



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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December 6, 2000

Kim R. Kemper, P.E.
Kemper - Vaughan Consulting Engineers
3700 Coors Road, NW, Suite C
Albuquerque, NM 87120

RE: ENGINEER'S CERTIFICATION FOR BOY SCOUTS OF AMERICA ADDITION (E-17/
D041A) ENGINEER'S STAMP DATED FEBRUARY 9, 2000, CERTIFICATION
DATED NOVEMBER 7, 2000.

Dear Mr. Kemper,

Based upon the information provided in your submittal dated November 6, 2000, the Engineering Certification for Certificate of Occupancy for the project referred to above is approved. For future submittals, kindly use the procedure for Certification outline in the DPM.

Thank you.

If you have any questions, please call me at 924-3988.

Sincerely,

Stuart Reeder, P.E.
Hydrology Division

xc: Whitney Reiersen

✓ File



City of Albuquerque

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February 29, 2000

Kim R. Kemper, P.E.
Kemper-Vaughn Consulting Engineers
3700 Coors Rd., NW Suite C
Albuquerque, NM 87120

RE: GRADING & DRAINAGE PLAN FOR BOY SCOUTS OF AMERICA (E-
17/D041A) SUBMITTED FOR BUILDING PERMIT APPROVAL

Dear Mr. Kemper,

Based upon the information provided in your February 9, 2000, submittal, the project referred to above is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

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

If you have any questions, please call me at 924-3988.

Sincerely,

Stuart Reeder, P.E.

Stuart Reeder, P.E.
Hydrology Division

xc: Whitney Reiersen
✓File

BOY SCOUTS OF AMERICA

GRADING PLAN & DRAINAGE PLAN

February 9, 2000

Prepared for:

Boy Scouts of America

5841 Office Boulevard N.E.

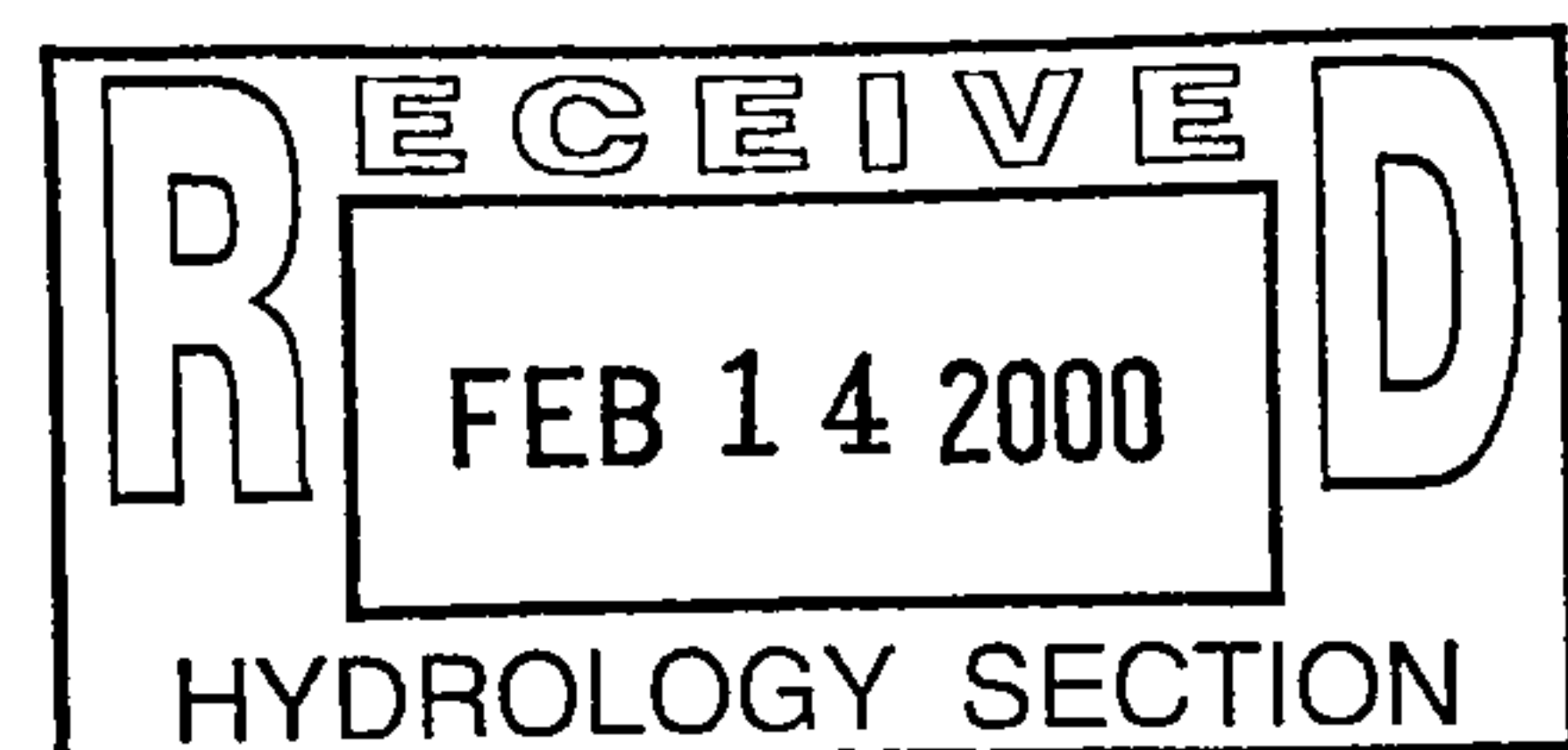
Albuquerque, New Mexico 87109

Prepared by:

KEMPER-VAUGHAN CONSULTING ENGINEERS

3700 Coors Road NW

Albuquerque, New Mexico 87120



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PROJECT OVERVIEW

The site is located on Office Blvd. within the Midway Business Park. As shown on Panel 138 of the F.I.R.M. this site is not within a designated 100-yr flood hazard area. The site contains 1.02 acres in total. There is an existing building on the property that was constructed in 1884. The proposed project includes the construction of an addition to the existing building with related parking and landscaping.

LEGAL DESCRIPTION

Lot 4A of Midway Business Park, as shown on the said plat filed and the office of the County Clerk, Bernalillo County, New Mexico on September 14, 1984, in Volume C25, Folio 15.

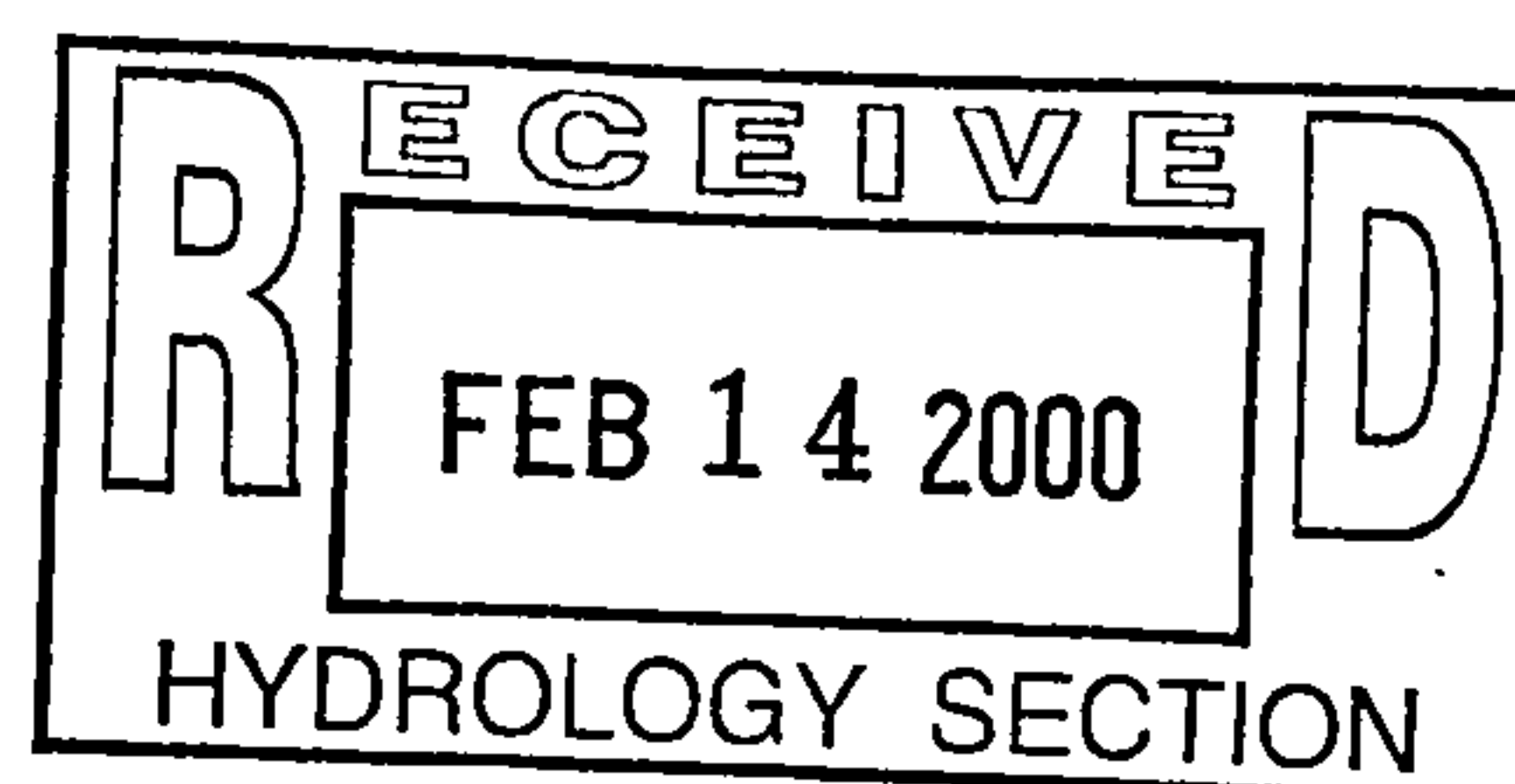
DRAINAGE PLAN

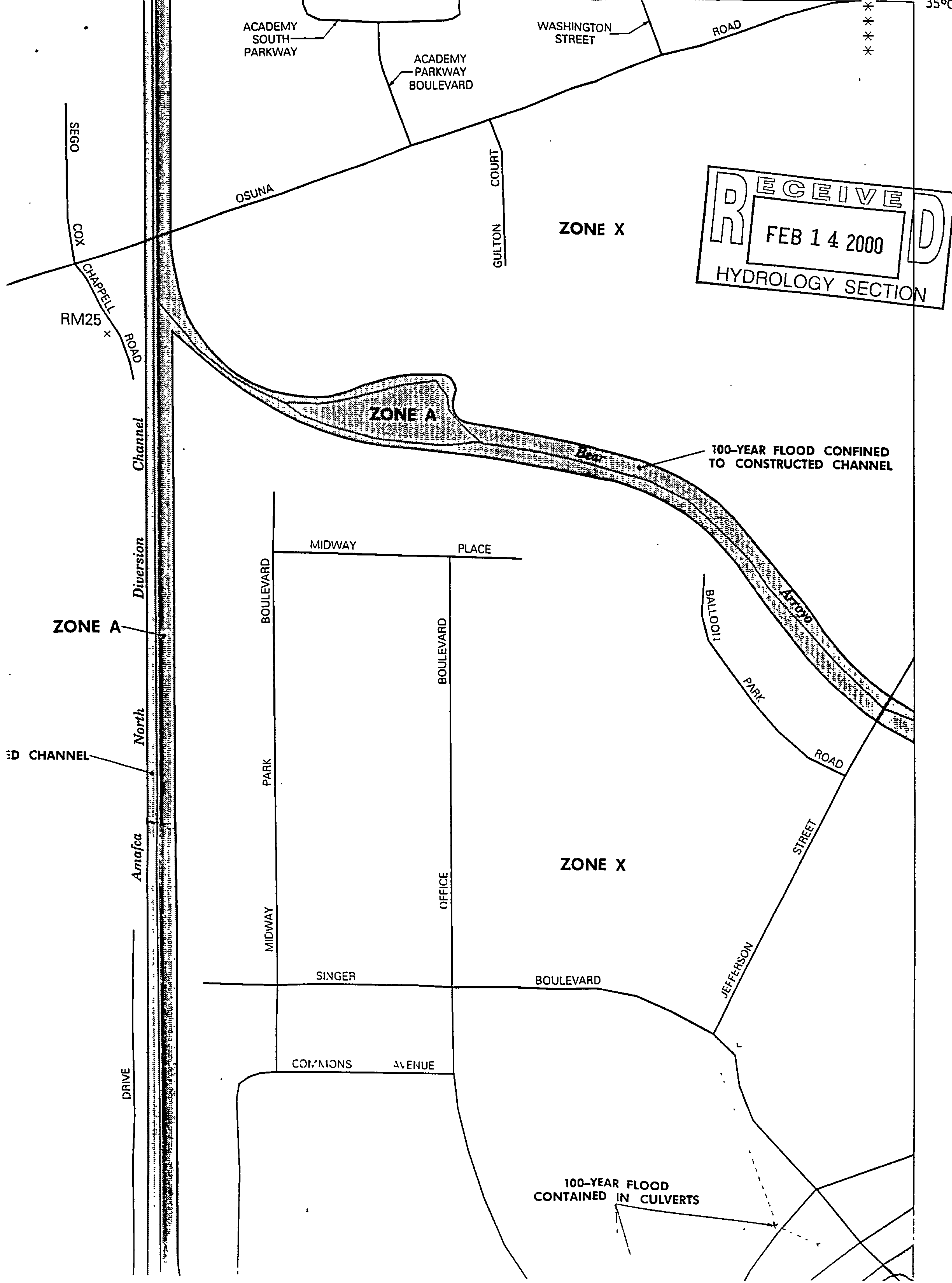
There are three(3) drainage plans on file at the City which relate to the subject site. First, the grading and drainage plan for subdivision establishing development criteria can be found in file E17/41. Secondly, there is a plan which was prepared in 1984 for the construction of the original building located on this site. This plan is in City file E17/41A. Lastly, a plan was prepared in 1996 for Lot 5A (immediately south of the subject Lot). This plan is in City file E17/41Q.

The grading and drainage plan for subdivision provided for lots 4A and 5A to drain through a concrete rundown located approximately 150 feet south of the subject site. This rundown conveys flows to Midway Park Blvd. Attached to this submittal are calculations which quantify the capacity of this rundown. The grading and drainage plan which was prepared for the original construction of this site provide a small concrete rundown paralleling the southern property line as shown on this grading plan. Calculations identifying the capacity of this rundown are also attached. Also provided are calculations that determine the capacity of the earthen swale which conveys waters from Lot 4A along the western property line of Lot 5A to the concrete rundown which flows to Midway Park Blvd. This earthen swale was constructed as part of the original plan for the subject site (E17-41A). The typical section shown on this grading plan for this effort was taken from the original plan.

The developed peak flow rate from the subject site is calculated to be 4.04 cfs. Approximately 50% of the site will drain to the onsite concrete rundown. As shown in the calculations this rundown has ample capacity to control these flows. In 1996 when Lot 5A was developed, only the southern 2/3 were included in that construction effort. The calculated peak discharge was determined to be 9.08 cfs. Assuming a developed condition on the remainder of Lot 5A (85% impervious) the balance of the site could contribute an estimated 5.46 cfs. This then provides for the estimated total peak discharge of 14.56 cfs.

Adding the 14.56 cfs to the 4.04 cfs results in a estimated flows which reaches the rundown at Midway Park of 18.6 cfs. As shown, this rundown has ample capacity to control the flows from Lots 4A & 5A





RECEIVED
FEB 14 2000
HYDROLOGY SECTION

ZONE X

ZONE A

100-YEAR FLOOD CONFINED TO CONSTRUCTED CHANNEL

ZONE X

100-YEAR FLOOD CONTAINED IN CULVERTS

TOTAL SITE AREA = 1.020 ac. BOY SCOUTS OF AMERICA

DRAINAGE ZONE 2

PRECIPITATION: 360 = 2.35 in.
1140 = 2.75 in.
10day = 3.95 in.

EXCESS PRECIPITATION:

TREATMENT A	0.53 in.	1.56	cfs/ac.
TREATMENT B	0.78 in.	2.28	cfs/ac.
TREATMENT C	1.13 in.	3.14	cfs/ac.
TREATMENT D	2.12 in.	4.70	cfs/ac.

PEAK DISCHARGE:

EXISTING CONDITIONS:

	AREA		AREA
TREATMENT A	0.00 ac.		0.00 ac.
TREATMENT B	0.15 ac.		0.17 ac.
TREATMENT C	0.44 ac.		0.22 ac.
TREATMENT D	0.43 ac.		0.63 ac.

PROPOSED CONDITIONS:

EXISTING EXCESS PRECIPITATION:

Weighted E = (0.53)x(0.00)+(0.78)x(0.15)+(1.13)x(0.44)+(2.12)x(0.43)/ 1.02 ac.
= 1.50 in.
V100-360 = (1.50)x(1.02)/ 12 = 0.127150 ac-ft = 5539 cf

EXISTING PEAK DISCHARGE:

Q100 = (1.56)x(0.00)+(2.28)x(0.15)+(3.14)x(0.44)+(4.70)x(0.43)= 3.74 cfs

PROPOSED EXCESS PRECIPITATION:

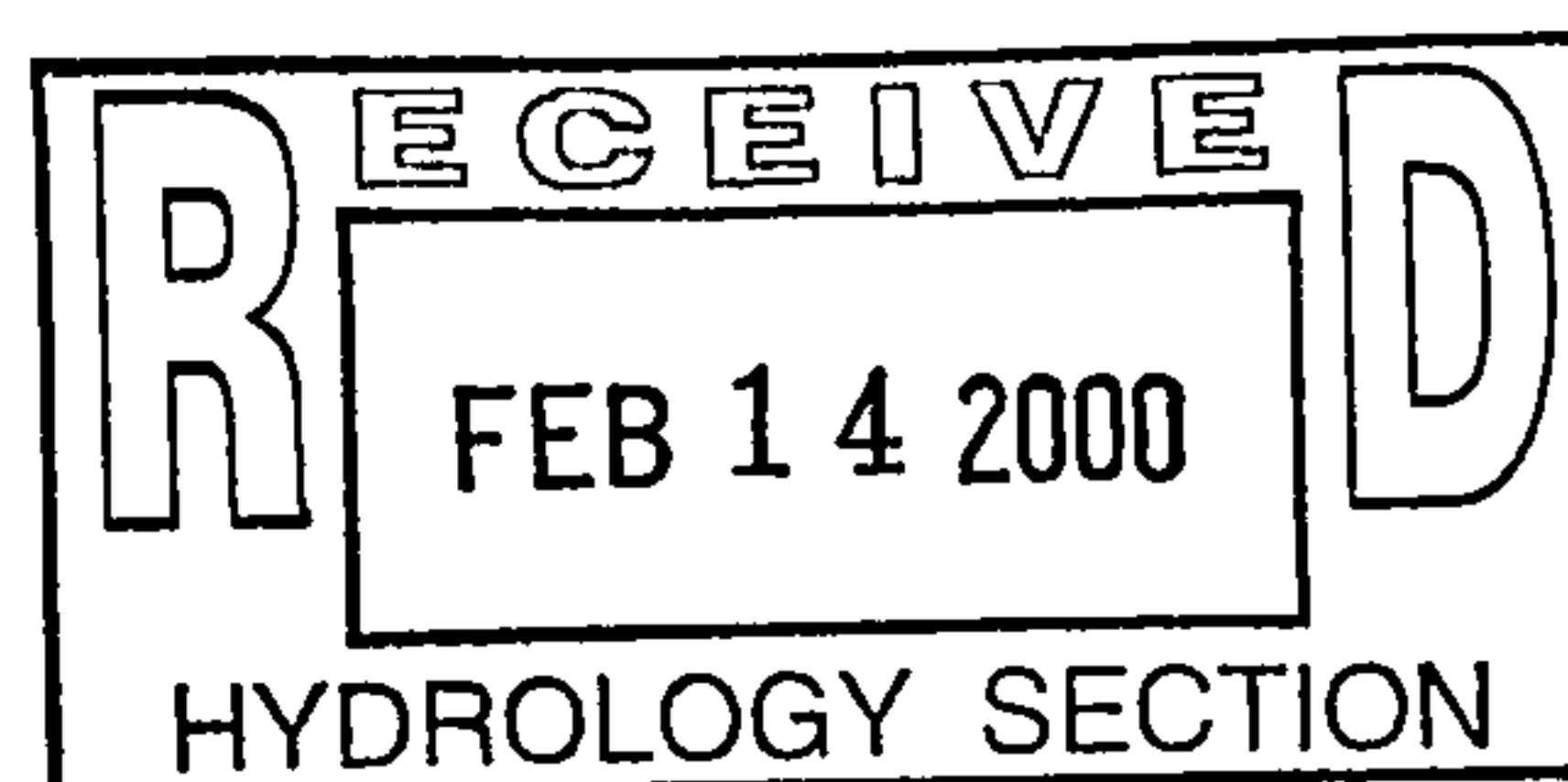
Weighted E = (0.53)x(0.00)+(0.78)x(0.17)+(1.13)x(0.22)+(2.12)x(0.63)/ 1.02 ac.
= 1.68 in.
V100-360 = (1.68)x(1.02)/ 12.0 = 0.143067 ac-ft = 6232 cf

V100-1440 = (0.14)+(0.63)x(2.75 - 2.35)/ 12 = 0.164067 ac-ft = 7147 cf

V100-10day = (0.14)+(0.63)x(3.95 - 2.35)/ 12 = 0.227067 ac-ft = 9891 cf

PROPOSED PEAK DISCHARGE:

Q100 = (1.56)x(0.00)+(2.28)x(0.17)+(3.14)x(0.22)+(4.70)x(0.63)= 4.04 cfs



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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

February 8, 2000
BOY SCOUTS OF AMERICA
CONCRETE CHANNEL DRAINING
TO MIDWAY PARK BLVD.

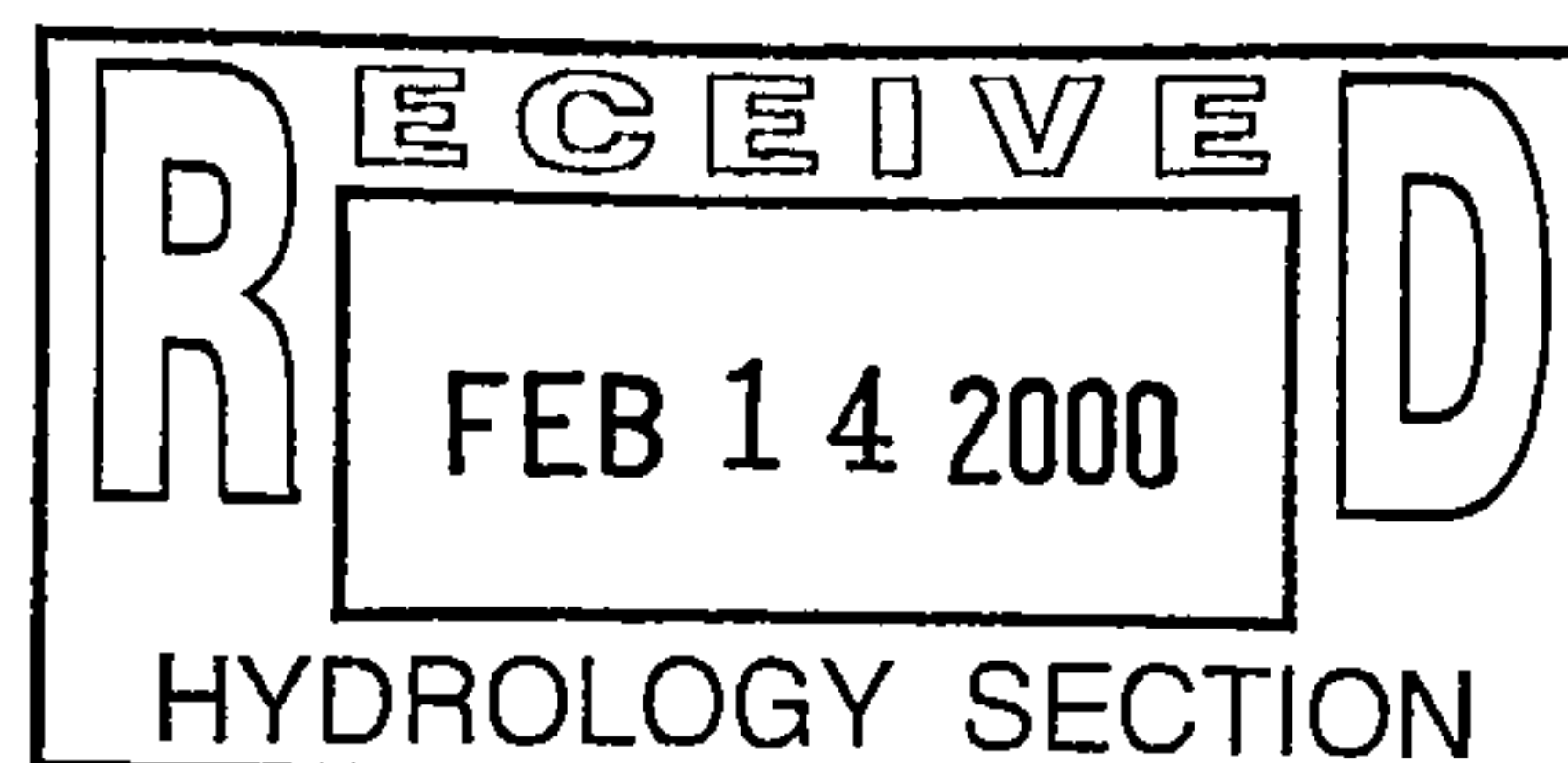
PROGRAM INPUT DATA:
DESCRIPTION

	VALUE
Channel Bottom Slope (feet per foot).....	0.0194
Manning's Roughness Coefficient (n-value).....	0.0140
Channel Side Slope - Left Side (horizontal/vertical)....	0.01
Channel Side Slope - Right Side (horizontal/vertical)...	0.01
Channel Bottom Width (feet).....	8.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.1	2.5	3.13	1.746	0.152	0.252	0.8	8.0
0.2	7.8	4.90	1.929	0.372	0.572	1.6	8.0
0.3	15.2	6.32	2.032	0.619	0.919	2.4	8.0
0.4	24.1	7.53	2.100	0.881	1.281	3.2	8.0
0.5	34.5	8.61	2.147	1.152	1.652	4.0	8.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.



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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

February 7, 2000
BOY SCOUTS OF AMERICA
GRAVEL SWALE SOUTH TO
EXISTING CONC. RUNDOWN

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PROGRAM INPUT DATA:
DESCRIPTION

VALUE

Channel Bottom Slope (feet per foot).....	0.0030
Manning's Roughness Coefficient (n-value).....	0.0450
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

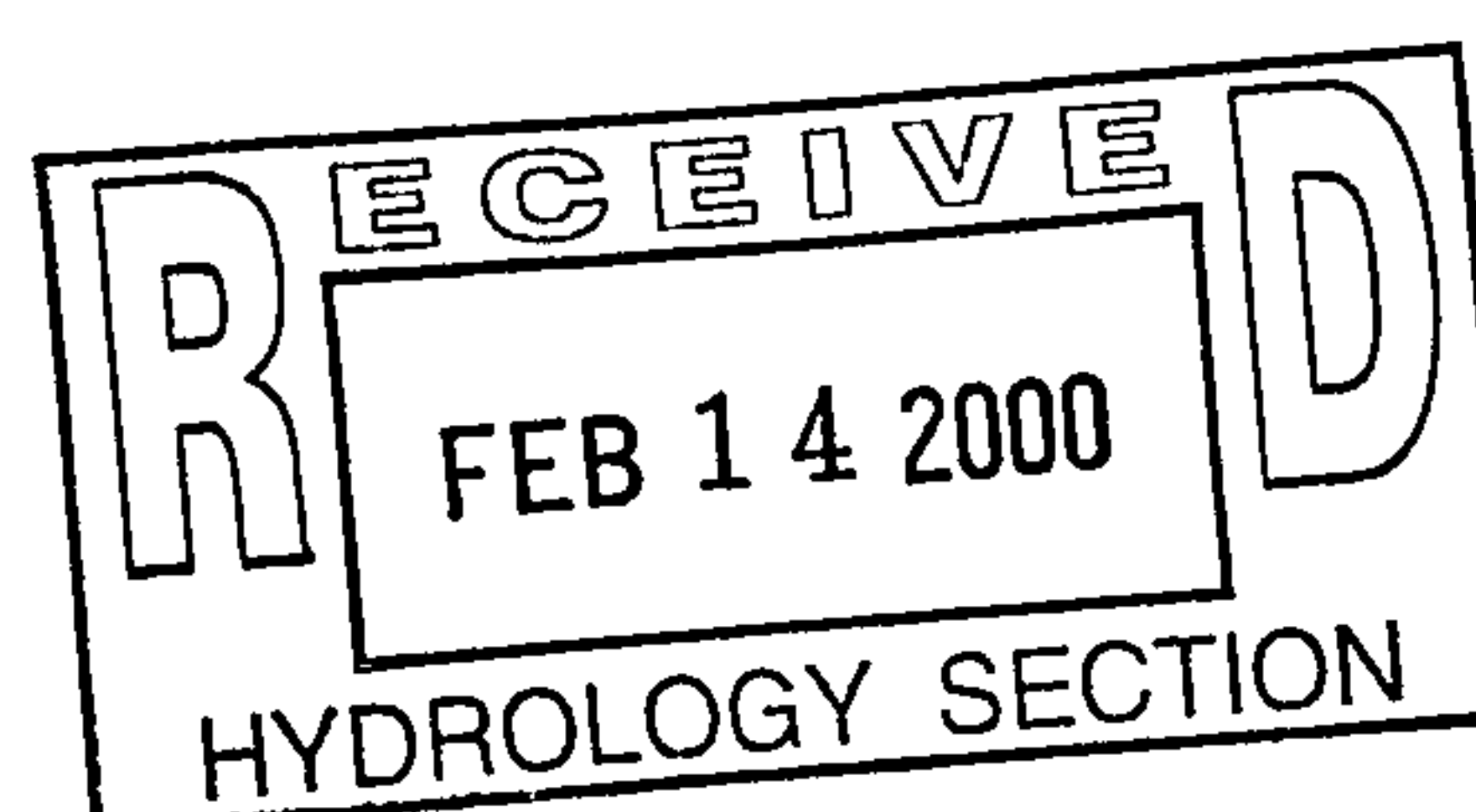
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PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.1	0.2	0.37	0.214	0.002	0.102	0.5	5.6
0.2	0.6	0.57	0.238	0.005	0.205	1.1	6.2
0.3	1.3	0.73	0.252	0.008	0.308	1.8	6.8
0.4	2.1	0.86	0.263	0.012	0.412	2.5	7.4
0.5	3.2	0.98	0.271	0.015	0.515	3.3	8.0
0.6	4.4	1.08	0.277	0.018	0.618	4.1	8.6
0.7	5.9	1.18	0.283	0.022	0.722	5.0	9.2
0.8	7.5	1.27	0.288	0.025	0.825	5.9	9.8
0.9	9.4	1.35	0.292	0.028	0.928	6.9	10.4

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TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.



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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

February 9, 2000
BOY SCOUTS OF AMERICA
EXISTING CONCRETE RUNDOWN
ON SOUTH PROPERTY LINE

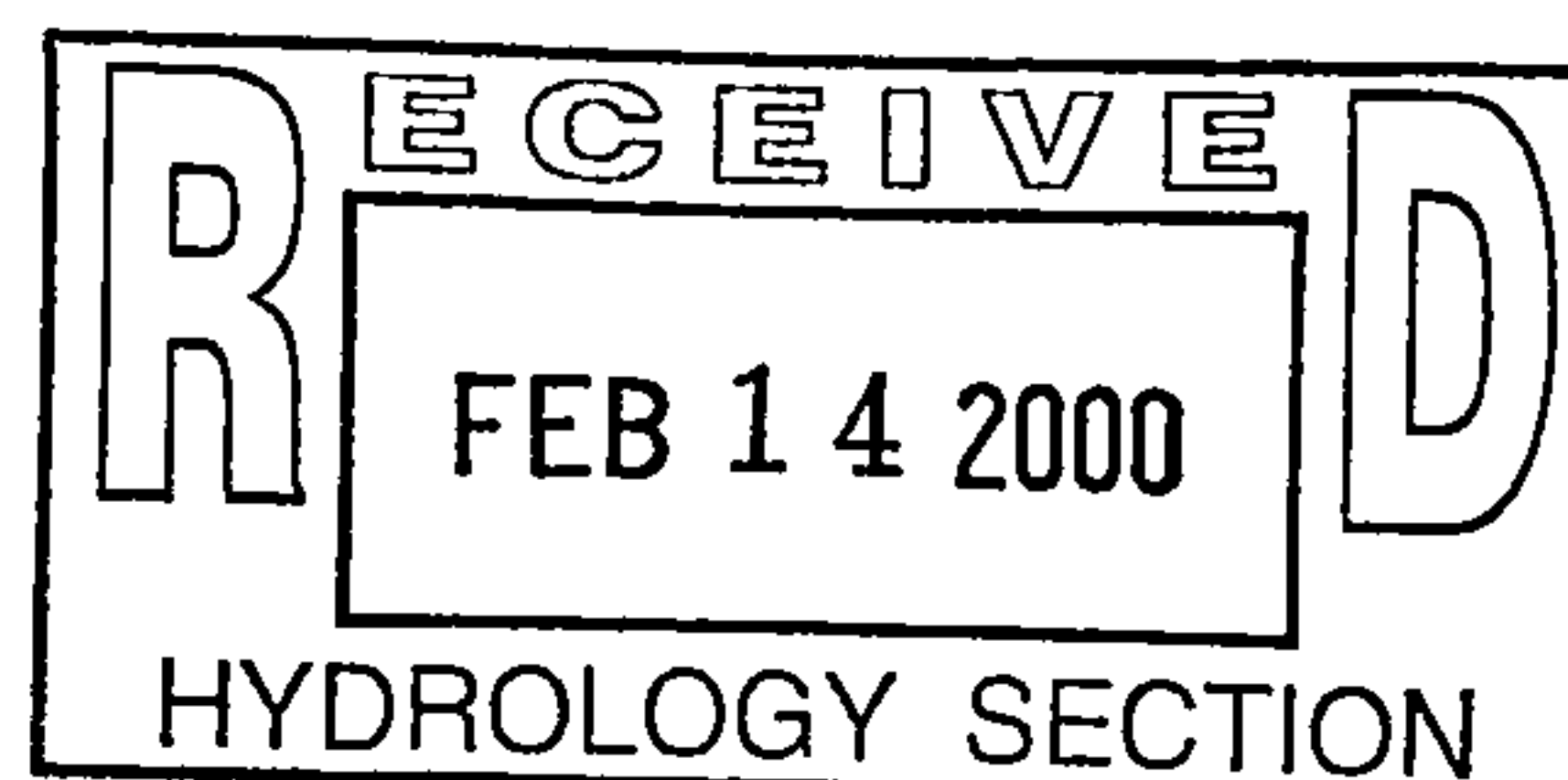
PROGRAM INPUT DATA:
DESCRIPTION

	VALUE
Channel Bottom Slope (feet per foot).....	0.0120
Manning's Roughness Coefficient (n-value).....	0.0140
Channel Side Slope - Left Side (horizontal/vertical)....	0.01
Channel Side Slope - Right Side (horizontal/vertical)...	0.01
Channel Bottom Width (feet).....	2.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.1	0.5	2.35	1.311	0.086	0.186	0.2	2.0
0.2	1.4	3.52	1.389	0.193	0.393	0.4	2.0
0.3	2.6	4.38	1.410	0.298	0.598	0.6	2.0
0.4	4.0	5.05	1.409	0.396	0.796	0.8	2.0
0.5	5.6	5.60	1.397	0.487	0.987	1.0	2.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.





City of Albuquerque

P.O. BOX 1293 · ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

August 30, 1984

Mr. Mark Goodwin
Bovay Engineer, Inc.
P.O. Box 30068
Albuquerque, New Mexico 87190

RE: BOY SCOUT COUNCIL SERVICE CENTER (E17-D41A) RECEIVED AUGUST 21, 1984

Dear Mark:

The referenced Drainage Plan is approved with the understanding that the treatment (i.e., interim and final) of the easement and the connection (includes obtaining the required permit) to the right of way at Midway Park Boulevard will be resolved prior to Certification of Occupancy sign-off by Hydrology. Please advise your client of this condition.

Sincerely yours,

For Fred J. Aguirre, P.E.
Design Hydrologist

FJA/bm

cc
John Andrews

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Dwayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

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