_T / Q_P - (0.25 * A_D / A_T))$$

Where, t_B is in hours

E is Excess Precipitation in inches

Q_P is the peak discharge in cfs

A_D is the area in treatment D in acres, and

A_T is the total area in acres

$$E = (A_B * E_B + A_C * E_C + A_D * E_D) / (A_B + A_C + A_D)$$

$$E = (392,897 \times 0.78 + 82,570 \times 1.13 + 311,886 \times 2.12) / 787,353 = 1.35"$$

$$E = 1.35 \quad Q_p = 60.17 \quad A_D = 7.16 \text{ ac.} \quad A_T = 18.08 \text{ ac.}$$

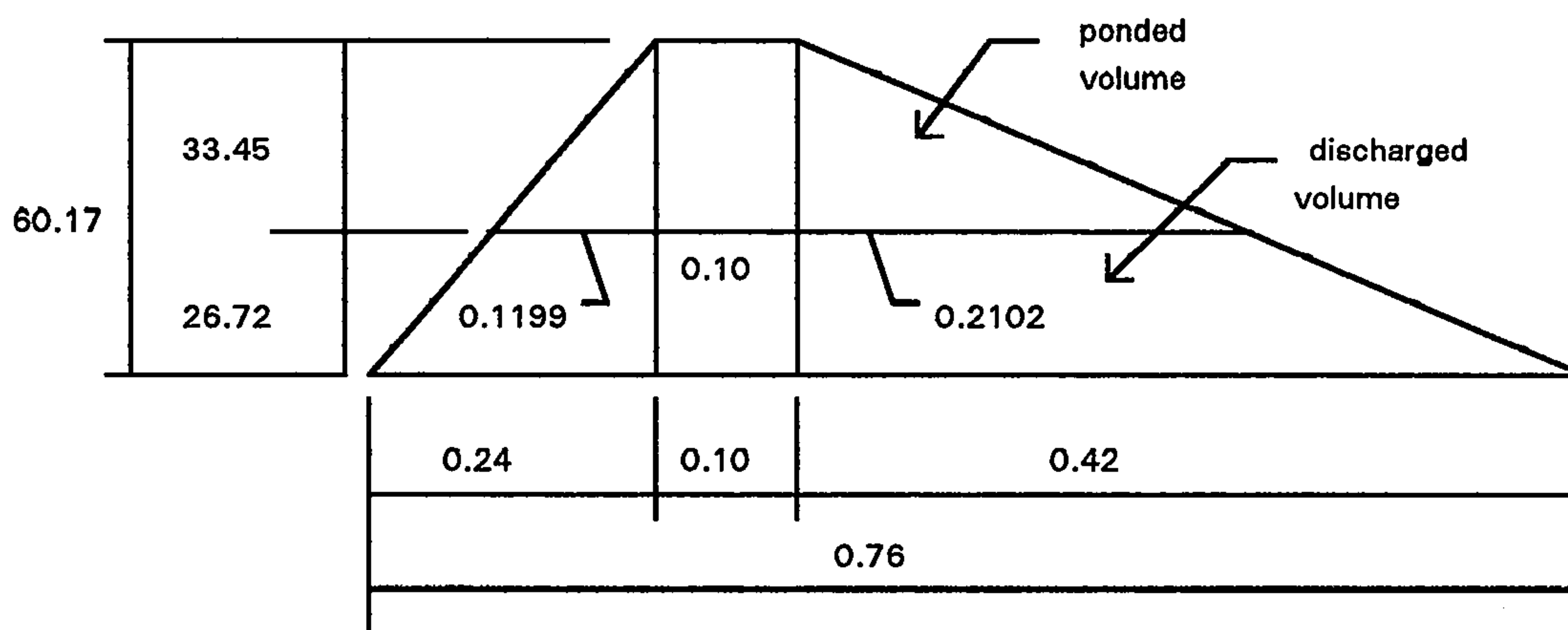
$$t_B = (2.107 \times 1.35 \times 18.08 / 60.17 - (0.25 \times 7.16 / 18.08))$$

$$t_B = 0.76 \text{ hr.}$$

$$t_p = (0.7 T_c) + [(1.6 - (A_D/A_T))] / 12$$

$$t_p = (0.7 \times 0.2) + [(1.6 - 7.16/18.08)]/12 = 0.24 \text{ hr.}$$

Continue the peak for $0.25(A_D/A_T)$ hr. $0.25 \times (7.16/18.08) = 0.10$ hr.



The total volume, V_{360} , of the above diagram is calculated as follows:

$$V_{360} = [60.17 \times 0.24] / 2 + 60.17 \times 0.10 + (60.17 \times 0.42) / 2 \times 3600$$

$V_{360} = 93,143$ cf. The volume for areas B through D from Table 1 is 88,413 cf.

The value calculated by the hydrograph method is 5.35 % higher than the sum of volumes in Table 1. Therefore, the pond volume calculated by the above method

should be divided by 1.0535 to obtain the adjusted pond volume.

$$V = [(33.45 \times 0.1334) / 2 + 33.45 \times 0.1 + (33.45 \times 0.2335) / 2] \times 3600$$

$$V = 34,133 \text{ cf. Adjusted pond volume required } 34,133 / 1.0535 = 32,400 \text{ cf}$$

4. ACTUAL DETENTION POND CAPACITY

a. Pond Volume. (Calculated by planimetering contours.)

Elevation	Area	Average Area	Depth	Volume
96.0	3,908			
		4,595	1.0	4,595
97.0	5,283			
		6,025	1.0	6,025

98.0	6,767			
		7,558	1.0	7,558
99.0	8,350			
		9,488	1.5	14,230
00.5	10,625			
Total				32,410

5. POND POSITIVE DISCHARGE PIPE:

For a 24" diameter positive discharge pipe, the discharge is calculated at two levels, when the pond is at its minimum level and when it is at its maximum level.

Elevation of spillway = 5000.50 Elevation of pipe springline = 4994.00

Use Orifice Equation $Q = CA(2GH)^{1/2}$ $C = 0.6$ $A = 3.14$ sf for a 24" RCP

H = Vertical distance from spillway elevation to springline of pipe. $H = 2.00$ and 6.50

$$Q = 0.6 * 3.14 (2 * 32.2 * 2.24)^{1/2} = 22.63 \text{ cfs}$$

$$Q = 0.6 * 3.14 (2 * 32.2 * 6.74)^{1/2} = 39.25 \text{ cfs} > 36.51 \text{ cfs}$$

Actually, the flow must be limited to the flow rate corresponding to the pond size, or 26.72 cfs. An orifice plate is required to limit the flow to that rate.

$$\text{Try } A = 2.90 \quad Q = 0.6 * 2.16 (2 * 32.2 * 6.50)^{1/2} = 26.52 \text{ cfs}$$

$$D = (4A / \pi)^{1/2} = (4 * 2.16 / \pi)^{1/2} = 1.66' \text{ Use } 1' - 7-15/16" \text{ Dia. orifice plate.}$$

6. POND OVERFLOW SPILLWAY

Design $Q = 60.17$ cfs Use Weir Equation. $Q = CLH^{3/2}$ $C = 2.65$ (Broadcrested Weir) $L = 35'$ $H = 0.75'$

$$Q = 2.65 * 35 * 0.75^{3/2} = 60.24 \text{ cfs} > 60.17 \text{ cfs}$$

7. ANALYSIS OF OUTFALL PIPE:

The pond positive discharge pipe is proposed to discharge into the Edith Boulevard storm drain by connecting to the existing manhole in the Edith Boulevard storm drain. (See plans for "Widening of Edith Boulevard, Phase I", Project 3675.90, Sheet No. 10-5, Bernalillo County, New Mexico, prepared by Boyle Engineering Corporation.) The outfall line will be connected between the pond and the manhole by a segment of storm drain pipe. There will be no need to cross the Alameda Lateral since the manhole to which the outfall will be connected is on the east side of the Alameda Lateral. The storm drain crosses under the Alameda Lateral (66" X 51" CSP) just south of the manhole.

The hydraulic gradeline elevation in the storm sewer at the manhole is 91.03 at the north side (inlet) and 90.01 at the south side (outlet).

The inlet and outlet losses will be relative to the velocity head in the pond outlet pipe. The maximum discharge rate permissible for the pond dimensions shown is 26.72 cfs. For a 24" pipe the velocity is...

$$V = Q / A = 26.72 / 3.14 = 8.51 \text{ fps.}$$

For submerged conditions, the entrance and exit losses are $0.5H_v$ and $1.0H_v$, respectively.¹

$$\text{Entrance loss} = 0.5H_v = 0.5(V^2/2G) = 0.5[8.51^2/(2 \times 32.2) = 0.56'$$

$$\text{Exit loss} = 0.5H_v = 1.0(V^2/2G) = 1.0[8.51^2/(2 \times 32.2) = 1.12'$$

The head loss in the pipe by the Darcy-Weisbach Equation is as follows:

$$h_f = (fL/D)(V^2/2G)$$

For a 24" dia. pipe, $R = 0.5$, $N = 0.010$, the value for f is given as 0.015 .²

$$h_f = [(0.015 \times 115)/2.0][8.51^2 / (2 \times 32.2)] = 0.097 \text{ ft.}$$

Summary of Losses:

Entrance 0.56'

Pipe	0.97
Exit	1.12'
Total	2.65'

The elevation in the pond must, therefore, be equal to or greater than the hydraulic grade elevation in the El Paraiso manhole plus the head losses.

$$4991.03 + 2.65 = 4995.36$$

The spillway elevation is 5000.50, therefore, a 24" pipe is adequate.

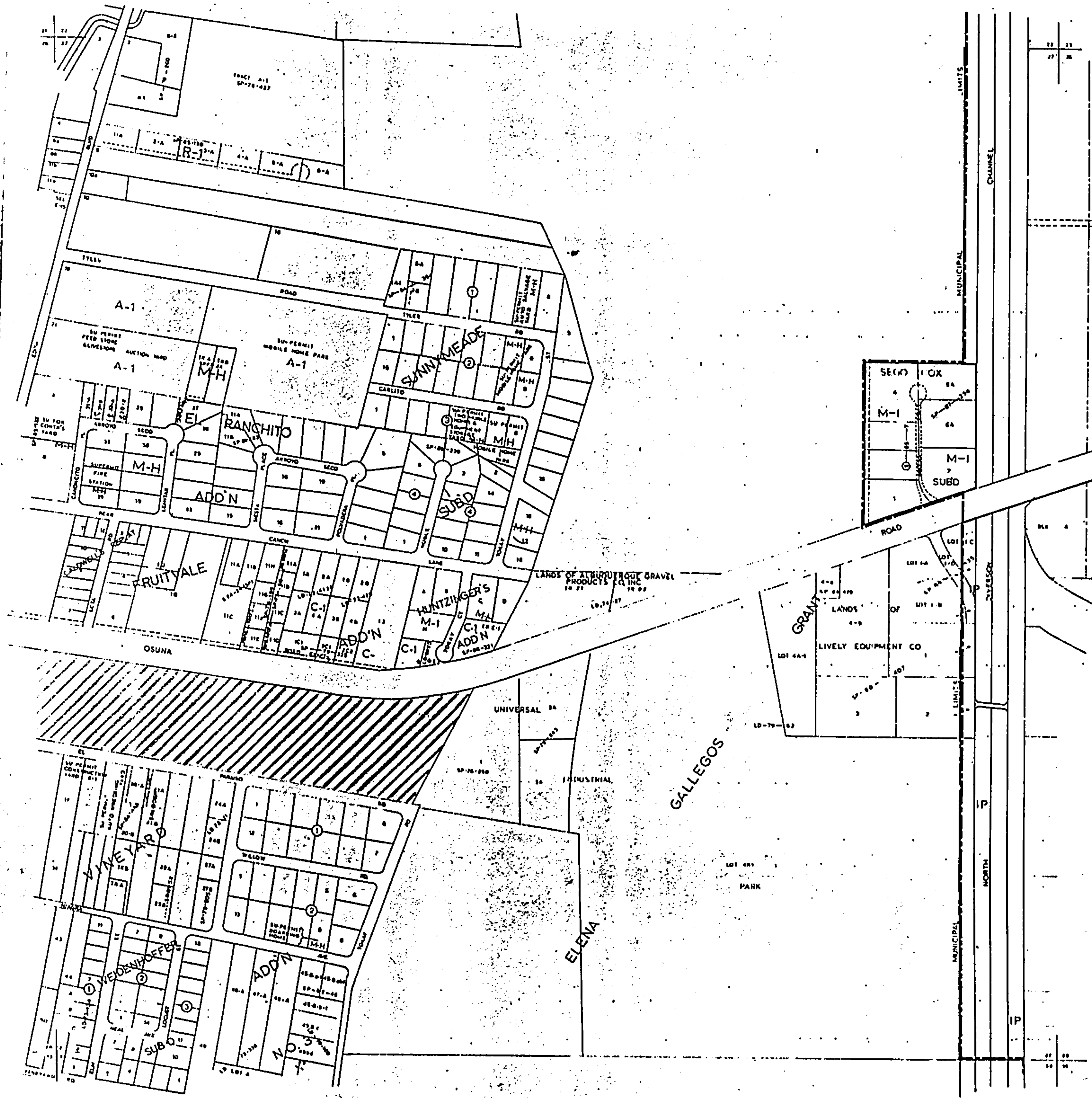
¹*Design of Small Dams, United States Department of Interior, Bureau of Reclamation, Appendix B, Figure B-7.*

²*Design of Small Canal Structures, United States Department of Interior, Bureau of Reclamation, Section 8-2, Hydraulic Head Losses.*

VI. JOINT USE OF POND AS AN ENVIRONMENTAL WETLANDS STUDY AREA

Since Sandia Preparatory School has a need to have a local environmental wetlands study area, it is proposed to utilize the detention pond by making it approximately 3' deeper than the invert elevation of the equalizing pipe. This will give the students an opportunity to perform ecological studies in a natural setting on the school campus. The fact that the pond may be inundated from time to time by flood waters will give them an opportunity to study what effect such inundation has on the ecological system of the wetlands. The pond will be fenced with a 6' chain link fence equipped with a locking gate. The Sandia Preparatory School will prepare and submit to the City of Albuquerque a hold harmless agreement that will relieve the City of any responsibilities or liabilities. A detailed proposal for the wetlands project is currently being prepared by one of the staff members of Sandia Preparatory School and will be submitted to the City of Albuquerque as soon as it becomes available.

VII. MAPS



Map No. 1, Cont.



LEGAL DESCRIPTION
T 15 N
R 10 E
S 17

UNIFORM PROPERTY CODE
§ 1518.001

MAP AMENDED THROUGH
MAY 1988

E-16-Z
CITY OF ALBUQUERQUE
PLANNING DEPARTMENT

11/11/11 7:12 PM
11/11/11 7:12 PM

0001 4444

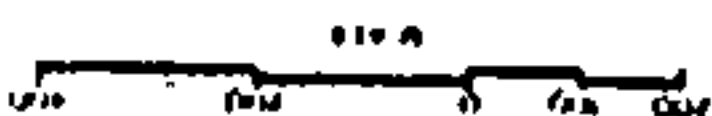
900 000 0

17m' 03mm

58 336

22 23 24

4th of 10 25



Map No. 1.





1" = 500'

VIII. EXCERPTS FROM EDITH BOULEVARD DRAINAGE ANALYSIS

Project _____

Description _____

Job No. _____

By PL

Date 3-28

Chkd By _____

Date _____

SHEET

8/14

Basin 12 D assume slight development w/school & Mega Corp being mostly pervious.

$$C = .55 \text{ area} = 40.5 \text{ acres } S = .014$$

$$L = 1800'$$

$$= 1100' \text{ (street)}$$

$$T_c = \left[\frac{1800}{4.1} + \frac{1100}{2.2} \right] \frac{1}{60} = 35.6 \text{ min}$$

$$I = 2.6 \text{ in/hr}$$

$$Q_p = CIA = .55(2.6)40.5 = 58 \text{ cfs.}$$

Basin 70

$$\text{street } C = .95 \text{ area} = .95 \text{ acres } S = .016$$

$$L = 500'$$

$$\text{parked } C = .60 \text{ area} = .92 \text{ acres } S = .03$$

$$= 150'$$

$$\text{composite } C = \frac{.95(.95) + .6(.92)}{.95 + .92} = .78$$

$$\text{area} = 1.87 \text{ acres}$$

$$T_c = 10 \text{ min.}$$

$$I = 4.8 \text{ in/hr}$$

$$Q_p = .78(1.87)4.8 = 7 \text{ cfs.}$$

AP 53

Basins 70, 12 D + AP52 control flow (EL Basin & Edith)

Because a large portion of basin 12 B & 12 C flow is intercepted by existing SD on Osuna, omit Basins 12 B & 12 C from area & composite C calculations. But add 40 cfs onto peak flows throughout this storm drain system.

$$\text{composite } C = \frac{.78(1.87) + .55(40.5) + .6(76.3)}{118.7} = .586$$

$$= 118.7 \text{ acres}$$

OSUNA ROAD
STUDY AREA

OSUNA RD

12D

12E

12F

VINEYARD RD

70

71

72

75

76

73

74

SCS UNIT HYDROGRAPH PER CITY OF ALBUQUERQUE DPM

EDITH BLVD. SIDESTREETS B1710102 EL PARAISO	
6 Hr. RAINFALL	2.2
CURVE NUMBER	78
LENGTH OF BASIN (ft)	160
AVERAGE SLOPE OF BASIN (ft/ft)	.031
AREA OF BASIN (acres)	.37
TIME OF CONCENTRATION (min)	1.48
TIME TO PEAK (min)	10.00
PEAK RUNOFF (cfs)	1.01
TOTAL RUNOFF VOLUME (acre-ft)	.019

OK

Project EdithDescription Side street Hydrology

Job No. _____

By PRL Date 8-16 Chkd By _____ Date _____

SHEET

4/11

Muscatel

 $d = 2.2''$ $CN = 35\% \text{ imp } 80$ $L = 700'$ $S = \frac{6}{650} = .009$ $A = \frac{100 \times 650}{43560} = 1.49 \text{ acres}$

Mission

 $d = 2.2$ $CN = 35\% \text{ imp } 80$ $L = 500'$ $S = \frac{9}{500} = .018$ $A = \frac{500 \times 80}{43560} = .918 \text{ acres}$

EL Paraiso

 $d = 2.2''$ $CN = 30\% \text{ imp } 78$ $L = 160'$ $S = \frac{5}{160} = .031$ $A = \frac{100 \times 160}{43560} = .37 \text{ acres}$

Vineyard

 $d = 2.2$ $CN = 35\% \text{ imp } 80$ $L = 270'$ $S = \frac{5}{270} = .0185$ $A = \frac{270 \times 75}{43560} = .46 \text{ acres}$

Niagara

 $d = 2.2$ $CN = 35\% \text{ imp } 80$ $L = 620'$ $S = \frac{10}{620} = .016$ $A = \frac{80 \times 620}{43560} = 1.14 \text{ acres}$

DRAINAGE INFORMATION SHEET

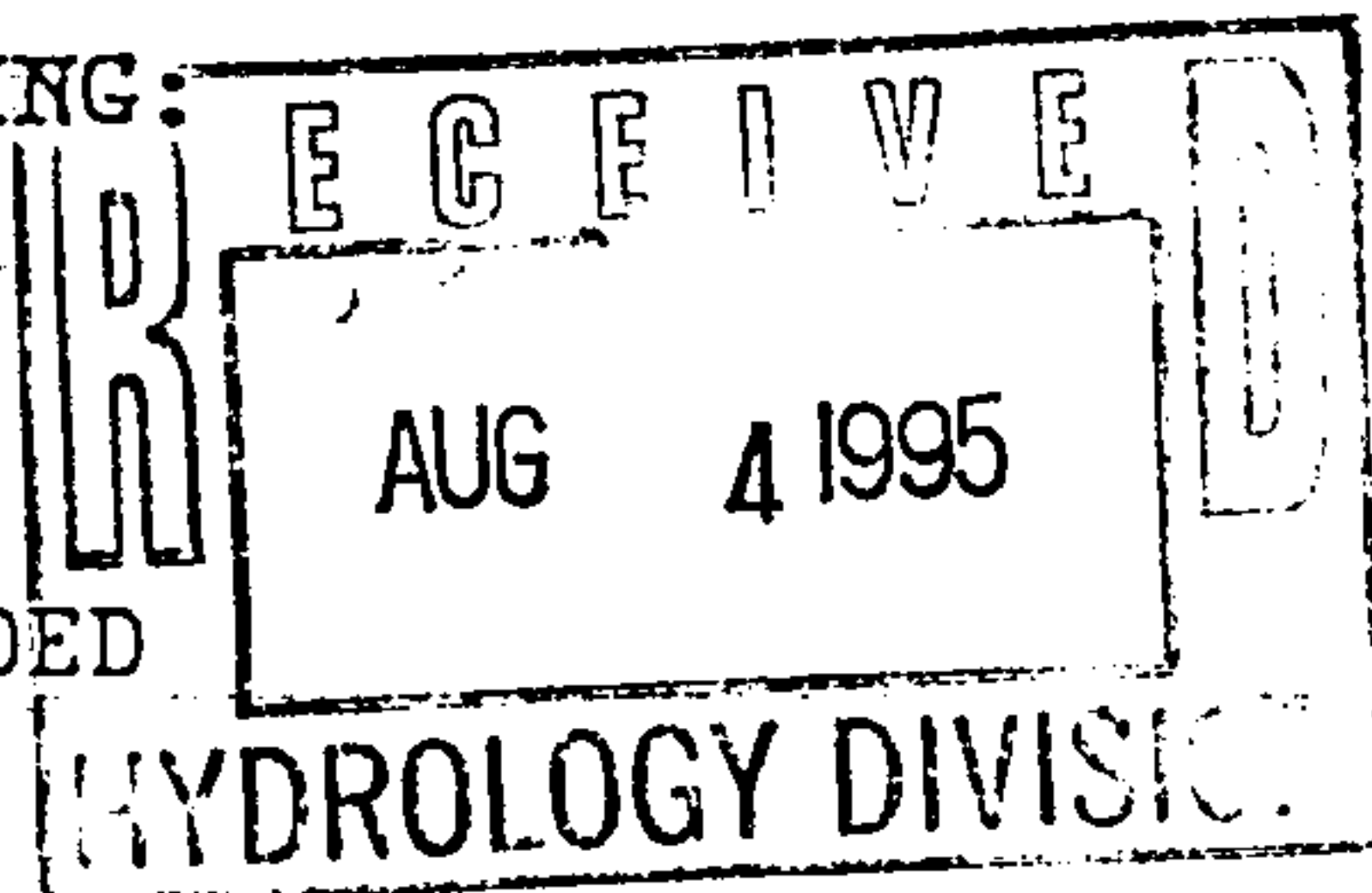
PROJECT TITLE: Sandia Preparatory School ZONE ATLAS/DRNG. FILE #: E16/D-12
 DRB #: _____ EPC #: _____ WORK ORDER #: _____
 LEGAL DESCRIPTION: Tracts 1, 2A & 2B the Academy for Boys
 CITY ADDRESS: 532 Osuna Road NE.
 ENGINEERING FIRM: Lovelady & Associates CONTACT: Frank D. Lovelady
 ADDRESS: 300 ALAMOSA NW, 87107 PHONE: 345-2267
 OWNER: Sandia Preparatory School CONTACT: Dick Heath Headmaster
 ADDRESS: 532 Osuna Road NE PHONE: 87113 344-1671
 ARCHITECT: Custer Basarich CONTACT: Phil Custer
 ADDRESS: 1400 Central SE Suite 3000 PHONE: 87106 765-1020
 SURVEYOR: ALPHA SURVEYING GROUP CONTACT: Gary Gritsko
 ADDRESS: 9311 4TH NW PHONE: 897-4865
 CONTRACTOR: _____ CONTACT: _____
 ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
☒ NO
☐ COPY PROVIDED



CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS

☒ OTHER Approval requested (SPECIFY)
for constructing an outfall line
and a spillway for existing
detention pond.

DATE SUBMITTED:

August 3, 1995

BY:

Frank D. Lovelady



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 21, 1995

Frank Lovelady
Lovelady & Associates
300 Alamosa Rd. NW
Albuquerque, NM 87107

RE: REVISED GRADING/PAVING PLAN FOR SANDIA PREPARATORY SCHOOL
TRACK/SOCCER/BASEBALL FIELDS (E16-D12) SHEET 1 OF 4
(7/25/95) SHEET 2 OF 4 (8/18/95) SHEET 3 OF 4 (10/5/94)
AND SHEET 4 OF 4 (10/5/94).

Dear Mr. Lovelady:

Based on the information provided on your August 4, 1995
resubmittal, the above referenced site is approved for outfall
alterations & building permit.

Please be advised that you will need to coordinate the
construction of the outfall with the County Public Works
Department. All other applicable requirements prior to
Certificate of Occupancy release from my September 16, 1994
letter will apply.

If I can be of further assistance, please feel free to contact me
at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 21, 1995

Frank Lovelady
Lovelady & Associates
300 Alamosa Rd. NW
Albuquerque, NM 87107

RE: REVISED GRADING/PAVING PLAN FOR SANDIA PREPARATORY SCHOOL
TRACK/SOCCER/BASEBALL FIELDS (E16-D12) SHEET 1 OF 4
(7/25/95) SHEET 2 OF 4 (10/5/94) SHEET 3 OF 4 (10/5/94)
AND SHEET 4 OF 4 (10/5/94).

Dear Mr. Lovelady:

Based on the information provided on your August 4, 1995
resubmittal, the above referenced site is approved for outfall
alterations & building permit.

Please be advised that you will need to coordinate the
construction of the outfall with the County Public Works
Department. All other applicable requirements prior to
Certificate of Occupancy release from my September 16, 1994
letter will apply.

If I can be of further assistance, please feel free to contact me
at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 12, 1995

Frank Lovelady
Lovelady & Associates
300 Alamosa Rd. NW
Albuquerque, NM 87107

RE: DRAINAGE PLAN FOR A 24' x 40' STORAGE SHED FOR SANDIA
PREPARATORY SCHOOL (E16-D12) SHEET 1 OF 1, REVISION
DATED 10/10/95.

Dear Mr. Lovelady:

Based on the information provided on your October 11, 1995
submittal, the above referenced site is approved for Building
Permit.

Please attach a copy of this approved plan to the construction
sets prior to sign-off by Hydrology.

Also, Engineer Certification for the complete site will be
required per my September 16, 1994 correspondence. The
certification submittal must be provided when the Certificate of
Occupancy request for the above site is requested.

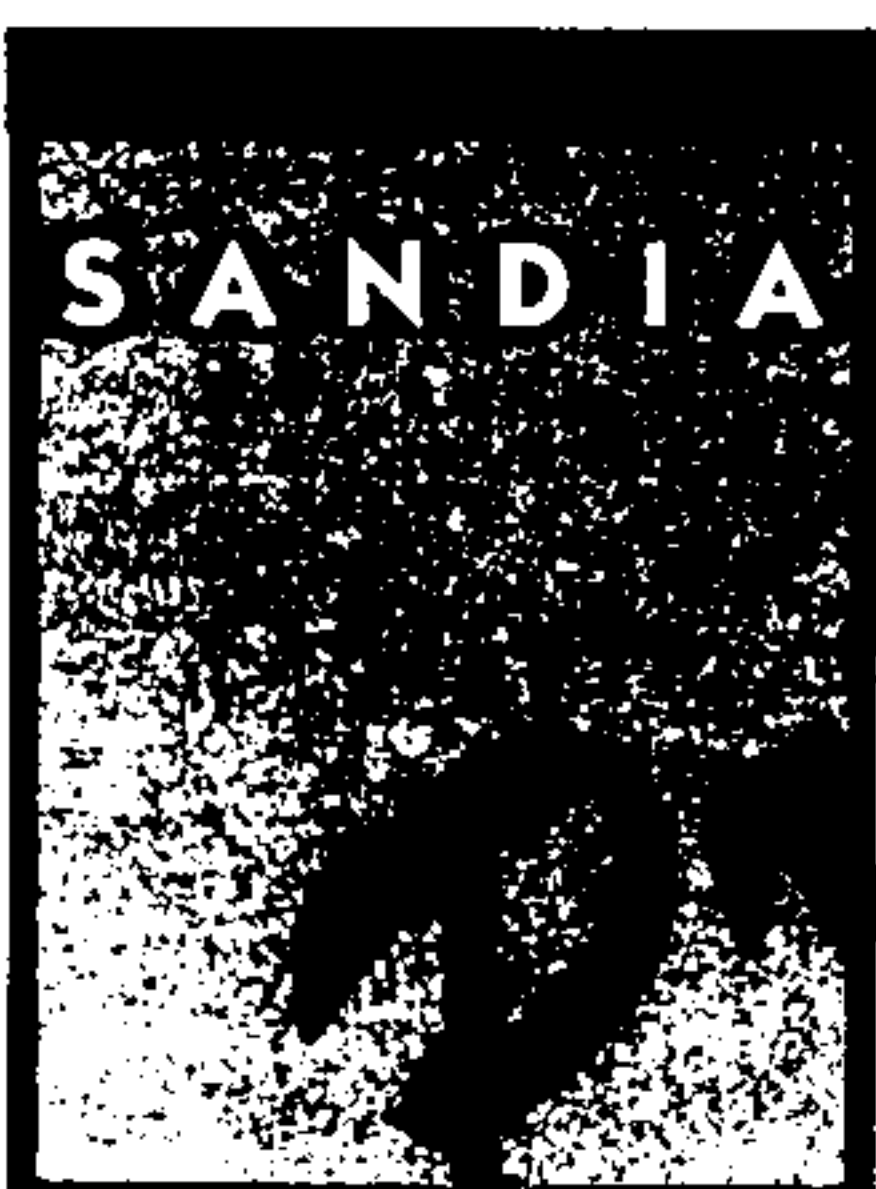
If I can be of further assistance, please feel free to contact me
at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
Dick Heath
File



November 1, 1995

Mr. Bernie Montoya, C. E.
City of Albuquerque - Hydrology Section
PO Box 1293
Albuquerque, NM 87103

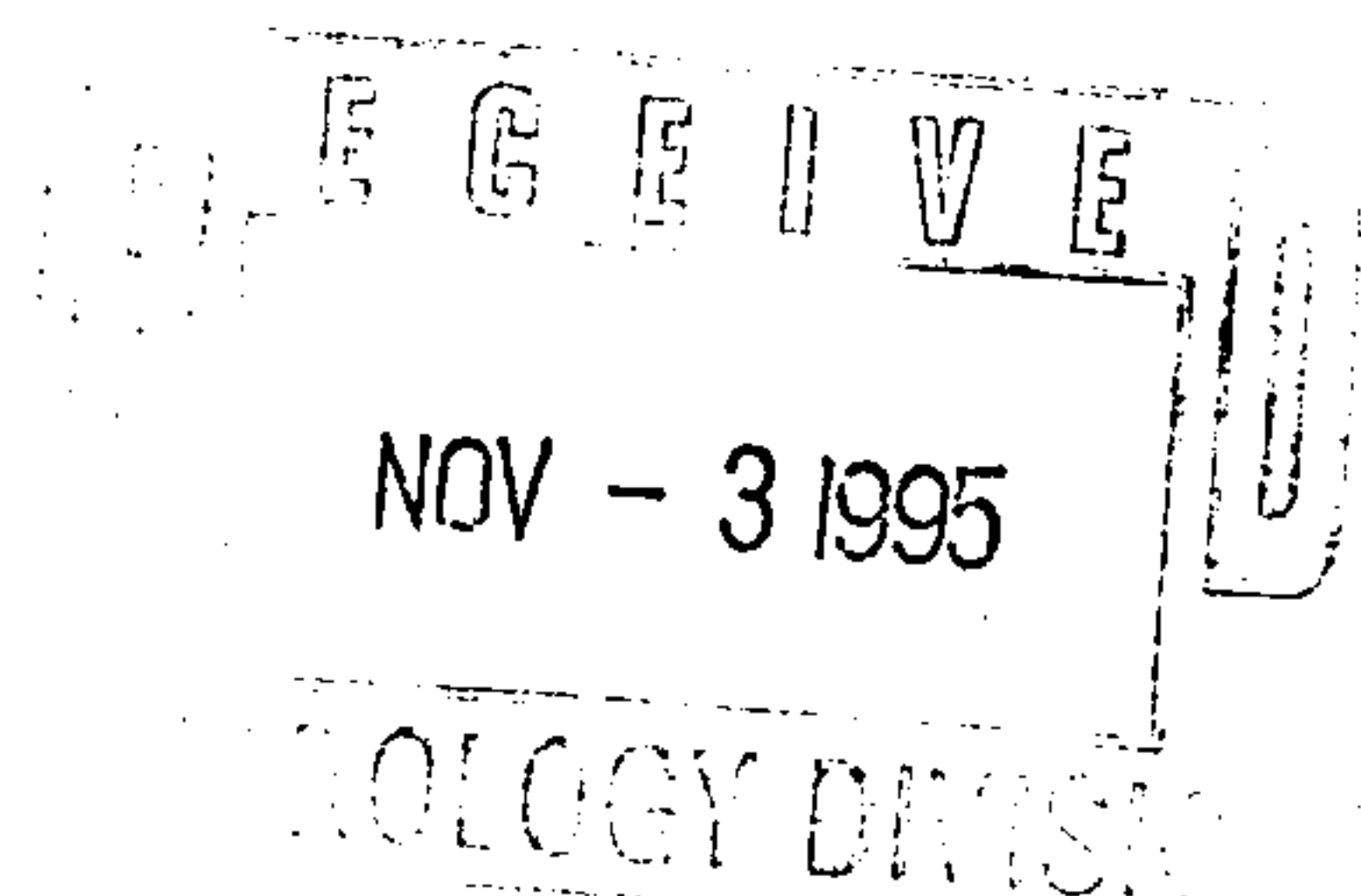
Dear Mr. Montoya:

I spoke today with our Engineer, Frank Lovelady, who informed me that you wished to know our intentions on our approved plan to discharge water into the Osuna storm system from our wetlands pond area. We have a pending date in November for our Performing Arts Center with E. P. C.. Our intent has been to include the pond discharge system in the planned construction of the Performing Arts Center. Our target date for that project is February 1, 1996. However, the work can commence if necessary as soon as we can contact three contractors, bid the job in the normal manner, and proceed according to plans drawn by Frank Lovelady, P.E.. We will proceed today to solicit bids on this project, and will notify you about the progress and completion of construction.

Sincerely,

Dick Heath
Headmaster

CC: Phil Custer
Marlene Ditto



CITY OF ALBUQUERQUE



**Planning Department
Transportation Development Services Section**

July 18, 2008

Daniel P. Kemme, R.A.
Dekker/Perich/Sabatini
7601 Jefferson NE, Ste. 100
Albuquerque, NM 87109

Re: Approval of Permanent Certificate of Occupancy (C.O.) for
Sandia Prep Field House, [E-16 / D012A]
532 Osuna NE
Architect's Stamp Dated 06/10/08

PO Box 1293

Dear Mr. Kemme,

Albuquerque

The above referenced project is approved for release of Permanent
Certification of Occupancy.

NM 87103

If you have any questions, please call me at 924-3991.

www.cabq.gov

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: File
CO Clerk

CITY OF ALBUQUERQUE



**Planning Department
Transportation Development Services Section**

July 1, 2008

Daniel P. Kemme, Registered Architect,
Dekker/Perich/Sabatini
7601 Jefferson NE, Ste. 100
Albuquerque, NM 87109

Re: Approval of Temporary Certificate of Occupancy (C.O.) for
Sandia Prep Field House, [E-16 / D012A]
532 Osuna NE
Architect's Stamp Dated 06/10/08

Dear Mr. Kemme:

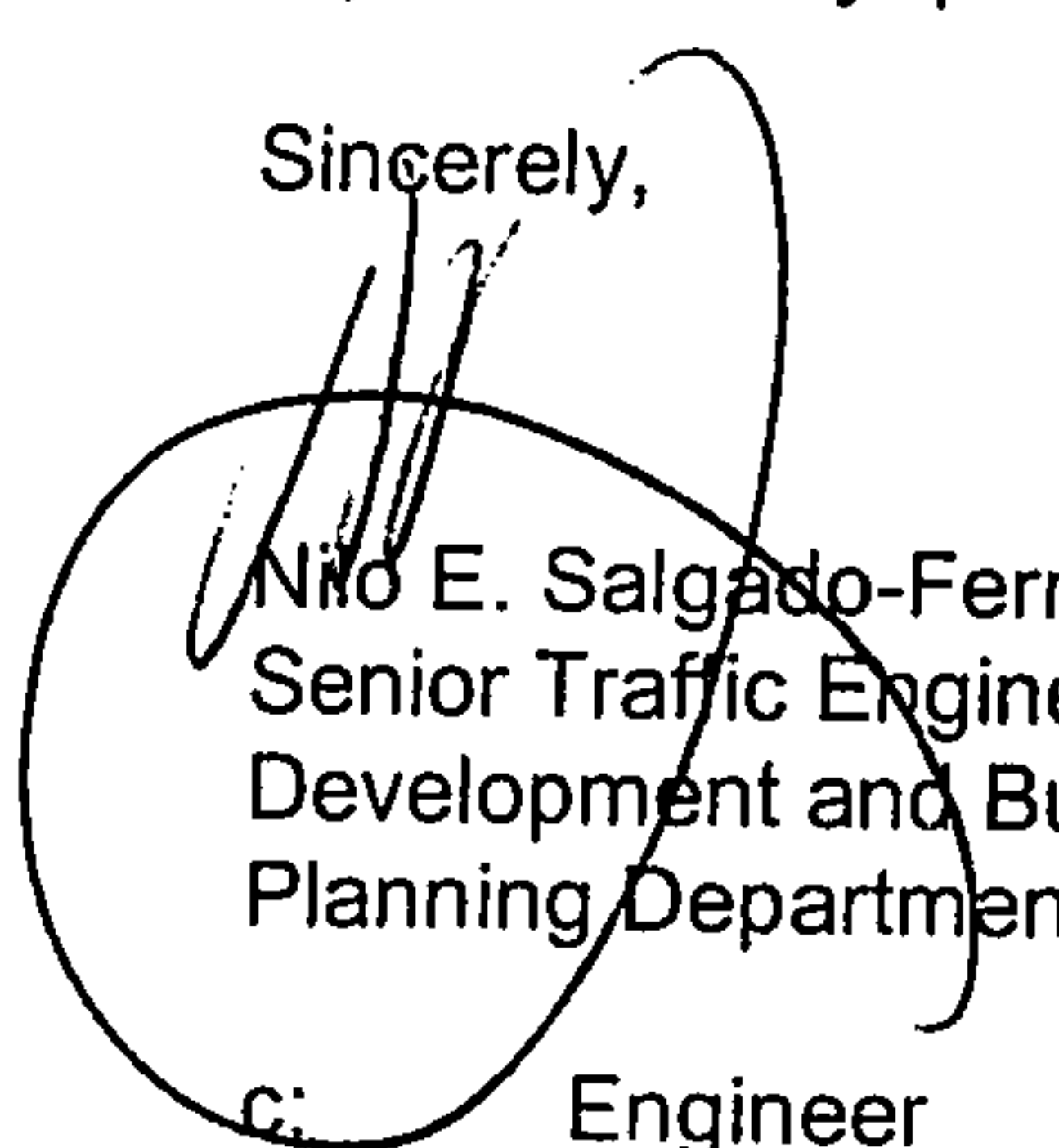
Based on the information provided on your submittal dated June 30, 2008, the above referenced project is approved for a 90-day Temporary C.O.

A Temporary C.O. has been issued allowing the Site Plan ~~(need to submit the original approved Site Plan in conjunction with AA Site Plan)~~ issues to be completed within this time period. When these remaining issues have been fully completed, are in substantial compliance, and a final Certification for Transportation has been resubmitted to the City's Hydrology office for approval, a Permanent C.O. will be issued.

The Certification package for Final C.O. must include an exact copy of the approved TCL, or signed off D.R.B. Site Plan, which is in each of the two City Permit Plan Sets—the contractor's City field set and the City's plan set in the basement of the Plaza Del Sol building. Package also must include a letter of certification on designer's letterhead-stamped with his seal, signed, and dated. Submit package along with fully completed Drainage Information Sheet to front counter personnel for log in and evaluation by Transportation.

If you have any questions, please call me at 924-3630.

Sincerely,


Nito E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

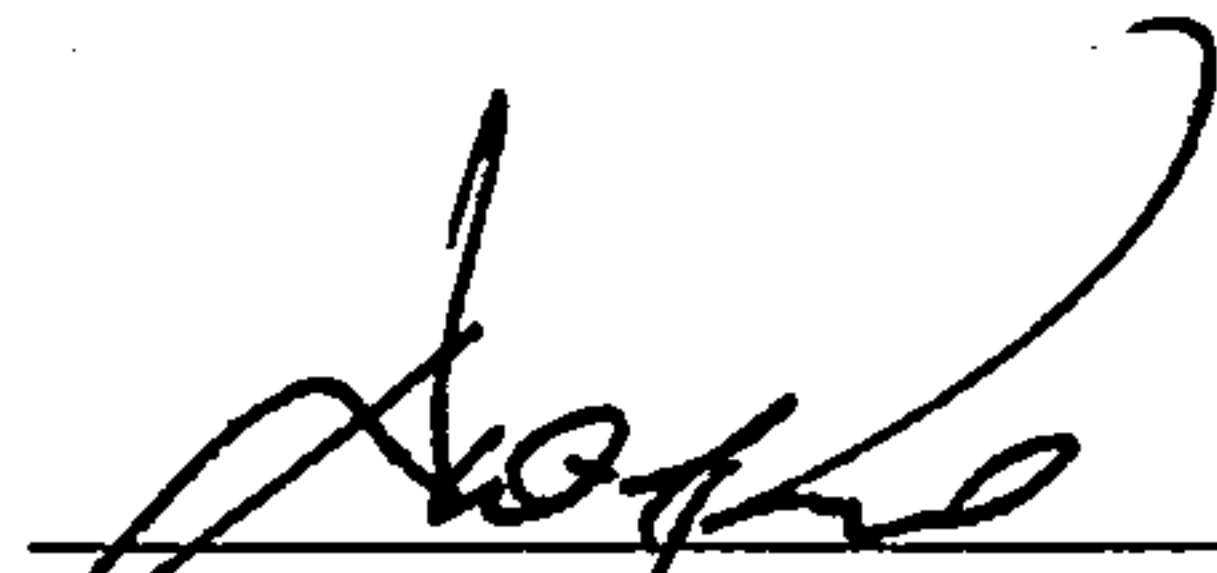
c: Engineer
Hydrology file
CO Clerk

TRAFFIC CERTIFICATION

I, Dan Kemme, NMRA #003817, of the firm Dekker/Perich/Sabatini, hereby certify that this project is in substantial compliance with and in accordance with the design intent of the approved Revised Master Site plan dated 18th June 07. I further certify that Dekker/Perich/Sabatini visited the project site on 06/10/08 and has determined by visual inspection that the survey data provided is representative of actual site conditions and is true and correct to the best of my knowledge and belief. The only variation to the approved Master Site plan noted in the attached copy of the Site plan is a revision to the parking count from 80 new spaces to 77 new spaces with 2 motorcycle spaces. The accessible space count was not affected. We have approved this change as the new spaces were in excess of that originally required for the school.

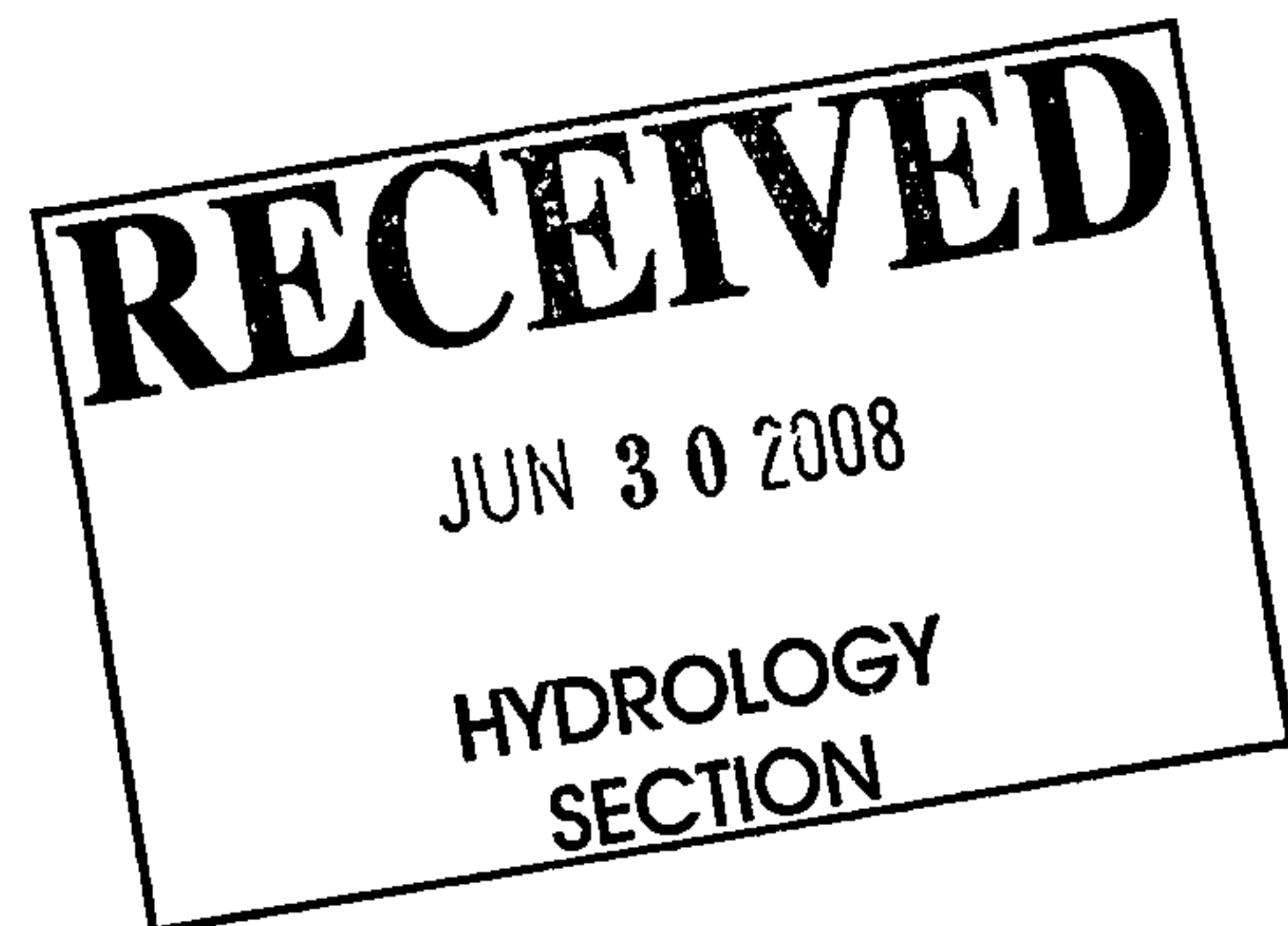
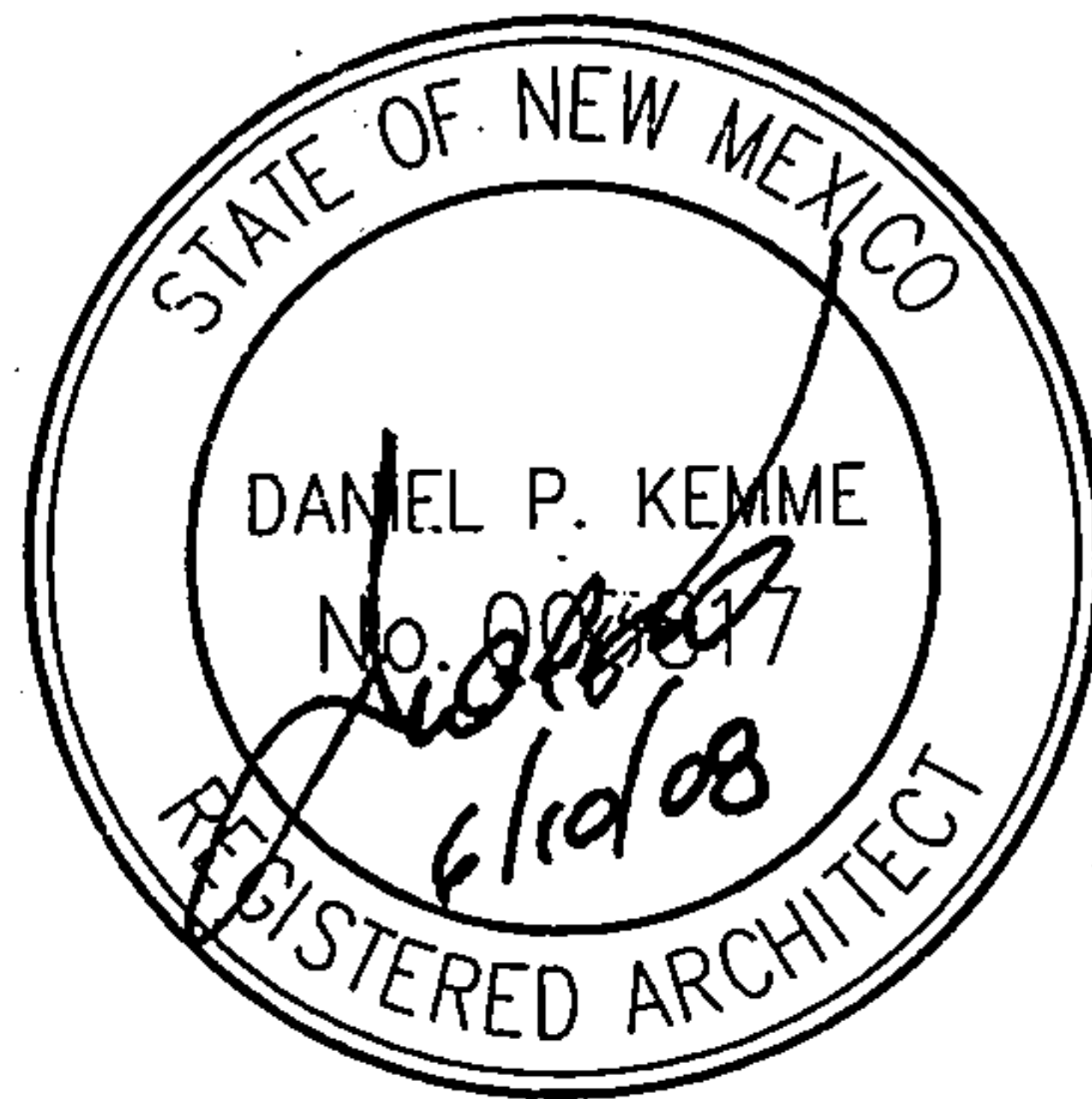
This certification is submitted in support of a request for Certificate of Occupancy.

The record information presented to Dekker/Perich/Sabatini is not necessarily complete and has been used only to verify substantial compliance of the traffic aspects of this project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.


Signature of Architect

Engineer's or Architect's Stamp

06/10/08
Date



DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

PROJECT TITLE: SANDIA PREP FIELD HOUSE ZONE MAP: E-16/D012A
 DRB#: _____ EPC#: 01128 00000 00252 WORK ORDER#: _____

LEGAL DESCRIPTION: TRACT 2A & 2B ACADEMY FOR BOYS
 CITY ADDRESS: 532 OSUNA RD. NE ALBUQUERQUE, NM 87109

ENGINEERING FIRM: HIGH MESA CONSULTING GROUP CONTACT: _____
 ADDRESS: 6010-13 MIDWAY PARK BLVD NE PHONE: 345-4250
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

OWNER: SANDIA PREP SCHOOL CONTACT: _____
 ADDRESS: 532 OSUNA RD. NE PHONE: 338-3000
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

ARCHITECT: DEKKER PERICH SABATINI CONTACT: DAW KEMME
 ADDRESS: 7601 JEFFERSON NE SUITE 100 PHONE: 761-9700
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

SURVEYOR: HIGH MESA CONSULTING GROUP CONTACT: _____
 ADDRESS: 6010-13 MIDWAY PARK BLVD NE PHONE: 345-4250
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

CONTRACTOR: JAYNES CORPORATION CONTACT: ZACH JOHNSON
 ADDRESS: 2906 BROADWAY NE PHONE: 345-8591
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87107

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING PLAN
- ☐ EROSION CONTROL
- ☐ ENGINEER'S CERTIFICATE
- ☒ CLOMR/LOMR
- ☒ TRAFFIC CIRCULATION
- ☐ ENGINEER'S CERTIFICATE (DRB SITE PLAN)
- ☐ OTHER (SPECIFY)

City Project #:
1001079
ADMIN. AMENDMENT
FILE #:
07AA-00657
BY: MUSELL DROTO Jun 18, 07

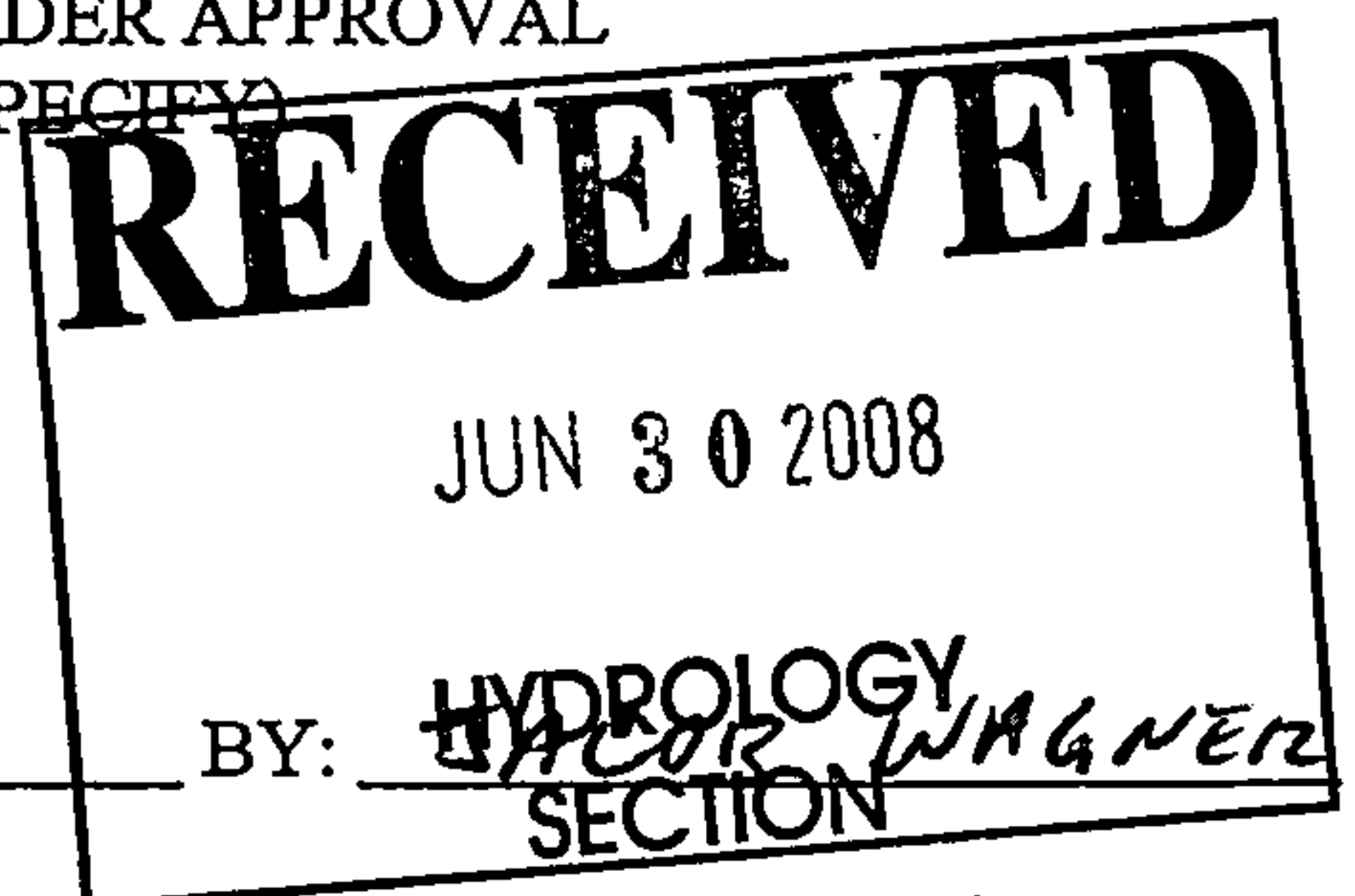
CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED

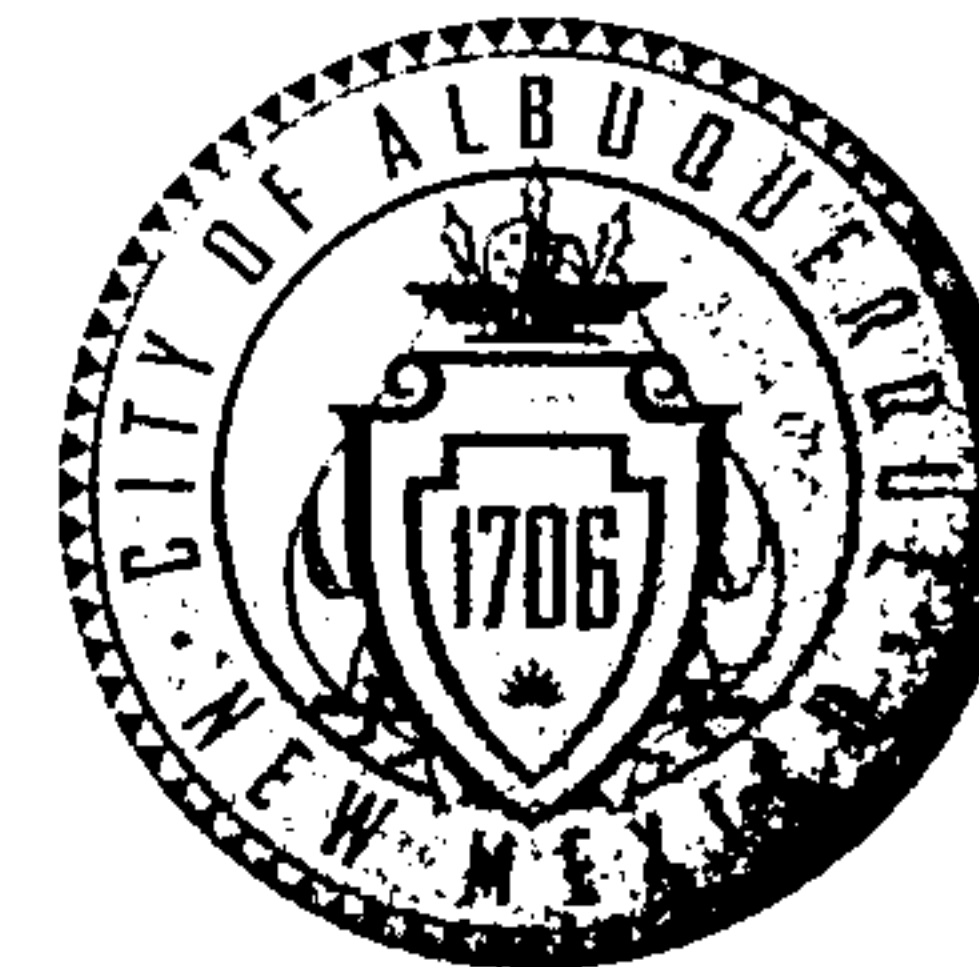
DATE SUBMITTED: 06/30/08



Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE



August 18, 2009

Benjamin J. Gardner, R.A.
Dekker/Perich/Sabatini
7601 Jefferson, Ste. 100
Albuquerque, NM 87109

Re: Permanent Certificate of Occupancy for Sandia Prep Arts Center Addition
532 Osuna Road NW [E16-D012]
Architect's Stamp Dated 08/10/09

Dear Mr. Gardner:

Based upon the additional information provided in your submittal received August 18, 2009, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Transportation Development.

PO Box 1293

If you have any questions, you can contact me at 924-3991.

Albuquerque

Sincerely,

NM 87103

Nilo Salgado-Fernandez, P.E.
Senior Traffic Engineer, Planning Dept.
Development and Building Services

www.cabq.gov

C: CO Clerk
File

TRAFFIC CERTIFICATION

I, Benjamin Gardner, NMRA #4161, of the firm Dekker/Perich/Sabatini, hereby certify that this project is in substantial compliance with and in accordance with the design intent of the approved plan dated 28th May 2008. I further certify that Dekker/Perich/Sabatini visited the project site on 08/10/09 and has determined by visual inspection that the survey data provided is representative of actual site conditions and is true and correct to the best of my knowledge and belief.

This certification is submitted in support of a request for Certificate of Occupancy.

The record information presented to Dekker/Perich/Sabatini is not necessarily complete and has been used only to verify substantial compliance of the traffic aspects of this project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.



Signature of Architect

Engineer's or Architect's Stamp

08/10/09
Date



DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 12/2005)

E-16/DO12A

PROJECT TITLE: Sandia Prep Arts Center Addition ZONE MAP: E-15-24 E-16-2
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Tract 2A and 2B Academy Boys
CITY ADDRESS: 532 Osuna Rd. NE ALBQ NM 87113

ENGINEERING FIRM: High Mesa Consulting Group CONTACT: Gracene Means
ADDRESS: 6010-B Midway Blvd. NE PHONE: 345-4250
CITY, STATE: ALBQ NM ZIP CODE: 87113

OWNER: Sandia Preparatory School CONTACT: Mark Heath
ADDRESS: 532 Osuna Rd NE PHONE: 388-3016
CITY, STATE: ALBQ NM 87113 ZIP CODE: 87113

ARCHITECT: DeKker/Perkins (Submittal) CONTACT: Benjamin Gardner
ADDRESS: 7601 Jefferson NE Suite 100 PHONE: 761-2700
CITY, STATE: ALBQ NM 87196 ZIP CODE: 87196

SURVEYOR: High Mesa Consulting Group CONTACT: Gracene Means
ADDRESS: 6010-B Midway Blvd NE PHONE: 345-4250
CITY, STATE: ALBQ NM ZIP CODE: 87109

CONTRACTOR: Gerold Martin General Contractor CONTACT: Jim Peterson
ADDRESS: 2901 Jefferson NE PHONE: 828-1144
CITY, STATE: ALBQ NM ZIP CODE: 87113

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1ST SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☒ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:

☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TEMP)
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY) _____

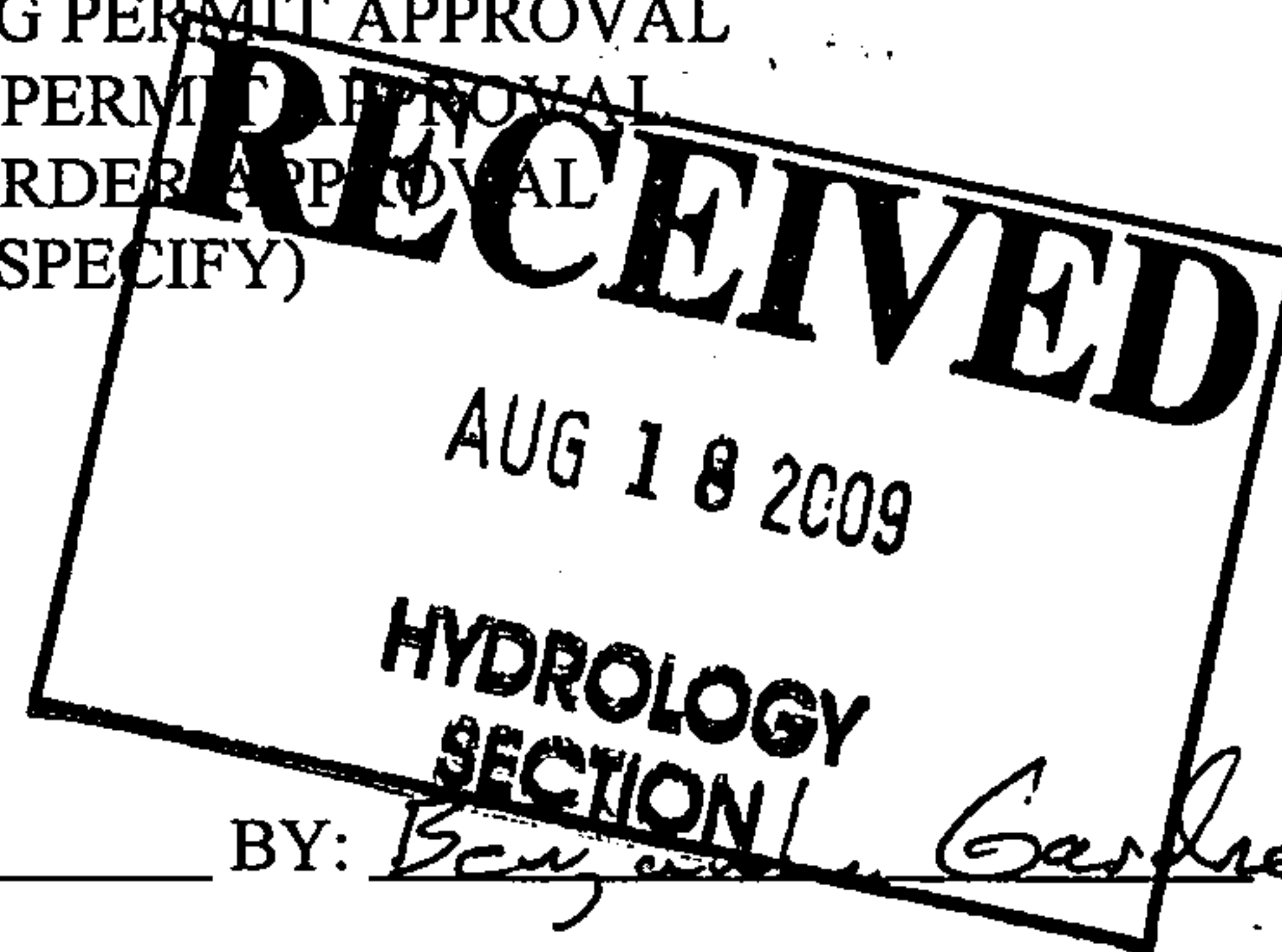
WAS A PRE-DESIGN CONFERENCE ATTENDED:

☐ YES
☐ NO
☐ COPY PROVIDED

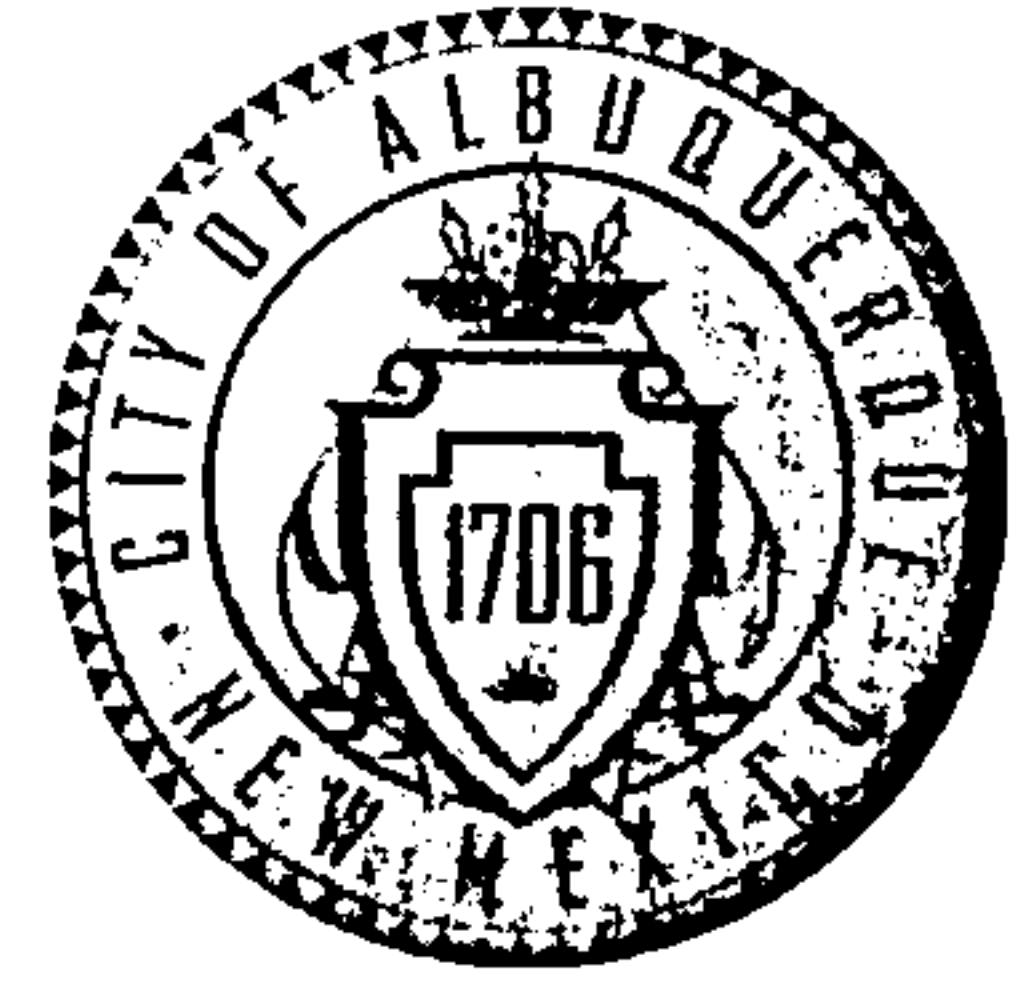
DATE SUBMITTED: 8/12/09 BY: Benjamin Gardner

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.



CITY OF ALBUQUERQUE



August 11, 2009

J. Graeme Means, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

**Re: Sandia Preparatory School New Field House, 532 Osuna Rd. NE,
(E-16/D0012A)**

Approval of Permanent Certificate of Occupancy,

Engineer's Stamp Dated: 05-12-08

Engineer's Certification Date: 08-10-09

PO Box 1293

Dear Mr. Means,

Albuquerque

Based upon the information provided on 8/11/09, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

NM 87103

If you have any questions, you can contact me at 924-3982.

Sincerely,

www.cabq.gov

Timothy E. Sims
Plan Checker-Hydrology, Planning Dept
Development and Building Services

C: CO Clerk—Katrina Sigala
file

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 01/06 – KDM)

PROJECT TITLE: Sandia Preparatory School New Field House ZONE MAP: E16/D012A
 DRB#: 1001079 EPC#: _____ WORK ORDER#: _____
 LEGAL DESCRIPTION: Tract 2B, Lands of the Academy for Boys
 CITY ADDRESS: 532 Osuna Rd NE

ENGINEERING FIRM: High Mesa Consulting Group CONTACT: Graeme Means #13676
 ADDRESS: 6010-B Midway Park Blvd NE PHONE: 345-4250
 CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: Sandia Preparatory School CONTACT: Architect
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Benjamin Gardner
 ADDRESS: 7601 Jefferson NE, Suite 100 PHONE: 761-9700
 CITY, STATE: Albuquerque, NM ZIP CODE: 87109

SURVEYING FIRM: Sandia Land Surveying SURVEYOR: Andrew S. Medina # 12649
 ADDRESS: 15 Casa Terrends PHONE: 867-1241
 CITY, STATE: Tijeras, NM ZIP CODE: 87043

CONTRACTOR: Gerald Martin CONTACT: Architect
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☐ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:

☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY - *perm*
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY) _____

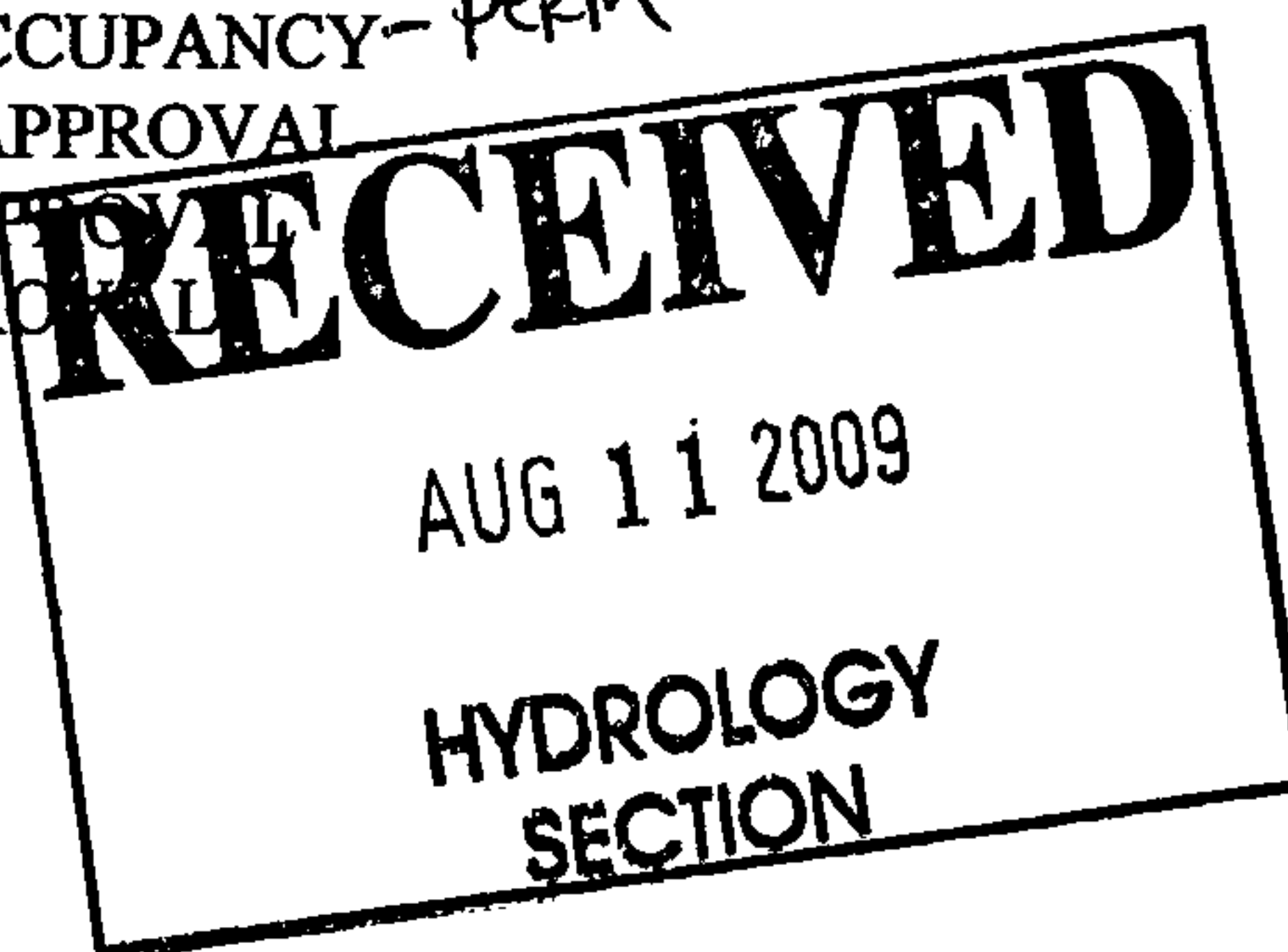
WAS A PRE-DESIGN CONFERENCE ATTENDED:

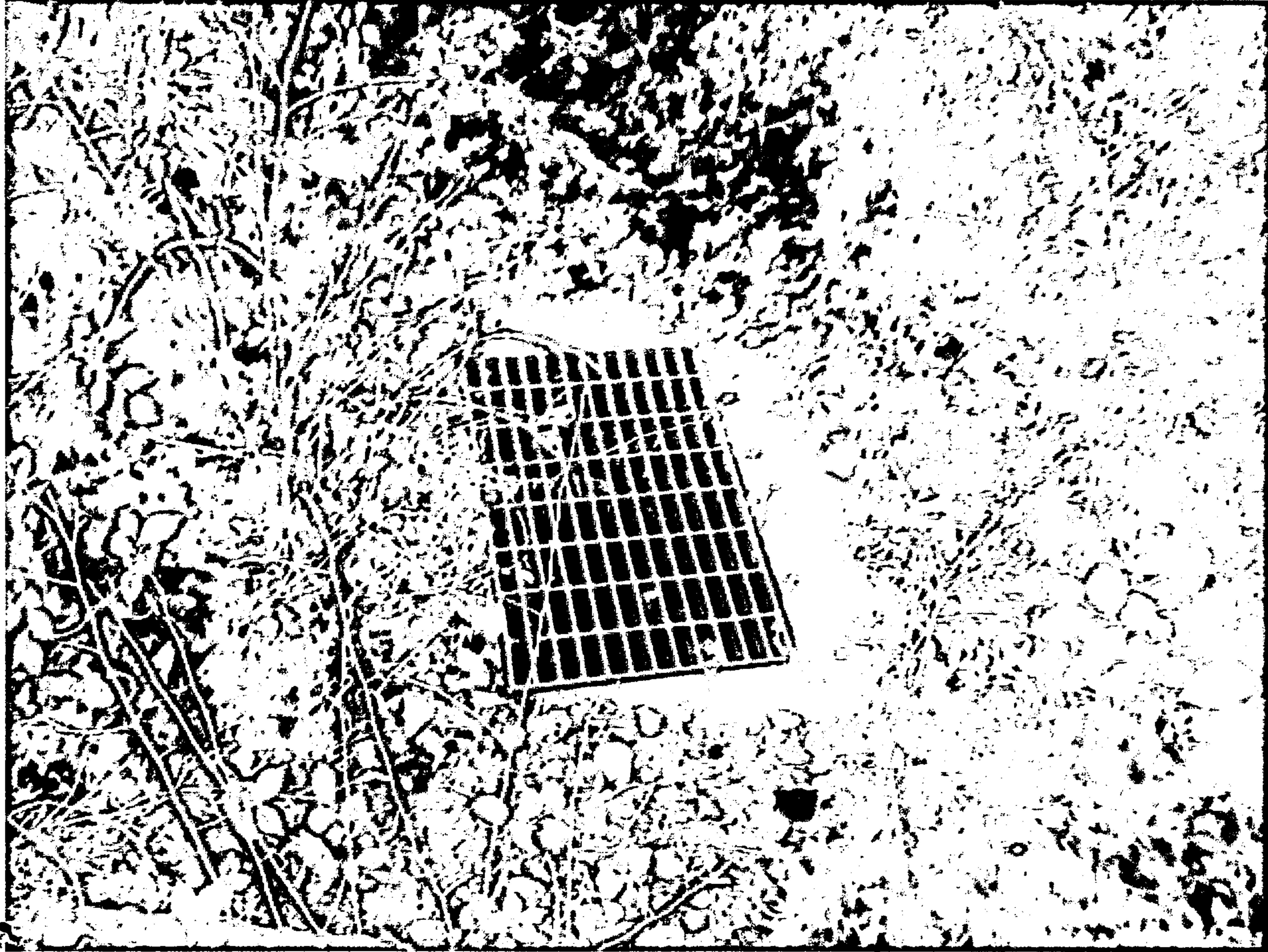
☐ YES
☒ NO
☐ COPY PROVIDED

DATE SUBMITTED: 8/11/09 BY: Graeme Means

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

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2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.





RECEIVED

AUG 11 2009

HYDROLOGY
SECTION

CITY OF ALBUQUERQUE



August 7, 2008

J. Graeme Means, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

**Re: Sandia Preparatory School New Field House, 532 Osuna Rd. NE,
(E-16/D012A)**

Approval of Permanent Certificate of Occupancy,

Engineer's Stamp Date 07/03/2008

Certification dated: 7-03-08

PO Box 1293

Mr. Means

Albuquerque

Based upon the information provided in your submittal received 8/07/08, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

NM 87103

If you have any questions, you can contact me at 924-3982.

Sincerely,

www.cabq.gov

Timothy E. Sims
Plan Checker-Hydrology, Planning Dept
Development and Building Services

C: CO Clerk—Katrina Sigala
file

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 01/06 – KDM)

PROJECT TITLE: Sandia Preparatory School New Field House ZONE MAP: E16/D12 A
 DRB#: 1001079 EPC#: _____ WORK ORDER#: _____
 LEGAL DESCRIPTION: Tract 2B, Lands of the Academy for Boys
 CITY ADDRESS: 532 Osuna Rd NE

ENGINEERING FIRM: High Mesa Consulting Group CONTACT: Graeme Means #13676
 ADDRESS: 6010-B Midway Park Blvd NE PHONE: 345-4250
 CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: Sandia Preparatory School CONTACT: Architect
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Benjamin Gardner
 ADDRESS: 7601 Jefferson NE, Suite 100 PHONE: 761-9700
 CITY, STATE: Albuquerque, NM ZIP CODE: 87109

SURVEYING FIRM: High Mesa Consulting Group SURVEYOR: Charles G. Cala, Jr. # 11184
 ADDRESS: 6010-B Midway park Blve NE PHONE: 345-4250
 CITY, STATE: Albuquerque, NM ZIP CODE: 87109

CONTRACTOR: Jaynes CONTACT: Zach Johnson
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☐ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:

☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED:

☐ YES
☒ NO
☐ COPY PROVIDED

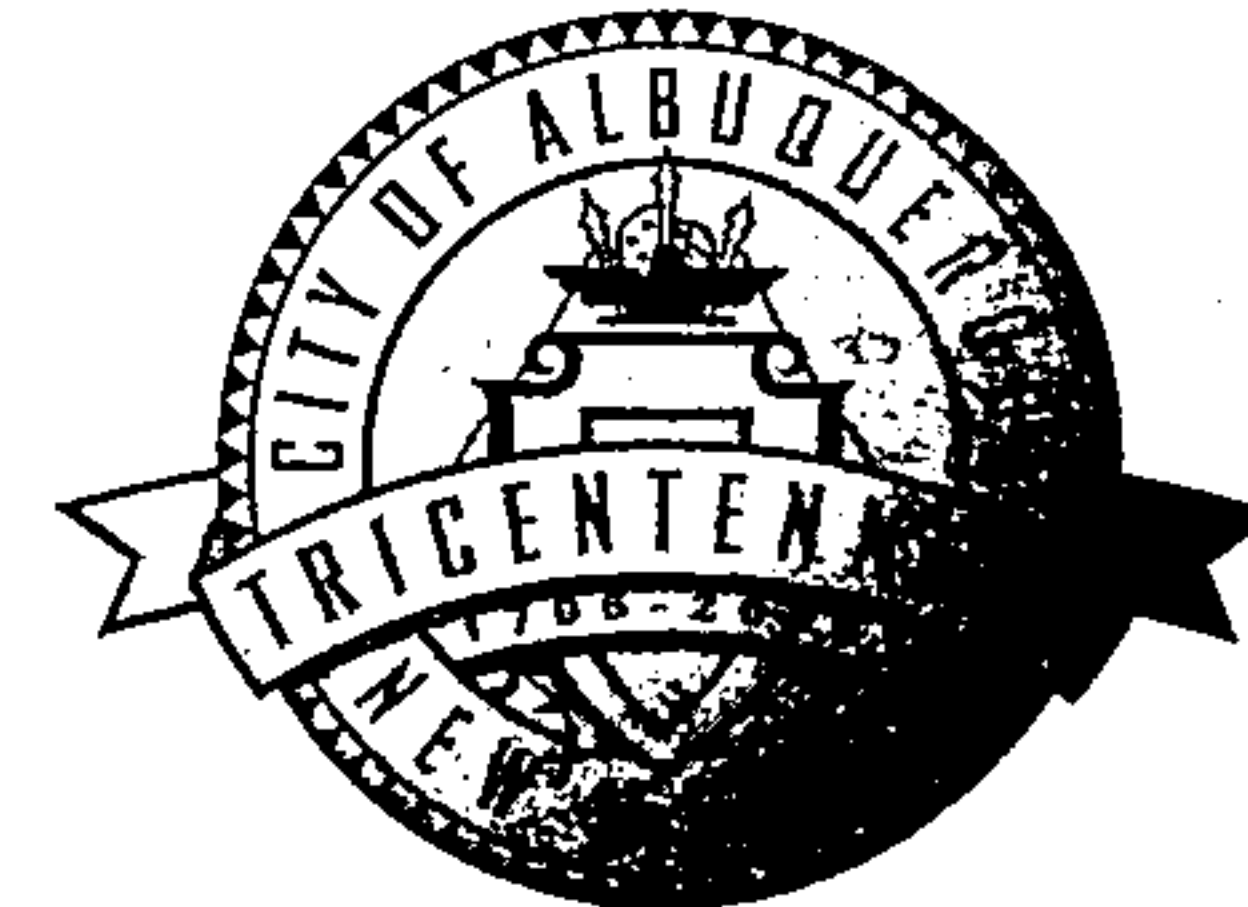
DATE SUBMITTED: 8/6/08 BY: Graeme Means

RECEIVED
 AUG 07 2008
 HYDROLOGY
 SECTION

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE



June 18, 2008

J. Graeme Means, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

**Re: Sandia Prep School Art Center Addition Grading and Drainage Plan
Engineer's Stamp dated 5-12-08 (E16/D012A)**

Dear Mr. Means,

Based upon the information provided in your submittal received 5-13-08, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

P.O. Box 1293

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. You are required to send a copy of your SWPPP on a CD to the following address:

Albuquerque

Department of Municipal Development, Storm Drainage Division, P.O. Box 1293, One Civic Plaza, Rm. 301, Albuquerque, NM 87103.

New Mexico 87103

Prior to Certificate of Occupancy release:

- The grate needs to be replaced on the pond outlet near Edith and Osuna. Remove debris as necessary.
- Engineer Certification per the DPM checklist will be required.

www.cabq.gov

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: file
Kathy Verhage, DMD

CITY OF ALBUQUERQUE



July 30, 2007

Jeffrey G. Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

Re: Sandia Prep. Field House, 532 Osuna NE
Engineer's Stamp dated 7-3-2007, (E16/D12A)

Dear Mr. Mortensen,

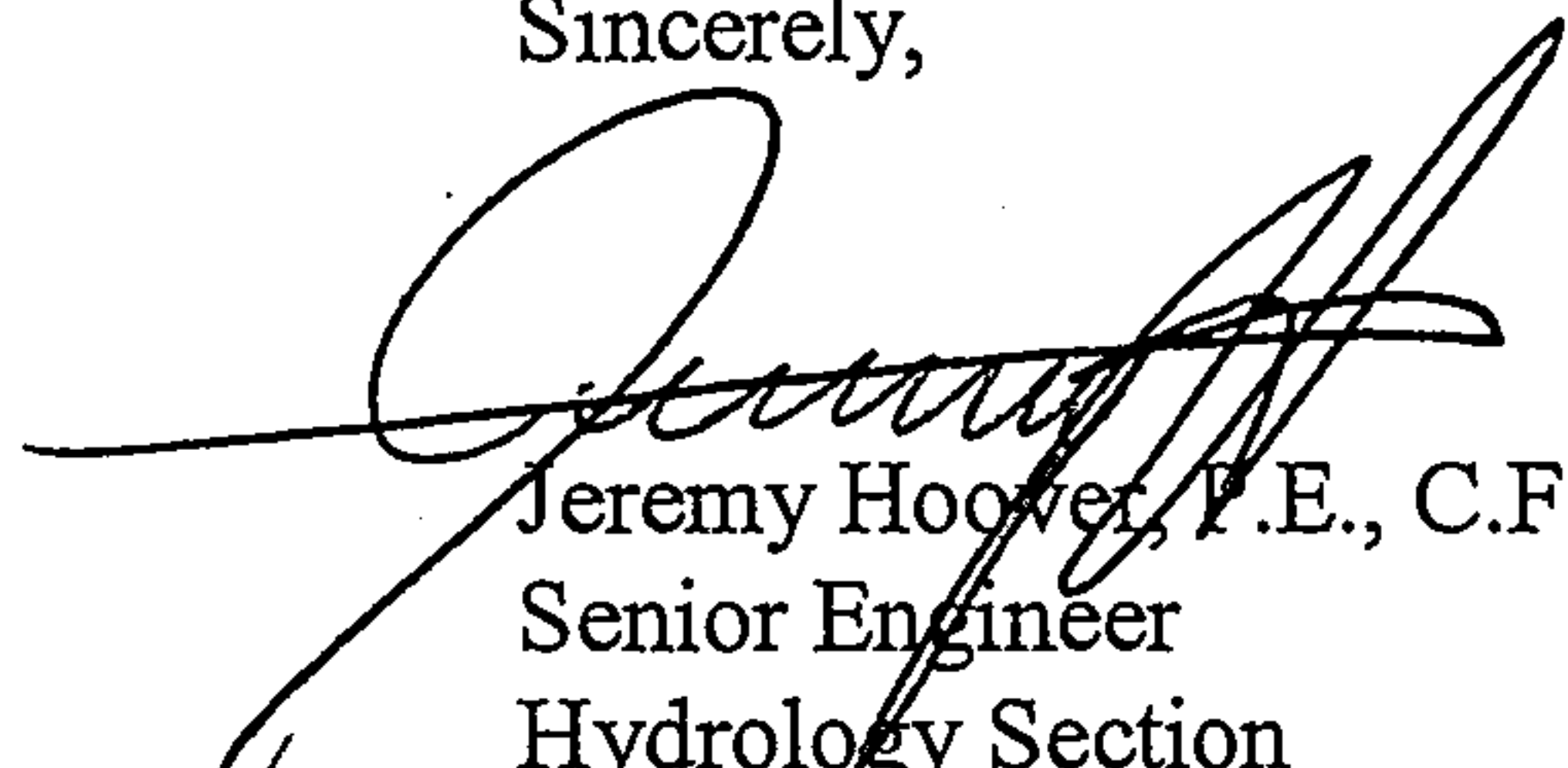
Based upon the information contained in your submittal received on July 12, 2007, the above referenced plan is approved for both Building Permit and S)-19 Permit. Please attach a copy of this letter and the approved plan to the construction sets to obtain sign-off by Hydrology. A copy of this approval letter must also be on hand when applying for the excavation permit. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

This project will also require a National Pollutant Discharge Elimination System (NPDES) permit. Inquiries regarding this permit should be directed to Sertil Kandar at 768-3645. In addition to submitting an NOI to the EPA and preparing a SWPPP, please send a copy of their SWPPP on a CD in .pdf format to Kathy Verhage with the Department of Municipal Development Storm Drainage Division at the following address.

Department of Municipal Development
Storm Drainage Division
P.O. Box 1293, One Civic Plaza, Rm. 301
Attn: Kathy Verhage
Albuquerque, NM 87103

If you have any questions, you can contact me at 924-3990.

Sincerely,


Jeremy Hoover, P.E., C.F.M.
Senior Engineer
Hydrology Section
Development and Building Services

cc: file E16/D12A

Antoinette Baldonado, Construction Services
Dwayne Schmitz, DMD Street / Storm Maintenance

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

PROJECT TITLE: Sandia Preparatory School New Field House ZONE MAP: E-16 / D012A
 DRB # _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Tract 2B, Lands of the Academy for Boys
 CITY ADDRESS: 532 Osuna Road, NE, Albuquerque, New Mexico 87113

ENGINEERING FIRM: High Mesa Consulting Group CONTACT: J Graeme Means, PE
 ADDRESS: 6010-B Midway Park Boulevard, NE PHONE: 505-345-4250
 CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

OWNER: Sandia Preparatory School CONTACT: Architect
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Benjamin Gardner
 ADDRESS: 7601 Jefferson NE, Suite 100 PHONE: 505-761-9700
 CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

SURVEYOR: High Mesa Consulting Group CONTACT: Charles G. Cala, Jr., PS
 ADDRESS: 6010-B Midway Park Boulevard, NE PHONE: 505-345-4250
 CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87109

CONTRACTOR: Jaynes Corporation CONTACT: Zach Johnson
 ADDRESS: POB 26841 PHONE: 505 345-8591
 CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87125

TYPE OF SUBMITTAL:

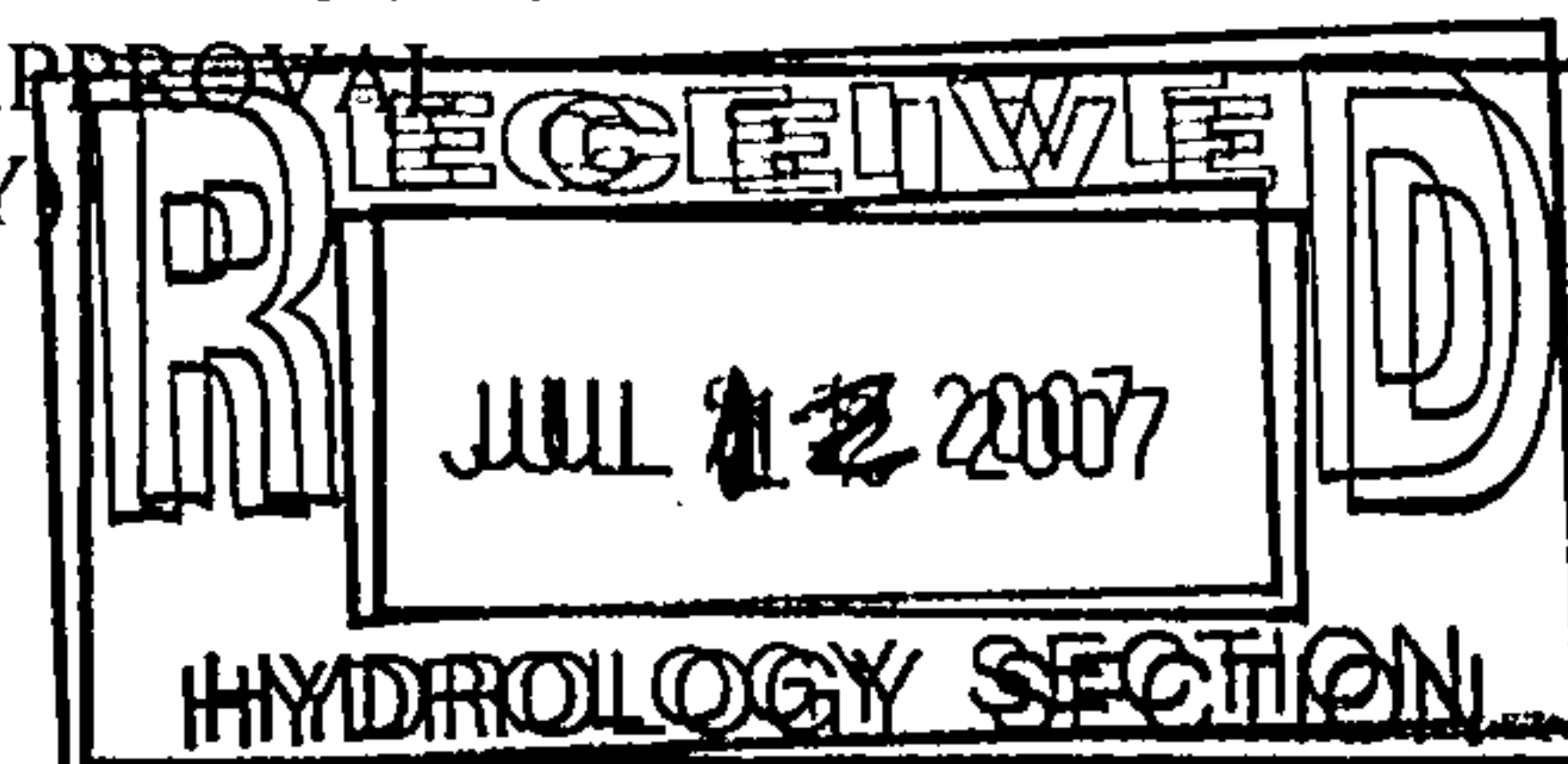
_____ DRAINAGE REPORT
☒ DRAINAGE PLAN 1st SUBMITTAL
 _____ DRAINAGE PLAN RESUBMITTAL
 _____ CONCEPTUAL G & D PLAN
 _____ GRADING PLAN
 _____ EROSION CONTROL PLAN
 _____ ENGINEER'S CERT (HYDROLOGY)
 _____ CLOMR/LOMR
 _____ TRAFFIC CIRCULATION LAYOUT
 _____ ENGINEER'S CERT (TCL)
 _____ ENGINEER'S CERT (DRB SITE PLAN)
 _____ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:

_____ SIA/FINANCIAL GUARANTEE RELEASE
 _____ PRELIMINARY PLAT APPROVAL
 _____ S. DEV. PLAN FOR SUB'D APPROVAL
 _____ S. DEV. FOR BLDG. PERMIT APPROVAL
 _____ SECTOR PLAN APPROVAL
 _____ FINAL PLAT APPROVAL
 _____ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
 _____ CERTIFICATE OF OCCUPANCY (PERM)
 _____ CERTIFICATE OF OCCUPANCY (TEMP)
 _____ GRADING PERMIT APPROVAL
 _____ PAVING PERMIT APPROVAL
 _____ WORK ORDER APPROVAL
☒ OTHER (SPECIFY) SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
☒ NO
 _____ COPY PROVIDED



DATE SUBMITTED: July 10, 2007 BY: J. Graeme Means, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

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2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

ONE STOP SHOP
CITY OF ALBUQUERQUE PLANNING DEPARTMENT
Development & Building Services

PAID RECEIPT

APPLICANT NAME _____

AGENT

HIGH MESA CONSULT'G GROUP

ADDRESS

6010-B MIDWAY BLVD NE

PROJECT & APP # _____

PROJECT NAME

SANDIA PREP SCHOOL NEW FIELD HOUSE

\$ _____ 441032/3424000 Conflict Management Fee

\$ _____ 441006/4983000 DRB Actions

\$ _____ 441006/4971000 EPC/AA/LUCC Actions & All Appeals

\$ _____ 441018/4971000 Public Notification

\$ 50.00 441006/4983000 DRAINAGE PLAN REVIEW OR TRAFFIC IMPACT STUDY***
() Major/Minor Subdivision () Site Development Plan (X) Bldg Permit
() Letter of Map Revision () Conditional Letter of Map Revision
() Traffic Impact Study

\$ 50.00 TOTAL AMOUNT DUE

***NOTE: If a subsequent submittal is required, bring a copy of this paid receipt with you to avoid an additional charge.

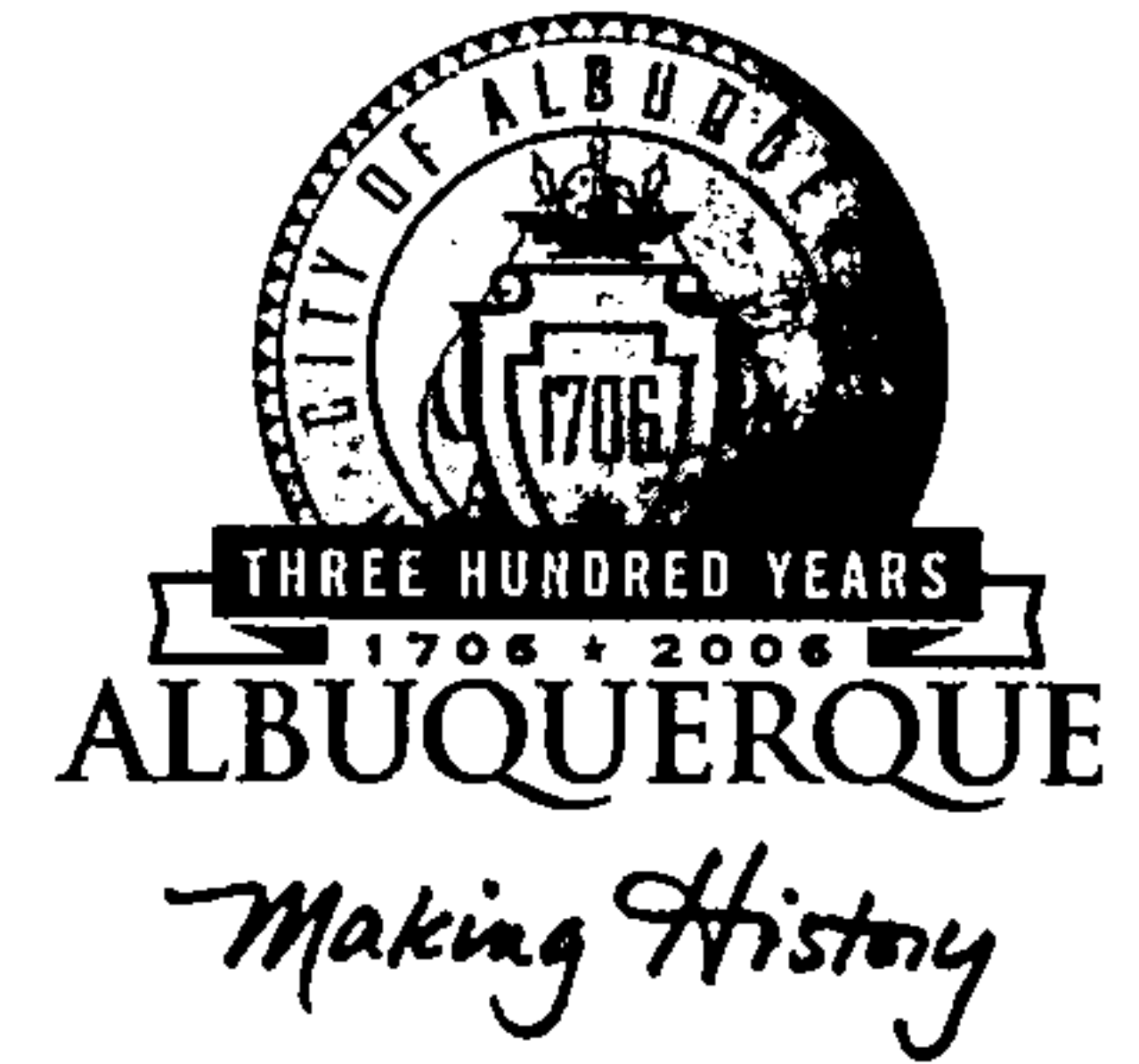
DUPLICATE
City Of Albuquerque
Treasury Division

Counterreceipt.doc 6/21/04

7/12/2007 8:28AM LOC: ANN
RECEIPT# 00084755 WSH 007 TRANSH 0005
Account: 441006 Fund 0110
Activity 4983000 TRSMSP
Trans Amt \$50.00
J24 Misc \$50.00
NC \$50.00
CHANGE \$0.00

Thank You

CITY OF ALBUQUERQUE



December 8, 2004

John MacKenzie, P.E.
Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199

**Re: Sandia Prep Observatory, SE Corner of Edith and Osuna, Grading and
Drainage Plan**

Engineer's Stamp dated 11-15-04 (E16-D12A)

Dear Mr. MacKenzie,

Based upon the information provided in your submittal received 11-15-04, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

P.O. Box 1293

Albuquerque

If you have any questions, you can contact me at 924-3981.

New Mexico 87103

www.cabq.gov

Sincerely,

Kristal D. Metro
Engineering Associate, Planning Dept.
Development and Building Services

C: File

DRAINAGE INFORMATION SHEET
(REV. 1/28/2003rd)

E-16/D012A

PROJECT TITLE:	<u>Sandia Prep Observatory</u>	ZONE MAP/DRG #:	<u>E-15416</u>
DRB#:	EPC #:	W.O.#:	
LEGAL DESCRIPTION:	<u>Tract 2 Lands of the Academy for Boys</u>		
CITY ADDRESS:	<u>SE Corner of Edith & Osuna</u>		
ENGINEERING FIRM:	Mark Goodwin & Associates, PA	CONTACT:	<u>Scott Davis</u>
ADDRESS:	PO Box 90606	PHONE:	828-2200
CITY, STATE:	Albuquerque, NM	ZIP CODE:	87199
OWNER:	<u>Sandia Preparatory School</u>	CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
ARCHITECT:	<u>N/A</u>	CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	Aldrich Land Surveying	CONTACT:	Tim Aldrich
ADDRESS:	P.O. Box 30701	PHONE:	884-1990
CITY, STATE:	Albuquerque, NM	ZIP CODE:	87190-0701
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

- | | |
|-------------------------------------|--|
| ☐ | DRAINAGE REPORT |
| ☒ | DRAINAGE PLAN 1 ST SUBMITTAL, req. TCL or equal |
| ☐ | DRAINAGE PLAN RESUBMITTAL |
| ☐ | CONCEPTUAL GRADING & DRAINAGE PLAN |
| ☒ | GRADING PLAN |
| ☐ | EROSION CONTROL PLAN |
| ☐ | ENGINEER'S CERTIFICATION (HYDROLOGY) |
| ☐ | CLOMR/LOMR |
| ☐ | TRAFFIC CIRCULATION LAYOUT (TCL) |
| ☐ | ENGINEER'S CERTIFICATION (TCL) |
| ☐ | ENGINEER'S CERTIFICATION (DRB APPR. SITE PLAN) |
| ☐ | OTHER |

CHECK TYPE OF APPROVAL SOUGHT:

- | | |
|-------------------------------------|--|
| ☐ | SIA / FINANCIAL GUARANTEE RELEASE |
| ☐ | PRELIMINARY PLAT APPROVAL |
| ☐ | S. DEV. PLAN FOR SUB'D. APPROVAL |
| ☐ | S. DEV. PLAN FOR BLDG. PERMIT APPROVAL |
| ☐ | SECTOR PLAN APPROVAL |
| ☐ | FINAL PLAT APPROVAL |
| ☐ | FOUNDATION PERMIT APPROVAL |
| ☒ | BUILDING PERMIT APPROVAL |
| ☐ | CERTIFICATE OF OCCUPANCY (PERM) |
| ☐ | CERTIFICATE OF OCCUPANCY (TEMP) |
| ☐ | GRADING PERMIT APPROVAL |
| ☐ | PAVING PERMIT APPROVAL |
| ☐ | WORK ORDER APPROVAL |
| ☐ | OTHER (specify) |

WAS A PRE-DESIGN CONFERENCE ATTENDED?

- | | |
|-------------------------------------|---------------|
| ☐ | YES |
| ☒ | NO |
| ☐ | COPY PROVIDED |

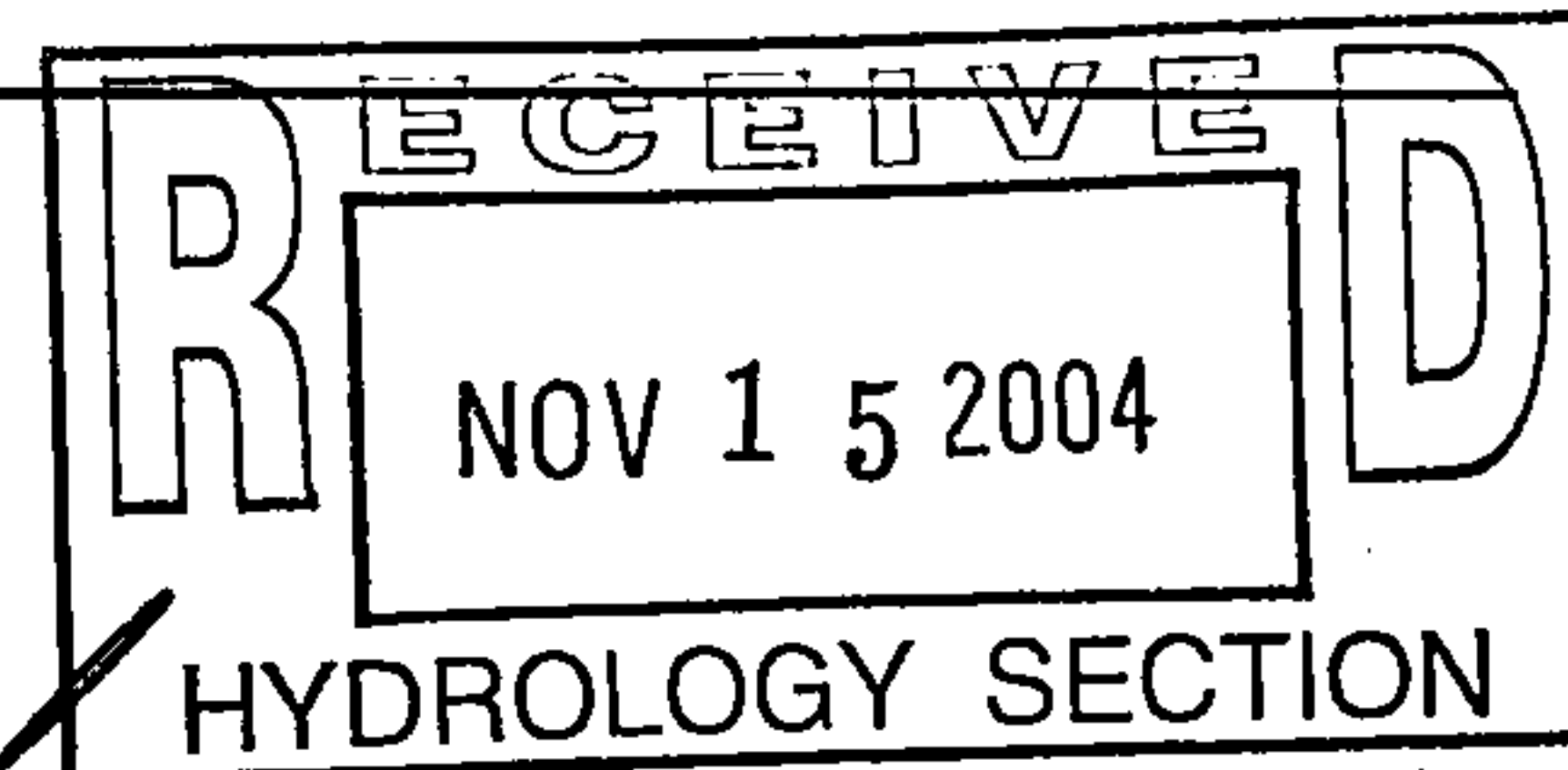
BP fee paid ✓

DATE SUBMITTED:

11/15/04

BY:

[Signature]



Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. Conceptual Grading and Drainage Plan: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. Drainage Plans: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. Drainage Report: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

***Public Works Department
Transportation Development Services Section***

September 13, 2002

Sandra Fairchild for Claudio Vigil, Registered Architect
Claudio Vigil Architects
1801 Rio Grande Blvd. N.W., Suite 2
Albuquerque, NM 87104

Re: Certification Submittal for Final Building Certificate of Occupancy for
Sandia Preparatory School - Student Center Building, [E-16 / D012A]
532 Osuna Rd. N.E.
Architect's Stamp Dated 08/23/02

Dear Ms. Fairchild:

The TCL / Letter of Certification submitted on August 23, 2002 is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to Building and Safety and final C.O. has been logged in at the Building Safety Section downstairs.

As was asked before, on all future submittals -TCL resubmittals, Certifications, etc.- please place the complete Hydrology File number on the "ZONE MAP / DRG. FILE" blank on the Drainage and Transportation Information Sheet. Only the Zone Map number [E-16-Z] was entered. The full File number [E-16/D012A] is the number following the name of the building being permitted, listed in the Subject area of this document.

In order for this office to perform plan review in an efficient, timely manner, which has been a continual need by the Development/Engineering/Architectural community, menial tasks, such as tracking down file numbers, is time taken from that review time and can no longer be performed by this office.

If the information required on the Drainage and Transportation Information Sheet is not adequately completed, the best that can be expected by your office will be a Temporary C.O. until a properly completed form is submitted again with another complete Cert Package.

Sincerely,

Mike Zamora, Commercial Plan Checker
Development and Building Services
Planning Department

c: Hydrology file
Mike Zamora

DRAINAGE INFORMATION SHEET

(REV. 11/01/2001)

E-16/D12A

PROJECT TITLE: Sandia Preparatory School Student Center Building 1 ZONE MAP/DRG. FILE #: E-16-2
 DRB # 01450-00000-01216 EPC# 01128-00000-06252 WORK ORDER #:
 LEGAL DESCRIPTION: Tract 2, Academy for Boys Addition
 CITY ADDRESS: 532 Osuna Road NE

ENGINEERING FIRM: Claudio Vigil Architects CONTACT: Art Blessen
 ADDRESS: 1801 Rio Grande Blvd. Nk Suite 2 PHONE: 842-1113
 CITY, STATE: Albuquerque, NM ZIP CODE: 87104

OWNER: ~~University~~ Sandia Preparatory School CONTACT: Dick Heath
 ADDRESS: 532 Osuna Road NE PHONE: 344-1671
 CITY, STATE: Albuquerque NM ZIP CODE: 87113

ARCHITECT: Claudio Vigil Architects CONTACT: Sandra Fairchild
 ADDRESS: 1801 Rio Grande Blvd Suite 2 PHONE: 842-1113
 CITY, STATE: Albuquerque NM ZIP CODE: 87104

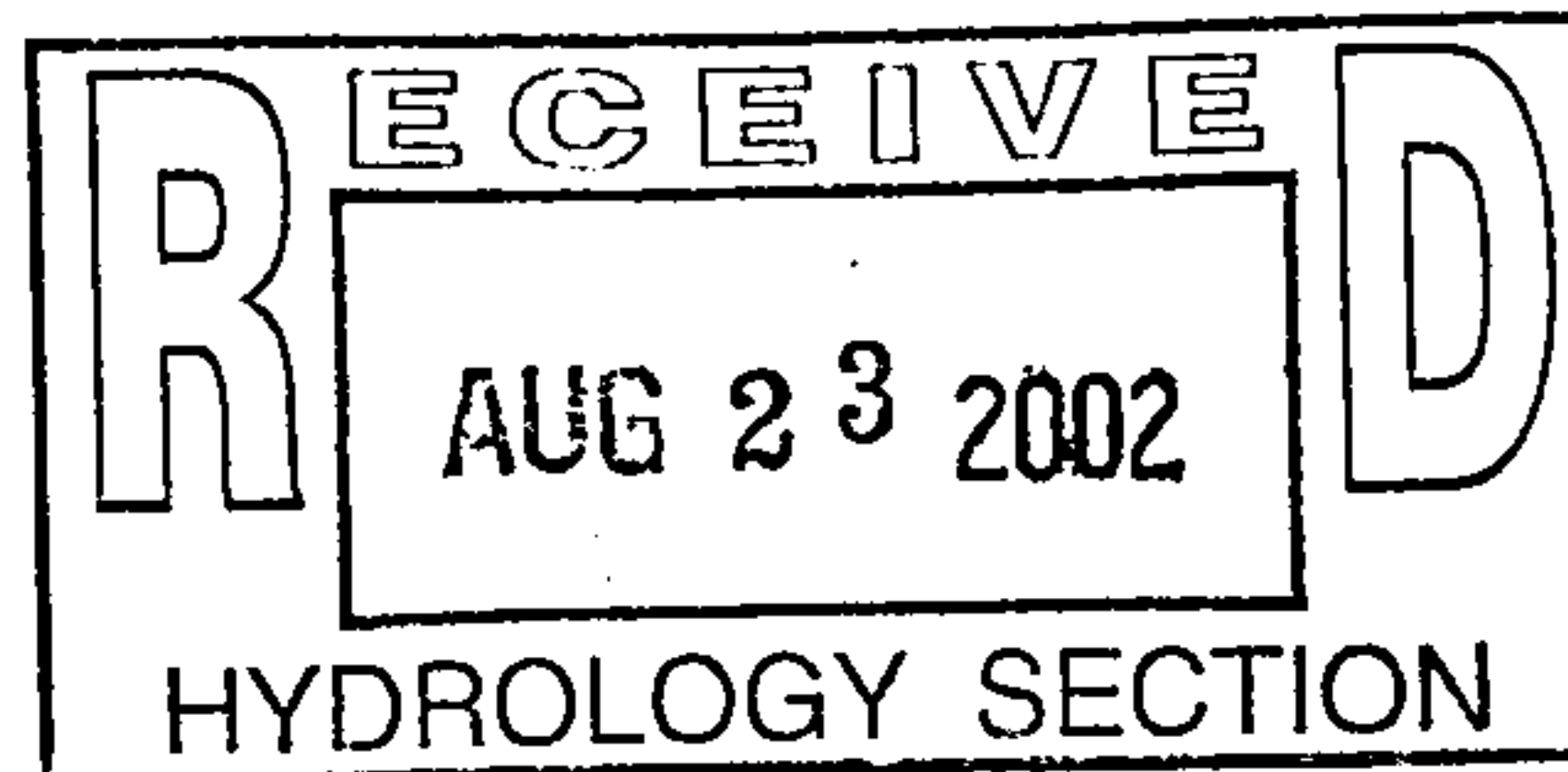
SURVEYOR: CONTACT:
 ADDRESS: PHONE:
 CITY, STATE: ZIP CODE:

CONTRACTOR: Jaynes Corporation CONTACT: Brian O'Connell
 ADDRESS: 2906 Broadway Boulevard NE PHONE: 345-8591
 CITY, STATE: Albuquerque NM ZIP CODE: 87107

- TYPE OF SUBMITTAL:
- ☐ DRAINAGE REPORT
 - ☐ DRAINAGE PLAN
 - ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
 - ☐ GRADING PLAN
 - ☐ EROSION CONTROL PLAN
 - ☐ ENGINEER'S CERTIFICATION (HYDROLOGY)
 - ☐ CLOMR/LOMR
 - ☒ TRAFFIC CIRCULATION LAYOUT (TCL)
 - ☒ ENGINEERS CERTIFICATION (TCL)
 - ☒ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
 - ☐ OTHER

- CHECK TYPE OF APPROVAL SOUGHT:
- ☐ SIA / FINANCIAL GUARANTEE RELEASE
 - ☐ PRELIMINARY PLAT APPROVAL
 - ☐ S. DEV. PLAN FOR SUB'D APPROVAL
 - ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
 - ☐ SECTOR PLAN APPROVAL
 - ☐ FINAL PLAT APPROVAL
 - ☐ FOUNDATION PERMIT APPROVAL
 - ☐ BUILDING PERMIT APPROVAL
 - ☐ CERTIFICATE OF OCCUPANCY APPROVAL (PERM)
 - ☒ CERTIFICATE OF OCCUPANCY APPROVAL (TEMP)
 - ☐ GRADING PERMIT APPROVAL
 - ☐ PAVING PERMIT APPROVAL
 - ☐ WORK ORDER APPROVAL
 - ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:
☐ YES
☒ NO
☐ COPY PROVIDED



DATE SUBMITTED 8-19-02

BY: Jacob M. Sandsted

Requests for approval of Site Development Plan and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels if submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5)
3. **Drainage Reports:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or

8/23/02 - Cld in GT to Phyllis; 9/13/02 - Sent letter; 11-10-02



August 23, 2002

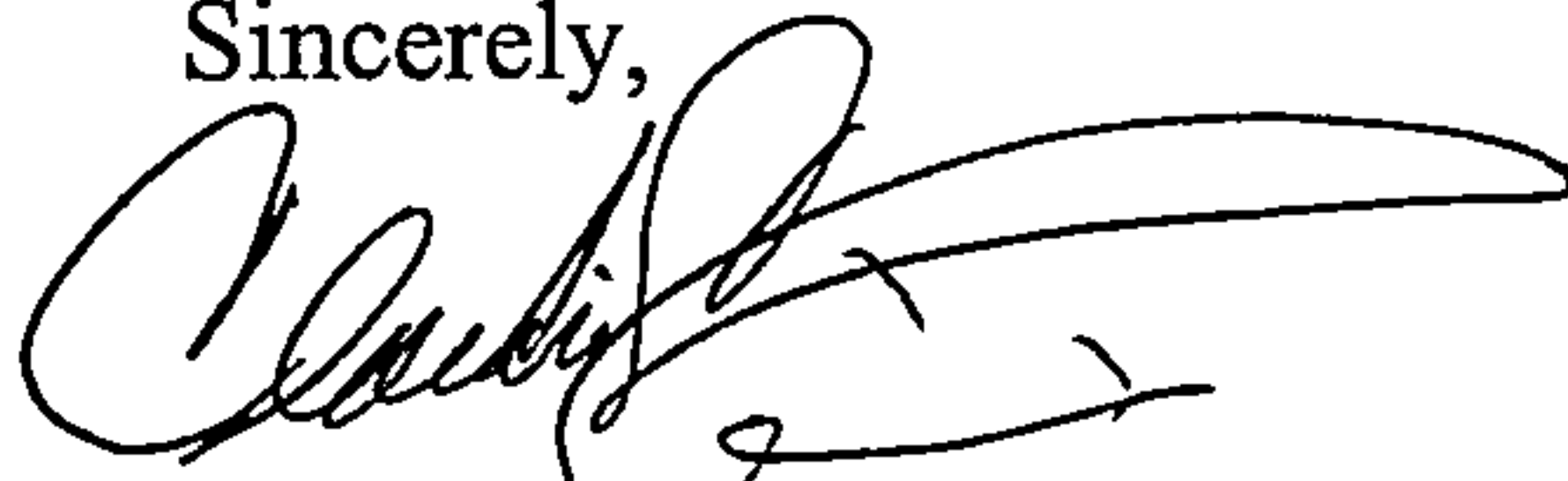
Mr. Mike Zamora/Richard Dourte, P.E.
600 2nd. St. N.W.
Transportation Department
Building and Inspection
Albuquerque, New Mexico

RE: Sandia Prep Student Commons Building
EPC: 01128-00000-1001079
DRB: 01450-00000-01216

Dear Mike Zamora/Richard Dourte,:

On August 23, 2002 this office made an inspection of the completed improvements to the Sandia Prep Student Commons Building site located at 532 Osuna Rd. NE. All work has been completed and is in compliance with the approved plan check set. The work is complete and ready for occupancy.

Sincerely,



Claudio Vigil
President





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

***Public Works Department
Transportation Development Services Section***

August 19, 2002

Sandra Fairchild for Claudio Vigil, Registered Architect
Claudio Vigil Architects
1801 Rio Grande Blvd. N.W.,
Suite 2
Albuquerque, NM 87104

Re: Certification Submittal for Final Building Certificate of Occupancy for
Sandia Preparatory School - Classroom Addn., [E-16 / D012A]
532 Osuna Rd. N.E.
Architect's Stamp Dated 08/19/02

Dear Ms. Fairchild:

The TCL / Letter of Certification submitted on August 19, 2002 is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to Building and Safety and final C.O. has been logged in by Vicki Chavez in the Building Safety Section downstairs.

On all future submittals -TCL, Certifications, etc.- please place the *complete* Hydrology File number on the "ZONE MAP / DRG. FILE" blank on the Drainage and Transportation Information Sheet. Only the Zone Map number [E-16] was entered.

Sincerely,

Mike Zamora, Commercial Plan Checker
Development and Building Services
Planning Department

c: Hydrology file
Mike Zamora

DRAINAGE INFORMATION SHEET

(REV. 11/01/2001)

PROJECT TITLE: Sandia Preparatory School Classroom Building ZONE MAP/DRG. FILE #: E-16-2
DRB # 01450-00000-01216 EPC# 01128-00000-00252 WORK ORDER #:
LEGAL DESCRIPTION: Tract 2 Academy for Boys Addition
CITY ADDRESS: 532 Osuna Road NE

ENGINEERING FIRM: Claudio Vigil Architects CONTACT: Art Blessen
ADDRESS: 1801 Rio Grande Blvd. NW Suite 2 PHONE: 842-1113
CITY, STATE: Albuquerque, NM ZIP CODE: 87104

OWNER: ~~University~~ Sandia Preparatory School CONTACT: Dick Heath
ADDRESS: 532 Osuna Road NE PHONE: 344-1671
CITY, STATE: Albuquerque NM ZIP CODE: 87113

ARCHITECT: Claudio Vigil Architects CONTACT: Sandra Fairchild
ADDRESS: 1801 Rio Grande Blvd NW Suite 2 PHONE: 842-1113
CITY, STATE: Albuquerque NM ZIP CODE: 87104

SURVEYOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

CONTRACTOR: Jaynes Corporation CONTACT: Brian O'Connell
ADDRESS: 7906 Broadway Boulevard NE PHONE: (505) 345-8591
CITY, STATE: Albuquerque NM ZIP CODE: 87107

TYPE OF SUBMITTAL:

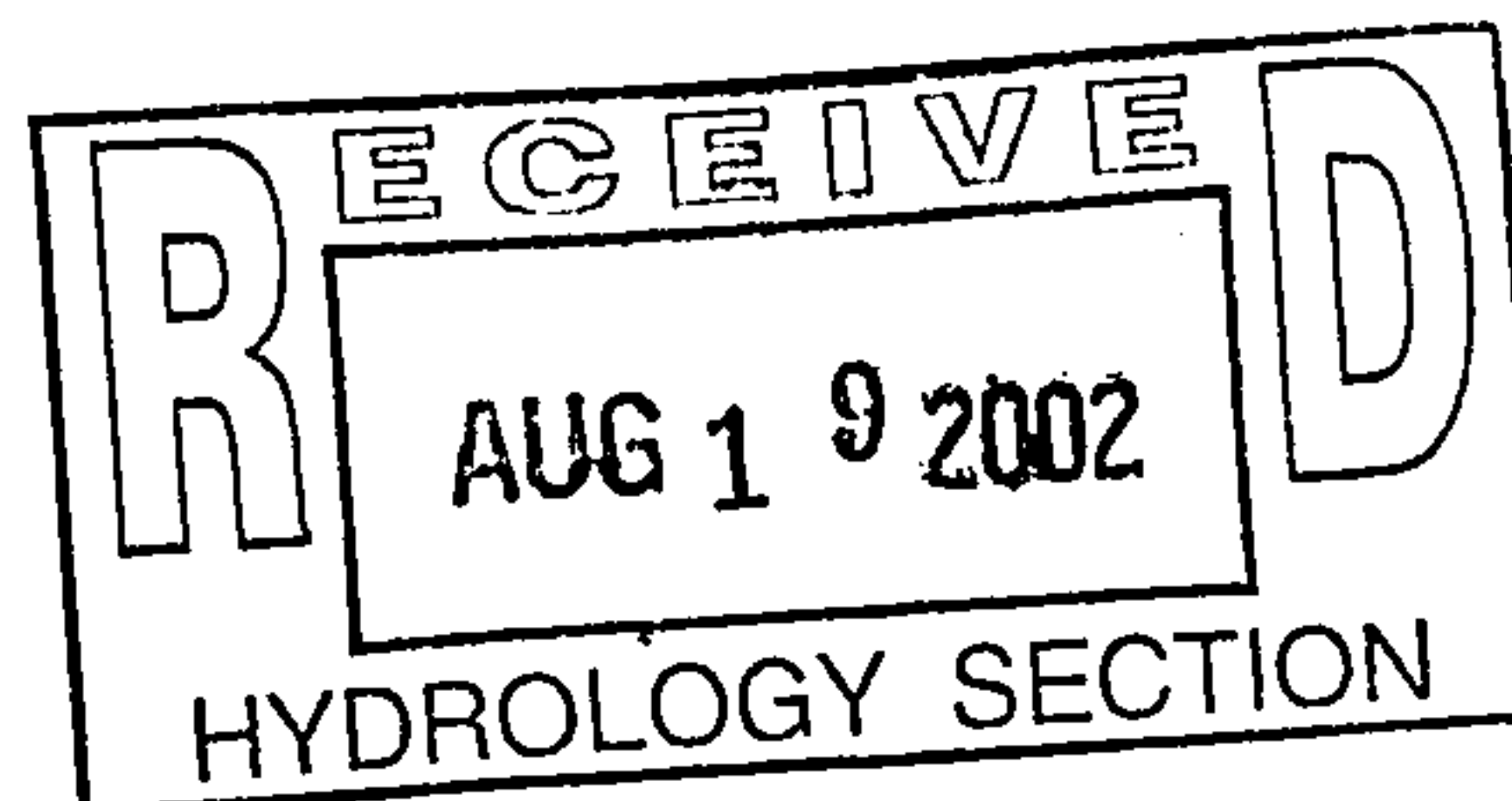
- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION (HYDROLOGY)
☐ CLOMR/LOMR
☒ TRAFFIC CIRCULATION LAYOUT (TCL)
☒ ENGINEERS CERTIFICATION (TCL)
☒ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY APPROVAL (PERM)
☒ CERTIFICATE OF OCCUPANCY APPROVAL (TEMP)
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
☒ NO
☐ COPY PROVIDED



DATE SUBMITTED 8-19-02

BY: Sandra Fairchild

Requests for approval of Site Development Plan and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5)
3. **Drainage Reports:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or

8/19/02 - CLD in PT to Phyllis ; 1/6 Sent letter (dated 8/19) ;

✓ - CLD



August 18, 2002

Mr. Mike Zamora/Richard Dourte, P.E.
600 2nd. St. N.W.
Transportation Department
Building and Inspection
Albuquerque, New Mexico

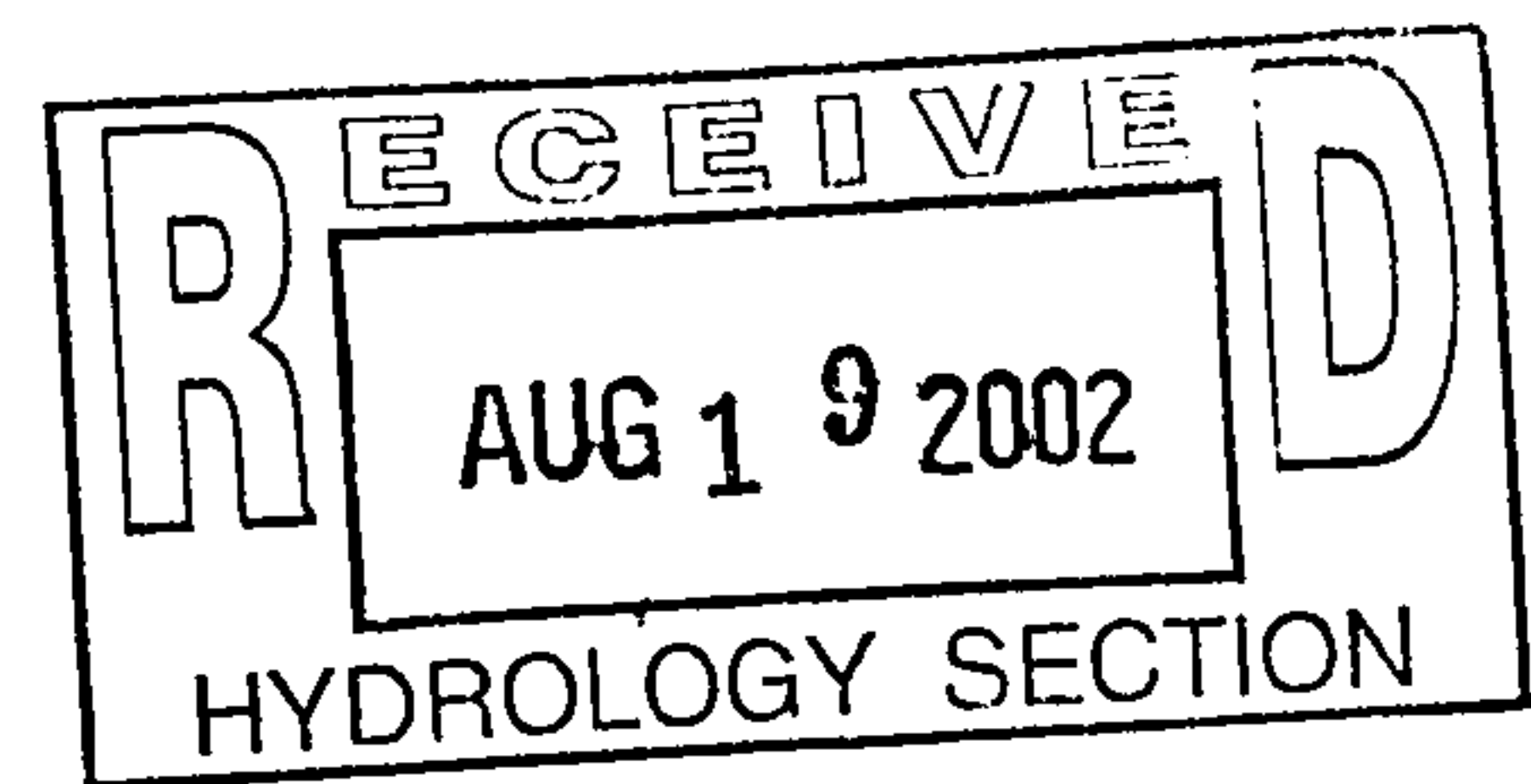
RE: Sandia Prep Class room Building
EPC: 01128-00000-1001079
DRB: 01450-00000-01216

Dear Mike Zamora/Richard Dourte,:

On August 17, 2002 this office made an inspection of the completed improvements to the Sadia Prep Classroom Building site located at 532 Osuna Rd. NE. All work has been completed and is in compliance with the approved plan check set. The work is complete and ready for occupancy.

Sincerely,


Claudio Vigil
President





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 7, 2002

J. Arthur Blessen, P.E.
Claudio Vigil Architects
1801 Rio Grande Blvd NW #2
Albuquerque, New Mexico 87104

RE: SANDIA PREPARATORY SCHOOL (E-16/D12A)
(532 Osuna Rd NE) (Classroom, Library & Student Center Addition)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 10/10/2001
ENGINEERS CERTIFICATION DATED 10/4/2002

Dear Mr. Blessen:

Based upon the information provided in your Engineers Certification submittal dated 10/4/2002, the above referenced site is approved for a Permanent Certificate of Occupancy.

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin
Hydrology Plan Checker
Development & Bldg. Ser. Div.
BUS

C: Certificate of Occupancy Clerk, COA
✓ drainage file
approval file

DRAINAGE INFORMATION SHEET

(REV. 11/01/2001)

PROJECT TITLE: SANDIA PREP CLASSROOM ADDITION ZONE MAP/DRG. FILE #: E16/D12A

DRB # _____ EPC# _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT 2 LANDS OF THE ACADEMY FOR BOYS

CITY ADDRESS: 532 OSUNA ROAD

ENGINEERING FIRM: Claudio Vigil Architects CONTACT: Arthur Blessen
ADDRESS: 1801 Rio Grande Blvd. PHONE: 842-1113
CITY, STATE: Albuquerque, NM ZIP CODE: 87104

OWNER: Dr. Romero SANDIA PREP CONTACT: _____
ADDRESS: 532 OSUNA ROAD PHONE: _____
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: _____

ARCHITECT: Claudio Vigil Architects CONTACT: Arthur Blessen
ADDRESS: 1801 Rio Grande Blvd PHONE: 842-1113
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

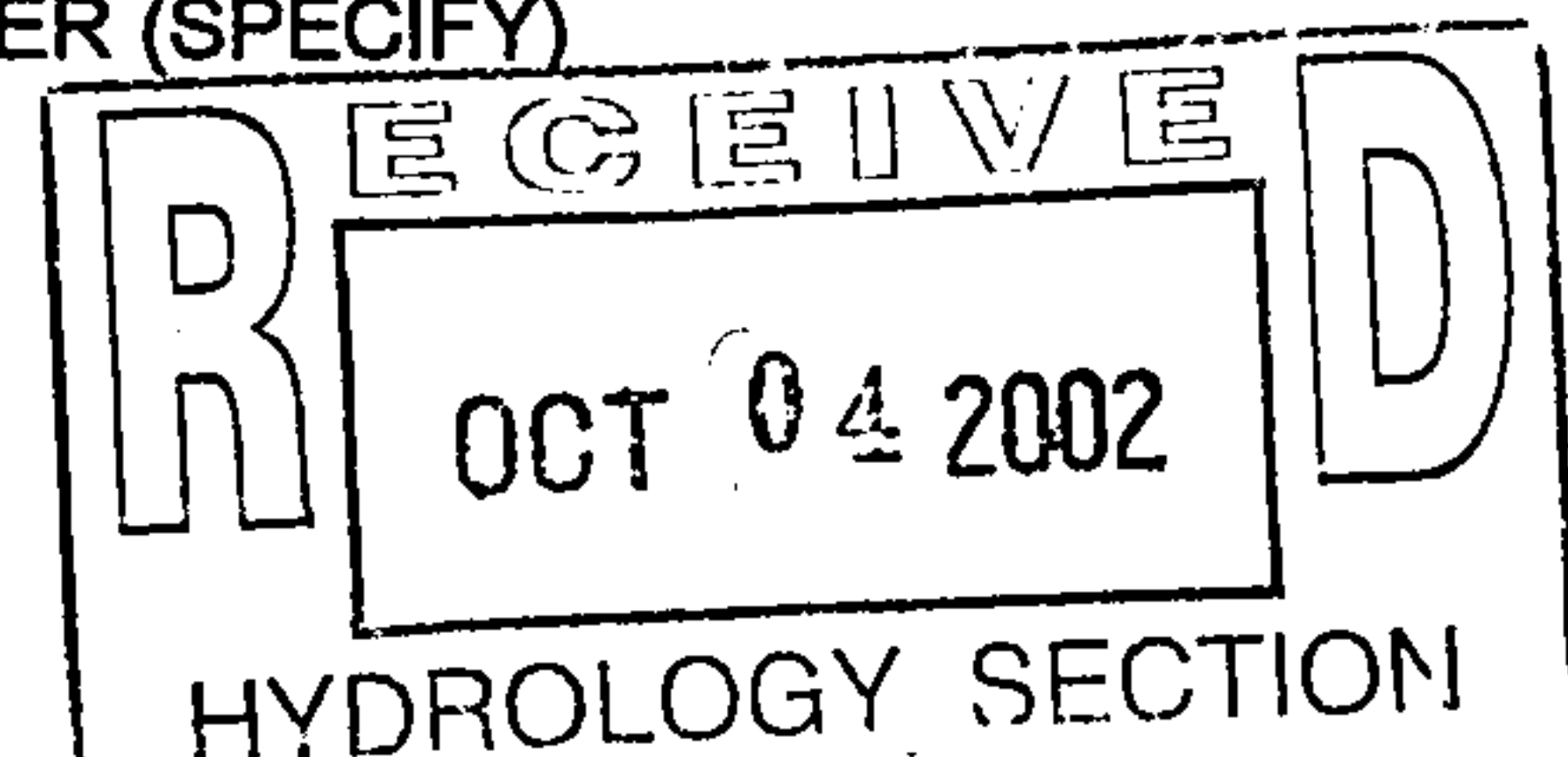
- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY APPROVAL (PERM)
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL (TEMP)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED



DATE SUBMITTED 10/4/02

BY: Arthur Blessen

Requests for approval of Site Development Plan and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5)
3. **Drainage Reports:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 17, 2001

John Arthur Blessen, PE
Claudio Vigil Architects
1305 Tijeras NW
Albuquerque, NM 87102

**Re: Sandia Prep School Classroom Addition Grading & Drainage Plan
Engineer's Stamp dated 10-9-01, (E16/D12A)**

Dear Mr. Blessen,

Based upon the information provided in your submittal dated 10-10-01, the above referenced plan is approved for Site Plan for Building Permit action by the DRB and Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

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

Sincerely,

Bradley L. Bingham, PE
Sr. Engineer, Hydrology

C: file

DRAINAGE INFORMATION SHEET

E-16/D12A

PROJECT TITLE: Sandia Preparatory School Addition ZONE MAP/DRG. FILE #: E16
DRB # _____ EPC# _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Tract 2 Lands of the Academy for Boys (Sandia Preparatory School)
CITY ADDRESS: 532 Osuna Road NE

ENGINEERING FIRM: Claudio Vigil Architects CONTACT: Arthur Blessen
ADDRESS: 1801 Rio Grande Blvd. PHONE: 842-1113
CITY, STATE: Albuquerque, NM ZIP CODE: 87104

OWNER: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Claudio Vigil Architects CONTACT: Sandra Fairchild
ADDRESS: 1801 Rio Grande Blvd PHONE: 842-1113
CITY, STATE: _____ ZIP CODE: 87104

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ CLOMR/LOMR
☐ OTHER

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
☒ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

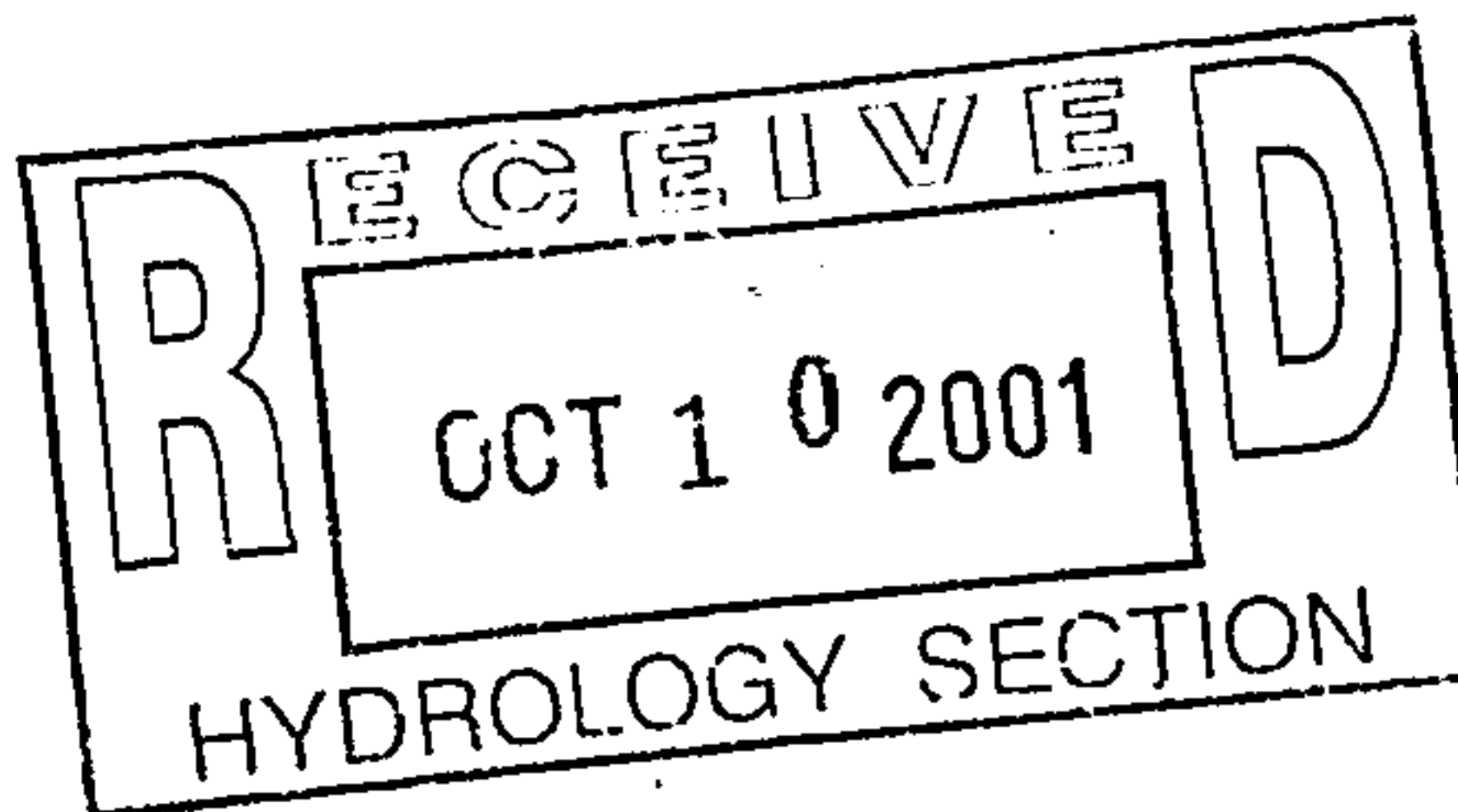
- ☐ SIA / FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY)

DATE SUBMITTED 10-10-01

BY: J Arthur Blessen

Requests for approval of Site Development Plan and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Reports:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 19, 2002

J. Art Blessen, P.E.
Claudio Vigil Architects
1801 Rio Grande Blvd NW
Albuquerque, New Mexico 87104

**RE: SANDIA PREPARATORY SCHOOL- LIBRARY & STUDENT CTR.
(532 Osuna Rd NE) (E-16/D12A)
CERTIFICATE OF OCCUPANCY APPROVAL-*Temporary*
ENGINEERS CERTIFICATION DATED 8/16/2002**

Dear Mr. Blessen:

Based on the information provided in your submittal dated August 16, 2002, the above referenced project is approved for a **TEMPORARY** Certificate of Occupancy.

A Temporary Certificate of Occupancy has been issued for 60 days, allowing the remaining outstanding drainage issues to be completed within this time scope.

Upon completion of all of the above outstanding drainage issues, final certification will be required for issuance of a Permanent Certificate of Occupancy.

If I can be of further assistance, please feel free to contact me at 924-3981.

Sincerely,

Teresa A. Martin

Hydrology Plan Checker

Development and Building Services Division

Bld

c: Vickie Chavez, COA
✓ Drainage file
Approval file

DRAINAGE INFORMATION SHEET

(REV. 11/01/2001)

PROJECT TITLE: SANDIA PREP CLASSROOM Bldg ZONE MAP/DRG. FILE #: E16/D12A
DRB # _____ EPC# _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT 2 LANDS OF THE ACADEMY FOR BOYS
CITY ADDRESS: _____

ENGINEERING FIRM: Claudio Vigil Architects CONTACT: Arthur Blessen
ADDRESS: 1801 Rio Grande Blvd. PHONE: 842-1113
CITY, STATE: Albuquerque, NM ZIP CODE: 87104

OWNER: Dr Romero CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Claudio Vigil Architects CONTACT: _____
ADDRESS: 1801 Rio Grande Blvd PHONE: 842-1113
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

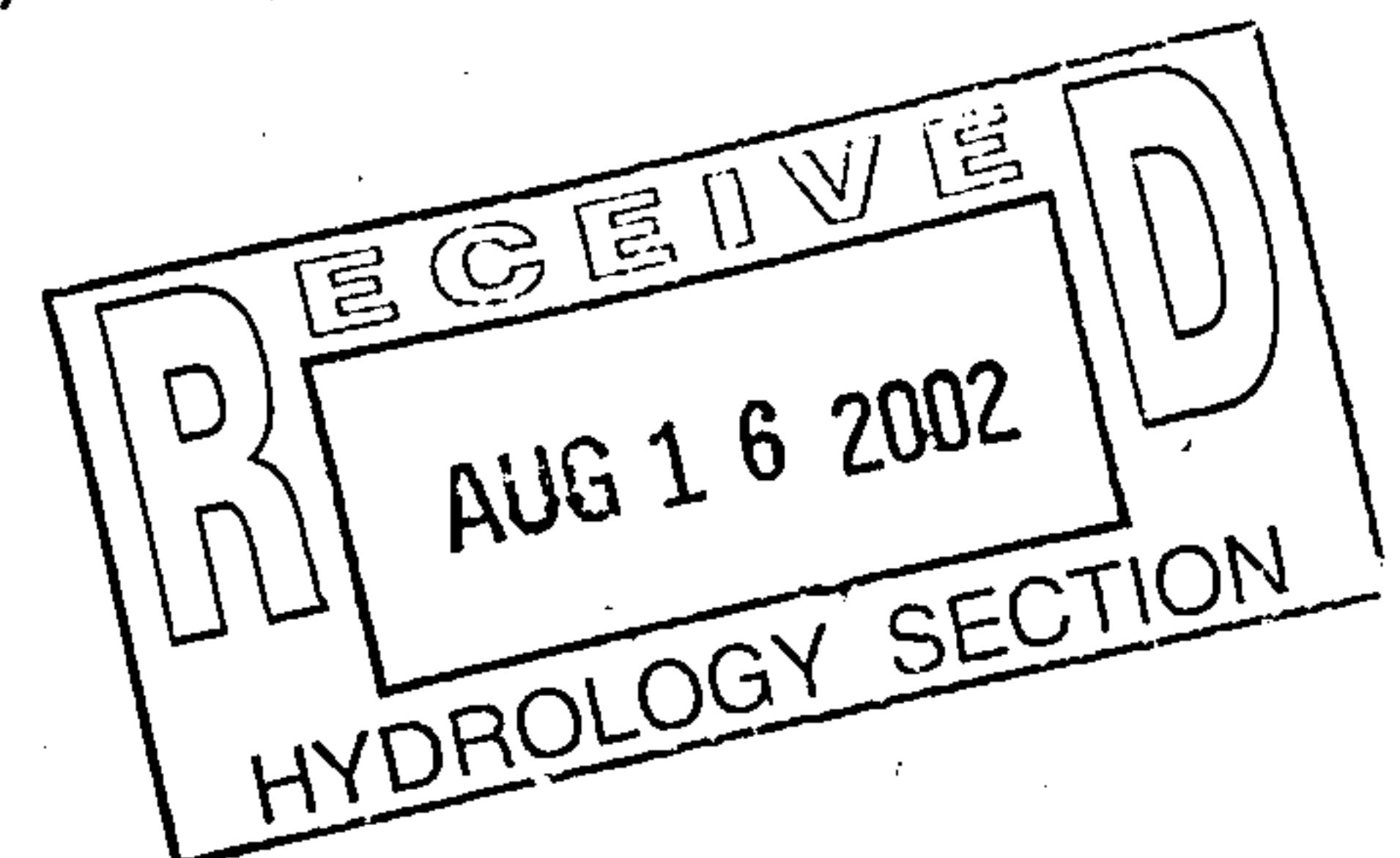
- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL (PERM)
- ☒ CERTIFICATE OF OCCUPANCY APPROVAL (TEMP)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED



DATE SUBMITTED 8-16-02 BY: J. Arthur Blessen

Requests for approval of Site Development Plan and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels if submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5)
3. **Drainage Reports:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or

INFORMATION SHEET

SANDIA PREPARATORY SCHOOL

PROJECT TITLE: PERFORMING ARTS CENTER ZONE ATLAS/DRNG. FILE #: E-16/D-12

DRB #: 95-533 EPC #: 295-108 WORK ORDER #: _____

LEGAL DESCRIPTION: TRACTS 1 & 2 LANDS OF THE ACADEMY FOR BOYS

CITY ADDRESS: 538 OSUNA ROAD NE 87113

ENGINEERING FIRM: Lovelady & Associates CONTACT: Frank D. Lovelady

ADDRESS: 300 ALAMOSA NW PHONE: 345-2267

OWNER: SANDIA PREPARATORY SCHOOL CONTACT: RICHARD HEATH

ADDRESS: 538 OSUNA ROAD NE PHONE: 344-1671

ARCHITECT: CUSTER BASKRICH CONTACT: PHIL CUSTER

ADDRESS: 1400 CENTRAL SE 87106 PHONE: 765-1020

SURVEYOR: ALPHA SURVEYING CONTACT: GARY BRITSKO

ADDRESS: 9311 4TH NW 87114 PHONE: 897-4865
~~ALPHA SURVEYING CO.~~

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☒ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED

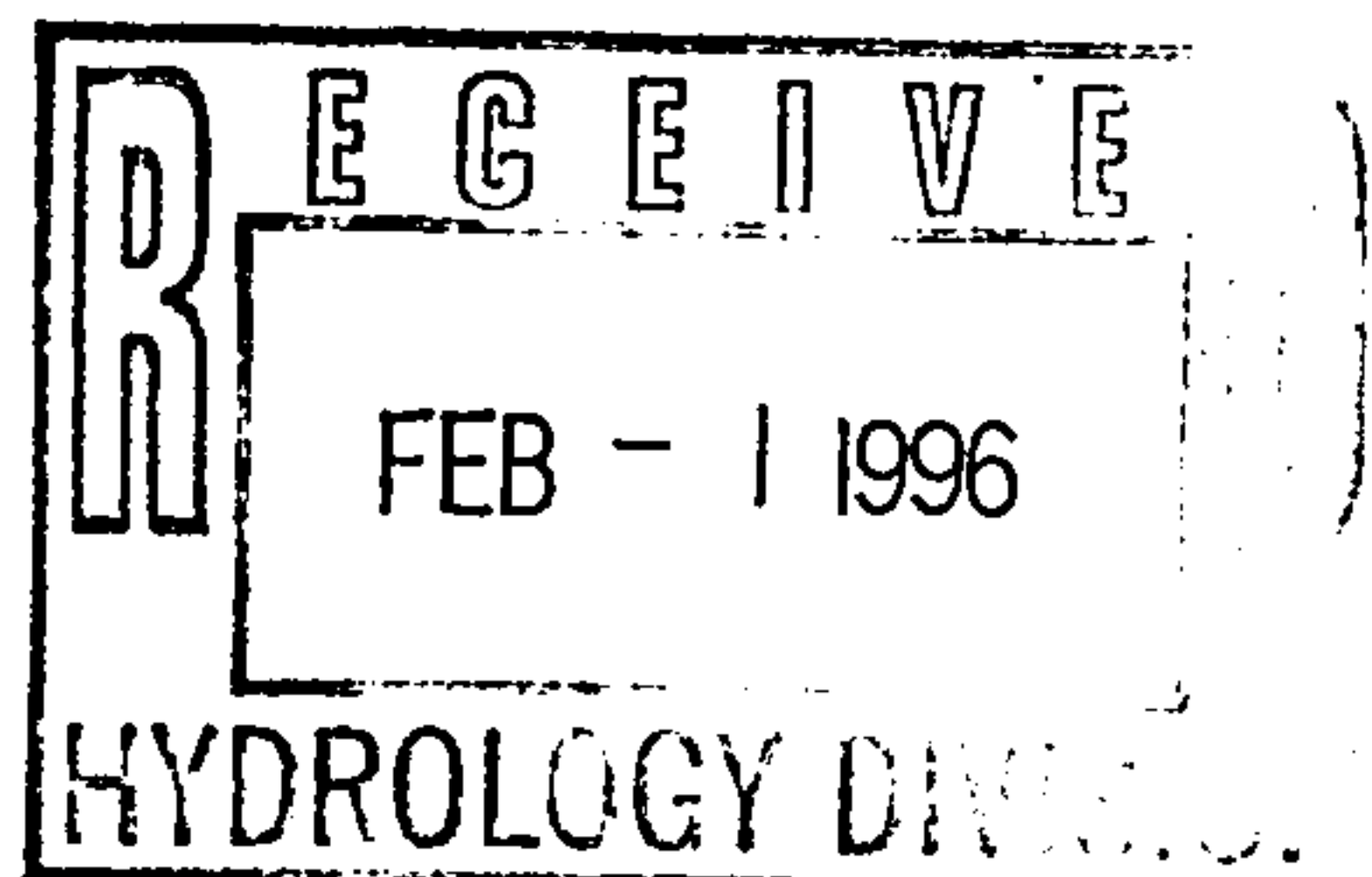
CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☒ BUILDING PERMIT APPROVAL *RM*
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: Jan 31 1996

BY:

Frank D. Lovelady



Prior To
C.O. cutfall need to
be in

196.04.21



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 14, 1996

Frank Lovelady
Lovelady & Associates
300 Alamosa NW
Albuquerque, NM 87107

RE: DRAINAGE PLAN FOR SANDIA PREPARATORY SCHOOL PERFORMING
ARTS CENTER (E16-D12) ENGINEER'S STAMP DATED 1/31/96.

Dear Mr. Lovelady:

Based on the information provided on your February 1, 1996
submittal, the above referenced site is approved for Site
Development Plan for Building Permit & Building Permit.

Please attach a copy of sheets 3 of 4 and 4 of 4 to the
construction plans prior to sign off by Hydrology.

Also, prior to Certificate of Occupancy release, the following
must be addressed:

1. Engineer Certification per the D.P.M. checklist.
2. Connection of the pond outfall must be in place prior to
C.O. release.

If I can be of further assistance, please feel free to contact me
at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
Dick Heath



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 13, 1995

Frank Lovelady
Lovelady & Associates
300 Alamosa NW
Albuquerque, NM 87107

RE: ENGINEER CERTIFICATION FOR PHOTO CLASSROOM ADDITION TO
SANDIA PREPARATORY SCHOOL (E16-D12) ENGINEER'S CERTIFICATION
STATEMENT DATED 11/3/95 SHEET 2 OF 4.

Dear Mr. Lovelady:

Based on the information provided on your November 6, 1995
submittal, Engineer Certification for the above referenced site
is acceptable.

Also, I am in receipt of the letter from Dick Heath (Headmaster)
addressing the future connection of the storm drain onto the
Osuna storm system.

Please provide me with all documentation pertaining to the tie
into the system when you have coordinated with the County Public
Works Department.

If I can be of further assistance, please feel free to contact me
at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
Dick Heath
File

Drainage
Cert
11-3-95

Frank D. Lovelady, P.E.
300 Alamosa Road, N.W.
Albuquerque, N.M. 87107
(505)345-2267

Bernie J. Montoya, C.E.
Engineering Associate/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, N.M. 87102

RE: SANDIA PREPARATORY SCHOOL, PERFORMING ARTS CENTER
GRADING AND DRAINAGE PLAN AND REVISED MASTER DRAINAGE
PLAN - (E-16/D-12):

Dear Mr. Montoya:

The referenced project is herewith submitted for review. In accordance with your letter of November 13, 1995, you requested documentation with regard to the construction of the pond outfall and tie-in to the County storm drain system in Edith Boulevard.

In the fall of 1994, the Middle Rio Grande Conservancy District was contacted with regard to extending the storm sewer in El Paraiso under the Alameda Lateral so that the pond outfall line could be connected to it. The cost for the necessary construction was prohibitive for the school and so Bernalillo County was requested to place the project on its capital improvement program, which they did. It now appears that the storm sewer can be connected to at the intersection of Edith and Osuna before it goes under the Alameda Drain. This could be a savings to the County.

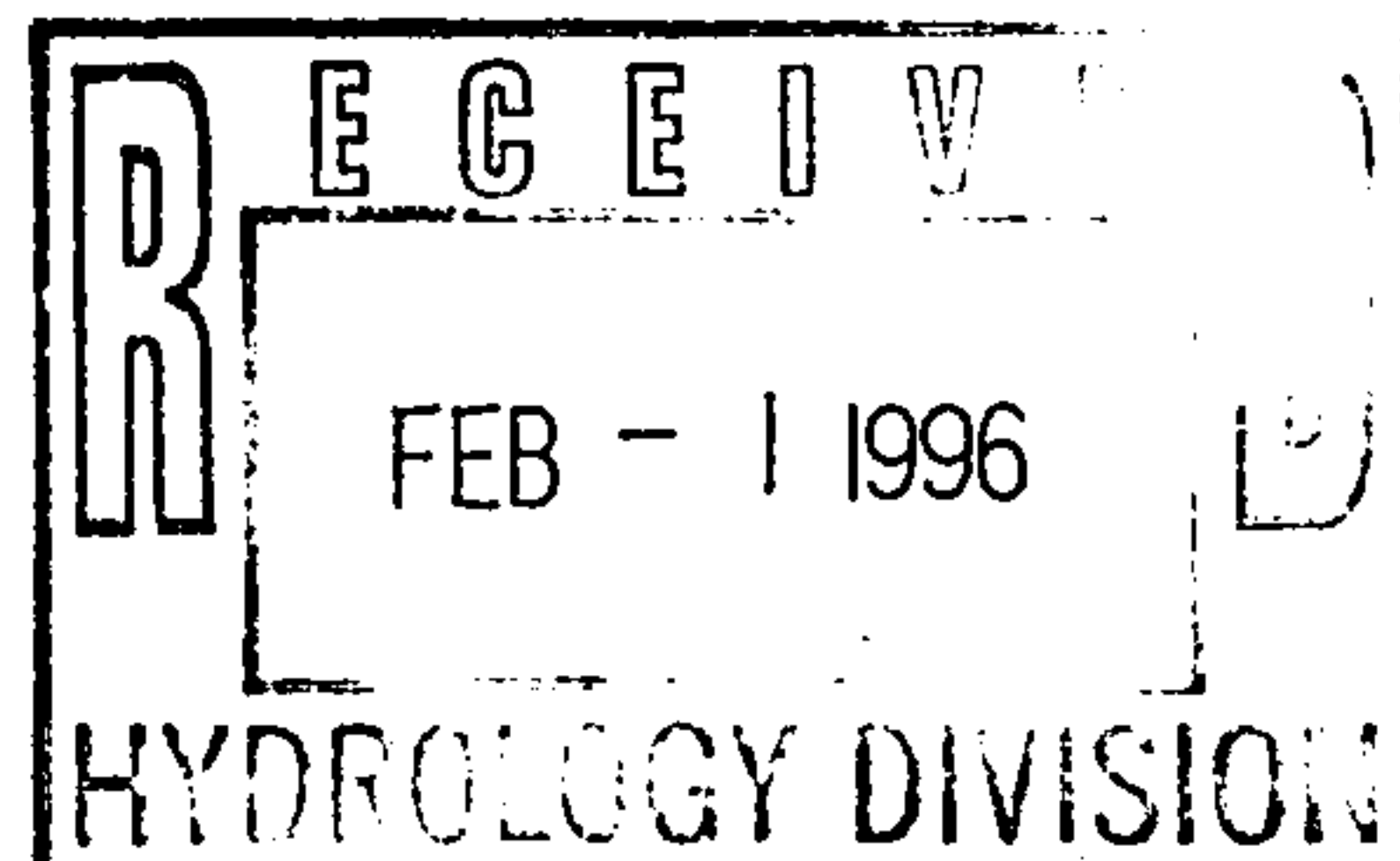
Since this project is still on the capital improvement program and is, according to David Stoliker, slated to be constructed this year, probably with the Edith Boulevard project or the Comanche/Griegos project, it would seem appropriate for the school to coordinate construction of the pond outfall line with the County's project so that the school has to spend the least amount for the drainage and can maximize their efforts in educating young people.

This submittal is for the purpose of obtaining EPC approval. If you have any questions, please do not hesitate to contact me.

Sincerely,

Frank D. Lovelady
Frank D. Lovelady, P.E.

cc: Richard Heath



DRAINAGE INFORMATION SHEET

PROJECT TITLE: PHOTO CLASSROOM ADDN SANDIA PREPARATORY SCH. ZONE ATLAS/DRNG. FILE #: E-16/D-12

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACTS 1 & 2 LANDS OF THE ACADEMY FOR BOYS

CITY ADDRESS: 538 OSUNA ROAD NE 87113

ENGINEERING FIRM: Lovelady & Associates CONTACT: Frank D. Lovelady

ADDRESS: 300 ALAMOSA NW 87107 PHONE: 345-2267

OWNER: SANDIA PREP SCHOOL CONTACT: RICHARD HEATH

ADDRESS: 538 OSUNA RD NE 87113 PHONE: 344-1671

ARCHITECT: CUSTER BASARICH CONTACT: PHIL CUSTER

ADDRESS: 1400 CENTRAL SE 87106 PHONE: 765-1020

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: EAST MOUNTAIN CONST. CONTACT: BRIAN HEATH

ADDRESS: 3625 HIGH ST NE 87107 PHONE: 259-0269 344-5988

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION
- ☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☒ OTHER _____ (SPECIFY)

DATE SUBMITTED:

NOV 3, 1995

BY:

Frank D. Lovelady

NOV - 6 1995

DRAINAGE INFORMATION SHEET

PROJECT TITLE: SANDIA PREPARATORY SCHOOL
TRACK/SOCCER/BASEBALL FIELDS ZONE-ATLAS/DRNG. FILE #: (E16-D12)

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACTS 1 AND 2 LANDS OF ACADEMY FOR BOYSCITY ADDRESS: 532 OSUNA ROAD NEENGINEERING FIRM: Lovelady & Associates CONTACT: Frank D. LoveladyADDRESS: 300 ALAMOSA ROAD NW ⁸⁷¹⁰⁷ PHONE: 345-2267OWNER: SANDIA PREPARATORY SCHOOL CONTACT: RICHARD HEATHADDRESS: 532 OSUNA ROAD NE PHONE: 344-1671ARCHITECT: CUSTER BASARICH CONTACT: PHIL CUSTERADDRESS: 215 CENTRAL AVE. NW ⁸⁷⁶⁰² PHONE: 765-1020SURVEYOR: THOMAS R. MANN & ASSOCIATES CONTACT: TOM MANNADDRESS: 5115 COPPER AVE NE PHONE: 266-7757CONTRACTOR: CCM (GRADING CONT.) CONTACT: TOM SKIBITSKIADDRESS: 8019 EDITH BLVD NE PHONE: 898-7777

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☒ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
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☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

SEP 12 1994

DATE SUBMITTED: September 8 1994BY: Frank D. LoveladyTHIS SUBMITTAL IS FOR GRADING
OF THE ATHLETIC FIELDS.



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 16, 1994

Frank Lovelady
Lovelady & Associates
300 Alamosa Rd. NW
Albuquerque, NM 87107

RE: GRADING/PAVING PLAN FOR SANDIA PREPARATORY SCHOOL TRACK/SOCCER/
BASEBALL FIELDS (E16-D12) REVISION DATED 9/7/94.

Dear Mr. Lovelady:

Based on the information provided on your September 12, 1994 submittal, the above referenced site is approved for Grading/Paving.

Please be advised that Engineer Certification per the D.P.M. checklist will be required.

All the infrastructure must be in place to handle the run-off from the above approved areas.

The wetlands portion will be allowed provided the proposed fencing and Hold Harmless document is made part of the Certification.

When the proposal for the wetlands area is completed, please submit a copy to our office. Concurrence from the appropriate agency for the tie into the existing storm system will be required.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/d1/WPHYD/8745

c: Andrew Garcia
File

MASTER GRADING AND DRAINAGE PLAN

FOR

SANDIA PREPARATORY SCHOOL

532 OSUNA ROAD, N.E.

ALBUQUERQUE, NEW MEXICO

DECEMBER 17, 1990

(REVISED SEPTEMBER 6, 1994)

Prepared by

Frank D. Lovelady, P.E.

300 Alamosa Road, N.W.

Albuquerque, NM 87107

(505) 898-0142

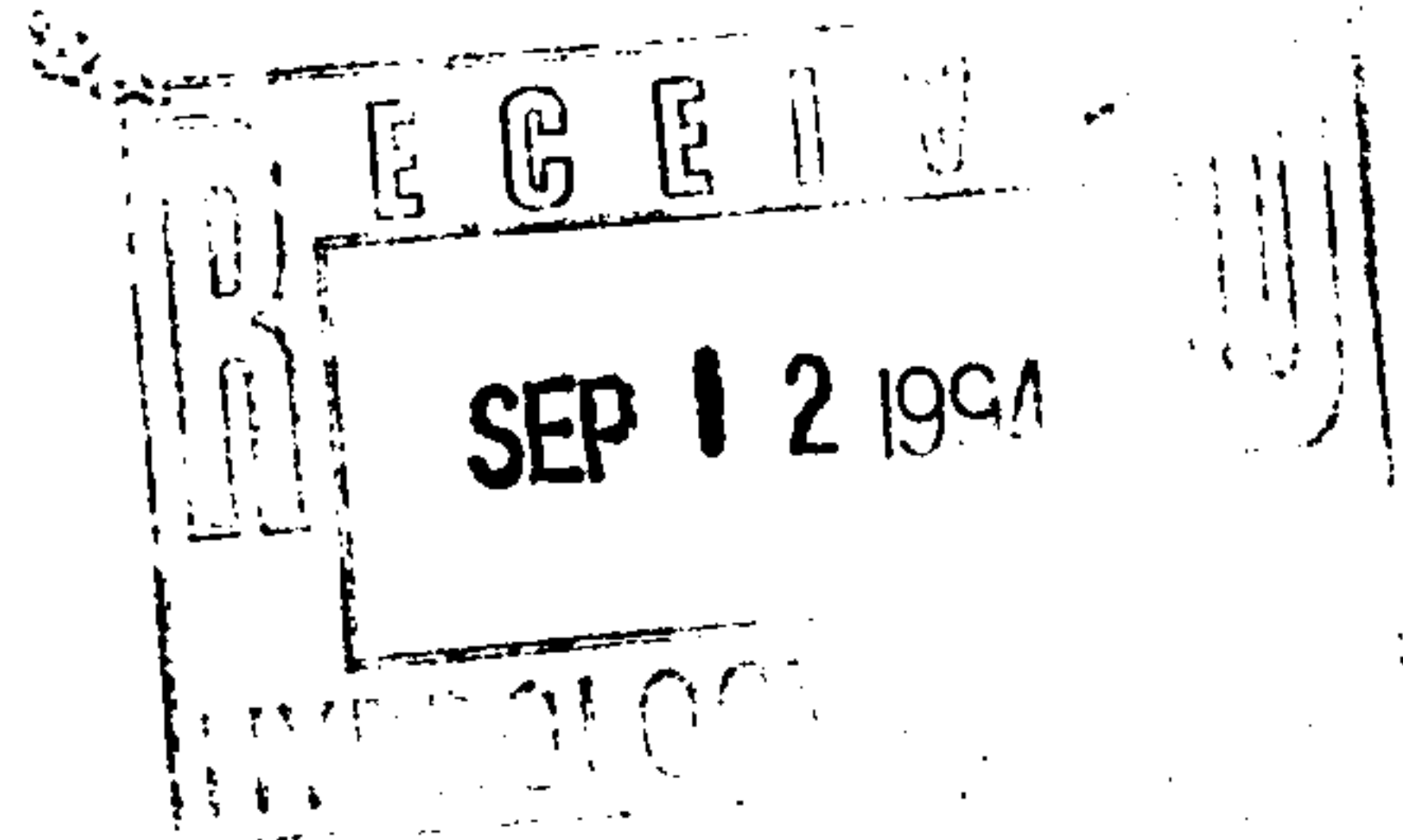


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I. INTRODUCTION

This report, with the enclosed maps, constitutes the Master Grading and Drainage Plan for the Sandia Preparatory School located on Tracts 1 and 2, Academy for Boys, Bernalillo County, New Mexico. The campus orientation upon which this report is based is as prepared by Custer-Basarich Ltd., Architects, Planners, A.I.A.

The Sandia Preparatory School campus is located at 532 Osuna Road N.E. The property is bounded on the north by Osuna Road N.E., on the east by Lot 1, Universal Industrial Park, on the south by El Paraiso Road N.E. and on the west by Edith Boulevard N.E.

For the location of the Sandia Preparatory School relative to major streets, see location map (Map No. 1) The site is located on Bernalillo County Zone Atlas Maps E-15 and E-16.

The report and plan sheets 1 and 2 originally submitted December 17, 1990 to Bernalillo County for review in connection with obtaining a building permit for a new library. Since that time, the plan has been revised several times. Other new buildings have been added to the campus including the science building, the gymnasium, and two classroom buildings that are currently under construction. All of these are shown on the Master Grading and Drainage Plan. The site was recently annexed into the City of Albuquerque.

The plan also shows a revised and updated layout for the outdoor athletic complex. It is the purpose of this report to analyze on-site and off-site flow volumes and peak discharge rates and analyze downstream capacity to determine the required volume of detention ponding.

II. EXISTING CONDITIONS

A. GENERAL

The existing topographic conditions of the site have been prepared by aerial photogrammetric methods and are shown on the Master Grading and Drainage Plan, sheets one and two of two located in the pocket in the back of this report. These conditions have not changed significantly since the original photography was done.

B. OFF-SITE DRAINAGE

There is no off-site flow reaching this site. Osuna Road is paved with curb and gutter and storm drainage system. The system is designed for the 10-year undeveloped runoff rates. A small amount of runoff is generated by the portion of the right-of-way behind the curb and gutter. El Paraiso Road is paved with no curb and gutter. Drainage is by means of roadside ditches. There is a substantial ditch on the north side of El Paraiso road adjacent to the site. Edith Boulevard is lower than the site so there is no off-site flow from the west. It would appear that off-site flow might be generated by the property east of the site. However, there is a detention pond on the property with a positive discharge pipe and an overflow spillway directing flow to El Paraiso Road right-of-way. A berm near the westerly property line directs all runoff to the pond. A drainage plan for this property was prepared by Jeff Mortensen & Associates dated May 1990.

C. ON-SITE DRAINAGE

The site generally slopes from east to west at an average slope of roughly 1.5 percent. The site is presently divided into several drainage areas in accordance with existing and proposed land use. The

eastern-most area, designated as Area A, is developed as a soccer field complex. The next two areas, designated Areas B and C, are occupied by educational and administrative facilities and parking. Area B drains around the south side of the new gymnasium. Area C drains into the north parking lot. The two flows come together just west of the new gymnasium.

The fourth drainage area, designated Area D, is now partially utilized for a running track but is proposed to contain the outdoor athletic complex. The fifth drainage area is the area west of the Alameda lateral and will be used for parking. The Alameda Lateral is under the jurisdiction of the Middle Rio Grande Conservancy District.

Area A is very flat. Since El Paraiso Road is lower than Osuna Road, runoff generated by all drainage areas naturally flow toward El Paraiso Road. However, Area A has minimal runoff due to the flat grades of the turf-covered playing fields.

A large part of the physical plant section drains to El Paraiso Road. The remainder of it drains to the existing running track and is largely contained in that area. The runoff from the running track section is also mostly contained in the area. The undeveloped land west of the existing running track, drains to El Paraiso Road and Edith Boulevard. The Alameda Lateral has sufficiently high berms on each side to prevent runoff from entering the lateral.

III. DEVELOPED CONDITIONS

A. OFF-SITE DRAINAGE

There are not likely to be any significant changes in the off-site drainage conditions affecting property. There is essentially no off-site flow.

B. ON-SITE DRAINAGE

The site is proposed to be fully developed in accordance with the Master Plan. The playing field, physical plant and running track will be modified as described below.

The playing field (Area A) will remain much as it is. A 34 space parking lot will be constructed which is the only improvement which will be impervious. When the parking lot is constructed, runoff from it will be discharged onto the adjacent soccer field. The runoff from the fields themselves can be contained by the construction of low-profile berms around the fields, if considered necessary.

The physical plant (Areas B and C) has had two new buildings added, a gymnasium and a new science building. New parking and access roads will be constructed. There are two additional classroom buildings now under construction in the northeast corner of the physical plant. It is proposed to convey all runoff from the physical plant section to a detention pond west of the outdoor athletic complex where it will be discharged into the El Paraiso Road extension of the Edith Boulevard storm sewer.

Sandia Preparatory School

The outdoor athletic complex (Area D) has been totally redesigned as shown on sheet one of two of the master plan. The tract will be reoriented and a baseball field is proposed. West of the baseball field will be a detention pond sized as required by limited downstream capacity.

Tract 1, west of the Alameda Lateral will be graded as required for parking in connection with the outdoor athletic complex.

IV. ANALYSIS OF DOWNSTREAM CAPACITY

A. PREVIOUS STUDIES

Edith Boulevard Drainage Analysis, Boyle Engineering Corporation, November 1990.

B. ANALYSIS OF ALLOWABLE DISCHARGE RATE.

The Edith Boulevard Drainage Analysis shows that the site is included in Basin 12D. A small portion of Basin 12D lies south of El Paraiso Road. Calculations for Basin 12D from the above analysis are reproduced in the back of this report. A total of 58 cfs was calculated as the peak discharge from Basin 12D, 57cfs being intercepted by the first manhole east of Edith Boulevard and 0.5 cfs at each of the inlets at the NE and SE corners of the intersection of El Paraiso Road and Edith Boulevard. Basin 12D is shown by the calculations to have an area of 40.5 acres. The site area is 25.94 acres. The allowable discharge is prorated by multiplying the ratio of the two areas by the total discharge from Basin 12D, or 57 cfs. (See drainage calculations).

V. DRAINAGE CALCULATIONS

A. CRITERIA

1. GENERAL

These drainage calculations are based on Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, City of Albuquerque, New Mexico in cooperation with Bernalillo County, New Mexico and the Albuquerque Metropolitan Arroyo Flood Control Authority, January 1993. The simplified procedure, Part A, is used which is applicable to watersheds up to 40 acres in size.

2. ZONE

The site is located east of the Rio Grande River and west of San Mateo Blvd., and is, therefore, in Zone 2.

3. DESIGN STORM

A return period of 100 years is used for most calculations. The ten-year undeveloped runoff volumes and rates are also calculated and are shown in Table 2. Previously, no runoff was permitted to be discharged into El Paraiso Road due to the fact that there was no storm system in place. However, the recent construction of Edith Boulevard included a storm sewer system with a single manhole on El Paraiso Road approximately 320' east of the centerline of Edith Boulevard.

The depth in inches of the 100-year storm of various durations is tabulated below:

Sandia Preparatory School

ZONE	P ₆₀	P ₃₆₀	P ₁₄₄₀	P _{4 days}	P _{10 days}
2	2.01	2.35	2.75	3.30	3.95

To calculate the above rainfall depths for a return period of ten years, multiply the above values by 0.667.

4. LAND TREATMENTS

Treatment A - Soil uncompacted by human activity. Probably, the entire site has been, at one time, disturbed by human activity. Therefore, Treatment A is really not applicable to the site except in calculating the 10-year undeveloped discharge rate.

Treatment B - Irrigated lawns, parks and golf courses. The playing fields are included in this treatment as well as landscaping.

Treatment C - Soil compacted by human activity. This is the conditions of most undeveloped portions of the site.

Treatment D - Impervious areas, pavement and roofs.

5. EXCESS PRECIPITATION

For Zone 2, the excess precipitation for the 100-year and 10-year storms are shown for the various land treatments in the table below:

RETURN	EXCESS PRECIPITATION FOR LAND TREATMENTS			
PERIOD	A	B	C	D
100-Year	0.53	0.78	1.13	2.12
10-Year	0.13	0.28	0.52	1.34

6. PEAK DISCHARGE

For Zone 2, the peak discharge per acre for the 100-year and 10-year storms are shown for the various land treatments in the table below:

RETURN	PEAK DISCHARGE PER ACRE FOR LAND TREAT. SHOWN			
PERIOD	A	B	C	D
100-Year	1.56	2.28	3.14	4.70
10-Year	0.38	0.95	1.71	3.14

B. RUNOFF QUANTITIES (VOLUME AND PEAK DISCHARGE)

1. VOLUME

The runoff volume is the product of the area (sf) and the excess precipitation, E (in.), divided by 12 (in./ft.)

$$V = (AE)/12 \text{ (ft}^3\text{)}$$

TABLE 1 - 100-YEAR VOLUME AND PEAK DISCHARGE

TYPE OF SURFACE	LAND TREAT.	AREA (SQ. FT.)	EX. PREC. (E) INCHES	VOLUME CF	AREA (ACRES)	DISCH. CFS/AC	D
TRACT 1							
GRADED AREA	C	12,014	1.13	1,131	0.276	3.14	
TRACT 2							
AREA A							
SOCCER FIELD	B	213,120	0.78	13,853	4.893	2.28	11.16
LANDSCAPING	B	117,104	0.78	7,612	2.688	2.28	6.13
ASPHALT PARKING	D	12,200	2.12	2,155	0.280	4.70	1.32
SUBTOTALS		342,424		23,620	7.861		18.60
AREA B							
BUILDING	D	51,652	2.12	9,125	1.186	4.70	5.57
ASPHALT	D	9,470	2.12	1,673	0.217	4.70	1.02
SIDEWALKS	D	18,030	2.12	3,185	0.414	4.70	1.95
LANDSCAPING	B	70,800	0.78	4,602	1.625	2.28	3.71
GRADED AREAS	C	2,500	1.13	235	0.057	3.14	0.18
SUBTOTALS		152,452		18,821	3.499		12.42
AREA C							
BUILDING	D	45560	2.12	8,049	1.046	4.70	4.92
ASPHALT	D	113783	2.12	20,102	2.612	4.70	12.28
SIDEWALKS	D	17015	2.12	3,006	0.391	4.70	1.84
LANDSCAPING	B	35776	0.78	2,325	0.821	2.28	1.87
GRADED AREAS	C	1870	1.13	176	0.043	3.14	0.14
SUBTOTALS		214004		33,658	4.913		21.04
AREA D							
TRACK	D	43,400	2.12	7,667	0.996	4.70	4.68
PARKING	D	11,696	2.12	2,066	0.269	4.70	1.26
PUMPHOUSE	D	640	2.12	113	0.015	4.70	0.07
BLEACHERS	D	640	2.12	113	0.015	4.70	0.07
LANDSCAPING	B	286,321	0.78	18,611	6.573	2.28	14.99
GRADED AREAS	C	78,200	1.13	7,364	1.795	3.14	5.64
SUBTOTALS		420,897		35,934	9.663		26.71
TOTAL - TRACT 2		1,129,777		112,033	25.936		78.77
SITE TOTALS		1,141,791		113,165	26.212		79.64

TABLE 1 - 100-YEAR VOLUME AND PEAK DISCHARGE

<u>TYPE OF SURFACE</u>	<u>LAND TREAT.</u>	<u>AREA (SQ. FT.)</u>	<u>EX. PREC. (E) INCHES</u>	<u>VOLUME CF</u>	<u>AREA (ACRES)</u>	<u>DISCH. CFS/AC</u>	<u>DISCH. CFS</u>
TRACT 1							
GRADED AREA	C	12,014	0.52	521	0.276	1.71	0.47
TRACT 2							
AREA A							
SOCCER FIELD	B	213,120	0.28	4,973	4.893	0.95	4.65
LANDSCAPING	B	117,104	0.28	2,732	2.688	0.95	2.55
ASPHALT PARKING	D	12,200	1.34	1,362	0.280	3.14	0.88
SUBTOTALS		342,424		9,068	7.861		8.08
AREA B							
BUILDING	D	51,652	1.34	5,768	1.186	3.14	3.72
ASPHALT	D	9,470	1.34	1,057	0.217	3.14	0.68
SIDEWALKS	D	18,030	1.34	2,013	0.414	3.14	1.30
LANDSCAPING	B	70,800	0.28	1,652	1.625	0.95	1.54
GRADED AREAS	C	2,500	0.52	108	0.057	1.71	0.10
SUBTOTALS		152,452		10,599	3.499		7.35
AREA C							
BUILDING	D	45560	1.34	5,088	1.046	3.14	3.28
ASPHALT	D	113783	1.34	12,706	2.612	3.14	8.20
SIDEWALKS	D	17015	1.34	1,900	0.391	3.14	1.23
LANDSCAPING	B	35776	0.28	835	0.821	0.95	0.78
GRADED AREAS	C	1870	0.52	81	0.043	1.71	0.07
SUBTOTALS		214004		20,609	4.913		13.57
AREA D							
TRACK	D	43,400	1.34	4,846	0.996	3.14	3.13
PARKING	D	11,696	1.34	1,306	0.269	3.14	0.84
PUMPHOUSE	D	640	1.34	71	0.015	3.14	0.05
BLEACHERS	D	640	1.34	71	0.015	3.14	0.05
LANDSCAPING	B	286,321	0.28	6,681	6.573	0.95	6.24
GRADED AREAS	C	78,200	0.52	3,389	1.795	1.71	3.07
SUBTOTALS		420,897		16,365	9.663		13.38
TOTAL - TRACT 2		1,129,777		56,640	25.936		42.38
SITE TOTALS		1,141,791		57,161	26.212		42.85

The 100-year and 10-year, 6, hour volumes for Tract 1 and Areas A through D, Tract 2, are shown in Tables 1 and 2, respectively.

2. PEAK DISCHARGE

The total peak discharge, Q (cfs) is the product of the peak discharge per acre, Q_p (cfs/acre), and the area (acres).

$$Q = Q_p A \text{ (cfs)}$$

The peak discharge quantities for Tract 1 and Areas A through D of Tract 2 are shown in Tables 1 and 2 for the 100-year and 10-year storms, respectively.

C. DRAINAGE IMPROVEMENTS

1. EASTERLY SECTION (AREA A)

It is possible to hold the excess precipitation where it falls by constructing low-profile, turf-covered berms around the perimeters of the westerly 340' of soccer fields on the south and west sides as required. There is approximately 0.8' of fall across the westerly 340' of soccer fields. Since runoff will be retained, the 100-year, 10-day volume will be used to calculate the berm height

$$V_{10 \text{ day}} = V_{360} + A_D(P_{10 \text{ day}} - P_{360}) / 12$$

$$A_D = 12200 \text{ sf} \quad P_{10 \text{ day}} = 3.95 \text{ in.} \quad P_{360} = 2.35 \text{ in.}$$

$$V_{10 \text{ day}} = 23620 + 12200 (3.95 - 2.35) / 12 = 25247 \text{ cf}$$

$$\text{Depth} = V_{10 \text{ day}} / \text{Area of westerly 340 feet of soccer field}$$

$$\text{Depth} = 25247 / (340 \times 460) = 0.16 \text{ ft.}$$

This depth is added to the fall 0.8' to get the required height of berm.

Berm Height = 0.8 + 0.16 = 0.96' or approximately 1.0 ft.

Runoff from this area is fairly slow because of the flat grades so it is proposed that the berm not be constructed until the paved parking area is added.

2. PHYSICAL PLANT SECTION (AREAS B AND C)

Runoff from these areas will be conveyed to the detention pond and then discharged into the Edith Boulevard storm sewer at a controlled rate. Area C runoff will be conveyed through the parking lots. However, runoff from Area B must be conveyed by open ditch parallel to and just north of the south boundary line. Culverts will be required under access road crossings. The quantities at the Library access culverts are shown in the following table.

100-YEAR VOLUME AND PEAK DISCHARGE
PORTION OF AREA B DRAINING TO LIBRARY ACCESS CULVERT

TYPE OF SURFACE	LAND TREAT	AREA Ac.	"q" cfs/ac	"Q" cfs
Building	D	0.692	4.70	3.25
Sidewalk	D	0.404	4.70	1.90
Landscaping	B	1.375	2.28	3.14
Asphalt	D	0.017	4.70	0.08
Totals		2.488		8.37

- a. Drainage ditch east of Library access.

The proposed ditch section is trapezoidal with a 3' bottom, a 2' depth and 2:1 side slopes. For a depth of flow of 1'-0" the capacity is calculated as follows:

Use Manning's Equation, $Q = A(1.486/N)(R)^{2/3}(S)^{1/2}$ $A = 5 \text{ sf}$ $P = 7.47'$ R

$= A/P = 5 / 7.47 = 0.67$ $S = (20.5 - 19.25) / 235 = 0.0053'/\text{ft.}$ $N = 0.045$

$V = (1.486 / 0.045)(0.67)^{2/3}(0.0053)^{1/2} = 1.84 \text{ fps}$

$Q = AV = 5.0 \times 1.84 = 9.2 \text{ cfs} > 8.37 \text{ cfs}$ (Capacity is adequate.)

- b. Culvert selection - Library access.

$Q_{100} = 8.37$ Use inlet control, Chart 5, BPR, Jan 1963, For a CMP pipe, projecting end, $HW/D = 1.0$, an 18" CMP will carry approximately 5.75 cfs and an 24" CMP will carry 11.5 cfs. Therefore, use 2-18" CMPs, $Q = 11.5 \text{ cfs} > 8.37 \text{ cfs}$ (Capacity is adequate.)

- c. Drainage ditch west of Library access culvert.

$Q = 11.0 \text{ cfs}$. The proposed ditch is trapezoidal with a 3.5' bottom, a 2' depth and 2:1 side slopes. For a depth of flow of 1'-0" the capacity is calculated as follows:

$A = 5.5$ $P = 7.97'$ $R = A/P = 5.5 / 7.97 = 0.69$ $S = (19.0 - 17.2) / 165 = 0.0109'/\text{ft.}$ $N = 0.045$

$V = (1.486 / 0.045)(0.69)^{2/3}(0.0109)^{1/2} = 2.69 \text{ fps}$

$Q = AV = 5.5 \times 2.69 = 14.8 \text{ cfs} > 11.0 \text{ cfs}$ (Capacity is adequate.)

- d. Culvert selection - Gymnasium east access.

Approx. 1.25 cfs of Area B peak discharge enters downstream from this culvert. $Q = 12.25 - 1.25 = 11.0$ cfs. Use inlet control, Chart 5, BPR Jan. 1963. For a CMP pipe, projecting end, $HW/D = 1.0$, and 18" CMP will carry approximately 5.75 cfs and a 24" CMP will carry 11.5 cfs. Therefore, use 2-18" CMPs at 11.5 cfs or one 24" CMP at 11.5 cfs. (Capacity is adequate.)

3. TRACK/SOCCER FIELD

a. Drainage ditch adjacent to Gymnasium

Design Q is Area B peak discharge = 12.25 cfs. The proposed ditch is trapezoidal with a 3.0' bottom a 2.0' depth and 2:1 side slopes. For a depth of flow of 1'-0" the capacity is calculated as follows:

$$A = 5.0 \quad P = 7.47 \quad R = A/P = 5/7.47 = 0.67 \quad S = (15.53 - 14.51)/78 = 0.0131 \text{ '/ft.} \quad N = 0.045$$

$$V = (1.486/0.045)(0.67)^{2/3}(0.0131)^{1/2} = 2.89 \text{ fps}$$

$$Q = AV = 5.0 \times 2.89 = 14.45 \text{ cfs} > 12.25 \text{ cfs (Capacity is adequate with 1.0' freeboard.)}$$

b. Culvert selection - Gymnasium west access.

$Q_{100} = 12.25$ cfs Use inlet control, Culvert is a 35" X 24" pipe arch culvert. Per Handbook of Steel Drainage & Highway Construction Products, Fig. 4-20, Inlet Control and Headwater Depths for Corrugated Steel Pipe Arch Culverts. A 36" X 33" CMPA with projecting end, $HW/D = 1.0$, has a capacity of approximately 16 cfs > 12.25 cfs. (Capacity is adequate.)

- c. Drainage between Gymnasium access and Track/Soccer/Baseball field access.

Instead of having this as an open ditch, it is proposed to have an inlet near the east end of the soccer field, a manhole at the west end of the soccer field, and a smooth pipe, such as PVC or polyethylene, connecting the two. This pipe must carry runoff from both Area B and Area C. $Q = 12.25 + 21.04 = 33.29$ cfs.

For the inlet, the grate elevation is 08.00. The inlet will be in a depression with the surrounding elevations at 10.00 so there is a potential for a two foot head over the grate. Assume that only a 1.0 foot head is ever realized with half of the grate

clogged for a safety factor of 2.0. Use the Orifice Equation, $Q = CA(2GH)^{1/2}$

$$A = Q / [C(2GH)^{1/2}] = 33.29 / [0.6 (2 \times 32.2 \times 1.0)^{1/2}] = 6.91 \text{ sf}$$

Use twice the grate area for safety factor, or 13.82 sf actual grate openings.

For the analysis of the pipe, use the following equation:

$$H = [1 + K_e + (29n^2 L/R^{1.33})]V^2/2G$$

$$V = \{2GH / [1 + K_e + (29n^2 L/R^{1.33})]\}^{1/2}$$

Use concrete headwall with rounded edge $K_e = 0.2$

Elev. of headwater at inlet = 08.00 Elev. of surcharge in manhole = 04.00

$H = 4.0$ $L = 380'$ Try 30" PVC $n = 0.013$ and $R = 0.625$

$$V = \{2 \times 32.2 \times 4 / [1 + 0.2 + (29 \times 0.013^2 \times 380 / 0.625^{1.33})]\}^{1/2}$$

$$V = 7.42 \text{ fps} \quad A = 4.90 \text{ sf}$$

$$Q = AV = 4.90 \times 7.42 = 36.35 \text{ cfs} > 33.29 \text{ cfs} \text{ (30" PVC is adequate.)}$$

The runoff from the track/soccer field is considered to be very slow because of the turf and flat grades. It will all be collected in the ACO drains which have an 8" outfall so it will have minimal affect on the peak flow of the storm drain line.

- d. Culvert selection - From manhole to concrete junction/spillway box.

Use the following equation: $V = \{2GH / [1 + K_e + (29 n^2 L/R^{1.33})]\}^{1/2}$

The manhole inlet to have rounded edges $K_e = 0.2$

Elevation of surcharge in manhole = 5004.00

Elevation of tailwater at outlet = 5000.00

$H = 4.0$ $L = 380'$ Try 30" PVC pipe $n = 0.013$ $R = 0.625$

$V = \{2 \times 32.2 \times 4.0 / [1 + 0.2 + (29 \times 0.013^2 \times 380 / 0.625^{1.33})]\}^{1/2}$

$V = 7.42$ CFS $A = 4.90$

$Q = AV = 4.90 \times 7.42 = 36.36$ cfs > 33.29 cfs (30" PVC is adequate.)

4. **BASEBALL FIELD**

The baseball field will be constructed level in the area of the diamond and with a 1.0% slope from the diamond to the outer edges so it is anticipated that very little runoff will occur. What runoff does occur will drain directly to the detention pond.

D. ANALYSIS OF DOWNSTREAM CAPACITY

1. **REFERENCE**

Edith Boulevard Drainage Analysis, Boyle Engineering Corporation, November 1990.

2. **ALLOWABLE DISCHARGE RATE**

The site is a part of Basin 12D which has an area of 40.5 acres and has a peak discharge of 57 cfs. This area includes the site (25.94 acres), El Paraiso Road and a Triangular area south of El Paraiso Road. The latter two contain a total area of $40.5 - 25.94 = 14.56$ acres. The allowable site runoff is $(25.94 / 40.5)57 = 36.51$ cfs

3. **REQUIRED DETENTION POND CAPACITY**

$$H = [1 + K_e + (29n^2L/R^{1.33})] V^2/2G$$

$$V = \{ 2GH / [1 + K_e + (29n^2L/R^{1.33})] \}^{1/2}$$

$$K_e = 0.5 \text{ (End section conforming to fill)}$$

$$V = \{ 2 * 32.2 * 2 / [1 + 0.5 + (29 * 0.024^2 * 160 / 0.5^{1.33})] \}^{1/2}$$

$$V = 3.96 \text{ fps}$$

$$Q = AV = 1.57 * 3.96 = 6.21 \text{ cfs}$$

Therefore, it appears reasonable to conclude that the peak rate of flow into the junction/spillway box will not exceed the flow out of the positive discharge pipe and out of the 24" flow equalizing pipe into the pond.

5. POND POSITIVE DISCHARGE PIPE

$$\text{Use Orifice Equation } Q = CA(2GH)^{1/2} \quad C = 0.6 \quad A = 3.14 \text{ sf for a 24" RCP}$$

$$H = \text{Vertical distance from spillway elevation to springline of pipe. } H = 5.75$$

$$Q = 0.6 * 3.14(2 * 32.2 * 5.75)^{1/2} = 36.25 \text{ cfs}$$

6. POND OVERFLOW SPILLWAY

$$\text{Design } Q = 60.17 \text{ cfs} \quad \text{Use Weir Equation.} \quad Q = CLH^{3/2} \quad C = 2.65$$

$$\text{(Broadcrested Weir) } L = 35' \quad H = 0.75'$$

$$Q = 2.65 * 35 * 0.75^{3/2} = 60.24 \text{ cfs} > 60.17 \text{ cfs}$$

7. JOINT USE OF POND AS AN ENVIRONMENTAL WETLANDS STUDY AREA:

Since Sandia Preparatory School has a need to have a local environmental wetlands study area, it is proposed to utilize the detention pond by making it approximately 3' deeper than the invert elevation of the equalizing pipe. This will give the students an opportunity to perform ecological studies in a natural setting on the school campus. The fact that the



Map No. 1



LEGAL DESCRIPTION	
1	1/4
2	1/4
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92	1/4
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95	1/4
96	1/4
97	1/4
98	1/4
99	1/4
100	1/4

MAP AMENDED THROUGH
MAY 1988

E-15-Z
CITY OF ALBUQUERQUE
PLANNING DEPARTMENT



LEGAL DESCRIPTION
T 11 W
R 1 S
SEC 27

UNITED PROPERTIES
1010 100

MAP AMENDED THROUGH
MAY 1955

E-16-Z
CITY OF ALBUQUERQUE
PLANNING DEPARTMENT



Project _____ Description _____
 Job No. _____
 By PL Date 3-28 Chkd By _____ Date _____

SHEET
~~14~~
 14

Basin 12 D assume slight development w/school & Mega Corp
 being mostly pervious.

$$C = .55 \quad \text{area} = 40.5 \text{ acres} \quad S = .014 \quad L = 1800' \\
 = 1100' (\text{street})$$

$$T_c = \left[\frac{1800}{1.49} + \frac{1100}{2.2} \right] \frac{1}{60} = 35.6 \text{ min}$$

$$I = 2.6 \text{ in/hr}$$

$$Q_p = CIA = .55(2.6)40.5 = 58 \text{ cfs.}$$

Basin 70

$$\begin{array}{llll} \text{street:} & C = .95 & \text{area} = .95 \text{ acres} & S = .016 \quad L = 500' \\ \text{parked} & C = .60 & \text{area} = .92 \text{ acres} & S = .03 \quad L = 150' \\ \text{composite } C: & \frac{.95(.95) + .6(.92)}{.95 + .92} = .78 & \text{area} = 1.87 \text{ acres} \end{array}$$

$$T_c = 10 \text{ min.}$$

$$I = 4.8 \text{ in/hr}$$

$$Q_p = .78(1.87)4.8 = 7 \text{ cfs.}$$

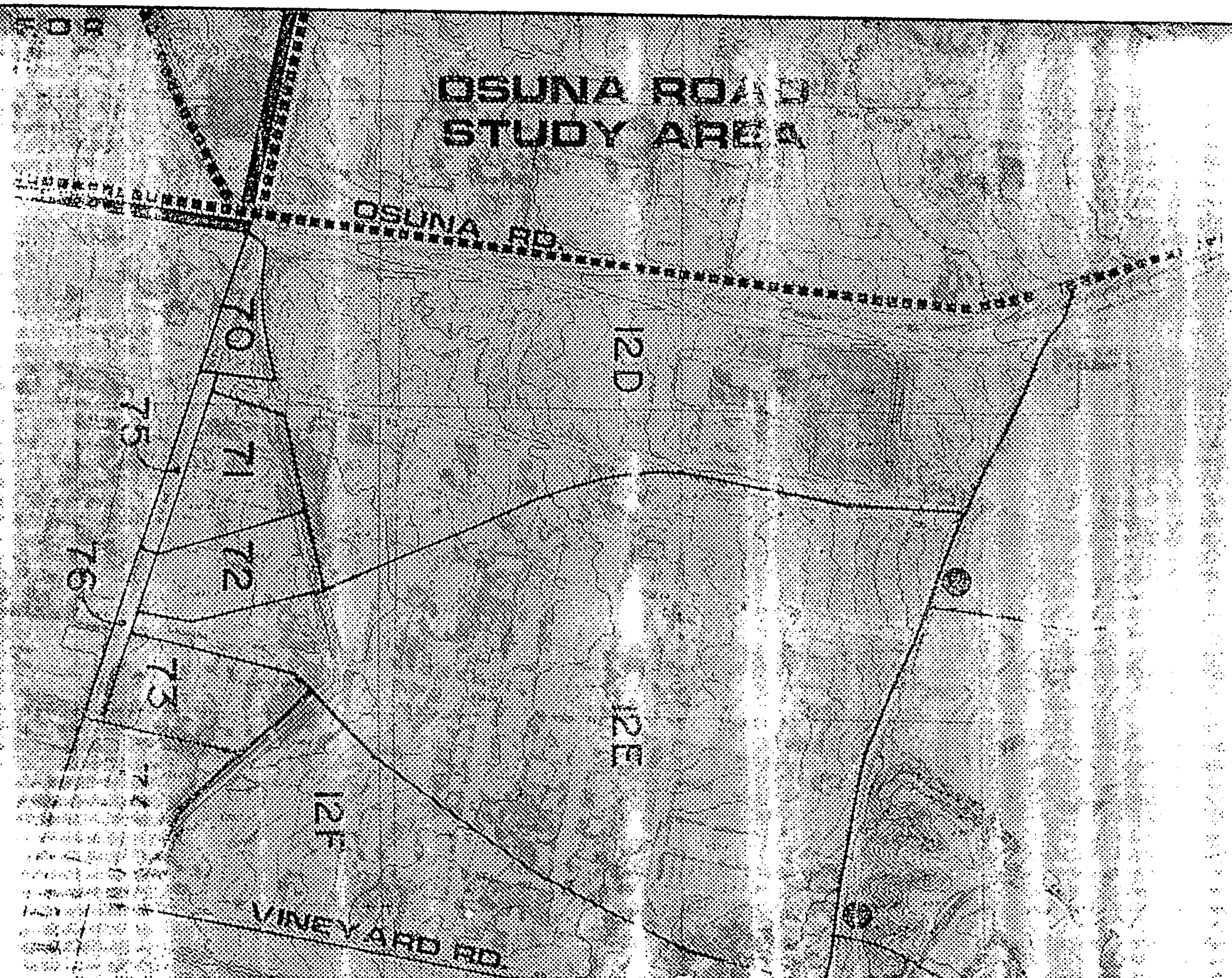
AP 53

Basins 70, 12 D + AP52 routed flow (EL Arriazo & Edith)

Because a large portion of basin 12 B & 12 CS flow is intercepted
 by existing SD on Osuna, omit Basins 12 B & 12 CS from
 area & composite C calculations. But add 40 cfs. onto
 peak flows throughout this storm drain system.

$$\text{composite } C: \frac{.78(1.87) + .55(40.5) + .6(76.3)}{118.7} = .586$$

OSUNA ROAD
STUDY AREA



SCS UNIT HYDROGRAPH PER CITY OF ALBUQUERQUE DPM

EDITH BLVD. SIDESTREETS B1710102 EL PARAISO	
6 Hr. RAINFALL	2.2
CURVE NUMBER	78
LENGTH OF BASIN (ft)	160
AVERAGE SLOPE OF BASIN (ft/ft)	.031
AREA OF BASIN (acres)	.37
TIME OF CONCENTRATION (min)	1.48
TIME TO PEAK (min)	10.00
PEAK RUNOFF (cfs)	1.01
TOTAL RUNOFF VOLUME (acre-ft)	.019

Project Edith
 Job No. _____
 By PRL Date 8-16 Chkd By _____ Date _____

Description Side street Hydrology

SHEET
 4/11

Muscate

$d = 2.2''$

CN: 35% imp 80

L: 700'

S: $\frac{6}{650} = .009$

A: $\frac{100 \times 650}{43560} = 1.49 \text{ acres}$

Mission

$d = 2.2$

CN: 35% imp 80

L: 500

S: $\frac{9}{500} = .018$

A: $\frac{500 \times 90}{43560} = .918 \text{ acres}$

El Paraiso

$d = 2.2''$

CN = 30% imp. 78

L = 160'

S = $\frac{5}{160} = .031$

A = $\frac{100 \times 160}{43560} = .37 \text{ acres}$

Vineyard

$d = 2.2$

CN = 35% imp 80

L = 270'

S = $\frac{5}{270} = .0185$

A = $\frac{270 \times 75}{43560} = .46 \text{ acres}$

Niagara

$d = 2.2$

CN = 35% imp 80

L = 620'

S = $\frac{10}{620} = .016$

A = $\frac{80 \times 620}{43560} = 1.14 \text{ acres}$

DRAINAGE INFORMATION SHEET

E161012

PROJECT TITLE:

SANDIA PREPARATORY SCHOOL

ZONE ATLAS/DRNG. FILE #:

E15, E16-D

DRB #:

EPC #:

WORK ORDER #:

LEGAL DESCRIPTION:

~~532 OSUNA~~ TRACTS 1 & 2 LANDS OF ACADEMY FOR BOYS.

CITY ADDRESS:

532 OSUNA ROAD NE

ENGINEERING FIRM:

Lovelady & Associates

CONTACT:

Frank D. Lovelady

ADDRESS:

300 ALAMOSA N.W 87107

PHONE:

345-2267

OWNER:

SANDIA PREPARATORY SCHOOL

CONTACT:

Richard Heath

ADDRESS:

532 OSUNA ROAD NE

PHONE:

3

ARCHITECT:

CUSTER BASARICH

CONTACT:

PHIL CUSTER

ADDRESS:

215 CENTRAL AVE NW 87102

PHONE:

765-1020

SURVEYOR:

THOMAS R MANN & ASSOC

CONTACT:

TOM MANN

ADDRESS:

5115 COPPER AVE NE

PHONE:

266 7757

CONTRACTOR:

JAYNES CORPORATION

CONTACT:

ADDRESS:

2906 BROADWAY NE

PHONE:

345-8591

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER (SPECIFY)

DATE SUBMITTED:

Aug 9, 1994

BY:

Frank D. Lovelady

THE MASTER GRADING & DRAINAGE PLAN HAS BEEN UPDATED PER NEW DPM CRITERIA AS REQUESTED BY BERNIE MONTROYA 1994



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 23, 1994

Frank Lovelady
Lovelady & Associates
300 Alamosa NW
Albuquerque, NM 87107

RE: REVISED MASTER DRAINAGE PLAN FOR SANDIA PREPARATORY SCHOOL
(E16-D12) ENGINEER'S STAMP DATED JULY 26, 1994.

Dear Mr. Lovelady:

Based on the information provided on your August 10, 1994 submittal, the above referenced site is approved for Master Grading & Drainage.

Please be advised that all the required infrastructure will need to be constructed and certified prior to any further development, each phase of development will require a site specific plan for review.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/d1/WPHYD/8745

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: SANDIA PREP ACAD 5 NEW CLASSROOMS ADD'N ZONE ATLAS/DRNG. FILE #: E-16/10/12

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT 1 & 2 ACADEMY FOR BOYS

CITY ADDRESS: 532 OSUNA RD NE

ENGINEERING FIRM: F. LOVELADY CONTACT: _____

ADDRESS: 300 ALAMOSA PHONE: 345 2267

OWNER: SANDIA PREP. ACADEMY CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☒ DRAINAGE PLAN

☐ CONCEPTUAL GRADING & DRAINAGE PLAN

☐ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION

☐ OTHER _____

PRE-DESIGN MEETING:

☐ YES

☐ NO

☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL

☐ PRELIMINARY PLAT APPROVAL

☐ S. DEV. PLAN FOR SUB'D. APPROVAL

☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

☐ SECTOR PLAN APPROVAL

☐ FINAL PLAT APPROVAL

☐ FOUNDATION PERMIT APPROVAL

☒ BUILDING PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY APPROVAL

☐ GRADING PERMIT APPROVAL

☐ PAVING PERMIT APPROVAL

☐ S.A.D. DRAINAGE REPORT

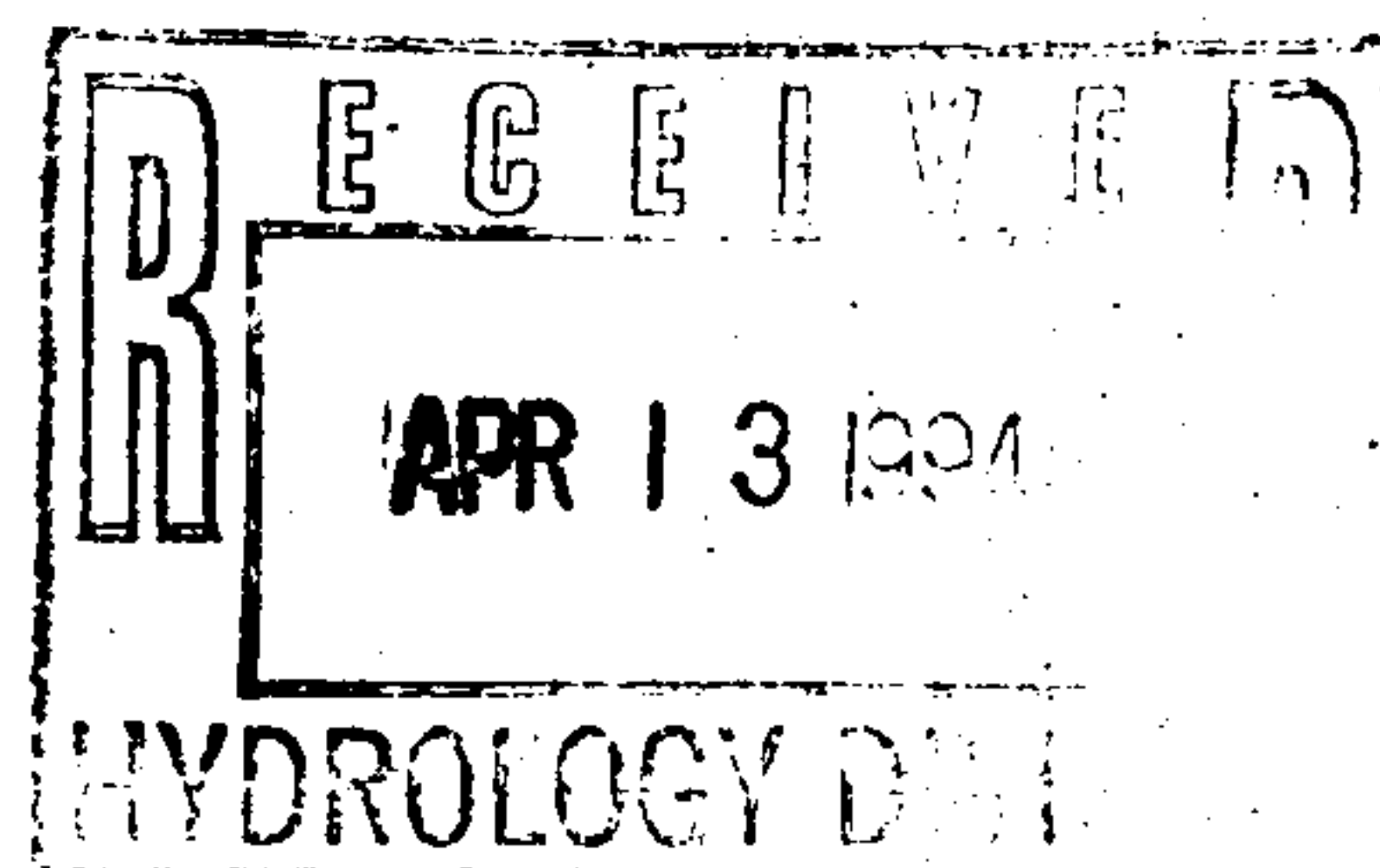
☐ DRAINAGE REQUIREMENTS

☐ SUBDIVISION CERTIFICATION

☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: APR. 13, 1994

BY: DAVID L. WALLERSTEDT





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 15, 1994

Frank Lovelady
Lovelady & Associates
300 Alamosa NW
Albuquerque, NM 87110

RE: DRAINAGE PLAN FOR AN ADDITION TO SANDIA PREPARATORY SCHOOL
(E16-D12) ENGINEER'S STAMP DATED 4/7/94.

Dear Mr. Lovelady:

Based on the information provided on your April 13, 1994 submittal, the above referenced site is approved for Building Permit and Site Development for Building Permit.

Please be advised that the Certificate of Occupancy will not be released until the Master Drainage Plan has been revised according to the new criteria in effect at present.

If I can be of further assistance, please feel free to call me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/d1/WPHYD/3329

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: SANDIA HEIGHTS Preparatory School ZONE ATLAS/DRNG. FILE #: E-16 102

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT 2 LANDS OF ACADEMY FOR BOYS

CITY ADDRESS: 532 OSUNA ROAD NE

ENGINEERING FIRM: LOVELADY & ASSOCIATES CONTACT: FRANK LOVELADY

ADDRESS: 7408 MORROW NE PHONE: 883-7973

OWNER: SANDIA PREPARATORY SCHOOL CONTACT: RICHARD HEATH

ADDRESS: 532 OSUNA ROAD NE PHONE: _____

ARCHITECT: CUSTER-BASARICH LTD CONTACT: PHIL CUSTER

ADDRESS: _____ PHONE: 765-1020

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: JAYNES CORP. CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☒ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED

APR 17 1992

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☒ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER _____ (SPECIFY)

AN EXISTING BUILDING (SHOWN IN RED) LOST ITS FOUNDATION DUE TO A WATERLINE BREAK. FOUNDATION PERMIT IS NEEDED ASAP. THIS MASTER GEN PLAN WAS ORIGINALLY APPROVED BY COUNTY.

DATE SUBMITTED: APRIL 17, 1992BY: Frank D. Lovelady



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 6, 1992

Frank Lovelady
Lovelady & Associates
7408 Morrow, NE
Albuquerque, New Mexico 87110

RE: PROPOSED BUILDING REPLACE @ SANDIA PREPARATORY SCHOOL
(E-16/D12) RECEIVED APRIL 17, 1992

Dear Mr. Lovelady:

Based on the information provided on your submittal of April 17, 1992, the above referenced plan is approved for Foundation Permit.

Please be advised that any further development within the Sandia Preparatory School site will require a revised Master Drainage Plan using the City of Albuquerque DPM Criteria.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,


Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj
(WP+3329)

PUBLIC WORKS DEPARTMENT