City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 20, 1994

Ronald R. Bohannan
Tierra West Dev. Mgmt. Ser.
4600 Montgomery NE Suite #3
Albuquerque, NM 87109

RE: ENGINEER CERTIFICATION FOR HOME DEPOT @ TRACT 2B RENAISSANCE CENTER (F16-D5F) CERTIFICATION STATEMENT DATED 12/12/94
W.O. 4837.80.

Dear Mr. Bohannan:

Based on the information provided on your December 14, 1994 submittal, Engineer Certification for the above referenced site is acceptable for Financial Guarantee release and Certificate of Occupancy.

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
Billy Goolsby
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 27, 1995

CERTIFICATE OF COMPLETION AND ACCEPTANCE

Home Depot U.S.A. Inc.
601 South Placentia
Fullerton, CA 92631

RE: PROJECT NO. 4837.80 HOME DEPOT- IN RENAISSANCE MAP (F-16)

Dear Sir:

This is to certify that the City of Albuquerque accepts Project No.4837.80 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- The project consisted of installing 30' of 24" storm drain. Removed and replaced curb and gutter and asphalt to build a deceleration lane to the entranceof Home Depot.

The contractor's correction period begins the date of this letter and will be effective for a period of one (1) year.

Sincerely,

Rick Roybal, P.E.
City Engineer,
Engineering Group
Public Works Department

Sincerely,

Russell B. Givler, P.E.
Chief Construction Engineer,
Engineering Group
Public Works Department

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

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 11, 1994

Ron R. Bohannan
Tierra West Development Management Services
4600 Montgomery NE Suite 3
Albuquerque, NM 87109

RE: REVISED DRAINAGE PLAN FOR HOME DEPOT (F16-D5F) REVISION DATED 1/7/94.

Dear Mr. Bohannan:

Based on the information provided on your January 7, 1994 resubmittal, the above referenced site is approved for Building Permit and Work Order.

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

Prior to Certificate of Occupancy release, the following will be required:

1. Engineer Certification per the D.P.M. checklist.

2. Copy of letter of Work Order acceptance.

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/WPHYD/8154

xc: Inspector
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 19, 1994

Daniel R. Hatch, Corporate Counsel-Western
HOME DEPOT U.S.A., INC.
℅ RON BOHANNON-Tierra West Development

CONTRACT FILE NO 9500365 CITY PROJECT NO.4837.80 THE HOME DEPOT IN RENAISSANCE CENTER

Dear Mr. Hatch:

Enclosed is a copy of the Agreement to Construct Public Improvements (PROCEDURE "A") dated and executed on SEPTEMBER 15, 1994, by the City's Director of Public Works Department, Robert E. Gurule.

Should you require any further information from the City in reference to this transaction, please do not hesitate to contact me at 786-2515.

Sincerely,

LyndaMichelle DeVanti, Project Administrator
Project Reveiw Section
Design/Construction Division
Engineering Group/Public Works Dept.

Enclosures (1)
cc:RON BOHANNON-Tierra West Development
cc:Project File

RECEIVED
DEC 14 1994

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

the public as a result of any condition of the Developer's Property; the Improvements; or the Developer's construction activities on Developer's Property or the City's property. The insurance policy must name the City of Albuquerque, its employees and elected officials, as their interest may appear, as additional insureds. The Developer must maintain the insurance until the City accepts the Improvements. The cancellation provision must provide that, if the policy is either cancelled prior to the expiration date of the policy or is materially changed or not renewed, the issuing company will mail 30 days written notice to the City, attention City Engineer.

B. The Developer complies with all applicable laws, ordinances and regulations, including, but not limited to the City Excavation Ordinance and Sidewalk Ordinance, and pays the following required engineering, staking, testing fees, and other related City fees:

Type of Fee	Amount
Engineering Fee	6.6% of Actual Construction cost.
Excavation and Sidewalk Ordinance, Street Restoration Fees	As required per City-approved estimate. (Figure 7)

(Note: The Developer must pay the City all City fees which have been incurred during construction before the City will accept the public Improvements.)

4. Surveying, Inspection and Testing. The Improvements shall be inspected, surveyed and tested in accordance with all applicable laws, ordinances, and regulations, and according to the following terms:

A. Construction Surveying. Construction surveying for the construction of the Improvements shall be performed by Jaynes Corp. If the construction surveying is performed by an entity other than the City, the City may monitor the construction surveying and the Developer shall ensure that the construction surveying entity provides all construction surveying field notes, plats, reports and related data to the City which the City requires for review. The Developer shall pay the City a reasonable fee for any construction surveying performed by the City.

B. Construction Inspection Methods. Inspection of the construction of the Improvements shall be performed by City of Albuquerque, a New Mexico Registered Professional Engineer. If the inspection is performed by an entity other than the City, the City may monitor the inspection and the Developer shall ensure that the inspecting entity provides all inspection results, reports and related data to the City which the City requires for review. Record drawings shall be provided by the entity performing the survey. The City retains the right to perform its own general overall inspection of the construction project at any time prior to final acceptance of the Improvements, if deemed necessary or advisable by the City Engineer. The Developer shall pay the City a reasonable fee for any inspections performed by the City.

FILED WITH CITY CLERK'S OFFICE
9/19/94
CC#95-00365

(PROCEDURE "A")
PUBLIC IMPROVEMENTS AGREEMENT

FIGURE 11

#4837.80

AGREEMENT TO CONSTRUCT
PUBLIC IMPROVEMENTS

THIS AGREEMENT is made this 15th day of September, 1994, by and between the City of Albuquerque, New Mexico ("City"), whose address is P. O. Box 1293 (One Civic Plaza), Albuquerque, New Mexico 87103, and Home Depot U.S.A., Inc. ("Developer"), a [state the type of business entity, for instance, "New Mexico corporation," "general partnership," "joint venture," "individual," etc.:] a Delaware Corporation, whose address is 601 South Placentia, Fullerton, California 92631 and whose telephone number is 714-738-5220, is made in Albuquerque, New Mexico, and is entered into as of the date of final execution of this Agreement.

1. Recital. The Developer is developing certain lands within the City of Albuquerque, Bernalillo County, New Mexico, known as [describe:] Tract 2B Renaissance Center II recorded on April 3, 1985 in the records of Bernalillo County at Book Misc. C26, pages 174 through ____ ("Developer's Property"). The Developer certifies that the Developer's Property is owned by [state the name of the present real property owner exactly as shown on the real estate document conveying title in Developer's Property to the present owner:] Home Depot U.S.A., Inc. ("Owner").

Developer proposes to install public infrastructure Improvements upon City property which abuts or is near or on Developer's Property, for the benefit of Developer's Property. The City requires, and the Developer is willing to provide certain assurances as a prerequisite to the City's granting permission to the Developer to enter City property to construct the improvements.

2. Deadline and Improvements. The Developer agrees to install and complete the following public infrastructure improvements, identified as Project No. 4837.80, to the satisfaction of the City, on or before the 1st day of July, 1994 ("Construction Completion Deadline"), at no cost to the City:

Utility Deceleration Lane and
Storm Drainage Tie In.

("Improvements").

3. Work Order Requirements. The City agrees to issue a Work Order after:

A. The Developer submits all documents and meets all requirements listed in Development Process Manual, Volume 1, Chapter 5, Work Order Process, and figure 1, including submitting a Certificate of Insurance in a form acceptable to the City. The certificate must establish that the Developer has procured or has caused to be procured public liability insurance in the amount of not less than One Million Dollars ($1,000,000) combined single limit for accidents or occurrences which are related to the activities covered by this Agreement which cause bodily injury, death or property damage to any member of

C. Field Testing. Field testing of the construction of the Improvements shall be performed by Agra Earth & Environmental Inc a certified testing laboratory under the supervision of a New Mexico Registered Professional Engineer, in accordance with the current City of Albuquerque Standard Specifications for Public Works Construction. If any field testing is performed by an entity other than the City, the City may monitor the field testing and the Developer shall ensure that the field testing entity provides all field testing results, reports and related data to the City which the City requires for review. The Developer shall pay the City a reasonable fee for any field testing performed by the City.

D. Additional Testing. The City retains the right to perform all additional testing which the City Engineer deems is necessary or advisable, and the Developer shall pay the City a reasonable fee therefor.

5. Acceptance and Termination. After the Developer completes the Improvements to the satisfaction of the City and submits the final acceptance package, the City will review it, and, if acceptable, the City will issue a Certificate of Completion and Acceptance for the Improvements. Thereafter, the Developer's obligations to the City pursuant to this Agreement shall terminate, with the exception of the bond or other guarantee which the Developer must provide to assure the materials and workmanship, as required by the Subdivision Ordinance.

6. Indemnification. Until the Improvements are accepted by the City, the Developer shall be solely responsible for maintaining the premises upon which the Improvements are being constructed in a safe condition. The Developer agrees to defend, indemnify and hold harmless the City and its officers, agents and employees from any claims, actions, suits or other proceedings arising from or out of the negligent acts or omissions of the Developer, its agents, representatives, contractors or subcontractors or arising from the failure of the Developer, its agents, representatives, contractors or subcontractors to perform any act or duty required of the Developer herein; provided, however, to the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give directions or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property. The indemnification required hereunder shall not be limited as a result of the specifications of any applicable insurance coverage. Nothing herein is intended to impair any right or immunity under the laws of the State of New Mexico.

7. Assignment. This Agreement shall not be assigned without the prior written consent of the City and the Developer and the express written concurrence of any surety which has undertaken to guarantee the completion of the Improvements. The City's approval will not be withheld unreasonably. If so assigned, this Agreement shall extend to and be binding upon the successors and assigns of the parties hereto.

8. Payment for Incomplete Improvements. If the Developer fails to complete construction of the Improvements satisfactorily by the Construction Completion Deadline, the City may make demand upon the excavation bond posted in accordance with City Ordinance 8-7-3(A)(3) or any successor ordinance in order to obtain payment for completing the Improvements. If the cost of completing the Improvements exceeds the amount of the excavation bond, the City may proceed against the Developer for the balance of the completion costs and for any costs or damages incurred by the City as a result of Developer's failure to perform according to the terms of this Agreement

9. Notice. For purposes of giving formal written notice, including notice of change of address, the Developer's and the City's addresses are as stated in the first paragraph of this Agreement. Notice may be given either in person or by certified U.S. mail, postage paid. Notice will be considered to have been received within six days after the notice is mailed if there is no actual evidence of receipt.

10. Entire Agreement. This Agreement contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral or written, whether previous to the execution hereof or contemporaneous herewith.

11. Changes to Agreement. Changes to this Agreement are not binding unless made in writing, signed by both parties.

12. Construction and Severability. If any part of this Agreement is held to be invalid or unenforceable, the remainder of the Agreement will remain valid and enforceable if the remainder is reasonably capable of completion.

13. Captions. The captions to the sections or paragraphs of this Agreement are not part of this Agreement and will not affect the meaning or construction of any of its provisions.

14. Form not Changed. Developer agrees that changes to this form are not binding unless initialed by the Developer and signed by the City's Legal Department on this form.

15. Authority to Execute. If the Developer signing below is not the Owner of the Developer's Property, the City may require the Developer to provide the City with satisfactory proof of Developer's authority to execute this Agreement.

Executed on the date stated in the first paragraph of this Agreement.

DEVELOPER: HOME DEPOT U.S.A., INC., a Delaware corp.

By: _____
Name: Daniel R. Hatch
Title: Corporate Counsel - Western Division
Dated: August 23, 1994

CITY OF ALBUQUERQUE

_____
Director, Public Works Department
Dated: 9-13-94

Approved by: _____ 9/13/94
City Engineer

9/13/94

DEVELOPER'S NOTARY

STATE OF _____)
)
COUNTY OF _____)

The instrument was acknowledged before me on _____, 1994 by: (name(s) of person(s) _____ as (type of authority, e.g., officer, trustee, etc.) _____ of (name of party on behalf of whom instrument was executed) _____.

_____
Notary Public

My commission expires:

_____

CITY'S NOTARY

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on September 15, 1994, by ROBERT E. GURULE, Director, Public Works Department of the City of Albuquerque, a municipal corporation, on behalf of said corporation.

Felicia Lucero

My commission expires:

1-27-98

SKB

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

On August 23, 1994, before me, Jeannette McClain, a Notary Public in and for said state, personally appeared DANIEL R. HATCH, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Jeannette McClain
SIGNATURE OF NOTARY PUBLIC

(SEAL)

OFFICIAL NOTARY SEAL
JEANNETTE MC CLAIN
Notary Public — California
ORANGE COUNTY
My Comm. Expires NOV 04 1994

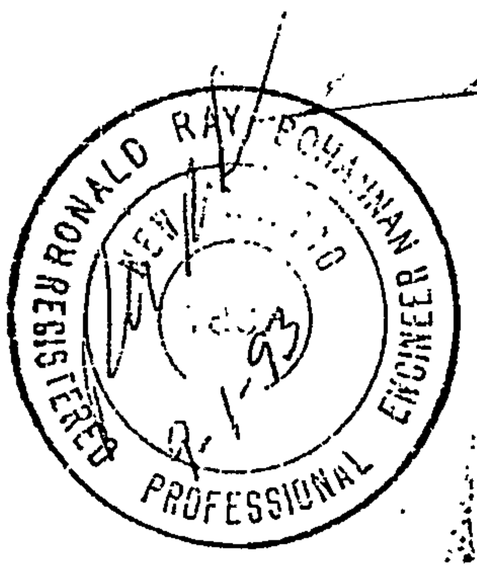
CONCEPTUAL DRAINAGE REPORT

FOR

THE HOME DEPOT

Prepared by:

Tierra West Development
Management Services
4600 Montgomery Blvd. NE, Suit 3
Albuquerque, NM 87109



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PURPOSE

The purpose of this report is to present the conceptual drainage management plan for The Home Depot site development plan and preliminary plat approval. Tract 2B is proposed HOME DEPOT and will include a new building, garden center, and paved parking.

EXISTING CONDITIONS

The parcel is Tract 2B of Renaissance Center, Filed April 3, 1985 in Volume C26, Folio 174 containing 10.96 acres which lies at the SW corner of Alexander and Renaissance Blvd. (See attached Vicinity Map, Zone Map F-16). The site does not lie within designated Flood Hazard Zone.

HYDROLOGY ANALYSIS

The calculations where done utilizing Part A of the DPM section 22.2 as revised August, 1991. The site lies within Zone 2 and will use the design storm listed in Table 2. The runoff coefficient is based on the land use shown on the site plan. All of the hydrology calculations are located in the calculations of this report. This report and allowable runoff discharge complies with the Renaissance Master Plan.

PROPOSED MANAGEMENT PLAN

Improvements consist of a new building, parking, and a garden center. This site is part of the Renaissance Master Plan prepared by ANDREWS, ASBURY & ROBERT, INC., (F16/D6). The flows are being collected by three storm sewer pipes to the main 84" storm sewer in Renaissance Blvd. These flows then drain to the "Renaissance Detention Pond".

The enclosed grading and drainage plan shows proposed grades indicated by spot elevations and on-site drainage patterns. All grades range between a minimum of 1% and a maximum of 3%.

As shown on the plan the proposed improvements on HOME DEPOT, will generate 100-yr run-off of 51.51 cfs.

As required by the master plan, the peak 100-year discharge of 51.51 cfs is to be detained on site and released at a rate of 0.1 cfs per acre, totalling 1.1 cfs. We have calculated the total volume from the design needing 1.94 acre-ft on site. Volume of the three proposed parking lot ponds are 89,917 ft^3, 37,117 ft^3, and 44,978 ft^3 totalling 3.95 acre-ft or sufficient volume to handle the flows.

DESIGN OF THE HOME DEPOT STORMDRAIN

Tract 2B's runoff is designed to be drained through a series of catch basin, with 18" outlet pipes, to an existing 84" storm drain pipe which drains into "Renaissance Detention Pond." (See enclosed Grading and Drainage Map for catch basin locations). Based upon such a low release rate, we have sized the storm sewer pipes collecting the flow at 18 inches. Further analysis will determine the actual size of the basins and storm drain pipes.

CALCULATIONS

The following calculations are based on the "Drainage Design Criteria" for the City of Albuquerque.

AREA = 477,417 ft² = 10.96 Acre TREATMENT = D

The site is @ Zone 2 (From Fig. A page 2, DPM Sec. 22.2)

From table 2, Depth (Inches) @ 100-year storm

$P_{100\text{-}360}$ = 2.35 inches

Find the 10-year, 6-hour storm depth for zone 2.

$P_{10\text{-}360}$ = 2.35 x 0.667
= 1.57 inches

INITIAL ABSTRACTION (IA)

$IA_{treatment\text{-}D}$ = 0.10

INFILTRATION (INF)

$INF_{treatment\text{-}D}$ = 0.04

EXCESS PRECIPITATION, E (INCHES), (100yr-6hr)

$$WEIGHTED\ E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

FROM TABLE 8, PAGE 8, DPM SECTION 22.2

$$WEIGHTED\ E = \frac{0 + 0 + 0 + 2.12(10.96)}{0 + 0 + 0 + 10.96}$$

$WEIGHTED\ E = 2.12''$

EXCESS PRECIPITATION, E (INCHES), (10yr-6hr)

$$WEIGHTED\ E = \frac{0 + 0 + 0 + 1.34(10.96)}{0 + 0. + 0 + 10.96}$$

$WEIGHTED\ E = 1.34''$

VOLUME OF RUNOFF, (100yr-6hr)

$$V_{360} = WEIGHTED\ E * (A_A + A_B + A_C + A_D)$$

$$V_{360} = \frac{2.12}{12} \ x\ 10.96$$

$$V_{360} = 1.94\ Acre\text{-}ft$$

VOLUME OF RUNOFF, (10yr-6hr)

$$V_{360} = \frac{1.34}{12} \ x\ 10.96$$

$$V_{360} = 1.22\ Acre\text{-}ft$$

PEAK DISCHARGE RATE (cfs/acre), (100yr-6hr)

$$TOTAL\ Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$$

FROM TABLE 9, PAGE 11, DPM SECTION 22.2

$$TOTAL\ Q_P = 0 + 0 + 0 + 4.70(10.96)$$

$$TOTAL\ Q_P = 51.51\ cfs$$

PEAK DISCHARGE RATE (cfs/acre), (10yr-6hr)

$$TOTAL\ Q_P = 0 + 0 + 0 + 3.14(10.96)$$

$$TOTAL\ Q_P = 34.41\ cfs$$

TABLE 1.

DRAINAGE BASIN	Qp–100YR (CFS)	V–RUNOFF (AC–FT)	ORIFICE PLATE SIZE ON PIPE COMING OUT OF CB
B1	4.54	0.2244	2"
B2	0.52	0.0173	2"
B3	2.32	0.0936	2"
B4	4.44	0.1797	3"
B5	4.61	0.1868	2"
B6	6.34	0.2573	3"
B7	10.63	0.4318	2"
B8	6.12	0.3030	2"
B9	3.18	0.1285	3"
B10	4.54	0.1840	2"
B11	3.73	0.1508	2"
Qp–10YEAR IS APPROXIMATELY 67% OF Qp–100YEAR			

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JAN 7 1994
HYDROLOGY DIVISION

TABLE 2.

CATCH BASIN CONNECTIONS	FLOW	FLOW W/ PLATE	L. F.	PIPE USED	SLOPE	VELOCITY (FT/S)
CB 8 TO 1	10.66	0.22	165	12"–PVC	0.80 %	2.47
CB 1 TO 3	0.52	0.30	175	12"–PVC	0.60 %	2.44
CB 2 TO 3	11.18	0.20	45	12"–PVC	4.13 %	4.29
CB 3 TO 4	15.62	0.32	135	12"–PVC	0.60 %	2.83
CB 4 TO 5	20.23	0.73	250	12"–PVC	0.60 %	3.15
CB 5 TO 6	50.97	0.39	175	12"–PVC	1.33 %	2.71
CB 9 TO 10	22.74	0.48	195	12"–PVC	1.00 %	2.48
CB 10 TO 11	7.22	0.30	130	12"–PVC	0.60 %	2.45
CB 11 TO 7	3.84	0.32	265	12"–PVC	0.60 %	2.49
CB 7 TO 6	8.38	0.41	325	12"–PVC	0.60 %	2.67
CB 6 TO MH	12.11	*1.13*	148	18"–RCP	2.15 %	5.38

TABLE 3.

CATCH BASIN	INV. @ CB (FT)	WT. ELEV. (FT)	RIM ELEV. (FT)	WT. HT. (FT)	WT. HT. (IN)	TIME
B1	5025.68	5032.64	5032.12	0.52	6.29	@2.87 HR
B2	5026.49	5029.05	5028.93	0.12	1.45	@1.83 HR
B3	5024.63	5031.18	5030.60	0.58	6.94	@3.00 HR
B4	5023.82	5030.91	5030.53	0.38	4.51	@2.30 HR
B5	5022.32	5031.29	5030.40	0.89	10.62	@6.77 HR
B6	5021.18	5031.02	5030.56	0.46	5.47	@2.43 HR
B7	5023.13	5029.69	5029.21	0.48	5.70	@3.07 HR
B8	5027.00	5032.09	5031.60	0.49	5.84	@2.87 HR
B9	5027.45	5029.78	5029.45	0.33	3.91	@2.33 HR
B10	5025.50	5029.32	5028.71	0.61	7.28	@4.67 HR
B11	5024.72	5029.09	5028.61	0.48	5.70	@2.97 HR

*** See Drainage Map for drainage patterns and catch basin locations.**

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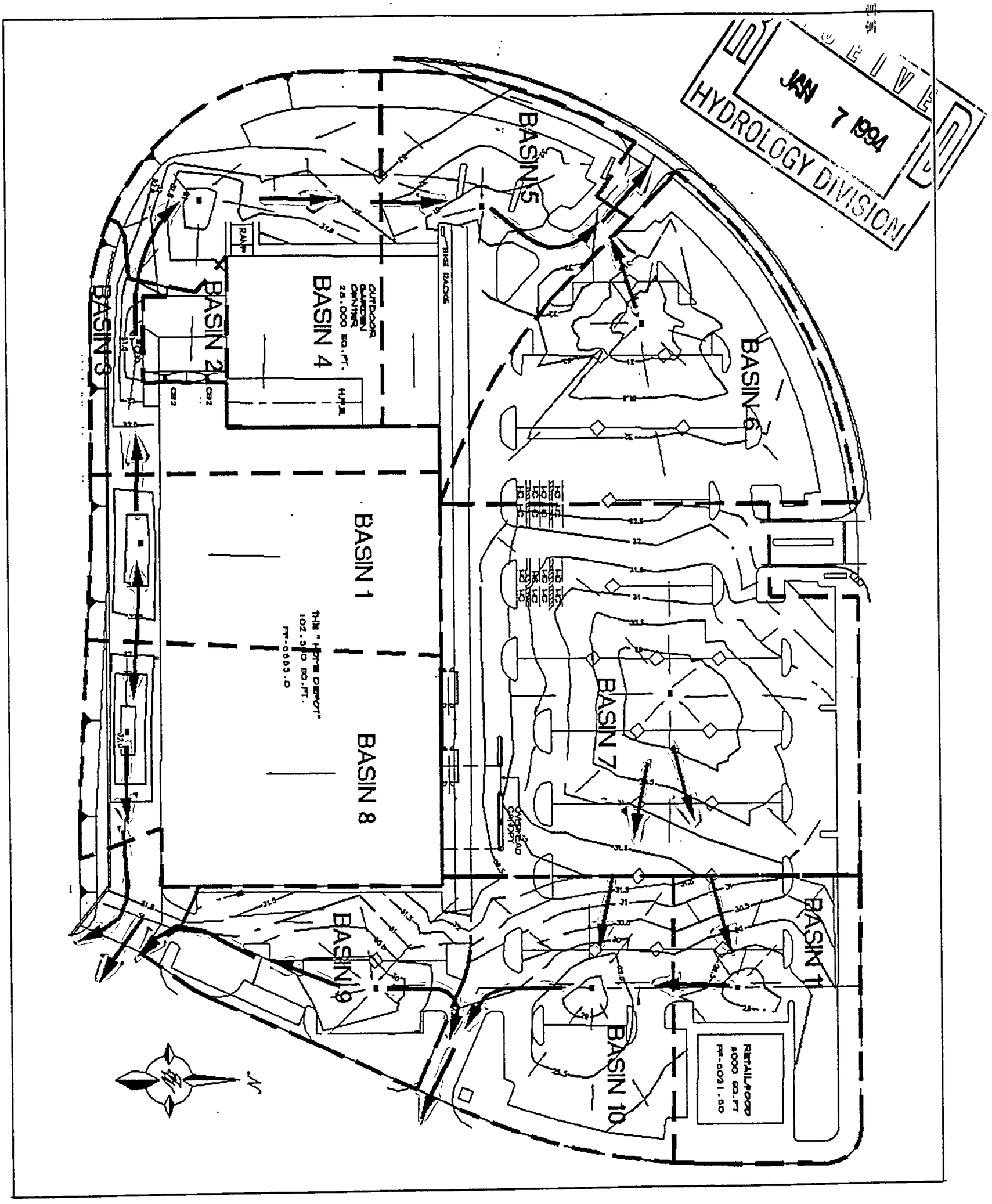
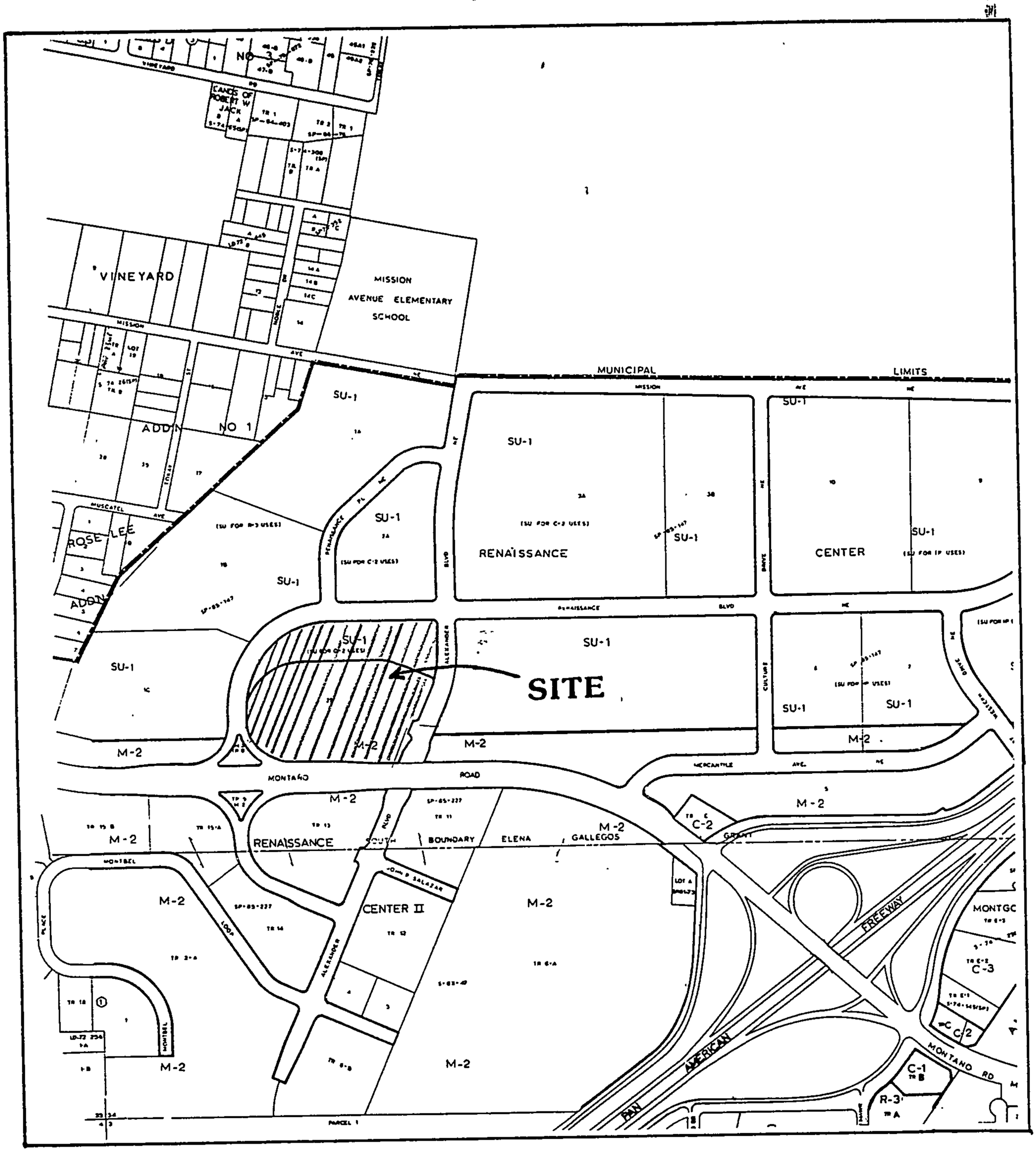
JAN 7 1994
HYDROLOGY DIVISION



EMERGENCY SPILLWAY

VICINITY MAP



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City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 12, 2003

David Soule, P.E.
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

RE: THE HOME DEPOT- Tool Rental & Garden Expansion (F-16/D5F)
(1220 Renaissance Blvd NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 2/25/2002
ENGINEERS CERTIFICATION DATED 3/5/2003

Dear David:

Based upon the information provided in your Engineers Certification submittal dated 3/6/2003, the above referenced site is approved for 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. Division
BLD

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

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 4, 2002

Ray Bohannan, PE
Tierra West, LLC
8509 Jefferson NE
Albuquerque, NM 87113

Re: Home Depot Expansion Grading and Drainage Plan
Engineer's Stamp Dated 2-25-02, (F16/D5F)

Dear Mr. Bohannan,

Based on your submittal dated 2-26-02, the above referenced plan is approved for Site Plan for Building Permit Action by the DRB, and Building Permit which in inclusive with a Paving 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 924-3984.

Sincerely,

Leslie Romero
Engineering Associate, PWD
Development and Building Services

c: Terri Martin, Hydrology
File (2)

[redacted] DRAINAGE REPORT

FOR

THE HOME DEPOT

12/08/93

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DEC 9

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the state of New Mexico in good standing.

Ronald R. Bohannan
PE NO. 7868

Prepared by:

Tierra West Development
Management Services
4600 Montgomery Blvd. NE, Suite 3
Albuquerque, NM 87109
(505) 883-7592

PURPOSE

The purpose of this report is to present the drainage management plan for the Home Depot Site Development Plan and Grading/Drainage approval, situated on Tract 2B, Renaissance. HOME DEPOT is proposing to build a new 102,000 SF building and 28,000 SF garden center. The site is located in the North Renaissance Center adjacent to Renaissance Blvd. and west of Alexander Blvd. as shown on zone atlas page F-16.(See attached Vicinity Map, Zone Map F-16.)

EXISTING CONDITIONS

The parcel is Tract 2B of Renaissance Center, Filed April 3, 1985 in Volume C26, Folio 174 containing 12.8874 acres. This site lies at the SW corner of Alexander and Renaissance Blvd. The site does not lie within designated Flood Hazard Zone.

This site is part of the Renaissance Master Plan, and all of the existing and developed runoff discharge through via surface flow and storm drainage systems to the "Renaissance Detention Pond" located on the west side. That pond under City control released the water in Montano Blvd.

HYDROLOGY ANALYSIS

Hydrological aspects of this site were evaluated using AMAFCA's AHYMO program according to guidelines presented in the City of Albuquerque DPM, Section 22.2 (January 1993). All of the pertinent hydrologic parameters and calculations are located in the calculations of this report.

PROPOSED MANAGEMENT PLAN

Improvements consist of a new building, parking, and a garden center. This site is part of the Renaissance Master Plan prepared by ANDREWS, ASBURY & ROBERT, INC., (F16/D6). The flows are being collected on-site by a series of storm drain and then routed to the existing 84" storm sewer in Renaissance Blvd. These flows then drain to the "Renaissance Detention Pond". (See attached Drainage Map.)

The proposed Grading and Drainage Plan show future grades indicated by spot elevations and on-site drainage patterns. All grades range between a minimum of 1% and a maximum of 3%. A one foot water block has been designed at the driveways entrances. (See the Final Grading and Drainage Plan enclosed in the Map Pocket.)

Q: Calculate the standard deviation for the following data:

x	23	27	28	29	30	31	33	35
f	3	8	10	15	25	20	12	7

Sol:

x	f	fx	x^2	fx^2
23	3	69	529	1587
27	8	216	729	5832
28	10	280	784	7840
29	15	435	841	12615
30	25	750	900	22500
31	20	620	961	19220
33	12	396	1089	13068
35	7	245	1225	8575
	$\sum f = 100$	$\sum fx = 2991$		$\sum fx^2 = 91237$

$$\sigma = \sqrt{\frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f}\right)^2}$$

$$= \sqrt{\frac{91237}{100} - \left(\frac{2991}{100}\right)^2}$$

$$= \sqrt{912.37 - (29.91)^2}$$

$$= \sqrt{912.37 - 894.4881}$$

$$= \sqrt{17.8819}$$

$$= 4.23$$

TABLE 1.

DRAINAGE BASIN	Qp–100YR (CFS)	V–RUNOFF (AC–FT)	REQ. DIA. FOR PIPE FROM CB (FT)
B1	4.54	0.2244	1.51
B2	0.44	0.0173	0.49
B3	2.32	0.0936	1.54
B4	4.44	0.1797	1.74
B5	4.61	0.1868	1.56
B6	6.34	0.2573	2.83
B7	10.63	0.4318	2.09
B8	6.12	0.3030	1.30
B9	3.18	0.1285	1.07
B10	4.54	0.1840	1.44
B11	3.73	0.1508	1.65
Qp–10YEAR IS APPROXIMATELY 67% OF Qp–100YEAR			

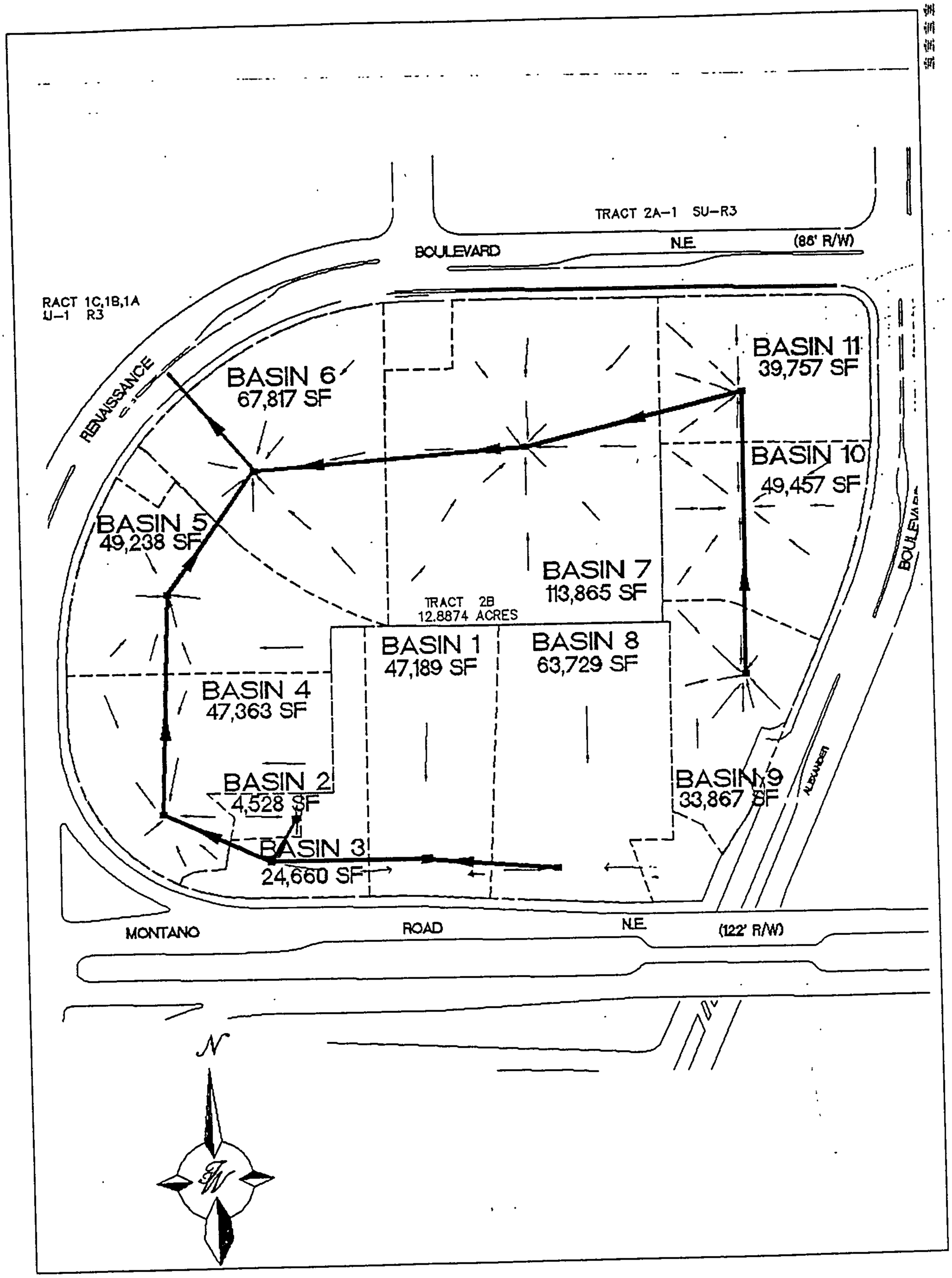
TABLE 2.

CATCH BASIN CONNECTIONS	FLOW	L. F.	PIPE USED	SLOPE
CB 8 TO 1	10.66	165	18"	1.00 %
CB 1 TO 3	0.52	175	18"	1.00 %
CB 2 TO 3	11.18	60	12"	1.06 %
CB 3 TO 4	15.62	135	18"	0.80 %
CB 4 TO 5	20.23	250	18"	0.61 %
CB 5 TO 6	50.89	175	18"	3.00 %
CB 9 TO 10	22.74	325	12"	0.80 %
CB 10 TO 11	7.22	130	18"	0.80 %
CB 11 TO 7	3.84	265	18"	0.80 %
CB 7 TO 6	8.38	325	18"	0.80 %
CB 6 TO 84" PIPE	12.11	160	36"	0.80 %

TABLE 3.

CATCH BASIN	Qp (CFS)	INV. @ CB (FT)	WT. ELEV. (FT)	RIM ELEV. (FT)	WT. HT. (FT)	WT. HT. (IN)	TIME
B1	0.22	5027.95	5032.64	5032.12	0.52	6.29	@2.87 HR
B2	0.20	5027.50	5029.05	5028.93	0.12	1.45	@1.83 HR
B3	0.32	5026.10	5031.18	5030.60	0.58	6.94	@3.00 HR
B4	0.73	5025.02	5030.91	5030.53	0.38	4.51	@2.30 HR
B5	0.39	5023.50	5031.29	5030.40	0.89	10.62	@6.77 HR
B6	*1.13*	5018.26	5031.02	5030.56	0.46	5.47	@2.43 HR
B7	0.41	5020.96	5029.69	5029.21	0.48	5.70	@3.07 HR
B8	0.22	5029.60	5032.09	5031.60	0.49	5.84	@2.87 HR
B9	0.48	5027.45	5029.78	5029.45	0.33	3.91	@2.33 HR
B10	0.30	5024.85	5029.32	5028.71	0.61	7.28	@4.67 HR
B11	0.32	5023.71	5029.09	5028.61	0.48	5.70	@2.97 HR

*** See Drainage Map for drainage patterns and catch basin locations.**



DRAINAGE MAP

The proposed improvements on HOME DEPOT will generate a runoff of 52.31 cfs, which are divided into 11 sub-basins. This runoff will be discharged at a rate of 1.13 cfs, per the approved Andrews' report, via a series of on-site catch basins and storm drainage pipes directly into an existing 84" storm drainage pipe, located north of the property on Renaissance Boulevard. The runoff is detained in ten parking lot ponds that are collected in a 18" storm drain pipe. This storm drain ties to the 84 inch existing drain as mentioned. An orifice plat will limit the flow to the approved 0.1 cfs/acre discharge rate allowed. (See Tables and Calculation Sheets attached for catch basin flows, inverts, and etc.)

As required by the Master Plan, the peak 100-year discharge of 52.31 cfs is to be detained on site and released at a rate of 0.1 cfs per acre, totalling 1.29 cfs. Based on the AHYMO calculation, water is released at a rate totalling 1.13 cfs, which put us on a lower discharge rate than that we are allowed. We have calculated the total volume from the design needing, 2.13 acre-ft on-site. Volume of the three proposed parking lot ponds are 89,917 ft^3, 37,117 ft^3, and 44,978 ft^3, totalling 3.95 acre-ft. This is sufficient volume to handle the flows. The water height on-site from the pondings on site will range from 0.12' to 0.86'. (See attached Tables and AHYMO sheets for calculations.)

DESIGN OF THE HOME DEPOT STORMDRAIN

Tract 2B's runoff is designed to be drained through a series of catch basin, with 18" outlet pipes 2-3" orifice plates limiting the flow, to an existing 84" storm drain pipe which drains into "Renaissance Detention Pond." (See enclosed Grading and Drainage Map for catch basin locations).

The following three tables summarize the runoff, volume, and peak discharge rates for the site.

INTERIM EROSION CONTROL

The plan centers on the fact that storm water will not be allowed to discharge during the construction process until the site is developed. A desilting pond will be place at the NE corner of the lot where the pad is located.

The site is @ Zone 4, Area 12.8874 acres.

P for 100-yr 1 hr storm = 2.23 inches

P for 100-yr 6 hr storm = 2.29 inches

P for 100-yr 24 hr storm = 3.65 inches

Treatment, B = 10%, and D = 90% for commercial site.

Time of concentration, T_c = 12 min

$T_p = 0.7T_c + 8 - 5\,A_D/A_T$
$= .7*12 + 8 - 5*.90$
$= 11.90$ min, $= 0.1983$ hr

From attached AHYMO calculation (Sheet 1)

Q_p = 52.31 cfs

Volume = 2.1298 AC-FT
= 92,775 CF

SAMPLE CALCULATIONS FOR BASIN 8

SIZING OF THE PIPE

$$Q = \frac{1.49}{n} AR^{\frac{2}{3}} S_o^{\frac{1}{2}}$$

$$A = \pi r^2$$

$$R = \frac{A}{P}$$

$$\text{Where } P = \frac{2}{3}\,\text{Perimeter}$$

$$= \frac{2}{3} x 2\pi r$$

$$= \frac{4}{3}\pi r$$

$$\therefore, \quad R = \frac{\pi r^2}{\frac{4}{3}\pi r}$$

$$= \frac{3r}{4}$$

n = 0.013, S = 1%, Q = 5.56 cfs from sheet 2 of AHYMO calculations.

$$6.12 = \frac{1.49}{0.013} (\pi \cdot r^2)(0.75 \cdot r)^{\frac{2}{3}} 0.01^{\frac{1}{2}}$$

and solve for r, r = 0.61', D = 1.22', Use 18" pipe

$A = \frac{\pi D}{4}$

$A = .0595$

$\frac{(.0253)(3.14)}{4}$

$D = \left(\frac{4A}{3.14}\right)^{1/2}$

$D = .2753$

3.30

CATCH BASIN MINIMUM HEIGHT FOR CB#8

$$H = C.F. + 0.5 + 1.2\,\frac{V^2}{2g} + \frac{d}{COS(S)}$$

Where C.F. = 0, and
for small S d/COS(S)=1
$V = Q/A = 6.12/(\pi\ 0.75^2)$
$= 3.46$ ft/s

$$H = 1.2\,\frac{(3.46)^2}{2 \cdot 32.2} + 1.5$$

H = 1.72', USE H = 2'

See Tables for inverts and other details of the catch basins and pipe sizes.

ORIFICE PLATE CALCULATIONS

$$Q = Ca\sqrt{2gh}$$

$$0.22 = 0.63\,a\sqrt{2(32.2)(2.49)}$$

and solve for a,

$a = .0283$ ft^2 $\qquad a = \frac{\pi D^2}{4}$

D = 0.19'

Use 2-3" diameter holes.

DISCHARGE FLOWCHART

ROUTING 1

CB 8, (6.12 CFS)

0.22 CFS DISC.

CB 1, (4.54 + 0.22 CFS)

CB 2, (0.44 CFS)

0.30 CFS DISC.

0.20 CFS DISC.

0.50 CFS DISC.

CB 3, (2.32 + 0.50 CFS)

0.32 CFS DISC.

CB 4, (4.44 + 0.32 CFS)

0.73 CFS DISC.

CB 5, (4.61 + 0.73 CFS)

0.39 CFS DISC.

0.80 CFS DISC.

CB 6, (6.34 + 0.80 CFS)

1.13 CFS DISC.

84" STORM SEWER PIPE

ROUTING 2

CB 9, (3.18 CFS)

0.48 CFS DISC.

CB 10, (4.54 + 0.48 CFS)

0.30 CFS DISC.

CB 11, (3.73 + 0.30 CFS)

0.32 CFS DISC.

CB 7, (10.63 + 0.32 CFS)

0.41 CFS DISC.

* See AHYMO Input File & Summery Table attached.

AHYMO SUMMARY TABLE (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992 RUN DATE (MON/DAY/YR) =12/07/1993
USER NO.= R_BOHANN.S92
INPUT FILE = 93723a.dat

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.900
COMPUTE NM HYD	101.10	-	1	.00229	6.12 CB-8	.303	2.48487	1.567	4.181	PER IMP= 90.00
ROUTE RESERVOIR	501.10	1	2	.00229	.22	.303	2.48473	2.866	.151	AC-FT= .238
RAINFALL TYPE= 1										RAIN6= 2.900
COMPUTE NM HYD	102.10	-	1	.00169	4.54 CB-1	.224	2.48487	1.567	4.188	PER IMP= 90.00
ADD HYD	102.20	1& 2	3	.00398	4.74	.527	2.48470	1.567	1.863	
ROUTE RESERVOIR	502.10	3	4	.00398	.30	.475	2.23828	3.433	.119	AC-FT= .191
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	103.10	-	1	.00016	.44 CB-2	.017	1.98308	1.567	4.206	PER IMP= 90.00
ROUTE RESERVOIR	503.10	1	2	.00016	.20	.017	1.98136	1.833	1.944	AC-FT= .005
ADD HYD	513.10	2& 4	5	.00414	.50	.492	2.22809	2.100	.190	
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	104.10	-	1	.00089	2.32 CB-3	.094	1.98308	1.567	4.100	PER IMP= 90.00
ADD HYD	104.20	1& 5	3	.00503	2.81	.586	2.18491	1.567	.875	
ROUTE RESERVOIR	504.10	3	2	.00503	.32	.496	1.85028	3.000	.098	AC-FT= .110
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	105.10	-	1	.00170	4.44 CB-4	.180	1.98308	1.567	4.080	PER IMP= 90.00
ADD HYD	105.20	1& 2	3	.00673	4.74	.676	1.88377	1.567	1.101	
ROUTE RESERVOIR	505.10	3	2	.00673	.73	.675	1.88185	2.300	.169	AC-FT= .138
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	106.10	-	1	.00177	4.61 CB-5	.187	1.98308	1.567	4.078	PER IMP= 90.00
ADD HYD	106.20	1& 2	3	.00849	5.32	.862	1.90286	1.567	.978	
ROUTE RESERVOIR	506.10	3	4	.00849	.39	.607	1.34085	6.766	.072	AC-FT= .336
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	107.10	-	1	.00122	3.18 CB-9	.129	1.98308	1.567	4.089	PER IMP= 90.00
ROUTE RESERVOIR	507.10	1	2	.00122	.48	.128	1.98286	2.233	.618	AC-FT= .085
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	108.10	-	1	.00174	4.54 CB-10	.184	1.98308	1.567	4.078	PER IMP= 90.00
ADD HYD	108.20	1& 2	3	.00296	5.00	.313	1.98287	1.567	2.643	
ROUTE RESERVOIR	508.10	3	2	.00296	.30	.313	1.98287	4.666	.157	AC-FT= .231
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	109.10	-	1	.00143	3.73 CB-11	.151	1.98308	1.567	4.083	PER IMP= 90.00
ADD HYD	109.20	1& 2	3	.00438	4.01	.463	1.98285	1.567	1.429	
ROUTE RESERVOIR	509.10	3	2	.00438	.32	.463	1.98285	2.966	.116	AC-FT= .146
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	110.10	-	1	.00408	10.63 CB-7	.432	1.98308	1.567	4.066	PER IMP= 90.00
ADD HYD	110.20	1& 2	3	.00846	10.94	.895	1.98290	1.567	2.020	
ROUTE RESERVOIR	510.10	3	2	.00846	.41	.636	1.40918	3.066	.076	AC-FT= .416
ADD HYD	111.10	2& 4	5	.01696	.80	1.243	1.37496	6.733	.074	
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	112.10	-	1	.00243	6.34 CB-6	.257	1.98308	1.567	4.072	PER IMP= 90.00
ADD HYD	112.20	1& 5	3	.01939	7.12	1.501	1.45124	1.567	.574	
ROUTE RESERVOIR	512.10	3	2	.01939	1.13	1.498	1.44857	2.433	.091	AC-FT= .220
FINISH										

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Planning Department
Transportation Development Services Section

March 10, 2003

David Soule, P.E.
8509 Jefferson NE
Albuquerque, NM 87113

Re: Certification Submittal for Final Building Certificate of Occupancy for
The Home Depot, [F16 / D5F]
1220 Renaissance
Engineer's Stamp Dated 03/10/03

Dear Mr. Soule:

The TCL / Letter of Certification submitted on March 5, 2003 is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to the Building and Safety Section.

Sincerely,

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

c: Engineer
Hydrology file
CO Clerk

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

TIERRA WEST, LLC

8509 Jefferson NE
Albuquerque, NM 87113

(505) 858-3100
fax (505) 858-1118

twllc@tierrawestllc.com
1-800-245-3102

March 5, 2003

Mr. Richard Dourte
Public Works Department
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Attn: Terri Martin

RE: Final Certification of Transportation for Certificate of Occupancy
THE HOME DEPOT RENAISSANCE CENTER
1220 RENAISSANCE BLVD. NE

Dear Mr. Dourte;

Enclosed please find one copy of the Approved Site Plan, As-built Amended Site Plan and Information Sheet for The Home Depot tool center expansion located in North Renaissance Center. White Spunner Construction completed construction of the Tool Rental Center and the Garden Center expansion. All curb, paving and striping is complete. Our office completed verification of the site plan. At the request of the Zoning Department, additional landscaping will be installed on the south side of the existing building however it will not affect site traffic movements. We are, therefore, requesting Final Certification of Transportation for Certificate of Occupancy.

If you have any questions regarding this matter, please do not hesitate to call me.

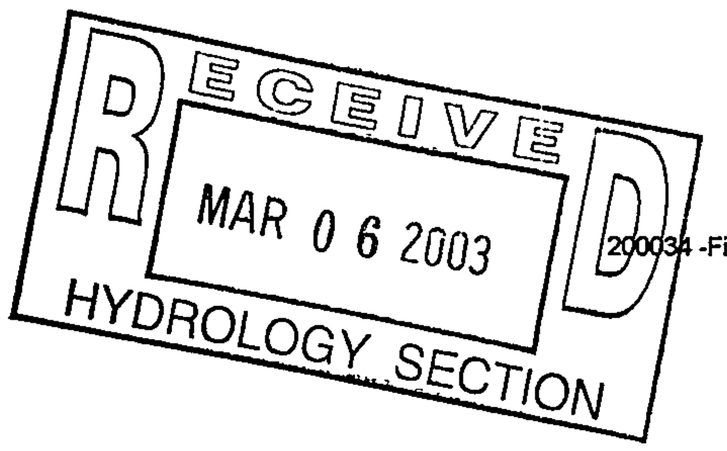
Sincerely,

David Soule, PE

Enclosures

cc: David Turbeville

JN: 200034
DS/rw



200034 -Final CO Transportation.ltr

MAP POCKET A

SITE GRADING AND DRAINAGE PLAN

AHYMO SUMMARY TABLE (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992 RUN DATE (MON/DAY/YR) =12/07/1993
INPUT FILE = 93723a.dat USER NO.= R_BOHANN.S92

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.900
COMPUTE NM HYD	101.10	-	1	.00229	6.12 CB-8	.303	2.48487	1.567	4.181	PER IMP= 90.00
ROUTE RESERVOIR	501.10	1	2	.00229	.22	.303	2.48473	2.866	.151	AC-FT= .238
RAINFALL TYPE= 1										RAIN6= 2.900
COMPUTE NM HYD	102.10	-	1	.00169	4.54 CB-1	.224	2.48487	1.567	4.188	PER IMP= 90.00
ADD HYD	102.20	1& 2	3	.00398	4.74	.527	2.48470	1.567	1.863	
ROUTE RESERVOIR	502.10	3	4	.00398	.30	.475	2.23828	3.433	.119	AC-FT= .191
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	103.10	-	1	.00016	.44 CB-2	.017	1.98308	1.567	4.206	PER IMP= 90.00
ROUTE RESERVOIR	503.10	1	2	.00016	.20	.017	1.98136	1.833	1.944	AC-FT= .005
ADD HYD	513.10	2& 4	5	.00414	.50	.492	2.22809	2.100	.190	
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	104.10	-	1	.00089	2.32 CB-3	.094	1.98308	1.567	4.100	PER IMP= 90.00
ADD HYD	104.20	1& 5	3	.00503	2.81	.586	2.18491	1.567	.875	
ROUTE RESERVOIR	504.10	3	2	.00503	.32	.496	1.85028	3.000	.098	AC-FT= .110
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	105.10	-	1	.00170	4.44 CB-4	.180	1.98308	1.567	4.080	PER IMP= 90.00
ADD HYD	105.20	1& 2	3	.00673	4.74	.676	1.88377	1.567	1.101	
ROUTE RESERVOIR	505.10	3	2	.00673	.73	.675	1.88185	2.300	.169	AC-FT= .138
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	106.10	-	1	.00177	4.61 CB-5	.187	1.98308	1.567	4.078	PER IMP= 90.00
ADD HYD	106.20	1& 2	3	.00849	5.32	.862	1.90286	1.567	.978	
ROUTE RESERVOIR	506.10	3	4	.00849	.39	.607	1.34085	6.766	.072	AC-FT= .336
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	107.10	-	1	.00122	3.18 CB-9	.129	1.98308	1.567	4.089	PER IMP= 90.00
ROUTE RESERVOIR	507.10	1	2	.00122	.48	.128	1.98286	2.233	.618	AC-FT= .085
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	108.10	-	1	.00174	4.54 CB-10	.184	1.98308	1.567	4.078	PER IMP= 90.00
ADD HYD	108.20	1& 2	3	.00296	5.00	.313	1.98287	1.567	2.643	
ROUTE RESERVOIR	508.10	3	2	.00296	.30	.313	1.98287	4.666	.157	AC-FT= .231
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	109.10	-	1	.00143	3.73 CB-11	.151	1.98308	1.567	4.083	PER IMP= 90.00
ADD HYD	109.20	1& 2	3	.00438	4.01	.463	1.98285	1.567	1.429	
ROUTE RESERVOIR	509.10	3	2	.00438	.32	.463	1.98285	2.966	.116	AC-FT= .146
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	110.10	-	1	.00408	10.63 CB-7	.432	1.98308	1.567	4.066	PER IMP= 90.00
ADD HYD	110.20	1& 2	3	.00846	10.94	.895	1.98290	1.567	2.020	
ROUTE RESERVOIR	510.10	3	2	.00846	.41	.636	1.40918	3.066	.076	AC-FT= .416
ADD HYD	111.10	2& 4	5	.01696	.80	1.243	1.37496	6.733	.074	
RAINFALL TYPE= 1										RAIN6= 2.290
COMPUTE NM HYD	112.10	-	1	.00243	6.34 CB-6	.257	1.98308	1.567	4.072	PER IMP= 90.00
ADD HYD	112.20	1& 5	3	.01939	7.12	1.501	1.45124	1.567	.574	
ROUTE RESERVOIR	512.10	3	2	.01939	1.13	1.498	1.44857	2.433	.091	AC-FT= .220
FINISH										

DISCHARGE FLOWCHART

ROUTING 1

CB 8, (6.12 CFS)

0.22 CFS DISC.

CB 1, (4.54 + 0.22 CFS)

CB 2, (0.44 CFS)

0.30 CFS DISC.

0.20 CFS DISC.

0.50 CFS DISC.

CB 3, (2.32 + 0.50 CFS)

0.32 CFS DISC.

CB 4, (4.44 + 0.32 CFS)

0.73 CFS DISC.

CB 5, (4.61 + 0.73 CFS)

0.39 CFS DISC.

ROUTING 2

CB 9, (3.18 CFS)

0.48 CFS DISC.

CB 10, (4.54 + 0.48 CFS)

0.30 CFS DISC.

CB 11, (3.73 + 0.30 CFS)

0.32 CFS DISC.

CB 7, (10.63 + 0.32 CFS)

0.41 CFS DISC.

0.80 CFS DISC.

CB 6, (6.34 + 0.80 CFS)

1.13 CFS DISC.

84" STORM SEWER PIPE

* See AHYMO Input File & Summery Table attached.

CATCH BASIN MINIMUM HEIGHT FOR CB#8

$$H = C.F. + 0.5 + 1.2\,\frac{V^2}{2g} + \frac{d}{COS\,(S)}$$

Where C.F. = 0, and
for small S d/COS(S)=1
$V = Q/A = 6.12/(\pi\ 0.75^2)$
$= 3.46$ ft/s

$$H = 1.2\,\frac{(3.46)^2}{2 \cdot 32.2} + 1.5$$

H = 1.72', USE H = 2'

See Tables for inverts and other details of the catch basins and pipe sizes.

ORIFICE PLATE CALCULATIONS

$$Q = Ca\sqrt{2gh}$$

$$0.22 = 0.63\,a\sqrt{2(32.2)(2.49)}$$

and solve for a,

$a = .0283$ ft^2 $\qquad a = \frac{\pi D^2}{4}$

D = 0.19'

Use 2-3" diameter holes.

The site is @ Zone 4, Area 12.8874 acres.

P for 100-yr 1 hr storm = 2.23 inches

P for 100-yr 6 hr storm = 2.29 inches

P for 100-yr 24 hr storm = 3.65 inches

Treatment, B = 10%, and D = 90% for commercial site.

Time of concentration, T_c = 12 min

T_p $= 0.7T_c + 8 - 5\,A_D/A_T$
$= .7*12 + 8 - 5*.90$
$= 11.90$ min, $= 0.1983$ hr

From attached AHYMO calculation (Sheet 1)

Q_p = 52.31 cfs

Volume = 2.1298 AC-FT
= 92,775 CF

SAMPLE CALCULATIONS FOR BASIN 8

SIZING OF THE PIPE

$$Q = \frac{1.49}{n} AR^{\frac{2}{3}} S_o^{\frac{1}{2}}$$

$$A = \pi r^2$$

$$R = \frac{A}{P}$$

$$\text{Where } P = \frac{2}{3}\,\text{Perimeter}$$

$$= \frac{2}{3} x 2\pi r$$

$$= \frac{4}{3}\pi r$$

$$\therefore, \quad R = \frac{\pi r^2}{\frac{4}{3}\pi r}$$

$$= \frac{3r}{4}$$

n = 0.013, S = 1%, Q = 5.56 cfs from sheet 2 of AHYMO calculations.

$$6.12 = \frac{1.49}{0.013} (\pi \cdot r^2)(0.75 \cdot r)^{\frac{2}{3}} 0.01^{\frac{1}{2}}$$

and solve for r, r = 0.61', D = 1.22', Use 18" pipe

The proposed improvements on HOME DEPOT will generate a runoff of 52.31 cfs, which are divided into 11 sub-basins. This runoff will be discharged at a rate of 1.13 cfs, per the approved Andrews' report, via a series of on-site catch basins and storm drainage pipes directly into an existing 84" storm drainage pipe, located north of the property on Renaissance Boulevard. The runoff is detained in ten parking lot ponds that are collected in a 18" storm drain pipe. This storm drain ties to the 84 inch existing drain as mentioned. An orifice plat will limit the flow to the approved 0.1 cfs/acre discharge rate allowed. (See Tables and Calculation Sheets attached for catch basin flows, inverts, and etc.)

As required by the Master Plan, the peak 100-year discharge of 52.31 cfs is to be detained on site and released at a rate of 0.1 cfs per acre, totalling 1.29 cfs. Based on the AHYMO calculation, water is released at a rate totalling 1.13 cfs, which put us on a lower discharge rate than that we are allowed. We have calculated the total volume from the design needing, 2.13 acre-ft on-site. Volume of the three proposed parking lot ponds are 89,917 ft^3, 37,117 ft^3, and 44,978 ft^3, totalling 3.95 acre-ft. This is sufficient volume to handle the flows. The water height on-site from the pondings on site will range from 0.12' to 0.86'. (See attached Tables and AHYMO sheets for calculations.)

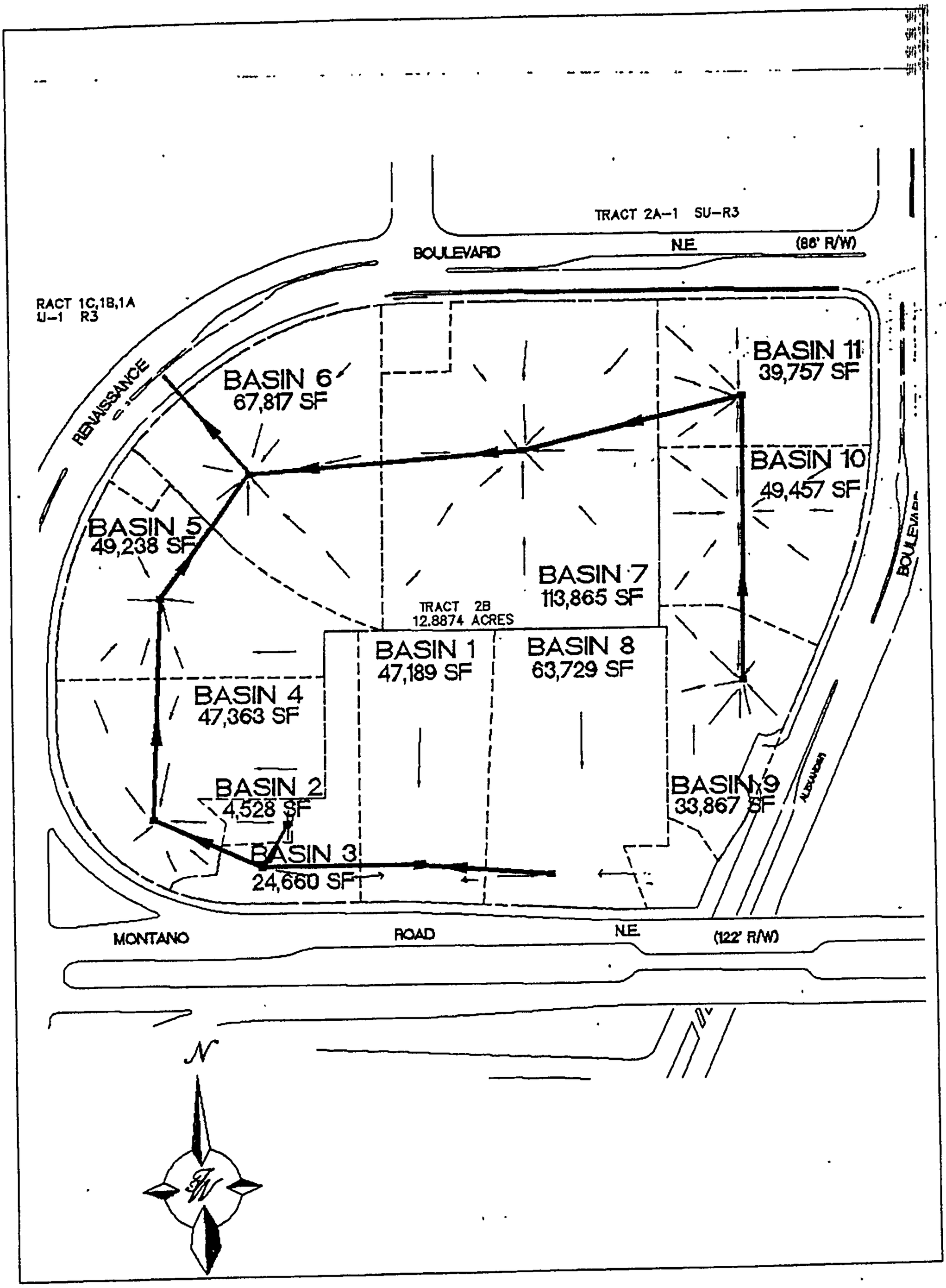
DESIGN OF THE HOME DEPOT STORMDRAIN

Tract 2B's runoff is designed to be drained through a series of catch basin, with 18" outlet pipes 2-3" orifice plates limiting the flow, to an existing 84" storm drain pipe which drains into "Renaissance Detention Pond." (See enclosed Grading and Drainage Map for catch basin locations).

The following three tables summarize the runoff, volume, and peak discharge rates for the site.

INTERIM EROSION CONTROL

The plan centers on the fact that storm water will not be allowed to discharge during the construction process until the site is developed. A desilting pond will be place at the NE corner of the lot where the pad is located.



DRAINAGE MAP

TABLE 1.

DRAINAGE BASIN	Qp–100YR (CFS)	V–RUNOFF (AC–FT)	REQ. DIA. FOR PIPE FROM CB (FT)
B1	4.54	0.2244	1.51
B2	0.44	0.0173	0.49
B3	2.32	0.0936	1.54
B4	4.44	0.1797	1.74
B5	4.61	0.1868	1.56
B6	6.34	0.2573	2.83
B7	10.63	0.4318	2.09
B8	6.12	0.3030	1.30
B9	3.18	0.1285	1.07
B10	4.54	0.1840	1.44
B11	3.73	0.1508	1.65
Qp–10YEAR IS APPROXIMATELY 67% OF Qp–100YEAR			

TABLE 2.

CATCH BASIN CONNECTIONS	FLOW	L. F.	PIPE USED	SLOPE
CB 8 TO 1	10.66	165	18"	1.00 %
CB 1 TO 3	0.52	175	18"	1.00 %
CB 2 TO 3	11.18	60	12"	1.06 %
CB 3 TO 4	15.62	135	18"	0.80 %
CB 4 TO 5	20.23	250	18"	0.61 %
CB 5 TO 6	50.89	175	18"	3.00 %
CB 9 TO 10	22.74	325	12"	0.80 %
CB 10 TO 11	7.22	130	18"	0.80 %
CB 11 TO 7	3.84	265	18"	0.80 %
CB 7 TO 6	8.38	325	18"	0.80 %
CB 6 TO 84" PIPE	12.11	160	36"	0.80 %

TABLE 3.

CATCH BASIN	Qp (CFS)	INV. @ CB (FT)	WT. ELEV. (FT)	RIM ELEV. (FT)	WT. HT. (FT)	WT. HT. (IN)	TIME
B1	0.22	5027.95	5032.64	5032.12	0.52	6.29	@2.87 HR
B2	0.20	5027.50	5029.05	5028.93	0.12	1.45	@1.83 HR
B3	0.32	5026.10	5031.18	5030.60	0.58	6.94	@3.00 HR
B4	0.73	5025.02	5030.91	5030.53	0.38	4.51	@2.30 HR
B5	0.39	5023.50	5031.29	5030.40	0.89	10.62	@6.77 HR
B6	*1.13*	5018.26	5031.02	5030.56	0.46	5.47	@2.43 HR
B7	0.41	5020.96	5029.69	5029.21	0.48	5.70	@3.07 HR
B8	0.22	5029.60	5032.09	5031.60	0.49	5.84	@2.87 HR
B9	0.48	5027.45	5029.78	5029.45	0.33	3.91	@2.33 HR
B10	0.30	5024.85	5029.32	5028.71	0.61	7.28	@4.67 HR
B11	0.32	5023.71	5029.09	5028.61	0.48	5.70	@2.97 HR

*** See Drainage Map for drainage patterns and catch basin locations.**

PURPOSE

The purpose of this report is to present the drainage management plan for the Home Depot Site Development Plan and Grading/Drainage approval, situated on Tract 2B, Renaissance. HOME DEPOT is proposing to build a new 102,000 SF building and 28,000 SF garden center. The site is located in the North Renaissance Center adjacent to Renaissance Blvd. and west of Alexander Blvd. as shown on zone atlas page F-16.(See attached Vicinity Map, Zone Map F-16.)

EXISTING CONDITIONS

The parcel is Tract 2B of Renaissance Center, Filed April 3, 1985 in Volume C26, Folio 174 containing 12.8874 acres. This site lies at the SW corner of Alexander and Renaissance Blvd. The site does not lie within designated Flood Hazard Zone.

This site is part of the Renaissance Master Plan, and all of the existing and developed runoff discharge through via surface flow and storm drainage systems to the "Renaissance Detention Pond" located on the west side. That pond under City control released the water in Montano Blvd.

HYDROLOGY ANALYSIS

Hydrological aspects of this site were evaluated using AMAFCA's AHYMO program according to guidelines presented in the City of Albuquerque DPM, Section 22.2 (January 1993). All of the pertinent hydrologic parameters and calculations are located in the calculations of this report.

PROPOSED MANAGEMENT PLAN

Improvements consist of a new building, parking, and a garden center. This site is part of the Renaissance Master Plan prepared by ANDREWS, ASBURY & ROBERT, INC., (F16/D6). The flows are being collected on-site by a series of storm drain and then routed to the existing 84" storm sewer in Renaissance Blvd. These flows then drain to the "Renaissance Detention Pond". (See attached Drainage Map.)

The proposed Grading and Drainage Plan show future grades indicated by spot elevations and on-site drainage patterns. All grades range between a minimum of 1% and a maximum of 3%. A one foot water block has been designed at the driveways entrances. (See the Final Grading and Drainage Plan enclosed in the Map Pocket.)

[redacted] DRAINAGE REPORT

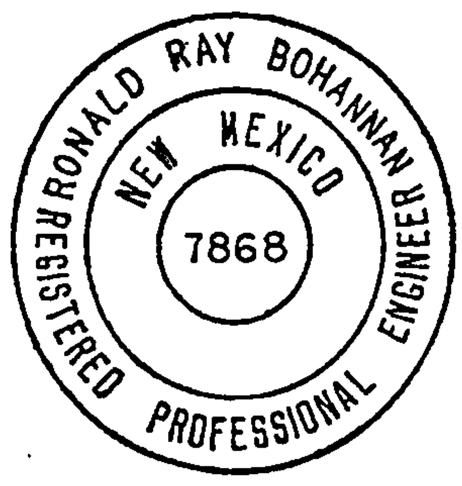
FOR

THE HOME DEPOT

12/08/93

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the state of New Mexico in good standing.

Ronald R. Bohannan
PE NO. 7868



Prepared by:

Tierra West Development
Management Services
4600 Montgomery Blvd. NE, Suite 3
Albuquerque, NM 87109
(505) 883-7592

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 4, 2002

Ray Bohannan, PE
Tierra West, LLC
8509 Jefferson NE
Albuquerque, NM 87113

Re: Home Depot Expansion Grading and Drainage Plan
Engineer's Stamp Dated 2-25-02, (F16/D5F)

Dear Mr. Bohannan,

Based on your submittal dated 2-26-02, the above referenced plan is approved for Site Plan for Building Permit Action by the DRB, and Building Permit which in inclusive with a Paving 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 924-3984.

Sincerely,

Leslie Romero
Engineering Associate, PWD
Development and Building Services

c: Terri Martin, Hydrology
File (2)

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

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 12, 2003

David Soule, P.E.
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

RE: THE HOME DEPOT- Tool Rental & Garden Expansion (F-16/D5F)
(1220 Renaissance Blvd NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 2/25/2002
ENGINEERS CERTIFICATION DATED 3/5/2003

Dear David:

Based upon the information provided in your Engineers Certification submittal dated 3/6/2003, the above referenced site is approved for 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. Division
DLD

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

APPENDIX B

Reference Report: *Drainage Report for The Home Depot*

Pipe Capacity for 6" PVC

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.01000	ft/ft
Normal Depth	0.50	ft
Diameter	6	in

Results

Discharge	0.73	ft³/s	<0.54 CFS, therefore OK
Flow Area	0.20	ft²	
Wetted Perimeter	1.57	ft	
Hydraulic Radius	0.13	ft	
Top Width	0.00	ft	
Critical Depth	0.43	ft	
Percent Full	100.0	%	
Critical Slope	0.00929	ft/ft	
Velocity	3.71	ft/s	
Velocity Head	0.21	ft	
Specific Energy	0.71	ft	
Froude Number	0.00		
Maximum Discharge	0.78	ft³/s	
Discharge Full	0.73	ft³/s	
Slope Full	0.01000	ft/ft	
Flow Type	SubCritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s

Weighted E Method

Affordable Dentures - Alenxander Blvd. & Renaissance Blvd. - Zone 2

Developed Basins

Basin Description												100-Year, 6-Hour			10-Year, 6-Hour			2-Year, 6-Hour		
Basin	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
1	4000.00	0.092	0.00014	0%	0	0%	0.000	0%	0	100%	0.092	2.120	0.016	0.43	1.340	0.010	0.29	0.790	0.006	0.17
2	5000.00	0.115	0.00018	0%	0	0%	0.000	0%	0	100%	0.115	2.120	0.020	0.54	1.340	0.013	0.36	0.790	0.008	0.21

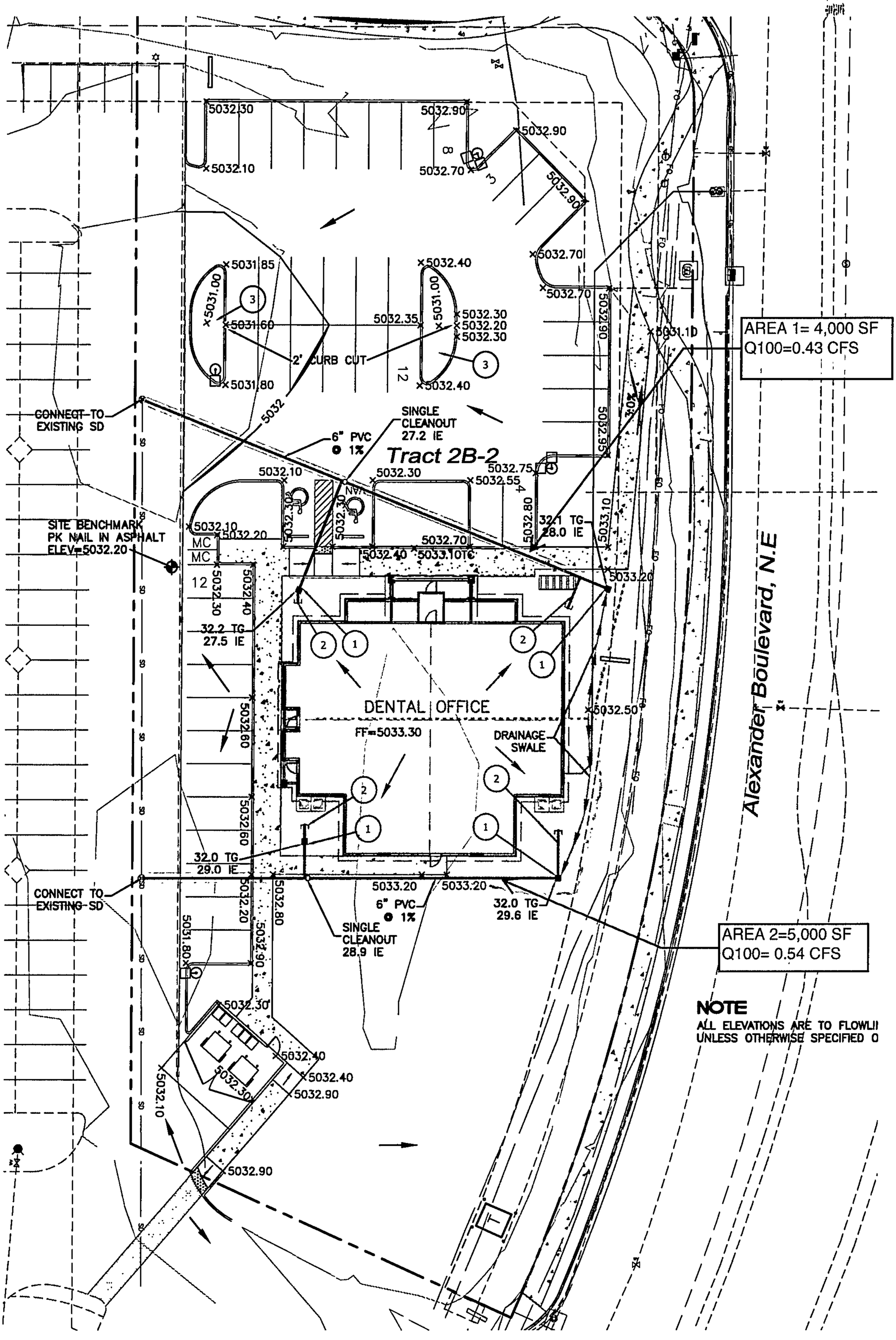
Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

HYDROLOGY MAP
PRIVATE AREA DRAIN



APPENDIX A

Calculations

The building finish floor elevation was set at elevation 5033.30 (NAVD 88) which exceeds the higher of the adjacent 100-year water elevation of the existing parking lot ponds at Catch Basin 10 and 11 are listed to have 100-year water a water surface elevation of 5029.32 and 5029.09, respectively, by the Home Depot Report. Adjusted for the datum difference of 2.676 feet, the building finish floor elevation is 1.3 feet higher than the water surface elevation for Basin 10.

A private area drain system to collect drainage around the building foundations and to collect nuisance drainage from landscape areas around the building is incorporated into the plans. The pipe is sizing is based on the hydrologic and hydraulic analysis included in Appendix A.

SUMMARY AND RECOMMENDATIONS

Per the Home Depot drainage report, all required drainage infrastructure was sized and installed to accommodate the developed condition of this tract. The proposed improvements will accommodate the proposed development. The development of this site is consistent with the DPM, Chapter 22, Hydrology section. It is recommended this development be approved for grading and Site Plan for Building Permit.

EXISTING CONDITIONS

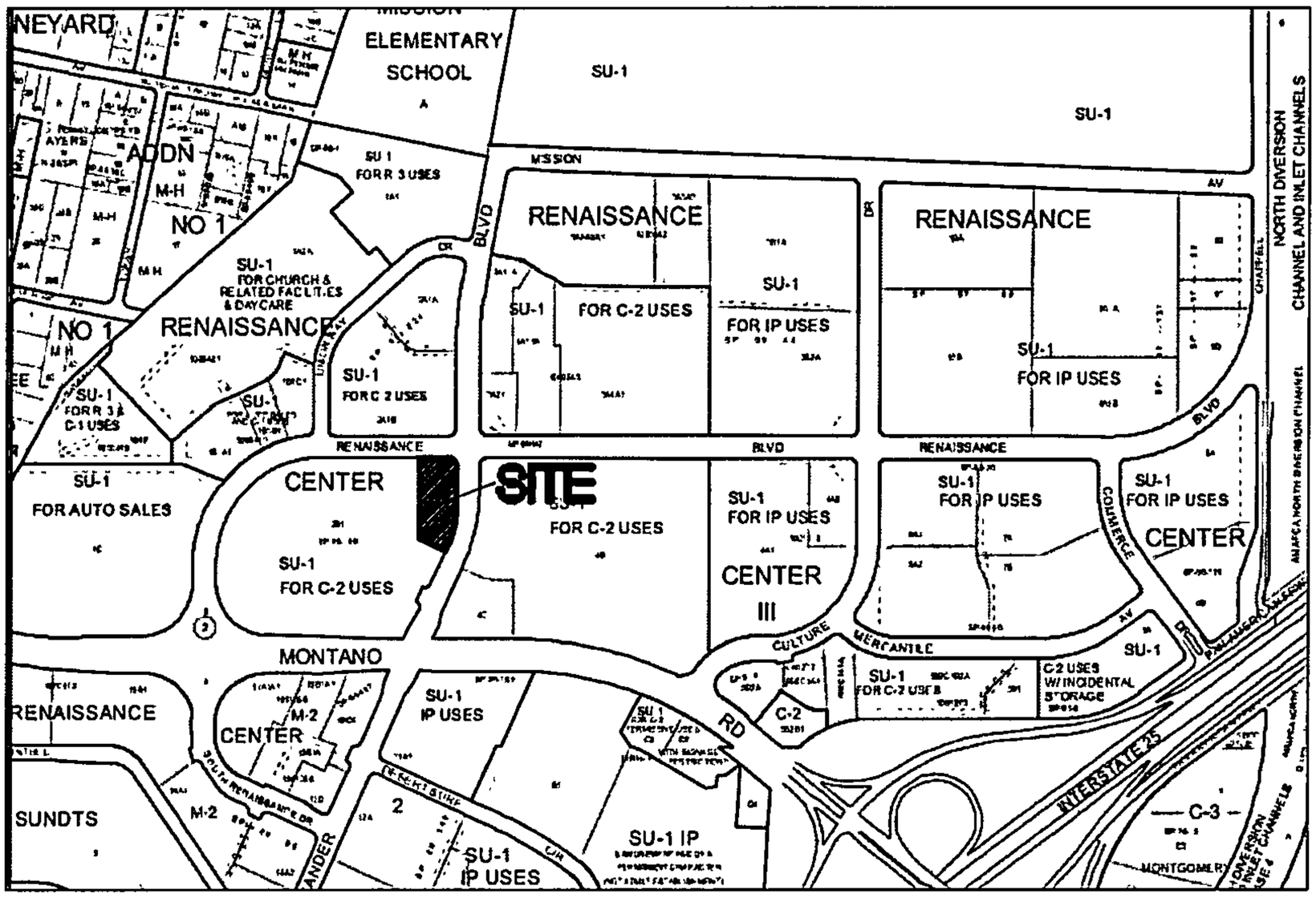
The site is graded flat (graded with the Home Depot construction) and stabilized with gravel and landscaped along the street frontage, but remains undeveloped. Most drainage from the site gently slopes toward existing catch basins (CB 10 and CB 11 per the Report) which is then routed to the existing 84" storm sewer in Renaissance Boulevard through the existing storm drain system discharging into the "Renaissance Detention Pond". The site is higher than the adjacent public right of way; no offsite flows are directed to the site.

An excerpt from the report by Tierra West, LLC, dated December 1993 titled: Drainage Report for Home Depot (COA Drainage File: F-16/D5F), is included for reference in Appendix B. The referenced report designates the site's northeasterly corner as "Basin 10" and "Basin 11" and assumed ultimate development of impervious area to correspond with hydrologic land treatment "B" 10%, and "D" 90%. The runoff from this area is intercepted by catch basins with orifice plates limiting the flow out of the system.

PROPOSED CONDITIONS

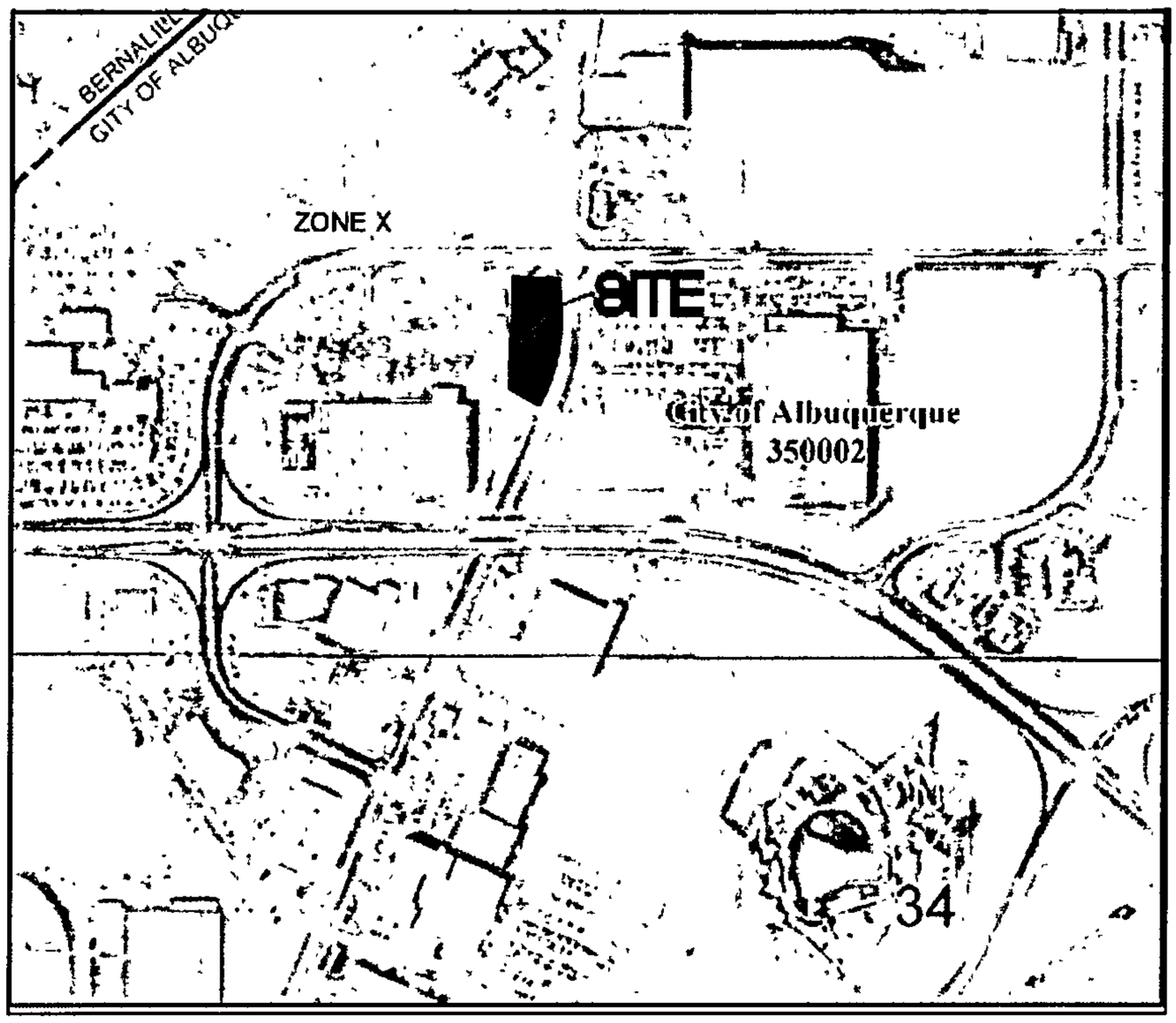
A single-story building with associated parking is proposed for this tract. Proposed grading will maintain historic drainage patterns and direct surface flows to the existing catch basins per the original design. Where practical, flow from the parking areas will be directed to depressed landscape islands via curb cuts for water quality and passive water harvesting. Existing landscaping along the northerly, easterly, and southerly tract boundary will remain in place and additional landscaping will be installed in the parking lot islands and around the building. The resulting impervious area (hydrologic treatment D) will be less than 60% of the site.

Exhibit A- Vicinity Map



VICINITY MAP: F-16-Z

Exhibit B- FIRM Map 35001C0138G



PURPOSE

The purpose of this report is to provide the drainage management plan for the development of Affordable Dentures, a dental clinic. This plan will be utilized for the development of a 4,688 square foot single-story structure and associated parking facilities located on the 1.12 acre undeveloped outlot for the Home Depot located on 1220 Renaissance Boulevard NE. This plan is in accordance with the DPM, Chapter 22, Hydrology Section. The purpose of this report is to provide the drainage analysis and management plan for the new site.

INTRODUCTION

The subject of this report, as shown on the Exhibit A vicinity map, is a 1.12-acre parcel of land located on the southwest corner of Renaissance Boulevard and Alexander Boulevard NE. The site appears on zone atlas page F16-Z. As shown on Exhibit B, FIRM map 35001C0138G, the subject property is outside mapped flood zones. A previous drainage report (Report) for the improvements to the overall Home Depot property (of which this property was a part) was prepared by Tierra West, LLC in December 1993. The Report designed surface drainage, parking lot ponds, and an onsite private storm drain system assuming hydrologic land treatment "B" 10%, and "D" 90%. The proposed development was designed to convey flow in the manner consistent with the assumptions of the referenced report.

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Summary 6

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Site Grading and Drainage Plan, Map Pocket A ..... A

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Hydrologic and Hydraulic Analysis ..... APPENDIX A
Drainage Report for The Home Depot (for reference) ..... APPENDIX B

DRAINAGE REPORT

for

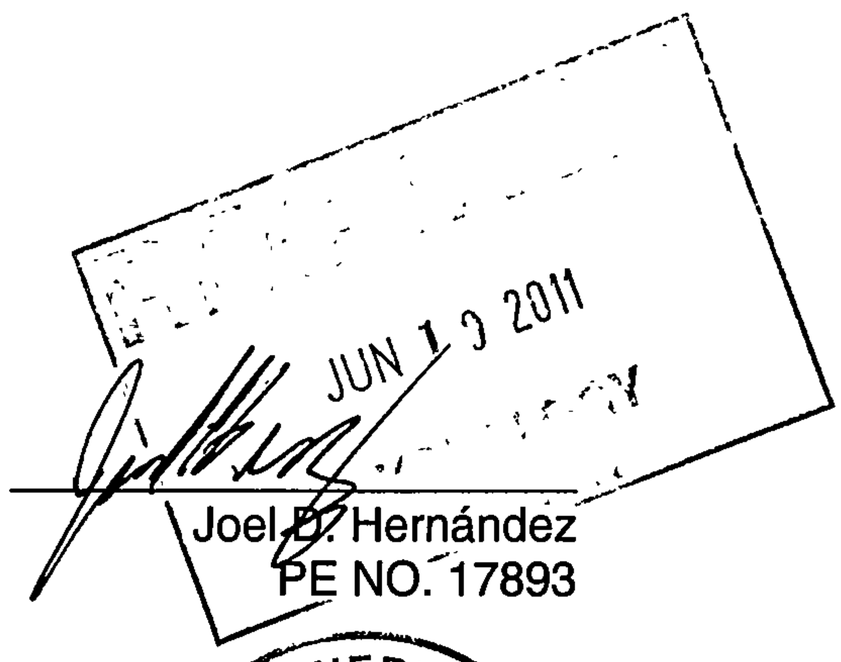
Affordable Dentures
4821 Alexander Blvd NE
Tract 2B-2 Renaissance Center
Albuquerque, New Mexico

Prepared by:

Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, New Mexico 87109

June, 2011

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.



Job No 2011038

CITY OF ALBUQUERQUE

June 13, 2011

Joel D. Hernandez, P.E.
Tierra West, LLC
5571 Midway Park PL NE
Albuquerque, NM 87109

Re: Affordable Dentures, Renaissance Center, Master Grading Plan and Drainage Report

Engineer's Stamp dated 6-10-11 (F16/D005F)

Dear Mr. Hernandez,

Based upon the information provided in your submittal received 6-10-11, the above referenced plan is approved for Site Plan for Building Permit action by the DRB.

When submitting for Building Permit, please include flow and volume calculations for the entire project, not just the building.

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

Sincerely,

Curtis A. Cherne

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

C: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

MAP POCKET A

SITE GRADING AND DRAINAGE PLAN

AHYMO SUMMARY TABLE (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992 RUN DATE (MON/DAY/YR) =12/07/1993
USER NO.= R_BOHANN.S92
INPUT FILE = 93723a.dat

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.900
COMPUTE NM HYD	101.10	-	1	.00229	6.12 CB-8	.303	2.48487	1.567	4.181	PER IMP= 90.00
ROUTE RESERVOIR	501.10	1	2	.00229	.22	.303	2.48473	2.866	.151	AC-FT= .238
										RAIN6= 2.900
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	102.10	-	1	.00169	4.54 CB-1	.224	2.48487	1.567	4.188	
ADD HYD	102.20	1& 2	3	.00398	4.74	.527	2.48470	1.567	1.863	
ROUTE RESERVOIR	502.10	3	4	.00398	.30	.475	2.23828	3.433	.119	AC-FT= .191
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	103.10	-	1	.00016	.44 CB-2	.017	1.98308	1.567	4.206	
ROUTE RESERVOIR	503.10	1	2	.00016	.20	.017	1.98136	1.833	1.944	AC-FT= .005
ADD HYD	513.10	2& 4	5	.00414	.50	.492	2.22809	2.100	.190	
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	104.10	-	1	.00089	2.32 CB-3	.094	1.98308	1.567	4.100	
ADD HYD	104.20	1& 5	3	.00503	2.81	.586	2.18491	1.567	.875	
ROUTE RESERVOIR	504.10	3	2	.00503	.32	.496	1.85028	3.000	.098	AC-FT= .110
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	105.10	-	1	.00170	4.44 CB-4	.180	1.98308	1.567	4.080	
ADD HYD	105.20	1& 2	3	.00673	4.74	.676	1.88377	1.567	1.101	
ROUTE RESERVOIR	505.10	3	2	.00673	.73	.675	1.88185	2.300	.169	AC-FT= .138
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	106.10	-	1	.00177	4.61 CB-5	.187	1.98308	1.567	4.078	
ADD HYD	106.20	1& 2	3	.00849	5.32	.862	1.90286	1.567	.978	
ROUTE RESERVOIR	506.10	3	4	.00849	.39	.607	1.34085	6.766	.072	AC-FT= .336
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	107.10	-	1	.00122	3.18 CB-9	.129	1.98308	1.567	4.089	
ROUTE RESERVOIR	507.10	1	2	.00122	.48	.128	1.98286	2.233	.618	AC-FT= .085
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	108.10	-	1	.00174	4.54 CB-10	.184	1.98308	1.567	4.078	
ADD HYD	108.20	1& 2	3	.00296	5.00	.313	1.98287	1.567	2.643	
ROUTE RESERVOIR	508.10	3	2	.00296	.30	.313	1.98287	4.666	.157	AC-FT= .231
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	109.10	-	1	.00143	3.73 CB-11	.151	1.98308	1.567	4.083	
ADD HYD	109.20	1& 2	3	.00438	4.01	.463	1.98285	1.567	1.429	
ROUTE RESERVOIR	509.10	3	2	.00438	.32	.463	1.98285	2.966	.116	AC-FT= .146
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	110.10	-	1	.00408	10.63 CB-7	.432	1.98308	1.567	4.066	
ADD HYD	110.20	1& 2	3	.00846	10.94	.895	1.98290	1.567	2.020	
ROUTE RESERVOIR	510.10	3	2	.00846	.41	.636	1.40918	3.066	.076	AC-FT= .416
ADD HYD	111.10	2& 4	5	.01696	.80	1.243	1.37496	6.733	.074	
										RAIN6= 2.290
RAINFALL TYPE= 1										PER IMP= 90.00
COMPUTE NM HYD	112.10	-	1	.00243	6.34 CB-6	.257	1.98308	1.567	4.072	
ADD HYD	112.20	1& 5	3	.01939	7.12	1.501	1.45124	1.567	.574	
ROUTE RESERVOIR	512.10	3	2	.01939	1.13	1.498	1.44857	2.433	.091	AC-FT= .220
FINISH										

DISCHARGE FLOWCHART

ROUTING 1

CB 8, (6.12 CFS)

0.22 CFS DISC.

CB 1, (4.54 + 0.22 CFS)

CB 2, (0.44 CFS)

0.30 CFS DISC.

0.20 CFS DISC.

0.50 CFS DISC.

CB 3, (2.32 + 0.50 CFS)

0.32 CFS DISC.

CB 4, (4.44 + 0.32 CFS)

0.73 CFS DISC.

CB 5, (4.61 + 0.73 CFS)

0.39 CFS DISC.

ROUTING 2

CB 9, (3.18 CFS)

0.48 CFS DISC.

CB 10, (4.54 + 0.48 CFS)

0.30 CFS DISC.

CB 11, (3.73 + 0.30 CFS)

0.32 CFS DISC.

CB 7, (10.63 + 0.32 CFS)

0.41 CFS DISC.

0.80 CFS DISC.

CB 6, (6.34 + 0.80 CFS)

1.13 CFS DISC.

84" STORM SEWER PIPE

* See AHYMO Input File & Summery Table attached.

CATCH BASIN MINIMUM HEIGHT FOR CB#8

$$H = C.F. + 0.5 + 1.2\,\frac{V^2}{2g} + \frac{d}{COS(S)}$$

Where C.F. = 0, and
for small S d/COS(S)=1
$V = Q/A = 6.12/(\pi\ 0.75^2)$
$= 3.46$ ft/s

$$H = 1.2\,\frac{(3.46)^2}{2 \cdot 32.2} + 1.5$$

H = 1.72', USE H = 2'

See Tables for inverts and other details of the catch basins and pipe sizes.

ORIFICE PLATE CALCULATIONS

$$Q = Ca\sqrt{2gh}$$

$$0.22 = 0.63\,a\sqrt{2(32.2)(2.49)}$$

and solve for a,

$a = .0283$ ft^2 $\qquad a = \frac{\pi D^2}{4}$

D = 0.19'

Use 2-3" diameter holes.

The site is @ Zone 4, Area 12.8874 acres.

P for 100-yr 1 hr storm = 2.23 inches

P for 100-yr 6 hr storm = 2.29 inches

P for 100-yr 24 hr storm = 3.65 inches

Treatment, B = 10%, and D = 90% for commercial site.

Time of concentration, T_c = 12 min

T_p = $0.7T_c + 8 - 5\ A_D/A_T$
= .7*12 + 8 - 5*.90
= 11.90 min, = 0.1983 hr

From attached AHYMO calculation (Sheet 1)

Q_p = 52.31 cfs

Volume = 2.1298 AC-FT
= 92,775 CF

SAMPLE CALCULATIONS FOR BASIN 8

SIZING OF THE PIPE

$$Q = \frac{1.49}{n} AR^{\frac{2}{3}} S_o^{\frac{1}{2}}$$

$$A = \pi r^2$$

$$R = \frac{A}{P}$$

Where $P = \frac{2}{3}$ Perimeter

$$= \frac{2}{3} x 2\pi r$$

$$= \frac{4}{3}\pi r$$

$$\therefore, \quad R = \frac{\pi r^2}{\frac{4}{3}\pi r}$$

$$= \frac{3r}{4}$$

n = 0.013, S = 1%, Q = 5.56 cfs from sheet 2 of AHYMO calculations.

$$6.12 = \frac{1.49}{0.013} (\pi \cdot r^2)(0.75 \cdot r)^{\frac{2}{3}} 0.01^{\frac{1}{2}}$$

and solve for r, r = 0.61', D = 1.22', Use 18" pipe

The proposed improvements on HOME DEPOT will generate a runoff of 52.31 cfs, which are divided into 11 sub-basins. This runoff will be discharged at a rate of 1.13 cfs, per the approved Andrews' report, via a series of on-site catch basins and storm drainage pipes directly into an existing 84" storm drainage pipe, located north of the property on Renaissance Boulevard. The runoff is detained in ten parking lot ponds that are collected in a 18" storm drain pipe. This storm drain ties to the 84 inch existing drain as mentioned. An orifice plat will limit the flow to the approved 0.1 cfs/acre discharge rate allowed. (See Tables and Calculation Sheets attached for catch basin flows, inverts, and etc.)

As required by the Master Plan, the peak 100-year discharge of 52.31 cfs is to be detained on site and released at a rate of 0.1 cfs per acre, totalling 1.29 cfs. Based on the AHYMO calculation, water is released at a rate totalling 1.13 cfs, which put us on a lower discharge rate than that we are allowed. We have calculated the total volume from the design needing, 2.13 acre-ft on-site. Volume of the three proposed parking lot ponds are 89,917 ft^3, 37,117 ft^3, and 44,978 ft^3, totalling 3.95 acre-ft. This is sufficient volume to handle the flows. The water height on-site from the pondings on site will range from 0.12' to 0.86'. (See attached Tables and AHYMO sheets for calculations.)

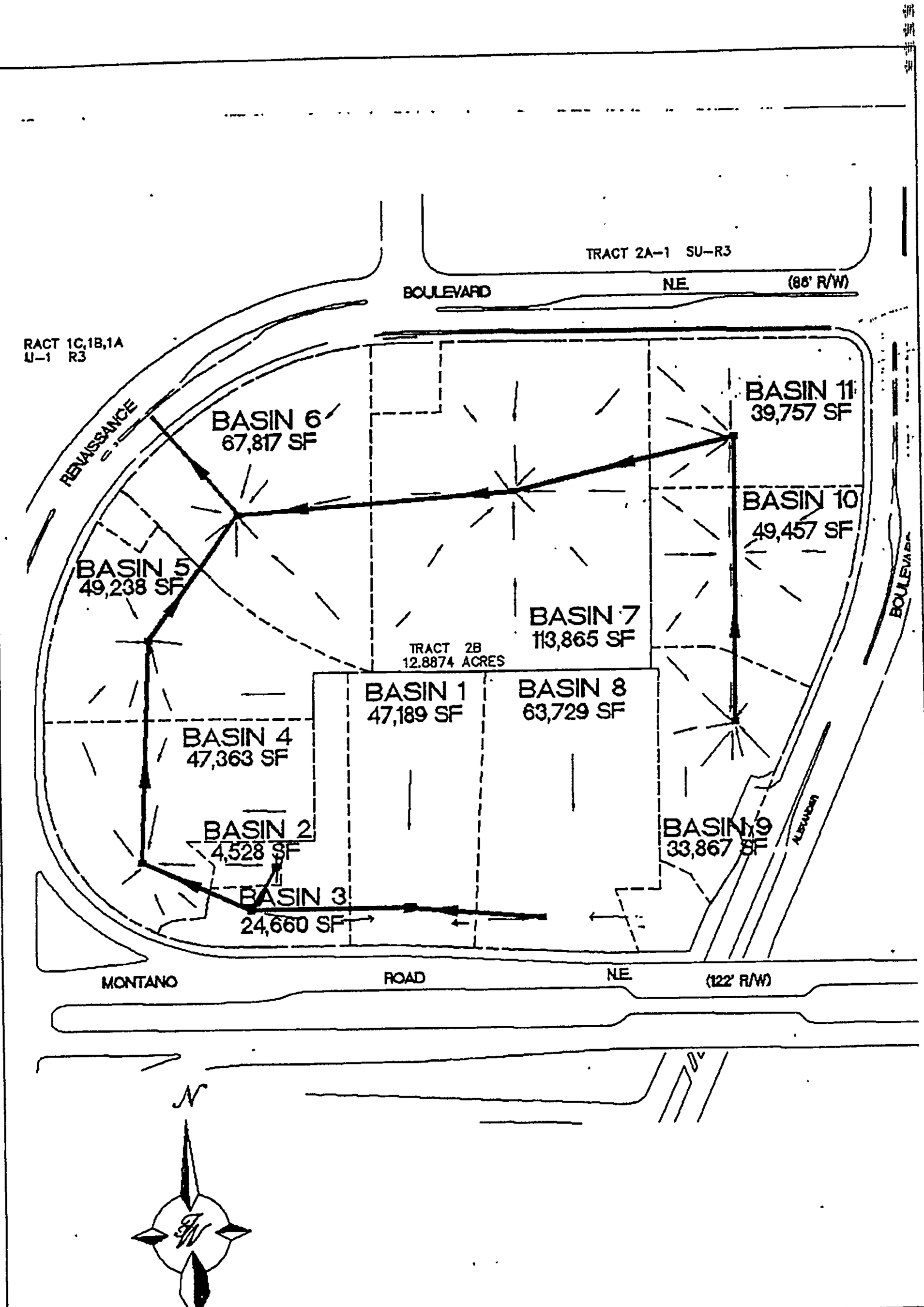
DESIGN OF THE HOME DEPOT STORMDRAIN

Tract 2B's runoff is designed to be drained through a series of catch basin, with 18" outlet pipes 2-3" orifice plates limiting the flow, to an existing 84" storm drain pipe which drains into "Renaissance Detention Pond." (See enclosed Grading and Drainage Map for catch basin locations).

The following three tables summarize the runoff, volume, and peak discharge rates for the site.

INTERIM EROSION CONTROL

The plan centers on the fact that storm water will not be allowed to discharge during the construction process until the site is developed. A desilting pond will be place at the NE corner of the lot where the pad is located.



DRAINAGE MAP

TABLE 1.

DRAINAGE BASIN	Qp–100YR (CFS)	V–RUNOFF (AC–FT)	REQ. DIA. FOR PIPE FROM CB (FT)
B1	4.54	0.2244	1.51
B2	0.44	0.0173	0.49
B3	2.32	0.0936	1.54
B4	4.44	0.1797	1.74
B5	4.61	0.1868	1.56
B6	6.34	0.2573	2.83
B7	10.63	0.4318	2.09
B8	6.12	0.3030	1.30
B9	3.18	0.1285	1.07
B10	4.54	0.1840	1.44
B11	3.73	0.1508	1.65
Qp–10YEAR IS APPROXIMATELY 67% OF Qp–100YEAR			

TABLE 2.

CATCH BASIN CONNECTIONS	FLOW	L. F.	PIPE USED	SLOPE
CB 8 TO 1	10.66	165	18"	1.00 %
CB 1 TO 3	0.52	175	18"	1.00 %
CB 2 TO 3	11.18	60	12"	1.06 %
CB 3 TO 4	15.62	135	18"	0.80 %
CB 4 TO 5	20.23	250	18"	0.61 %
CB 5 TO 6	50.89	175	18"	3.00 %
CB 9 TO 10	22.74	325	12"	0.80 %
CB 10 TO 11	7.22	130	18"	0.80 %
CB 11 TO 7	3.84	265	18"	0.80 %
CB 7 TO 6	8.38	325	18"	0.80 %
CB 6 TO 84" PIPE	12.11	160	36"	0.80 %

11.06

TABLE 3.

CATCH BASIN	Qp (CFS)	INV. @ CB (FT)	WT. ELEV. (FT)	RIM ELEV. (FT)	WT. HT. (FT)	WT. HT. (IN)	TIME
B1	0.22	5027.95	5032.64	5032.12	0.52	6.29	@2.87 HR
B2	0.20	5027.50	5029.05	5028.93	0.12	1.45	@1.83 HR
B3	0.32	5026.10	5031.18	5030.60	0.58	6.94	@3.00 HR
B4	0.73	5025.02	5030.91	5030.53	0.38	4.51	@2.30 HR
B5	0.39	5023.50	5031.29	5030.40	0.89	10.62	@6.77 HR
B6	*1.13*	5018.26	5031.02	5030.56	0.46	5.47	@2.43 HR
B7	0.41	5020.96	5029.69	5029.21	0.48	5.70	@3.07 HR
B8	0.22	5029.60	5032.09	5031.60	0.49	5.84	@2.87 HR
B9	0.48	5027.45	5029.78	5029.45	0.33	3.91	@2.33 HR
B10	0.30	5024.85	5029.32	5028.71	0.61	7.28	@4.67 HR
B11	0.32	5023.71	5029.09	5028.61	0.48	5.70	@2.97 HR

*** See Drainage Map for drainage patterns and catch basin locations.**

PURPOSE

The purpose of this report is to present the drainage management plan for the Home Depot Site Development Plan and Grading/Drainage approval, situated on Tract 2B, Renaissance. HOME DEPOT is proposing to build a new 102,000 SF building and 28,000 SF garden center. The site is located in the North Renaissance Center adjacent to Renaissance Blvd. and west of Alexander Blvd. as shown on zone atlas page F-16.(See attached Vicinity Map, Zone Map F-16.)

EXISTING CONDITIONS

The parcel is Tract 2B of Renaissance Center, Filed April 3, 1985 in Volume C26, Folio 174 containing 12.8874 acres. This site lies at the SW corner of Alexander and Renaissance Blvd. The site does not lie within designated Flood Hazard Zone.

This site is part of the Renaissance Master Plan, and all of the existing and developed runoff discharge through via surface flow and storm drainage systems to the "Renaissance Detention Pond" located on the west side. That pond under City control released the water in Montano Blvd.

HYDROLOGY ANALYSIS

Hydrological aspects of this site were evaluated using AMAFCA's AHYMO program according to guidelines presented in the City of Albuquerque DPM, Section 22.2 (January 1993). All of the pertinent hydrologic parameters and calculations are located in the calculations of this report.

PROPOSED MANAGEMENT PLAN

Improvements consist of a new building, parking, and a garden center. This site is part of the Renaissance Master Plan prepared by ANDREWS, ASBURY & ROBERT, INC., (F16/D6). The flows are being collected on-site by a series of storm drain and then routed to the existing 84" storm sewer in Renaissance Blvd. These flows then drain to the "Renaissance Detention Pond". (See attached Drainage Map.)

The proposed Grading and Drainage Plan show future grades indicated by spot elevations and on-site drainage patterns. All grades range between a minimum of 1% and a maximum of 3%. A one foot water block has been designed at the driveways entrances. (See the Final Grading and Drainage Plan enclosed in the Map Pocket.)

[redacted] DRAINAGE REPORT

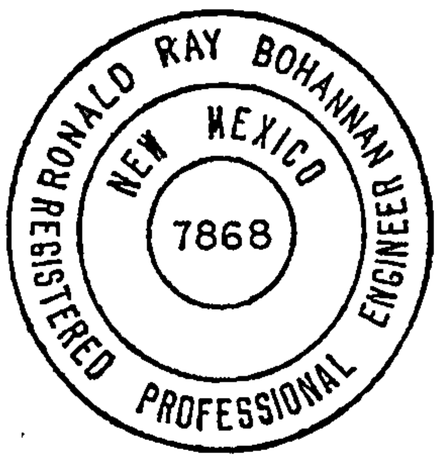
FOR

THE HOME DEPOT

12/08/93

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the state of New Mexico in good standing.

Ronald R. Bohannan
PE NO. 7868



Prepared by:

Tierra West Development
Management Services
4600 Montgomery Blvd. NE, Suite 3
Albuquerque, NM 87109
(505) 883-7592

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 4, 2002

Ray Bohannan, PE
Tierra West, LLC
8509 Jefferson NE
Albuquerque, NM 87113

Re: Home Depot Expansion Grading and Drainage Plan
Engineer's Stamp Dated 2-25-02, (F16/D5F)

Dear Mr. Bohannan,

Based on your submittal dated 2-26-02, the above referenced plan is approved for Site Plan for Building Permit Action by the DRB, and Building Permit which in inclusive with a Paving 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 924-3984.

Sincerely,

Leslie Romero
Engineering Associate, PWD
Development and Building Services

c: Terri Martin, Hydrology
File (2)

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

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 12, 2003

David Soule, P.E.
Tierra West, LLC
8509 Jefferson NE
Albuquerque, New Mexico 87113

RE: THE HOME DEPOT- Tool Rental & Garden Expansion (F-16/D5F)
(1220 Renaissance Blvd NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 2/25/2002
ENGINEERS CERTIFICATION DATED 3/5/2003

Dear David:

Based upon the information provided in your Engineers Certification submittal dated 3/6/2003, the above referenced site is approved for Permanent Certificate of Occupancy.

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

Sincerely,

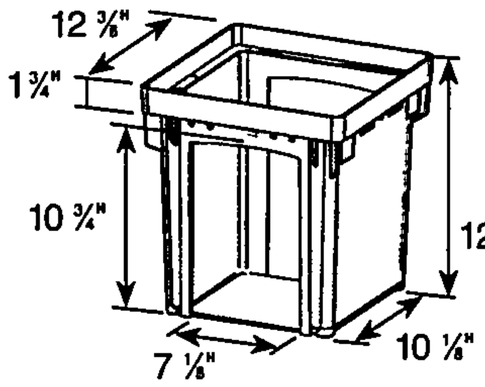
Teresa A. Martin
Hydrology Plan Checker
Development & Bldg. Ser. Division
BLD

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

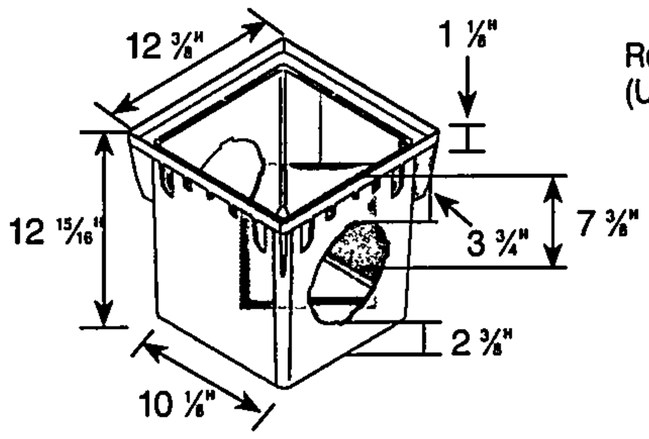
APPENDIX B

Reference Report: *Drainage Report for The Home Depot*

12" CATCH BASIN SERIES

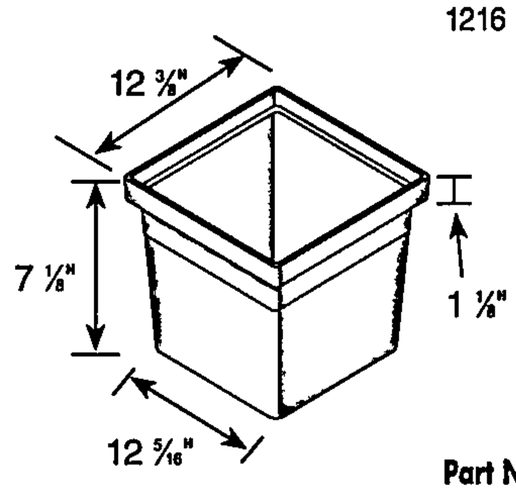


Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1200NGBDISPLAY	Distributor display with 8 1200NGBKITs	Black	8	47.20	10ND	NDS #1200NGB is made out of polyolefin, NDS #1207 and #1208 are made out of styrene
1200NGBKIT	12" x 12" Catch Basin, 2 Open Slides	Black	4	4.65	10ND	
1200NGB	12" x 12" Catch Basin	Black	4	3.45	10ND	
1207	Open Slide for 1200NGB	Black	8	.60	10ND	
1208	Plug Slide for 1200NGB	Black	8	.76	10ND	



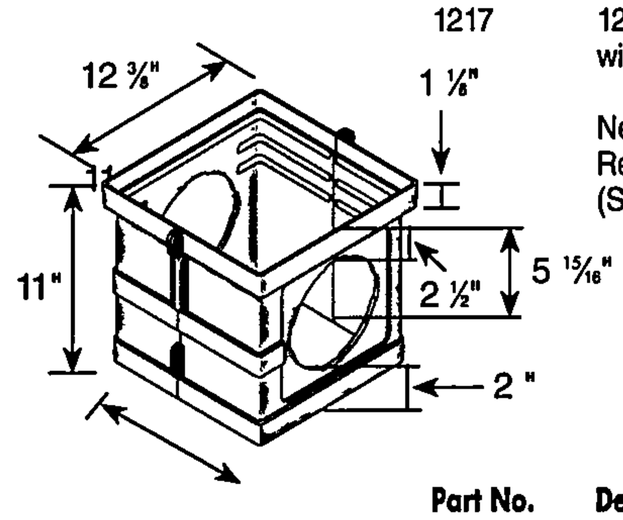
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1200	12" x 12" Catch Basin, 2 Openings	Black	4	4.25	10ND	NDS #1200, #1203, or #1204, 12" x 12" Tapered Catch Basin.
1203	12" x 12" Catch Basin, 3 Openings	Black	4	3.75	10ND	
1204	12" x 12" Catch Basin, 4 Openings	Black	4	3.75	10ND	

Requires either #1206, #1242, #1243, #1245, #1266 or #1889 Universal Outlet for each opening.
(Use bottom cutout for additional outlet. See page 24.)



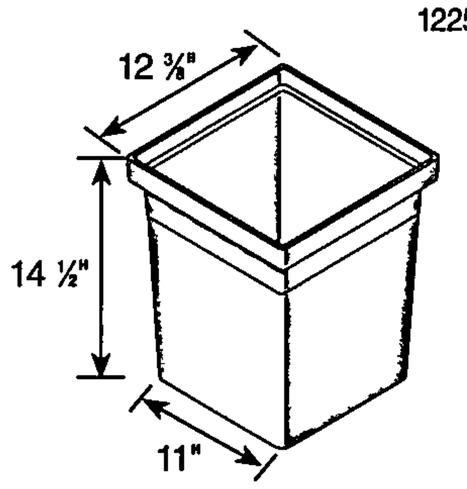
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1216	12" x 12" Catch Basin Riser (No Bottom)	Black	8	2.75	10ND	NDS #1216, 6" Riser for 12" Catch Basin.

Use with 12"x12" Catch Basin Series.



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1217	12" x 12" Riser with 2 openings	Black	4	4.0	10ND	NDS #1217, 12" Riser with Two Openings.

Nests on top of 12" catch basin series for shallow outlets and 12" sump box for more sump area.
Requires either #1206, #1242, #1243, #1245, #1266 or #1889 Universal Outlet for each opening.
(See page 24.)



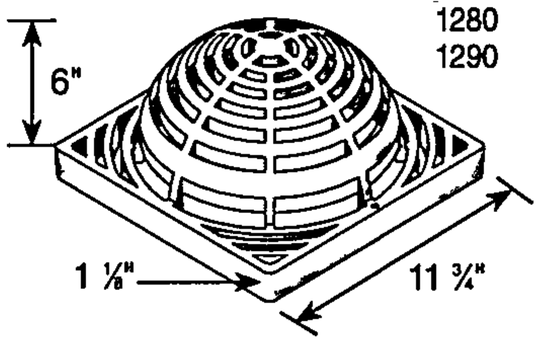
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
1225	12" x 12" Sump Box	Black	4	6.75	10ND	NDS #1225, one piece 12" Sump Box.

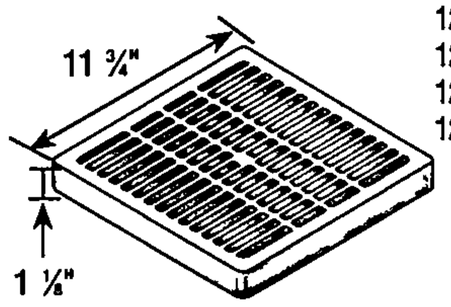
Use with 12" x 12" Grate or #1220 Valve Box Cover.

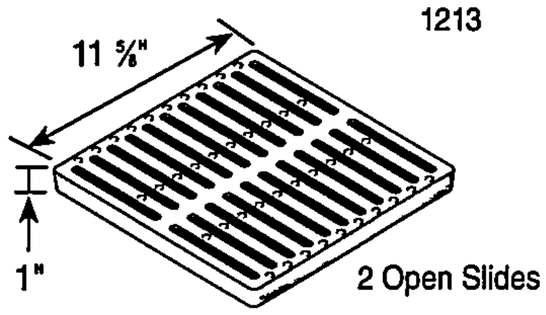
Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

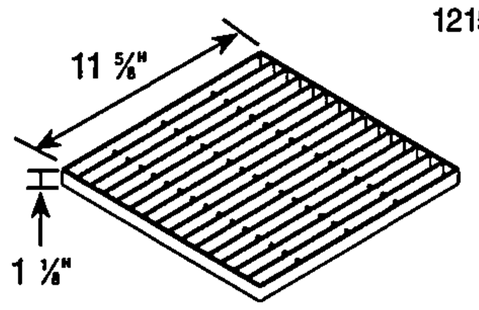
For customer service, please send your fax to: 1-800-726-1998 or call 1-800-726-1994.

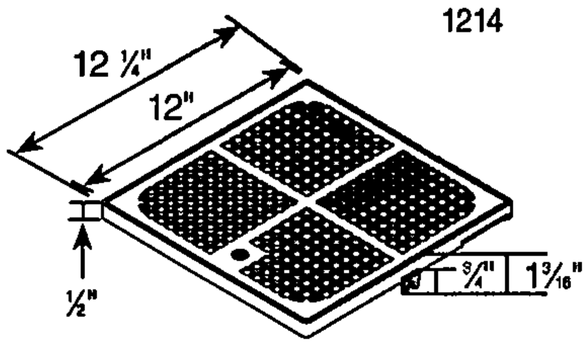
NDS WE PUT WATER IN ITS PLACE

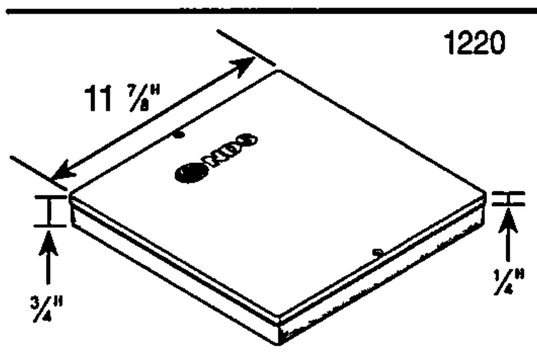
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 ⅜" Grate Opening	1280	12" x 12" Atrium Grate	Green	8	2.00	10ND	NDS #1280, #1290, 12" Structural Foam Polyolefin Dome Atrium Grate with UV inhibitor. Open surface area 50.60 square inches. 66.29 GPM.
	1290	12" x 12" Atrium Grate	Black	8	2.0	10ND	
		Use with 12" x 12" Catch Basin Series.					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 ⅜" Grate Opening	1210	12" x 12" Square Grate	Gray	8	2.00	10ND	NDS #1210, #1211, #1212, or #1212S, 12" Square Structural Foam Polyolefin Grate with UV inhibitor. Open surface area 50.76 square inches. 66.50 GPM.
	1211	12" x 12" Square Grate	Black	8	2.00	10ND	
	1212	12" x 12" Square Grate	Green	8	2.00	10ND	
	1212S	12" x 12" Square Grate	Sand	8	2.00	10ND	
		Use with 12" x 12" Catch Basin Series.					
		(See pg. 48) ADA Compliant					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 ⅜" Grate Opening	1213	12" x 12" Square Cast Iron Grate	Black	1	15.00	10ND	NDS #1213, 12" Square Heavy Duty Cast Iron Grate. Open surface area 59.50 square inches. 77.95 GPM.
		Use with 12" x 12" Catch Basin Series.					
		(See pg. 48) ADA Compliant					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 ¾" Grate Opening	1215	12" x 12" Square Galvanized Steel Grate	Galvanized Steel	1	8.90	10ND	NDS #1215, 12" Square Heavy Duty Galvanized Steel Bar Grate. Open surface area 122.30 square inches. 160.21 GPM.
		Use with 12" x 12" Catch Basin Series.					
		(See pg. 48)					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
 ¼" Grate Opening	1214	12" x 12" Square Grate	Manganese Bronze	1	9.00	10ND	NDS #1214, 12" Square Manganese Bronze Grate and Frame. Open surface area 36.75 square inches. 48.14 GPM.
		Use with 12" x 12" Catch Basin Series. Screws in tabs on the frame, will secure the frame to the outside edge of 12" x 12" catch Basin Adapter. Note: **(Frame must be attached to catch basin before backfilling or encasing in concrete.)**					
		(See pg. 48) ADA Compliant					

	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
	1220	12" x 12" Sump Box Cover	Black	8	2.00	10ND	NDS #1220, 12" Square Structural Foam Polyolifin Solid Cover.
		Use with NDS 12" x 12" Catch Basin Series and NDS #1219 Backwater Valve Box.					

Note: All dimensions are nominal. All weights are for shipping purposes only. Availability is subject to change.

Pipe Capacity for 6" PVC

Project Description

Friction Method	Manning Formula
Solve For	Discharge

CHECK FOR NORTHERLY PIPE
(GREATEST FLOW;CONSERVATIVE)
DEVELOPED AREA B+C Q100=0.37 CFS

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.01000	ft/ft
Normal Depth	0.50	ft
Diameter	6	in

Results

Discharge	0.73	ft³/s
Flow Area	0.20	ft²
Wetted Perimeter	1.57	ft
Hydraulic Radius	0.13	ft
Top Width	0.00	ft
Critical Depth	0.43	ft
Percent Full	100.0	%
Critical Slope	0.00929	ft/ft
Velocity	3.71	ft/s
Velocity Head	0.21	ft
Specific Energy	0.71	ft
Froude Number	0.00	
Maximum Discharge	0.78	ft³/s
Discharge Full	0.73	ft³/s
Slope Full	0.01000	ft/ft
Flow Type	SubCritical	

>0.37 CFS, therefore OK

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s

Weighted E Method

Affordable Dentures - Alenxander Blvd. & Renaissance Blvd. - Zone 2

Existing Basins

Basin	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-Hour Weighted E (ac-ft)	100-Year, 6-Hour Volume (ac-ft)	100-Year, 6-Hour Flow cfs	10-Year, 6-Hour Weighted E (ac-ft)	10-Year, 6-Hour Volume (ac-ft)	10-Year, 6-Hour Flow cfs	2-Year, 6-Hour Weighted E (ac-ft)	2-Year, 6-Hour Volume (ac-ft)	2-Year, 6-Hour Flow cfs
A	17736	0.407	0.00064	0%	0	0%	0.000	88%	0.358303	12%	0.049	1.249	0.042	1.35	0.618	0.021	0.77	0.227	0.008	0.31
B	8,917	0.205	0.00032	0%	0	0%	0.000	81%	0.165812	19%	0.039	1.318	0.022	0.70	0.676	0.012	0.41	0.272	0.005	0.17
C	22,403	0.514	0.00080	0%	0	0%	0.000	92%	0.475215	8%	0.039	1.205	0.052	1.68	0.582	0.025	0.94	0.199	0.009	0.36
		1.126																		

Developed Basins

Basin	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-Hour Weighted E (ac-ft)	100-Year, 6-Hour Volume (ac-ft)	100-Year, 6-Hour Flow cfs	10-Year, 6-Hour Weighted E (ac-ft)	10-Year, 6-Hour Volume (ac-ft)	10-Year, 6-Hour Flow cfs	2-Year, 6-Hour Weighted E (ac-ft)	2-Year, 6-Hour Volume (ac-ft)	2-Year, 6-Hour Flow cfs
A	17,782	0.408	0.00064	0%	0	12%	0.049	0%	0	88%	0.359	1.959	0.067	1.80	1.213	0.041	1.17	0.698	0.024	0.67
B	1,611	0.037	0.00006	0%	0	20%	0.007	0%	0	80%	0.030	1.852	0.006	0.16	1.128	0.003	0.10	0.636	0.002	0.06
C	2,026	0.047	0.00007	0%	0	40%	0.019	0%	0	80%	0.037	2.008	0.008	0.22	1.184	0.005	0.13	0.640	0.002	0.07
D	1,530	0.035	0.00005	0%	0	19%	0.007	0%	0	81%	0.028	1.865	0.005	0.15	1.139	0.003	0.10	0.644	0.002	0.05
E	2,180	0.050	0.00008	0%	0	45%	0.023	0%	0	55%	0.028	1.517	0.006	0.18	0.863	0.004	0.11	0.444	0.002	0.05
F	6,902	0.158	0.00025	0%	0	31%	0.049	0%	0	69%	0.109	1.705	0.023	0.63	1.011	0.013	0.39	0.551	0.007	0.21
G	17,038	0.391	0.00061	0%	0	30%	0.117	60%	0.234683	10%	0.039	1.124	0.037	1.19	0.530	0.017	0.64	0.175	0.006	0.22
		1.126																		

Private Catch Basin Capacity Check (66.29 GPM MAX)

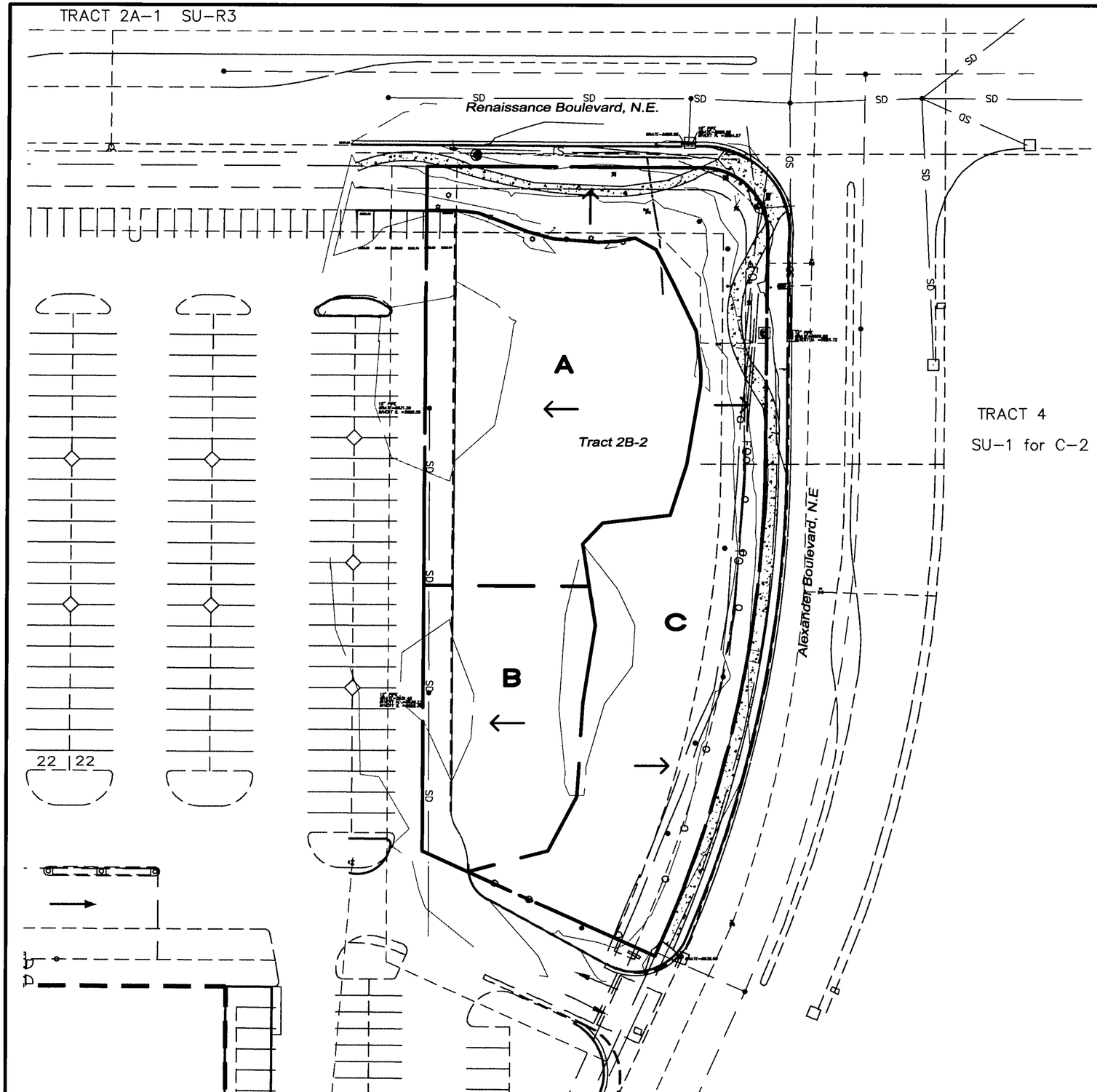
Basin	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-Hour Weighted E (ac-ft)	100-Year, 6-Hour Volume (ac-ft)	100-Year, 6-Hour Flow cfs	Flow gpm	
LS-B	323	0.007	0.00001	0%	0	100%	0.007	0%	0	0%	0.000	0.780	0.000	0.02	7.59	OK
LS-C	817	0.019	0.00003	0%	0	100%	0.019	0%	0	0%	0.000	0.780	0.001	0.04	19.19	OK
LS-D	291	0.007	0.00001	0%	0	100%	0.007	0%	0	0%	0.000	0.780	0.000	0.02	6.84	OK
LS-E	978	0.022	0.00004	0%	0	100%	0.022	0%	0	0%	0.000	0.780	0.001	0.05	22.97	OK

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad



BASIN	AREA	Q100
A	0.407 AC	1.35 CFS
B	0.205 AC	0.70 CFS
C	0.514 AC	1.68 CFS

N

SC: 50'

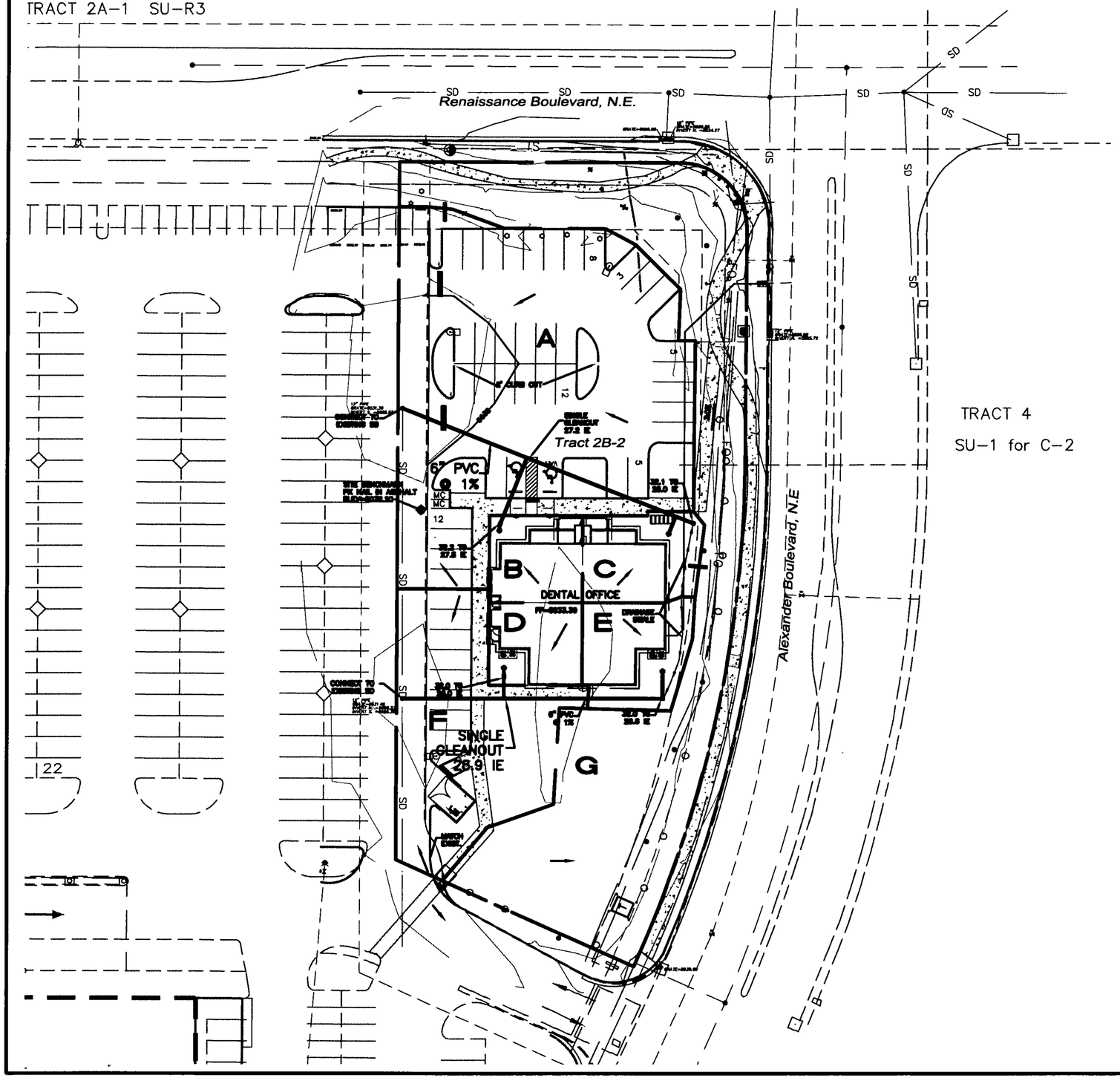
EXISTING HYDROLOGY MAP

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

DATE
06-29-11

JOB #
2011038

TRACT 2A-1 SU-R3



TRACT 4

SU-1 for C-2

BASIN	AREA	Q100	
A	0.408 AC	1.80 CFS	2.18
B	0.037 AC	0.16 CFS	
C	0.047 AC	0.22 CFS	
D	0.035 AC	0.15 CFS	2.15
E	0.050 AC	0.18 CFS	
F	0.158 AC	0.63 CFS	
G	0.391 AC	1.19 CFS	

N

SC: 50'

PROPOSED HYDROLOGY MAP

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

DATE
06-29-11

JOB #
2011038

APPENDIX A

Calculations

ing overall impervious area (hydrologic treatment D) will be less than 60% of the site. A hydrology map and calculations for the proposed conditions are included in Appendix A of this report.

The building finish floor elevation was set at elevation 5033.30 (NAVD 88) which exceeds the higher of the adjacent 100-year water elevation of the existing parking lot ponds at Catch Basin 10 and 11 are listed to have 100-year water a water surface elevation of 5029.32 and 5029.09, respectively, by the Home Depot Report. Adjusted for the datum difference of 2.676 feet, the building finish floor elevation is 1.3 feet higher than the water surface elevation for Basin 10.

A private area drain system to collect drainage around the building foundations and to collect nuisance drainage from landscape areas around the building is incorporated into the plans. The sizing of private catch basins for landscape areas and drainage pipe are based on the hydrologic and hydraulic analysis included in Appendix A.

SUMMARY AND RECOMMENDATIONS

Per the Home Depot drainage report, all required drainage infrastructure was sized and installed to accommodate the developed condition of this tract. The proposed improvements will accommodate the proposed development. The development of this site is consistent with the DPM, Chapter 22, Hydrology section. It is recommended this development be approved for grading and Site Plan for Building Permit.

EXISTING CONDITIONS

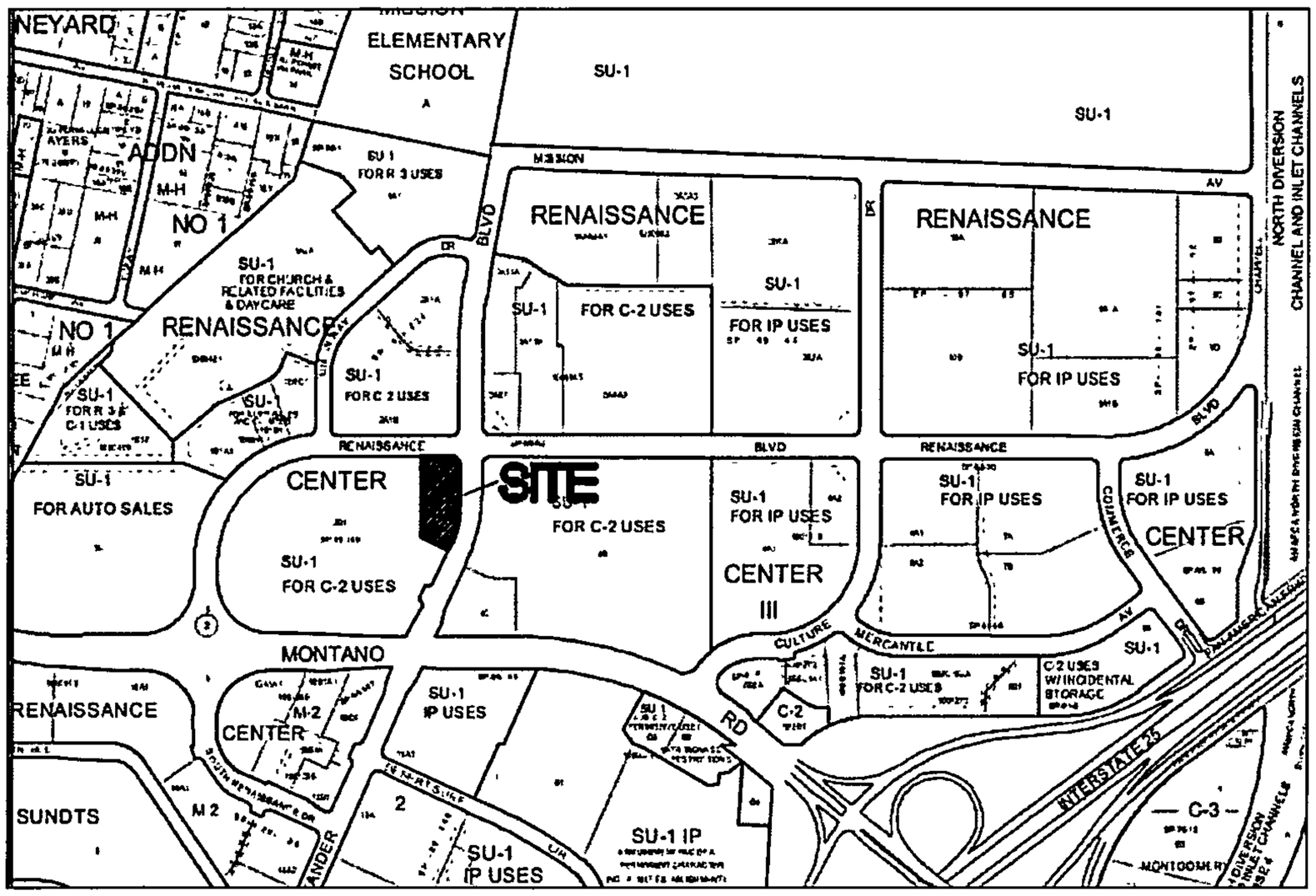
The site is graded flat (graded with the Home Depot construction) and stabilized with gravel and landscaped along the street frontage, but remains undeveloped. Most drainage from the site gently slopes toward existing catch basins (CB 10 and CB 11 per the Report) which is then routed to the existing 84" storm sewer in Renaissance Boulevard through the existing storm drain system discharging into the "Renaissance Detention Pond". The site is higher than the adjacent public right of way; no offsite flows are directed to the site.

An excerpt from the report by Tierra West, LLC, dated December 1993 titled: Drainage Report for Home Depot (COA Drainage File: F-16/D5F), is included for reference in Appendix B. The referenced report designates the site's northeasterly corner as "Basin 10" and "Basin 11" and assumed ultimate development of impervious area to correspond with hydrologic land treatment "B" 10%, and "D" 90%. The runoff from this area is intercepted by catch basins with orifice plates limiting the flow out of the system. A hydrology map and calculations for the existing conditions are included in Appendix A of this report.

PROPOSED CONDITIONS

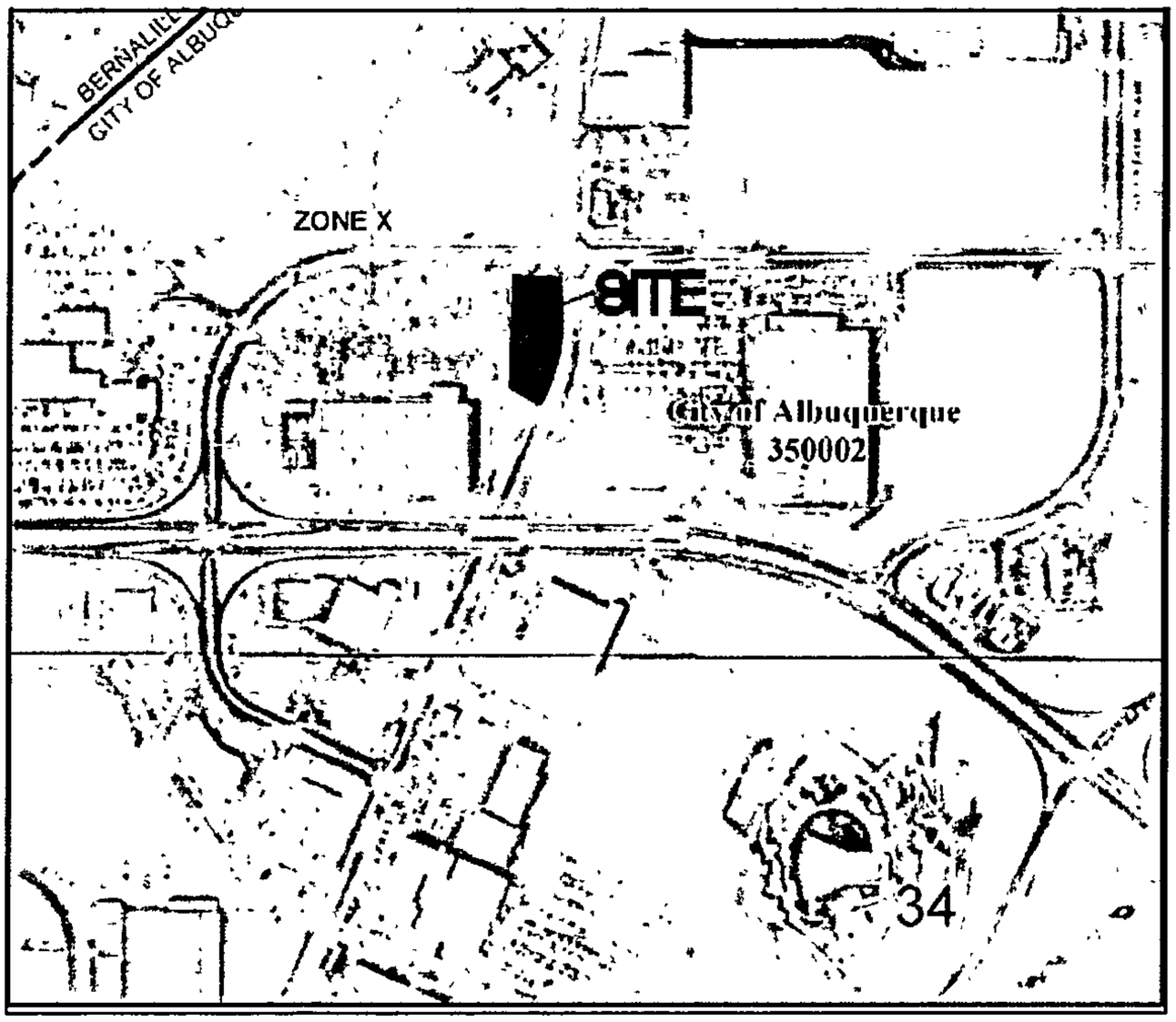
A single-story building with associated parking is proposed for this tract. Proposed grading will maintain historic drainage patterns and direct surface flows to the existing catch basins per the original design. Where practical, flow from the parking areas will be directed to depressed landscape islands via curb cuts for water quality and passive water harvesting. Existing landscaping along the northerly, easterly, and southerly tract boundary will remain in place and additional landscaping will be installed in the parking lot islands and around the building. The result-

Exhibit A- Vicinity Map



VICINITY MAP: F-16-Z

Exhibit B- FIRM Map 35001C0138G



PURPOSE

The purpose of this report is to provide the drainage management plan for the development of Affordable Dentures, a dental clinic. This plan will be utilized for the development of a 4,688 square foot single-story structure and associated parking facilities located on the 1.12 acre undeveloped outlot for the Home Depot located on 1220 Renaissance Boulevard NE. This plan is in accordance with the DPM, Chapter 22, Hydrology Section. The purpose of this report is to provide the drainage analysis and management plan for the new site.

INTRODUCTION

The subject of this report, as shown on the Exhibit A vicinity map, is a 1.12-acre parcel of land located on the southwest corner of Renaissance Boulevard and Alexander Boulevard NE. The site appears on zone atlas page F16-Z. As shown on Exhibit B, FIRM map 35001C0138G, the subject property is outside mapped flood zones. A previous drainage report (Report) for the improvements to the overall Home Depot property (of which this property was a part) was prepared by Tierra West, LLC in December 1993. The Report designed surface drainage, parking lot ponds, and an onsite private storm drain system assuming hydrologic land treatment "B" 10%, and "D" 90%. The proposed development was designed to convey flow in the manner consistent with the assumptions of the referenced report.

TABLE OF CONTENTS

Purpose 3
Introduction 3
Vicinity and FIRM Map 4
Existing Conditions 5
Proposed Conditions 5
Summary 6

Map Pockets

Site Grading and Drainage Plan, Map Pocket A ..... A

Appendices

Hydrologic and Hydraulic Analysis ..... APPENDIX A
Drainage Report for The Home Depot (for reference) ..... APPENDIX B

DRAINAGE REPORT

for

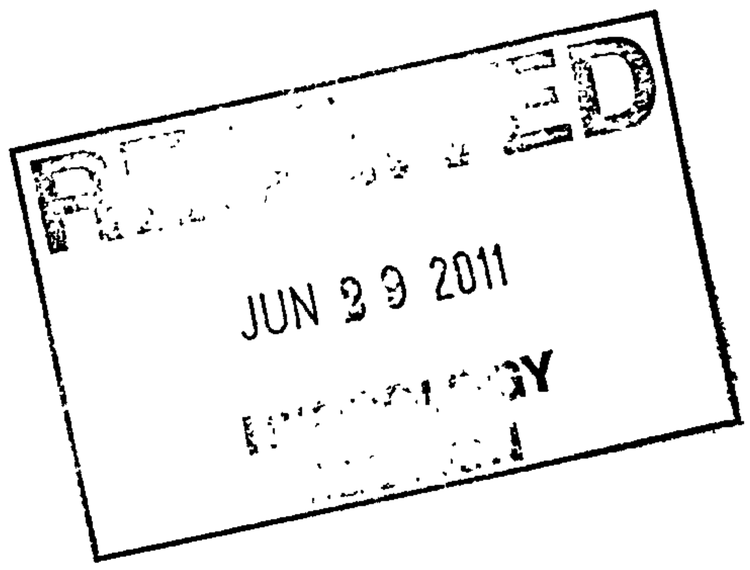
Affordable Dentures
4821 Alexander Blvd NE
Tract 2B-2 Renaissance Center
Albuquerque, New Mexico

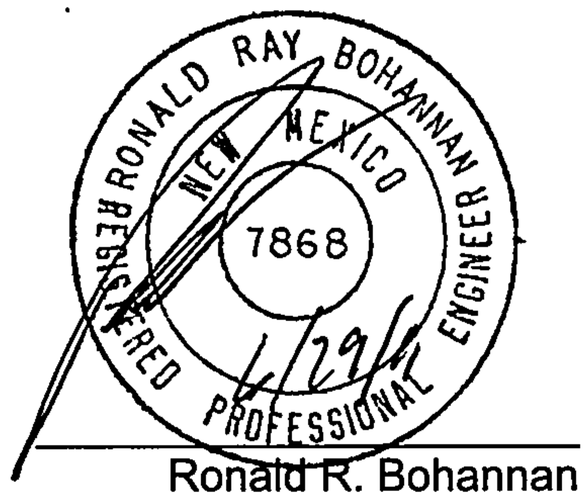
Prepared by:

Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, New Mexico 87109

June 29, 2011

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.





Ronald R. Bohannan
PE # 7868

1000662

Job No 2011038

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: **Affordable Dentures** ZONE MAP/DRG. FILE # **F-16-Z** P005F

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

LEGAL DESCRIPTION **Tract 2B-2 Renaissance Center**

CITY ADDRESS: **4821 Alexander Blvd NE**

ENGINEERING FIRM:	**TIERRA WEST, LLC**	CONTACT:	**JOEL HERNANDEZ**
ADDRESS:	**5571 MIDWAY PARK PLACE NE**	PHONE:	**(505) 858-3100**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87109**
OWNER:	**The Home Depot**	CONTACT:	**beverly_metz@homedepot.com**
ADDRESS:	**3800 West Chapman Avenue**	PHONE:	**714-940-3569**
CITY, STATE:	**Orange, CA 92868**	ZIP CODE:	
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	**PRECISION SURVEYS**	CONTACT:	**LARRY MEDRANO**
ADDRESS:	**8500-A JEFFERSON STREET, NE**	PHONE:	**(505) 856-5700**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87113**
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- X 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 BERNCO PROJECT-CONCURRENT REVIEW

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SIA / FINANACIAL 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
- x BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- x GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED

$ 50.00

RECEIVED
JUN 29 2011
HYDROLOGY SECTION

DATE SUBMITTED: **6/29/2011** BY: **JOEL HERNANDEZ, 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 of the proposed development defines the degree of drainage detail. One or more of the following levels of sumbittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans**: 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

July 8, 2011

Ronald R. Bohannan, P.E.
Tierra West, LLC
5571 Midway Park PL NE
Albuquerque, NM 87109

Re: Affordable Dentures, Renaissance Center
Master Grading Plan
Engineer's Stamp dated 6-24-11 (F16/D005F)

Dear Mr. Bohannan,

Based upon the information provided in your submittal received 6-29-11, the above referenced plan is can not be approved for Grading Permit and Building Permit until the following comments are addressed.

- Submit the signature sheet of the approved DRB Site Plan with all signatures, for review.

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

Sincerely,

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

RER/CAC
C: File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

July 8, 2011

Ronald R. Bohannan, P.E.
Tierra West, LLC
5571 Midway Park PL NE
Albuquerque, NM 87109

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Sincerely,

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

RER/CAC
C: File

RECEIVED
AUG 15 2011
HYDROLOGY SECTION

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Tierra West, LLC.

(505) 858-3100

5571 Midway Park Place NE, Albuquerque, NM 87109

LETTER OF TRANSMITTAL

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

DATE: 8/11/2011	JOB NO: 2011038
ATTENTION: Curtis Cherne	
RE:	
PHONE:	

WE ARE SENDING YOU [ ] Attached [ ] Under Separate cover via _____ the following items:

[ ] Shop drawings [ ] Prints [X] Plans [ ] Samples [ ] Specifications

[ ] Copy of letter [ ] Change order [ ] _____

COPIES	DATED	NO.	DESCRIPTION
1			Approved Site Plan for Building Permit
1			Master Grading Plan Letter

THESE ARE TRANSMITTED as checked below:

[ ] For approval [ ] Approved as submitted [ ] **FOR SIGNATURE(S)**

[ ] For your use [ ] Approved as noted [ ] _____

[X] As requested [ ] Returned for corrections

[ ] For review and comments [ ] _____

[ ] FOR BIDS DUE _____ 20 ____ [ ] PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

RECEIVED
AUG 15 2011
HYDROLOGY SECTION

COPY TO _____

RECEIVED BY _____ Date _____ SIGNED Danielle Chavez for Ronald R. Bohannan, PE

FAX (505) 858-1118 **If enclosures are not as noted, kindly notify us at once** **Email: twllc@tierrawestllc.com**

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: **Affordable Dentures** ZONE MAP/DRG. FILE #: **F-16-Z005F**

DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION **Tract 2B-2 Renaissance Center**

CITY ADDRESS: **4821 Alexander Blvd NE**

ENGINEERING FIRM:	**TIERRA WEST, LLC**	CONTACT:	**JOEL HERNANDEZ**
ADDRESS:	**5571 MIDWAY PARK PLACE NE**	PHONE:	**(505) 858-3100**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87109**
OWNER:	**The Home Depot**	CONTACT:	**beverly_metz@homedepot.com**
ADDRESS:	**3800 West Chapman Avenue**	PHONE:	**714-940-3569**
CITY, STATE:	**Orange, CA 92868**	ZIP CODE:	
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	**PRECISION SURVEYS**	CONTACT:	**LARRY MEDRANO**
ADDRESS:	**8500-A JEFFERSON STREET, NE**	PHONE:	**(505) 856-5700**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87113**
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
- X DRAINAGE PLAN RESUBMITTAL
- ___ 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 BERNCO PROJECT-CONCURRENT REVIEW

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- ___ SIA / FINANACIAL GUARANTEE RELEASE
- ___ PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
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- ___ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ SO-19

___ WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED

RECEIVED
AUG 15 2011
HYDROLOGY SECTION

DATE SUBMITTED: **8/12/2011** BY: **JOEL HERNANDEZ, 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 of the proposed development defines the degree of drainage detail. One or more of the following levels of sumbittal 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

August 16, 2011

Ronald R. Bohannan, P.E.
Tierra West, LLC
5571 Midway Park PL NE
Albuquerque, NM 87109

Re: Affordable Dentures, Renaissance Center
Master Grading Plan
Engineer's Stamp dated 6-24-11 (F16/D005F)

Dear Mr. Bohannan,

Based upon the information provided in your submittal received 8-15-11, the above referenced plan is approved for Grading Permit and Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge and a Topsoil Disturbance Permit since it is disturbing ¾ of an acre or more.

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 or Rudy Rael at 924-3977.

Sincerely,

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

RER/CAC
C: Kathy Verhage, DMD
File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

TIERRA WEST, LLC

5571 Midway Park Place NE Albuquerque, NM 87109
(505) 858-3100 Fax (505) 858-1118 1-800-245-3102
tierrawestllc.com

December 13, 2011

Ms. Kristal Metro, P.E.
Development and Building Services
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: SITE PLAN FOR BUILDING PERMIT
CERTIFICATION FOR TEMPORARY CERTIFICATE OF OCCUPANCY
AFFORDABLE DENTURES, 4821 ALEXANDER BLVD. NE

Dear Ms. Metro:

I, Ronald R. Bohannan, NMPE # 7868, of the firm Tierra West LLC, hereby request a temporary Certificate of Occupancy for the project referenced above. With the exception of the striping and handicap signage, this project is in substantial compliance as inspected on December 13, 2011, and is in accordance with the design intent of the Approved Site Plan for Building Permit dated 7/13/11. The contractor is unable to install the parking area striping, signage and truncated domes due to the recent rainfall and freezing temperatures. This certification is submitted in support of a request for Temporary Certificate of Occupancy to allow the tenant to move its equipment by its employees from its original place of business to the new location. The tenant will not conduct any business with the general public until the striping and signage is complete and approved for permanent occupancy.

The record information presented hereon is not necessarily complete and intended 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.

Enclosed, please find the information sheet, the as-built Approved Site Plan for Building Permit. Therefore, we request approval of the as-built Approved Site Plan for Building Permit for a Temporary Certificate of Occupancy.

If you have any questions or need additional information regarding this matter, please do not hesitate to contact me.

Sincerely,

RONALD R. BOHANNAN
NEW MEXICO
7868
REGISTERED PROFESSIONAL ENGINEER

Ronald R. Bohannan, P.E.

Enclosure/s

RECEIVED
DEC 14 2011
HYDROLOGY SECTION

JN: 2011038
RRB/BF/cla

Z:\2011\2011038 - Affordable Dentures\Correspondence\2011038 Kristal Metro Temp CO Letter 12-13-11.doc

TRANSPORTATION INFORMATION SHEET

(REV. 11/01/2001)

PROJECT TITLE: AFFORDABLE DENTURES
ZONE ATLAS/DRG. FILE #: F-16-Z D605F
DRB #: _____ EPC #: _____
WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT 2B-2 RENAISSANCE CENTER
CITY ADDRESS: 4821 ALEXANDER BLVD. NE

ENGINEERING FIRM:	TIERRA WEST, LLC	CONTACT:	JOEL HERNANDEZ
ADDRESS:	5571 MIDWAY PARK PLACE, NE	PHONE:	505 858-3100
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87109
OWNER:	AC-ALBUQUERQUE, NM-1,LP	CONTACT:	DAVE FREMMER
ADDRESS:	4747 WILLIAMS DR.	PHONE:	512 819-4765
CITY, STATE:	GEORGETOWN, TX	ZIP CODE:	78633
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	HIGH MESA CONSULTING	CONTACT:	CHARLES CALA
ADDRESS:	6010-B MIDWAY PARK BLVD. NE	PHONE:	505 345 4250
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87109
CONTRACTOR:	EMBREE CONTRUCTION	CONTACT:	DAVE FREMMER
ADDRESS:	4747 WILLIAMS DR.	PHONE:	505 858-3100
CITY, STATE:	GEORGETOWN, TX	ZIP CODE:	87109

CHECK 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)
- X ____ OTHER (SITE PLAN FOR BUILDING PERMIT)

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SIA / FINANACIAL 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.)
- X ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY) -

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ____ YES
- X ____ NO
- ____ COPY PROVIDED

RECEIVED
DEC 14 2011
HYDROLOGY SECTION

DATE SUBMITTED: 12/13/11 BY: JOEL HERNANDEZ, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a dranage 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 sumbittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans**: Required for approval of Site Development Plans greater than five (5) acres
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

Planning Department
Transportation Development Services Section

December 15, 2011

Ronald R. Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

Re: Certification Submittal for a 120-day Temporary Building Certificate of Occupancy (C.O.) for Affordable Dentures, [F-16/D005F]
4821 Alexander Blvd. NE
Architect's Stamp Dated 12/13/11

Dear Mr. Bohannan:

Based upon the information provided in your submittal received 12-14-11, Transportation Development has approved your submittal for a **120-day Temporary Certificate of Occupancy**.
The following items will need to be completed as part your condition for a Permanent C.O.: Parking area striping, signage and truncated domes.

This letter serves as a "green tag" from Transportation Development for a 120-day Temporary Certificate of Occupancy to be issued by the Building and Safety Division.

If you have any questions, please contact me at (505)924-3630.

Sincerely,

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

c: Engineer
Hydrology file
CO Clerk

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: **Affordable Dentures** ZONE MAP/DRG. FILE #: **F-16-~~D~~005E**

DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION **Tract 2B-2 Renaissance Center**

CITY ADDRESS: **4821 Alexander Blvd NE**

ENGINEERING FIRM:	**TIERRA WEST, LLC**	CONTACT:	**JOEL HERNANDEZ**
ADDRESS:	**5571 MIDWAY PARK PLACE NE**	PHONE:	**505-858-3100**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87109**
OWNER:	**AC-ALBUQUERQUE, NM-1,LP**	CONTACT:	**DAVE FREMMER**
ADDRESS:	**4747 WILLIAMS DR.**	PHONE:	**512-819-4765**
CITY, STATE:	**GEORGETOWN, TX**	ZIP CODE:	**78633**
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	**HIGH MESA CONSULTING**	CONTACT:	**CHARLES CALA**
ADDRESS:	**6010-B MIDWAY PARK BLVD. NE**	PHONE:	**505-345-4250**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87113**
CONTRACTOR:	**EMBREE CONSTRUCTION**	CONTACT:	**DAVE FREMMER**
ADDRESS:	**4747 WILLIAMS DR.**	PHONE:	**512-819-4765**
CITY, STATE:	**GEORGETOWN, TX**	ZIP CODE:	**78633**

CHECK TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEERS CERTIFICATION (TCL)
- ___ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER BERNCO PROJECT-CONCURRENT REVIEW

CHECK TYPE OF APPROVAL SOUGHT:

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- ___ 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
- X CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED

RECEIVED
DEC 29 2011
HYDROLOGY SECTION

DATE SUBMITTED: **12/29/2011** BY: **JOEL HERNANDEZ, 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 of the proposed development defines the degree of drainage detail. One or more of the following levels of sumbittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
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3. **Drainage Report**: Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

December 30, 2011

Ronald Ray Bohannan, P.E.
Tierra West, LLC.
5571 Midway Park Place N.E.
Albuquerque, NM 87109

Re: Affordable Dentures, 4821 Alexander Blvd NE,
Request for Permanent C.O. - Approved
Engineer's Stamp dated: 06-29-11 (F-16/D005F)
Certification dated: 12-29-11

Dear Mr. Bohannan,

Based upon the information provided in the Certification received 12-29-11, the above referenced Certification is approved for a release of a Permanent Certificate of Occupancy by Hydrology.

Hydrology is asking for an electronic copy, in .pdf format, of this certification for our records. This certification can be e-mailed to me at: tsims@cabq.gov.

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

Sincerely,

Timothy E. Sims,
Plan Checker—Hydrology Section
Development and Building Services

C: CO Clerk—Katrina Sigala
File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

TIERRA WEST, LLC

5571 Midway Park Place NE
(505) 858-3100 Fax (505) 858-1118 1-800-245-3102
tierrawestllc.com
Albuquerque, NM 87109

February 8, 2012

Ms. Kristal Metro, P.E.
Development and Building Services
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: SITE DEVELOPMENT PLAN FOR BUILDING PERMIT
CERTIFICATION FOR PERMENANT CERTIFICATE OF OCCUPANCY
AFFORDABLE DENTURES @ 4821 ALEXANDER BLVD. NE

Dear Ms. Metro:

I, Ronald R. Bohannan, NMPE # 7868, of the firm Tierra West LLC, hereby request approval of the Site Plan for Building Permit in support of issuance of a Permanent Certificate of Occupancy for the project referenced above. The project is in substantial compliance as inspected on February 8, 2012, and is in accordance with the design intent of the approved Site Development Plan for Building Permit dated July 13, 2011.

The record information presented hereon is not necessarily complete and intended 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.

Enclosed, please find the information sheet, the as-built Approved Site Development Plan for Building Permit. Therefore, we request approval of the as-built Approved Site Development Plan for Building Permit for Permanent Certificate of Occupancy.

If you have any questions or need additional information regarding this matter, please do not hesitate to contact me.

Sincerely,

Ronald R. Bohannan, P.E.

RONALD RAY BOHANNAN REGISTERED PROFESSIONAL ENGINEER NEW MEXICO 7868

Enclosure/s

JN: 2011038
RRB/BF/cla

Z \2011\2011038 Affordable Care HD outlot\Correspondence\2011038 Knstal Metro Perm CO Letter 2-8-12 doc

TIERRA WEST, LLC

5571 Midway Park Place NE
Albuquerque, NM 87109
(505) 858-3100 Fax (505) 858-1118 1-800-245-3102
tierrawestllc.com

February 8, 2012

Ms. Kristal Metro, P.E.
Development and Building Services
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: SITE DEVELOPMENT PLAN FOR BUILDING PERMIT
CERTIFICATION FOR PERMENANT CERTIFICATE OF OCCUPANCY
AFFORDABLE DENTURES @ 4821 ALEXANDER BLVD. NE

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Ronald R. Bohannan, P.E.

Enclosure/s

JN: 2011038
RRB/BF/cla

Z \2011\2011038 Affordable Care HD outlot\Correspondence\2011038 Kristal Metro Perm CO Letter 2-8-12.doc

TRANSPORTATION INFORMATION SHEET

(REV. 11/01/2001)

PROJECT TITLE: AFFORDABLE DENTURES — ZONE ATLAS/DRG. FILE #: F-16-Z DOOS F.

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

LEGAL DESCRIPTION: TRACT 2B-2 RENAISSANCE CENTER

CITY ADDRESS: 4821 ALEXANDER BLVD. NE

ENGINEERING FIRM:	TIERRA WEST, LLC	CONTACT:	JOEL HERNANDEZ # 216
ADDRESS:	5571 MIDWAY PARK PLACE, NE	PHONE:	505 858-3100
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87109
OWNER:	AC-ALBUQUERQUE, NM-1,LP	CONTACT:	DAVE FREMMER
ADDRESS:	4747 WILLIAMS DR.	PHONE:	512 819-4765
CITY, STATE:	GEORGETOWN, TX	ZIP CODE:	78633
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	HIGH MESA CONSULTING	CONTACT:	CHARLES CALA
ADDRESS:	6010-B MIDWAY PARK BLVD. NE	PHONE:	505 345 4250
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87109
CONTRACTOR:	EMBREE CONTRUCTION	CONTACT:	DAVE FREMMER
ADDRESS:	4747 WILLIAMS DR.	PHONE:	505 858-3100
CITY, STATE:	GEORGETOWN, TX	ZIP CODE:	87109

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- ___ PAVING PERMIT APPROVAL
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- ___ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED

RECEIVED

FEB 08 2012

HYDROLOGY SECTION

DATE SUBMITTED: 2/08/12 BY: JOEL HERNANDEZ, PE

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CITY OF ALBUQUERQUE

February 10, 2011

Ronald Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

Re: Affordable Dentures
4821 Alexander Blvd NE
Permanent Certificate of Occupancy – Transportation Development
Engineer's Stamp dated 02-08-12 (F16-D005F)
Certification dated 02-08-12

Dear Mr. Bohannan,

Based upon the information provided in your submittal received 01-06-12, Transportation Development has no objection to the issuance of a Permanent Certificate of Occupancy.

This letter serves as a "green tag" from Transportation Development for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

If you have any questions, you can contact me at 924-3630.

Sincerely,

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

C: CO Clerk
File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: **Affordable Dentures** ZONE MAP/DRG. FILE # **F-16-Z** D00 5F

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

LEGAL DESCRIPTION **Tract 2B-2 Renaissance Center**

CITY ADDRESS: **4821 Alexander Blvd NE**

ENGINEERING FIRM:	**TIERRA WEST, LLC**	CONTACT:	**JOEL HERNANDEZ**
ADDRESS:	**5571 MIDWAY PARK PLACE NE**	PHONE:	**(505) 858-3100**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87109**
OWNER:	**The Home Depot**	CONTACT:	**beverly_metz@homedepot.com**
ADDRESS:	**3800 West Chapman Avenue**	PHONE:	**714-940-3569**
CITY, STATE:	**Orange, CA 92868**	ZIP CODE:	
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	**PRECISION SURVEYS**	CONTACT:	**LARRY MEDRANO**
ADDRESS:	**8500-A JEFFERSON STREET, NE**	PHONE:	**(505) 856-5700**
CITY, STATE:	**ALBUQUERQUE, NM**	ZIP CODE:	**87113**
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

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- ___ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
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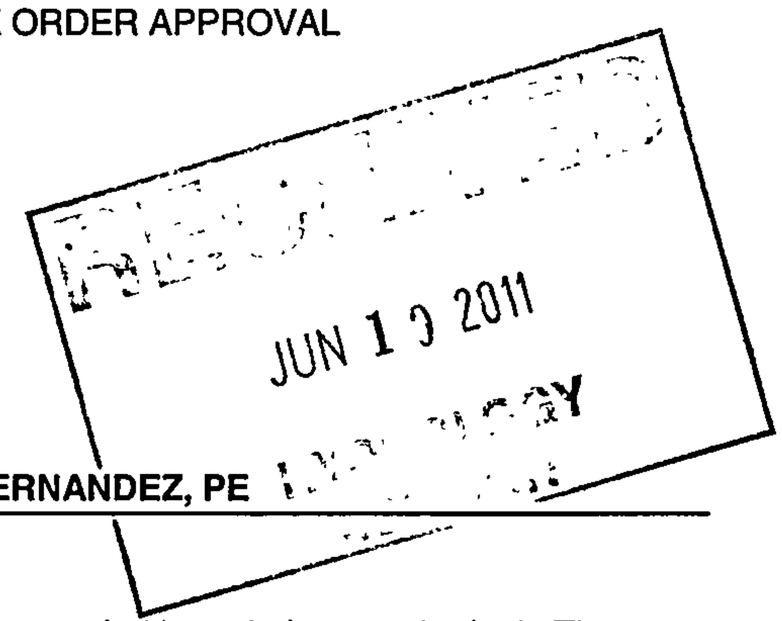
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED



DATE SUBMITTED: **6/10/2011** BY: **JOEL HERNANDEZ, PE**

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