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File 1992-0034

Name: St. Mary's Hospital Parking- Revised Final Plan - 7th & Patterson Rd.

P **S** A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, items are found on the list but are not present in the scanned electronic development file because they are already scanned elsewhere on the system. These scanned documents are denoted with (**) and will be found on the ISYS query system in their designated categories.
r **e** Documents specific to certain files, not found in the standard checklist materials, are listed at the bottom of the page.
s **a** Remaining items, (not selected for scanning), will be listed and marked present. This index can serve as a quick guide for the contents of each file.
e **n**
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X		Computer Files Indexing Information Sheet	X	X	Planting Plan - South Area
X		Draft of Traffic / Pedestrian Impact Study Proposed Parking Lot Addition	X	X	Irrigation Plan - South and North Area
X		Notes to file	X	X	Irrigation Plan Pressure System Overview
X	X	Parking Lot Project - 7/27/92	X		Traffic/Pedestrian Impact Study
X	X	Planning Commission Minutes - 8/4/92 - **	X	X	Grading & Drainage Plan - to be scanned
X		Public Notice Posting - 6/26/92			
X	X	Utility Composite - East Parking - to be scanned			



AMERICAN
LAND TITLE
COMPANY

550 Grand Ave.
Grand Junction, CO 81501

(303) 242-2582 (ALTC)

ENCUMBRANCE REPORT

Our Order No. ALTC- 4644

To: Western Engineers, Inc.
2150 U S Hwy 6 & 50
Grand Junction, CO
Attn: Cecil

Gentlemen:

At your request, we have searched our Tract Indexes of County Records, as to the following described property:

A tract of land situate in the NW 1/4 of Section 11, T1S, R1W of the Ute Meridian, the perimeter of which is described as follows:

Beginning at the N 1/4 Corner of said Section 11, thence along the following twenty courses:

1. N 90°00'00" E along the north line of said Section 11 738.05

(Continued)

And as of February 27, 1991, we find the last deed of record to be a Warranty Deed, recorded October 23, 1973, in Book 1004 at Page 257, from Sisters of Charity of Leavenworth to Sisters of Charity of Leavenworth Health Services Corporation, A Kansas Corporation. We have also searched our General Index for judgments and income tax liens against Sisters of Charity of Leavenworth Health Services Corporation, A Kansas Corporation, and as of the above date, we find: none.

We further find taxes, city liens, and other encumbrances as follows:

1. Unpatented mining claims; reservations or exceptions in Patents or in Acts authorizing the issuance thereof; water rights, claims and/or title to water, whether or not these matters are shown by public records.
2. General Taxes and Assessments which are liens, now due or payable.
3. Special assessments, liens for water and sewer service, and installation charges, if any, none now show of record.

(Continued)

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Legal Description (continued)

- feet;
2. S 02°33'00" E 50.05 feet;
 3. S 02°33'00" E 602.14 feet to the north line of Wellington Avenue;
 4. N 89°29'00" W along Wellington Avenue 533.43 feet to the beginning of a 25 foot radius curve to the right with a central angle of 72°19' (the chord of which bears N 53°19'30" W 29.50 feet);
 5. 31.55 feet along the arc of said curve;
 6. N 17°10'00" W along the east line of 7th Street 15.49 feet;
 7. N 90°00'00" W 89.42 feet;
 8. N 23°04'54" W 131.01 feet;
 9. N 84°07'00" E 176.29 feet;
 10. S 00°00'00" E 138.59 feet;
 11. N 90°00'00" E 0.61 feet;
 12. N 73°02'00" E 98.00 feet;
 13. N 01°45'00" E 239.92 feet;
 14. S 77°10'00" W 322.78 feet;
 15. N 26°19'00" W 60.80 feet to the west line of said NW 1/4 Section 11;
 16. N 00°00'00" E 108.10 feet;
 17. N 90°00'00" E 190.30 feet;
 18. N 05°33'00" E 75.35 feet;
 19. S 90°00'00" W 197.59 feet to said west line NE 1/4 Section 11;
 20. N 00°00'00" E 180.00 feet; except road right-of-way.

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Exceptions (continued)

4. An Easement in favor of Grand Valley Irrigation Company, for Water Lines, recorded September 18, 1946, in Book 453, at Page 215, Official Records.
5. An Easement in favor of City of Grand Junction, for Sewer Lines, recorded September 11, 1964, in Book 873, at Page 999, Official Records.
6. An Easement in favor of Theodore N. Haff, for Gas Line, recorded May 4, 1965, in Book 882, at Page 829, Official Records.
7. An Easement in favor of City of Grand Junction, for Sewer Lines, recorded May 4, 1965, in Book 882, at Page 830, Official Records.
8. An Easement in favor of Mountain States Telephone and Telegraph Company, for Communication Lines, recorded August 7, 1975, in Book 1043, at Page 174, Official Records.
9. An Easement in favor of City of Grand Junction, for Sewer Line, recorded October 7, 1977, in Book 1122, at Page 659, Official Records.
10. An Easement in favor of Mountain States Telephone and Telegraph Company, for Communication Lines, recorded July 12, 1982, in Book 1381, at Page 869, Official Records.
11. Covenants, conditions, restrictions and easements (deleting therefrom any based on race, color, national origin or creed):
Recorded: February 14, 1977
Book 1094 at Page 559
A copy of which is hereto attached.

Arendment and/or Modification of said Covenants:
Recorded: February 26, 1979
Book 1188 at Page 712
A copy of which is hereto attached.

(Continued)

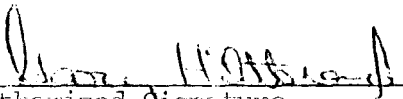
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Exceptions (continued)

This report is based on a search of our Tract Indexes of the County Records. This is not a title or ownership report and no examination of the title to the property described has been made. It is not to be used as a basis for closing any transaction affecting title to said premises. For this reason, no liability beyond the amount paid for this report is assumed hereunder, and the Company is not responsible beyond the amount paid for any errors or omissions contained herein.

AMERICAN LAND TITLE COMPANY


Authorized Signature

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#34 92



DEVELOPMENT APPLICATION
 Community Development Department
 250 North 5th Street Grand Junction, CO 81501
 (303) 244-1430

A Receipt # 5076
 Date 6/2/92
 Rec'd By [Signature]
 File No. # 34 92

We, the undersigned, being the owners of property situated in Mesa County, State of Colorado, as described herein do hereby petition this:

PETITION	PHASE	SIZE	LOCATION	ZONE	LAND USE
<input type="checkbox"/> Subdivision Plat/Plan	<input type="checkbox"/> Minor <input type="checkbox"/> Major <input type="checkbox"/> Resub				I
<input type="checkbox"/> Rezone				From: To:	
<input checked="" type="checkbox"/> Planned Development	<input type="checkbox"/> ODP <input type="checkbox"/> Prelim <input checked="" type="checkbox"/> Final		S.E. CORNER 1st & Patterson	PB	Parking
<input type="checkbox"/> Conditional Use					
<input type="checkbox"/> Zone of Annex					
<input type="checkbox"/> Text Amendment					
<input type="checkbox"/> Special Use					
<input type="checkbox"/> Vacation					<input type="checkbox"/> Right-of-Way <input type="checkbox"/> Easement
<input type="checkbox"/> PROPERTY OWNER		<input type="checkbox"/> DEVELOPER		<input type="checkbox"/> REPRESENTATIVE	

<u>Sisters of Charity of Leavenworth</u> Name Health Services Corporation 4200 South 4th, Cantwell Hall Address Leavenworth, Kansas 66048-5054 City/State/Zip (913) 682-1338 Business Phone No.	<u>St. Mary's Hospital</u> Name 2635 North 7th Street Address Grand Junction, Colo. 81501 City/State/Zip 244-2445 Business Phone No.	<u>Western Engineers, Inc.</u> Name 2150 Highway 6&50 Address Grand Junction, Colo. 81505 City/State/Zip 242-5202 Business Phone No.
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NOTE: Legal property owner is owner of record on date of submittal.

We hereby acknowledge that we have familiarized ourselves with the rules and regulations with respect to the preparation of this submittal, that the foregoing information is true and complete to the best of our knowledge, and that we assume the responsibility to monitor the status of the application and the review comments. We recognize that we or our representative(s) must be present at all hearings. In the event that the petitioner is not represented, the item will be dropped from the agenda, and an additional fee charged to cover rescheduling expenses before it can again be placed on the agenda.

Keith Estridge Director Engineering May 18, 1992
 Signature of Person Completing Application Date

Sisters of Charity of Leavenworth Health Services Corporation
Sister Maureen Ryan, President May 19, 1992
 Signature of Property Owner(s) - Attach Additional Sheets if Necessary

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Gene Taylor
633 Fletcher Lane
Grand Junction, CO 81505

W. Broderon
2376 N. 7th Street
Grand Junction, CO 81501

Weston Edfast
604 26½ Road
Grand Junction, CO 81506

Annie Muhr
633 Fletcher Lane
Grand Junction, CO 81505

J. N. Darnell, Jr.
3339 C Road
Palisade, CO 81526

Olga Henry
2711 N. 8th Court
Grand Junction, CO 81506

Glen Wilson
2666 F Road
Grand Junction, CO 81506

J. E. Darby
3339 C Road
Palisade, CO 81526

W.A.M.B.C.I. No. 1
c/o Alpha Investments
790 Wellington Ave., #205
Grand Junction, CO 81501

S. R. Rutter
2705 8th Court
Grand Junction, CO 81501

Bishop of Pueblo
c/o Diocese of Pueblo
1001 Grand Avenue
Pueblo, CO 81003

W.A.M.B.C.I. No. 2
c/o Dr. Gilbert Madison
2525 N. 8th, #5
Grand Junction, CO 81501

W. H. Hatmaker
2656 F Road
Grand Junction, CO 81506

St. Mary's Hospital
P.O. Box 1628
Grand Junction, CO 81502

Robert Alstatt
2670 Patterson Road
Grand Junction, CO 81506

R. B. Christensen
100 Mountain View Road
Watsonville, CA 85076

Guest House Motel
c/o Cindy & Tony DiGretorio
2425 N. 7th Street
Grand Junction, CO 81501

Carmen Burkhard
c/o T. N. Haff
P.O. Box 366
Nucla, CO 81424

Rae O. Marasco
653 26½ Road
Grand Junction, CO 81506

E. Easten
1900 Quentin Road
Brooklyn, NY 11229

Robert Lubinski
2709 N. 8th Court
Grand Junction, CO 81506

F. A. Murphy
951 Walnut
Grand Junction, CO 81501

Gretchen Davis
2709 N. 8th Court
Grand Junction, CO 81506

Carr Treasure
2604 N. 7th Street
Grand Junction, CO 81501

Kenneth Allen
603 Viewpoint Drive
Grand Junction, CO 81506

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FINAL PLAN

AREA OF REQUESTED ACTION

ST. MARY'S MINOR SUBDIVISION

Approximately eight (8) acres owned by St. Mary's Hospital located in the Northeast corner of Section 11, Township 1 South, Range 1 West of the Ute Principal Meridian. The property is bounded by Patterson Road on the North and the West edge is Seventh Street. The East adjoiner is the Wellington Medical Complex and the South property line is Wellington Avenue.

PURPOSE OF REQUESTED ACTION

St. Mary's Hospital has experienced a steady 1.5 - 2% growth in business for the past six years. The "Project Critical Care" expansion of the 1980's is completely filled and parking for patients, families, visitors, doctors and employees is continuing to be a major problem. The number one issue identified in surveys completed by our patients and employees is parking. In order to alleviate this problem and provide close parking for our patients and their families, St. Mary's requests approval of the attached employee parking expansion project. This project will provide an additional 330 spaces for employee parking East of Seventh Street.

ADJACENT LAND USE AND ZONING

The land use to the area immediate to Seventh and Patterson is limited to:

The Wellington Medical Center (to the East) and a portion of the Yocum Subdivision (to the South) are zoned B-1 limited business.

The property North of Patterson Road is Residential Single Family with a density of 4 units per acre.

The remaining portion of the land adjacent to the Yocum Subdivision is zoned Residential Single Family allowing 8 units per acre.

We're here for life.

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AREA IMPACT

The area of the proposed project consists of residential structures and vacant land. This project will not change the stature of the neighborhood and should have limited impact on surrounding areas.

DEVELOPMENT SCHEDULE

The project will be scheduled over a three month construction period, subject to weather delays. Initial construction will coincide with City approval and completion of contract negotiations with the contractor. The plan is similar in scope with the previous parking project which was completed over a period of forty working days and which encountered no serious delays nor caused any inconveniences to local traffic flow or to the public in general.

BEST MANAGEMENT PRACTICES PLAN

Key features of the construction impact will be addressed by sound construction management practice, most notably, project safety, dust abatement, and noise containment.

The area under construction will be identified to the public and segregated as much as possible from the daily parking, traffic, and use of existing adjacent facilities.

Watering vehicles will be on site implementing a daily dust abatement program.

Noise conflict will be minimized by adopting a daytime construction schedule.

Construction phase drainage and erosion control will be addressed with temporary drainage bars, wing ditches, and berming as required to direct runoff and silt to an impound site within the existing detention area at the south end of the project.

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**DRAINAGE STUDY
FOR ST. MARY'S HOSPITAL PARKING AREA
Grand Junction, Colorado
June, 1992**

SCOPE

The site proposed for additional parking for St. Mary's Hospital is located southeast of the intersection of 7th Street and Paterson Road in Grand Junction. The site is bounded on the north by Paterson Road, on the west by 7th Street, on the south by Wellington Avenue, and on the east by an existing medical office complex. This site is not entirely under the ownership of St. Mary's Hospital, however, nearly all of the drainage within this area drains to a common point; therefore, this drainage study encompasses the entire area. During the summer of 1991, a paved parking area was constructed in the northwest portion of the site. The storm drainage features for that project were designed to retain all runoff without discharge from the site. Storm water considerations for the 1991 improvements were presented in a report dated April 1, 1991.

SURFACE DRAINAGE CHARACTERISTICS

The surface generally slopes toward the middle of the site in an east/west direction and then down toward the southwest corner of the property. Prior to the 1991 improvements, surface water from 84 percent of the area drained to a low spot in the south of the property which acted as a retention basin draining into a 10 inch PVC pipe. The PVC pipe drained from there into an open channel running to the southeast corner of the property. At that time, the surface water ponded in the ditch and the retention basin and had no active way of getting off the property because a 12 inch concrete pipe culvert located at the southwest corner of the

property had been buried and intentionally plugged. It appeared that it was originally the intent that this culvert carry storm water away from the site but was later plugged because of overall storm water capacity considerations in the area. The culvert drains into a manhole in Wellington Avenue which is part of the City's storm water system. From there the storm water system drains to approximately the intersection of 7th Street and Bookcliff Avenue where it discharges into the Buthorn Drainage System. The Buthorn System is currently at maximum capacity. Therefore, the storm water control facilities for the final conditions must be designed to assure that the impact on the existing off-site system is not significant. The original on-site capacity for storm water retention without discharge for the features described above was about 31,500 cu ft. As can be seen from the attached calculation summaries, this provided for full storage of all storm runoff events including the 100 year event. In order to assure that the final conditions satisfy the requirements discussed above for minimizing impact, specific storm drainage design criteria for this project were determined based on discussions with representatives of both the City of Grand Junction and the Grand Junction Drainage District. The resulting criteria were as follows:

1. The discharges into the dedicated storm water conveyance facilities will not exceed that allowed by the original conditions existing before the 1991 parking lot construction for all storm events with recurrence intervals up to 10 years.
2. The discharges into the dedicated storm water conveyance facilities will be restricted as much as practical for storm events with recurrence intervals between 10 and 100 years.
3. Overland storm water discharges into the streets will not be allowed for storms with recurrence intervals of 2 years or less and will be limited to 5 cfs or less for storms with recurrence intervals between 2 and 100 years.

Approximately 14 percent of the original area drained onto Wellington, all of which belongs to St. Mary's. The runoff from the area which originally drained onto Wellington will be intercepted and diverted into the proposed detention basin. Therefore, for the purposes of comparing the final conditions with the original conditions, the original conditions will be considered to have resulted in off-site discharges due to the runoff from the area which originally drained directly onto Wellington. All surface area which will be affected by the paved parking will be drained into the proposed detention pond.

For the purposes of the drainage analysis, the site was divided into two basins for the original conditions but was treated as a single basin for the final conditions. This was done to distinguish the area draining onto Wellington from the remainder of the property. Figure 1 shows the general plan for site improvement as well as the division between the two drainage basins.

Tables 1 and 2 show the percentages of various ground covers for each of the two basins under both original and final conditions.

DRAINAGE EVALUATION METHODOLOGY

The drainage basin was evaluated for 3 storm recurrence intervals consisting of the 2, 10 and 100 year storms. In order to provide a comparison, the runoff characteristics were evaluated using 2 methods. These consisted of the rational method and the SCS tabular method. The SCS tabular method was chosen because it provides a method for obtaining runoff hydrograph data. The Modified Rational Method was used to provide comparison hydrograph data. Design storm values were obtained from two sources -- the storm values were obtained from "Mesa County Storm Drainage Criteria Manual". The determination of the runoff coefficients in the rational method as well as the curve number values used in the

SCS tabular method are presented in Tables 1 and 2. The soil group number required for the SCS tabular method was evaluated based on information compiled by the Soil Conservation Service and presented in a report entitled "Soil Survey, Grand Junction Area, Colorado." Lag times were determined to be less than 10 minutes; therefore, a minimum value of 10 minutes was used for the rational method time of concentration. Actual concentration times calculated were used for the SCS tabular method. Tables 3 and 4 present a summary of the resulting peak flow values and volumes. The surface flow hydrographs are presented on Figures 9 through 15 for the original conditions and figures 16 through 24 for the final conditions. The original retention pond capacity is shown on Figure 5, and the flow rating curve for the overflow discharge from the existing retention pond is shown on Figure 6. The capacity and flow rating curves for the final detention pond are shown on Figures 7 and 8.

The values shown for the final conditions include all areas except the 2 percent which will continue to drain to 7th Street. In general, with a few exceptions, both the flow rates and the runoff volumes were greatest for the Rational and Modified Rational method.

PROPOSED DRAINAGE FACILITIES

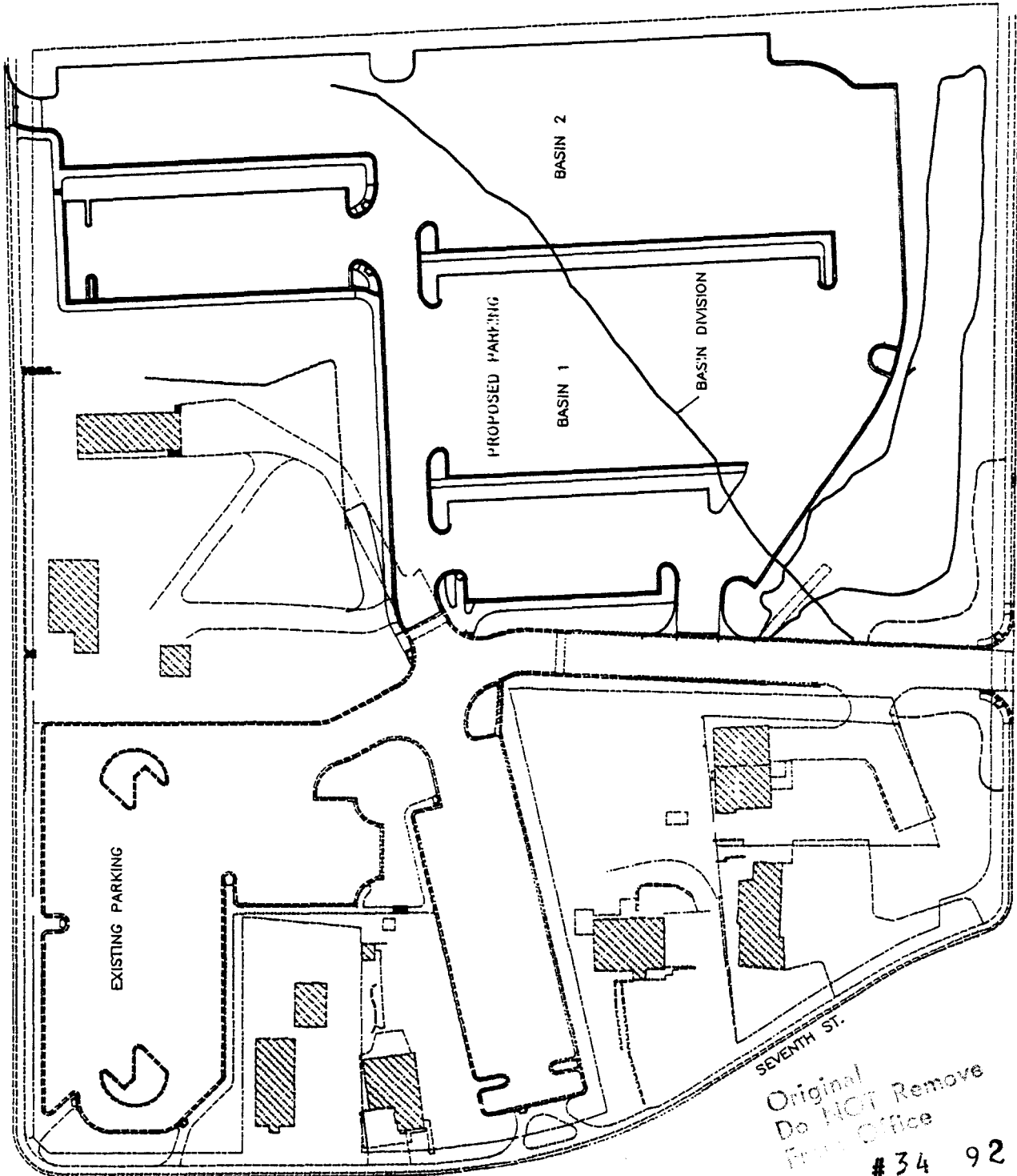
The plan to control drainage from this site includes intercepting runoff and draining it into a detention basin located in the southern portion of the site. The proposed detention pond is shown on the Drainage Plan and the capacity data is shown on Figure 7, attached. The maximum capacity of the proposed detention pond without overflow into the street is about 25,000 cubic feet. Metered discharge control will be provided by means of a low included angle v-notch overflow located in the manhole at the southwest corner of the property. The v-notch configuration provides for release patterns which approximate those under the original conditions during specific rainfall events.

It can be seen from the attached summary data on Tables 3 and 4 that, with one exception, for all storm events and with all calculation methods used, the off-site discharge under the final proposed conditions will be less than that which would have occurred during the same storms under the original conditions. The one exception was for the 100 year, 6 hour storm. During this event, the final off-site discharge exceeded that of the original conditions by about .5 cfs. The maximum water depth in the pond for any of the routed storm hydrographs considered was 2.3 feet. Pond discharge into the street will not occur until the depth reaches 2.9 feet. Therefore, discharge into the street is not anticipated for any of the storm events considered. The detention pond and outlet control will be maintained by personnel from St. Mary's Hospital.

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PATTERSON



WELLINGTON

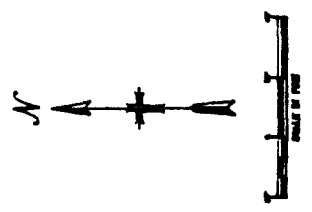


FIGURE 1

SEVENTH ST.

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ST MARY'S
ORIGINAL CONDITIONS (2 AND 10 YEAR STORMS)
HYDROLOGY STUDY

GROUND SURFACE COVER TYPE	RATIONAL RUNOFF COEFFICIENT	SCS RUNOFF CURVE NUMBER (24 HR)	SCS RUNOFF CURVE NUMBER (6 HR)	BASIN 1					BASIN 2				
				AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)	AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)
GRAVEL	0.25	85.00	92.00	1.37	19.32	0.048	16.424	17.776	0.00	0.00	0.000	0.000	0.000
CONCRETE SLAB	0.90	98.00	99.00	0.11	1.49	0.013	1.461	1.476	0.00	0.00	0.000	0.000	0.000
CURB & GUTTER	0.90	98.00	99.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00	0.000	0.000	0.000
SIDEWALK	0.90	98.00	99.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00	0.000	0.000	0.000
ASPHALT	0.90	98.00	99.00	0.21	2.88	0.026	2.825	2.854	0.00	0.00	0.000	0.000	0.000
ROOF	0.90	98.00	99.00	0.35	4.91	0.044	4.810	4.859	0.00	0.00	0.000	0.000	0.000
MULCH	0.20	61.00	78.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00	0.000	0.000	0.000
DIRT	0.30	85.00	91.00	3.30	46.41	0.139	39.446	42.230	1.80	100.00	0.300	85.000	91.000
LAWN 7%	0.20	81.00	90.00	0.01	0.20	0.000	0.159	0.177	0.00	0.00	0.000	0.000	0.000
LAWN 2%	0.15	78.00	88.00	1.41	19.81	0.030	15.455	17.437	0.00	0.00	0.000	0.000	0.000
UNKEMPT LAWN	0.20	81.00	90.00	0.35	4.98	0.010	4.032	4.480	0.00	0.00	0.000	0.000	0.000
TOTAL				7.11	100.00	0.311	84.613	91.290	1.80	100.00	0.300	85.000	91.000

ST MARY'S
ORIGINAL CONDITIONS (100 YEAR STORM)
HYDROLOGY STUDY

GROUND SURFACE COVER TYPE	RATIONAL RUNOFF COEFFICIENT	SCS RUNOFF CURVE NUMBER (24 HR)	SCS RUNOFF CURVE NUMBER (6 HR)	BASIN 1					BASIN 2				
				AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)	AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)
GRAVEL	0.55	85.00	92.00	1.37	19.32	0.000 0.106	16.424	17.776	0.00	0.00	0.000	0.000	0.000
CONCRETE SLAB	0.95	98.00	99.00	0.11	1.49	0.014	1.461	1.476	0.00	0.00	0.000	0.000	0.000
CURB & GUTTER	0.95	98.00	99.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00	0.000	0.000	0.000
SIDEWALK	0.95	98.00	99.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00	0.000	0.000	0.000
ASPHALT	0.95	98.00	99.00	0.21	2.88	0.027	2.825	2.854	0.00	0.00	0.000	0.000	0.000
ROOF	0.95	98.00	99.00	0.35	4.91	0.047	4.810	4.859	0.00	0.00	0.000	0.000	0.000
MULCH	0.35	61.00	78.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00	0.000	0.000	0.000
DIRT	0.45	85.00	91.00	3.30	46.41	0.209	39.446	42.230	1.80	100.00	0.450	85.000	91.000
LAWN 7%	0.35	81.00	90.00	0.01	0.20	0.001	0.159	0.177	0.00	0.00	0.000	0.000	0.000
LAWN 2%	0.25	78.00	88.00	1.41	19.81	0.050	15.455	17.437	0.00	0.00	0.000	0.000	0.000
UNKEMPT LAWN	0.35	81.00	90.00	0.35	4.98	0.017	4.032	4.480	0.00	0.00	0.000	0.000	0.000
TOTAL				7.11	100.00	0.471	84.613	91.290	1.80	100.00	0.450	85.000	91.000

TABLE 1

ST MARY'S
FINAL CONDITIONS (2 AND 10 YEAR STORMS)
HYDROLOGY STUDY

GROUND SURFACE COVER TYPE	RATIONAL RUNOFF COEFFICIENT	SCS RUNOFF CURVE NUMBER (24 HR)	SCS RUNOFF CURVE NUMBER (6 HR)	BASIN 1					BASIN 2				
				AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)	AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)
GRAVEL	0.25	85.00	92.00	0.51	5.63	0.014	4.782	5.176	0.00	ERR	ERR	ERR	ERR
CONCRETE SLAB	0.90	98.00	99.00	0.10	1.09	0.010	1.066	1.077	0.00	ERR	ERR	ERR	ERR
CURB & GUTTER	0.90	98.00	99.00	0.29	3.15	0.028	3.090	3.122	0.00	ERR	ERR	ERR	ERR
SIDEWALK	0.90	98.00	99.00	0.28	3.12	0.028	3.058	3.089	0.00	ERR	ERR	ERR	ERR
ASPHALT	0.90	98.00	99.00	4.31	47.34	0.426	46.389	46.862	0.00	ERR	ERR	0.000	ERR
ROOF	0.90	98.00	99.00	0.29	3.24	0.029	3.177	3.209	0.00	ERR	ERR	ERR	ERR
MULCH	0.20	61.00	78.00	0.25	2.69	0.005	1.642	2.100	0.00	ERR	ERR	ERR	ERR
DIRT	0.30	85.00	91.00	0.61	6.68	0.020	5.678	6.079	0.00	ERR	ERR	ERR	ERR
LAWN 7%	0.20	81.00	90.00	0.63	6.87	0.014	5.563	6.181	0.00	ERR	ERR	ERR	ERR
LAWN 2%	0.15	78.00	88.00	1.48	16.31	0.024	12.719	14.349	0.00	ERR	ERR	ERR	ERR
UNKEPT LAWN	0.20	81.00	90.00	0.35	3.89	0.008	3.151	3.501	0.00	ERR	ERR	ERR	ERR
TOTAL				9.10	100.00	0.607	90.314	94.745	0.00	ERR	ERR	ERR	ERR

ST MARY'S
FINAL CONDITIONS (100 YEAR STORM)
HYDROLOGY STUDY

GROUND SURFACE COVER TYPE	RATIONAL RUNOFF COEFFICIENT	SCS RUNOFF CURVE NUMBER (24 HR)	SCS RUNOFF CURVE NUMBER (6 HR)	BASIN 1					BASIN 2				
				AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)	AREA (ACRES)	PERCENT	RATIONAL WEIGHTING FACTOR	SCS RUNOFF WEIGHTING FACTOR (24 HR)	SCS RUNOFF WEIGHTING FACTOR (6 HR)
GRAVEL	0.55	85.00	92.00	0.51	5.63	0.000	4.782	5.176	0.00	ERR	ERR	ERR	ERR
CONCRETE SLAB	0.95	98.00	99.00	0.10	1.09	0.010	1.066	1.077	0.00	ERR	ERR	ERR	ERR
CURB & GUTTER	0.95	98.00	99.00	0.29	3.15	0.030	3.090	3.122	0.00	ERR	ERR	ERR	ERR
SIDEWALK	0.95	98.00	99.00	0.28	3.12	0.030	3.058	3.089	0.00	ERR	ERR	ERR	ERR
ASPHALT	0.95	98.00	99.00	4.31	47.34	0.450	46.389	46.862	0.00	ERR	ERR	ERR	ERR
ROOF	0.95	98.00	99.00	0.29	3.24	0.031	3.177	3.209	0.00	ERR	ERR	ERR	ERR
MULCH	0.35	61.00	78.00	0.25	2.69	0.009	1.642	2.100	0.00	ERR	ERR	ERR	ERR
DIRT	0.45	85.00	91.00	0.61	6.68	0.030	5.678	6.079	0.00	ERR	ERR	ERR	ERR
LAWN 7%	0.35	81.00	90.00	0.63	6.87	0.024	5.563	6.181	0.00	ERR	ERR	ERR	ERR
LAWN 2%	0.25	78.00	88.00	1.48	16.31	0.041	12.719	14.349	0.00	ERR	ERR	ERR	ERR
UNKEPT LAWN	0.35	81.00	90.00	0.35	3.89	0.014	3.151	3.501	0.00	ERR	ERR	ERR	ERR
TOTAL				9.10	100.00	0.699	90.314	94.745	0.00	ERR	ERR	ERR	ERR

TABLE 2

ST MARYS
ORIGINAL CONDITIONS
RUNOFF SUMMARY

BASIN PARAMETER	BASIN 1	BASIN 2
AREA (ACRES)	7.11	1.80
AREA (SQUARE MILES)	0.0111	0.0028
MAXIMUM ELEVATION	4660.63	4658.68
MINIMUM ELEVATION	4639.38	4640.26
LONGEST WATER COURSE LENGTH (FEET)	869.00	540.00
SLOPE	0.0256	0.0341
TIME OF CONCENTRATION (MINUTES)	9.05	4.50
2-YEAR RAINFALL		
RATIONAL METHOD (INCH/HR)	0.90	0.90
SCS METHOD (INCH/24 HOUR)	0.70	0.70
SCS METHOD (INCH/6 HOUR)	0.55	0.55
10-YEAR RAINFALL		
RATIONAL METHOD (INCH/HR)	1.68	1.68
SCS METHOD (INCH/24 HOUR)	1.12	1.12
SCS METHOD (INCH/6 HOUR)	0.87	0.87
100-YEAR RAINFALL		
RATIONAL METHOD (INCH/HR)	3.60	3.60
SCS METHOD (INCH/24 HOUR)	2.01	2.01
SCS METHOD (INCH/6 HOUR)	1.56	1.56
RUNOFF--SCS METHOD (INCH)		
24 HOUR		
2-YEAR	0.052	0.057
10-YEAR	0.222	0.232
100-YEAR	0.782	0.802
RUNOFF--SCS METHOD (INCH)		
6 HOUR		
2-YEAR	0.017	0.098
10-YEAR	0.110	0.282
100-YEAR	0.475	0.807
2-YEAR PEAK FLOW (CFS)		
RATIONAL METHOD	1.99	0.49
SCS METHOD (24 HOUR)	0.22	0.09
SCS METHOD (6 HOUR)	0.34	0.09
10-YEAR PEAK FLOW (CFS)		
RATIONAL METHOD	3.72	0.91
SCS METHOD (24 HOUR)	1.83	0.61
SCS METHOD (6 HOUR)	1.88	0.48
100-YEAR PEAK FLOW (CFS)		
RATIONAL METHOD	12.05	2.92
SCS METHOD (24 HOUR)	8.13	2.10
SCS METHOD (6 HOUR)	5.25	1.22
2-YEAR RUNOFF VOLUME (CU. FT.)		
MODIFIED RATIONAL METHOD (24 HR)	5732.00	1468.00
SCS METHOD (24 HOUR)	1366.00	379.00
SCS METHOD (6 HOUR)	2556.00	599.00
10-YEAR RUNOFF VOLUME (CU. FT.)		
MODIFIED RATIONAL METHOD (24 HR)	9554.00	2419.00
SCS METHOD (24 HOUR)	5844.00	1569.00
SCS METHOD (6 HOUR)	7451.00	2013.00
100-YEAR RUNOFF VOLUME (CU. FT.)		
MODIFIED RATIONAL METHOD (24 HR)	23150.00	5861.00
SCS METHOD (24 HOUR)	20944.00	5419.00
SCS METHOD (6 HOUR)	20823.00	5842.00
2-YEAR OFF-SITE DISCHARGE (CFS)		
MODIFIED RATIONAL METHOD	0.00	0.49
SCS METHOD (24 HOUR)	0.00	0.09
SCS METHOD (6 HOUR)	0.00	0.09
10-YEAR OFF-SITE DISCHARGE (CFS)		
MODIFIED RATIONAL METHOD	0.00	0.91
SCS METHOD (24 HOUR)	0.00	0.61
SCS METHOD (6 HOUR)	0.00	0.48
100-YEAR OFF-SITE DISCHARGE (CFS)		
MODIFIED RATIONAL METHOD	0.00	2.92
SCS METHOD (24 HOUR)	0.00	2.10
SCS METHOD (6 HOUR)	0.00	1.22

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TABLE 3

10/2

ST MARYS
FINAL CONDITIONS
RUNOFF SUMMARY

BASIN PARAMETER	BASIN 1
AREA (ACRES)	8.91
AREA (SQUARE MILES)	0.0139
MAXIMUM ELEVATION	4660.63
MINIMUM ELEVATION	4638.38
LONGEST WATER COURSE LENGTH (FEET)	869.00
SLOPE	0.0256
TIME OF CONCENTRATION (MINUTES)	4.40
2-YEAR RAINFALL	
RATIONAL METHOD (INCH/HR)	0.90
SCS METHOD (INCH/24 HOUR)	0.70
SCS METHOD (INCH/6 HOUR)	0.55
10-YEAR RAINFALL	
RATIONAL METHOD (INCH/HR)	1.68
SCS METHOD (INCH/24 HOUR)	1.12
SCS METHOD (INCH/6 HOUR)	0.87
100-YEAR RAINFALL	
RATIONAL METHOD (INCH/HR)	3.60
SCS METHOD (INCH/24 HOUR)	2.01
SCS METHOD (INCH/6 HOUR)	1.56
RUNOFF—SCS METHOD (INCH)	
24 HOUR	
2-YEAR	0.151
10-YEAR	0.415
100-YEAR	1.124
RUNOFF—SCS METHOD (INCH)	
6 HOUR	
2-YEAR	0.080
10-YEAR	0.249
100-YEAR	0.749
2-YEAR PEAK FLOW (CFS)	
RATIONAL METHOD	4.87
SCS METHOD (24 HOUR)	1.97
SCS METHOD (6 HOUR)	1.48
10-YEAR PEAK FLOW (CFS)	
RATIONAL METHOD	9.08
SCS METHOD (24 HOUR)	5.82
SCS METHOD (6 HOUR)	3.21
100-YEAR PEAK FLOW (CFS)	
RATIONAL METHOD	22.43
SCS METHOD (24 HOUR)	15.78
SCS METHOD (6 HOUR)	8.19
2-YEAR RUNOFF VOLUME (CU. FT.)	
MODIFIED RATIONAL METHOD (90 MIN)	8159.00
SCS METHOD (24 HOUR)	5072.00
SCS METHOD (6 HOUR)	6346.00
10-YEAR RUNOFF VOLUME (CU. FT.)	
MODIFIED RATIONAL METHOD (70 MIN)	13693.00
SCS METHOD (24 HOUR)	13362.00
SCS METHOD (6 HOUR)	14348.00
100-YEAR RUNOFF VOLUME (CU. FT.)	
MODIFIED RATIONAL METHOD (70 MIN)	31440.00
SCS METHOD (24 HOUR)	36241.00
SCS METHOD (6 HOUR)	34432.00
2-YEAR OFF-SITE DISCHARGE (CFS)	
MODIFIED RATIONAL METHOD	0.46
SCS METHOD (24 HOUR)	0.12
SCS METHOD (6 HOUR)	0.22
10-YEAR OFF-SITE DISCHARGE (CFS)	
MODIFIED RATIONAL METHOD	0.57
SCS METHOD (24 HOUR)	0.50
SCS METHOD (6 HOUR)	0.57
100-YEAR OFF-SITE DISCHARGE (CFS)	
MODIFIED RATIONAL METHOD	2.76
SCS METHOD (24 HOUR)	1.78
SCS METHOD (6 HOUR)	1.70

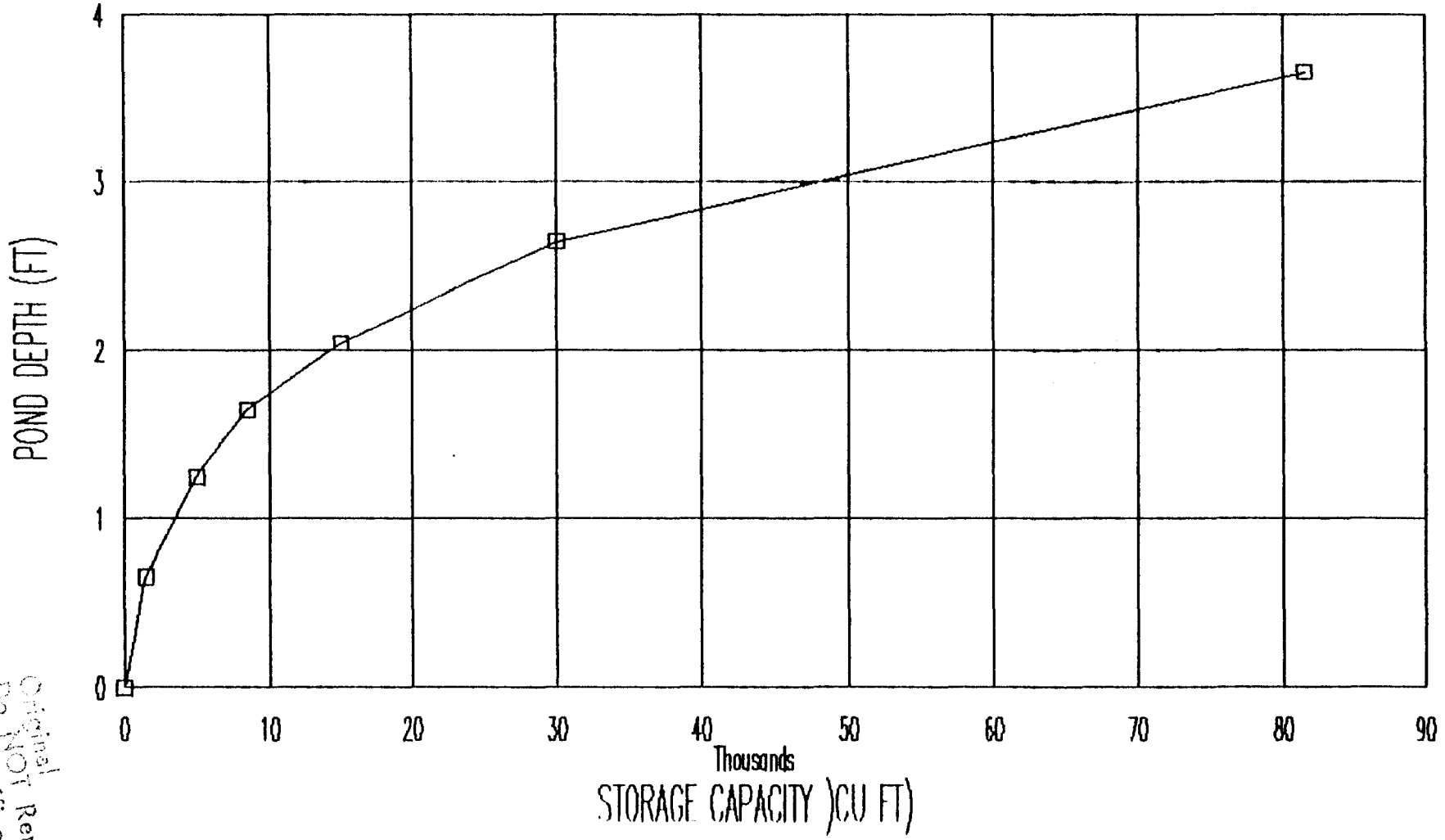
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TABLE 4

ST MARY'S PARKING

ORIGINAL CONDITIONS RETENTION BASIN RATING

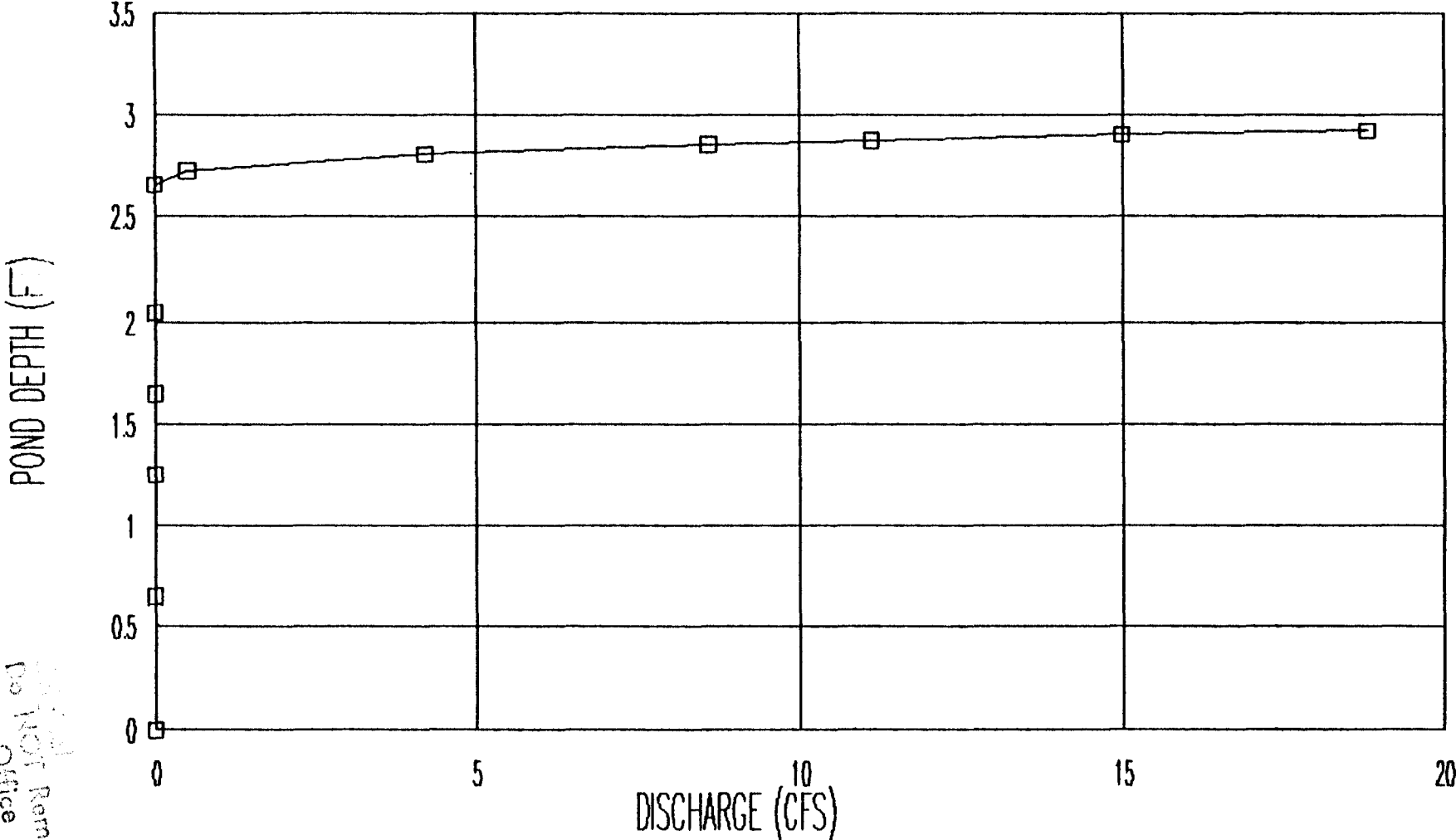


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FIGURE 5

ST MARY'S PARKING

ORIGINAL CONDITIONS RETENTION DISCHARGE RATING

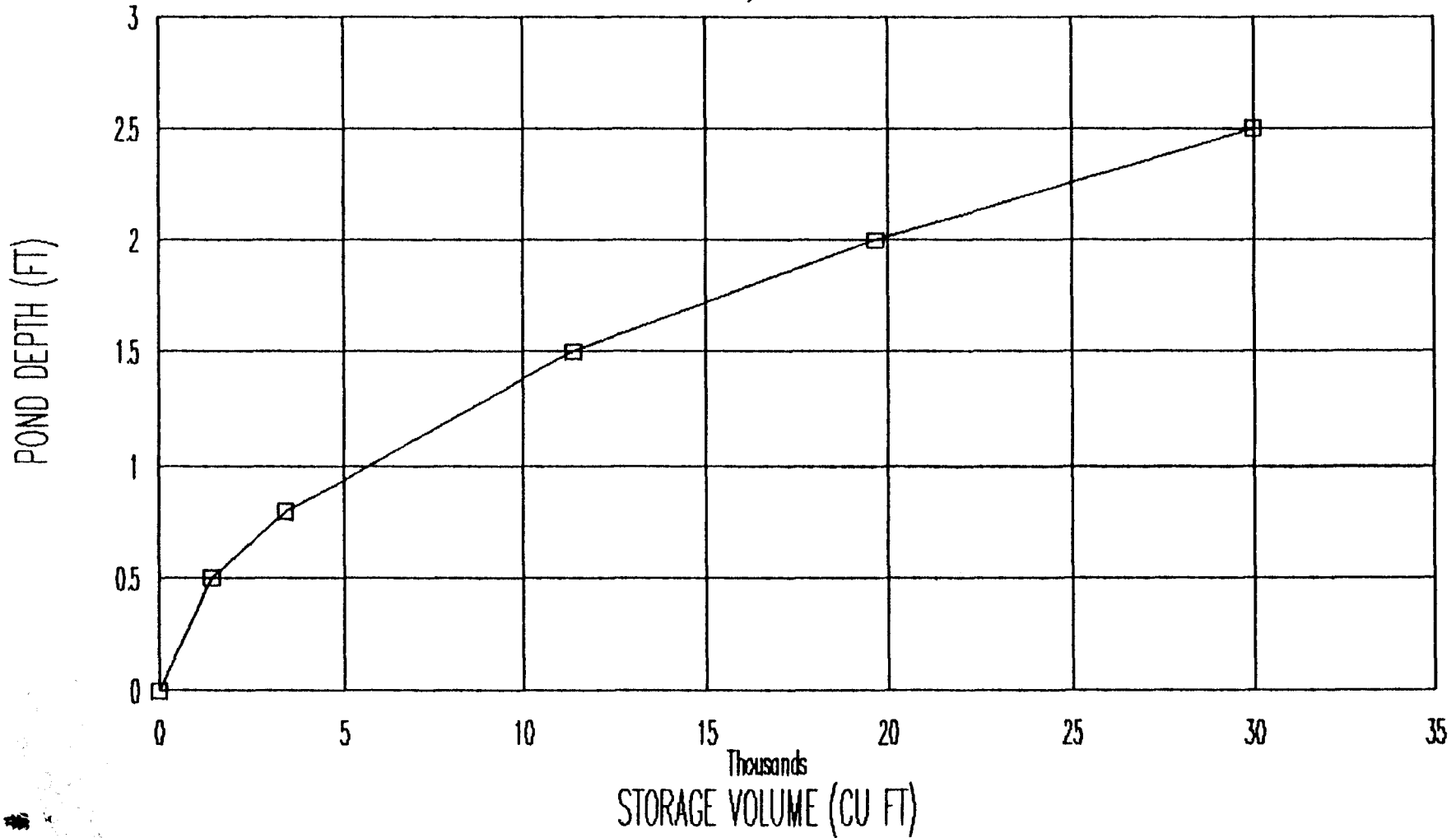


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FIGURE 6

ST MARY'S PARKING

FINAL CONDITIONS, DETENTION BASIN RATING

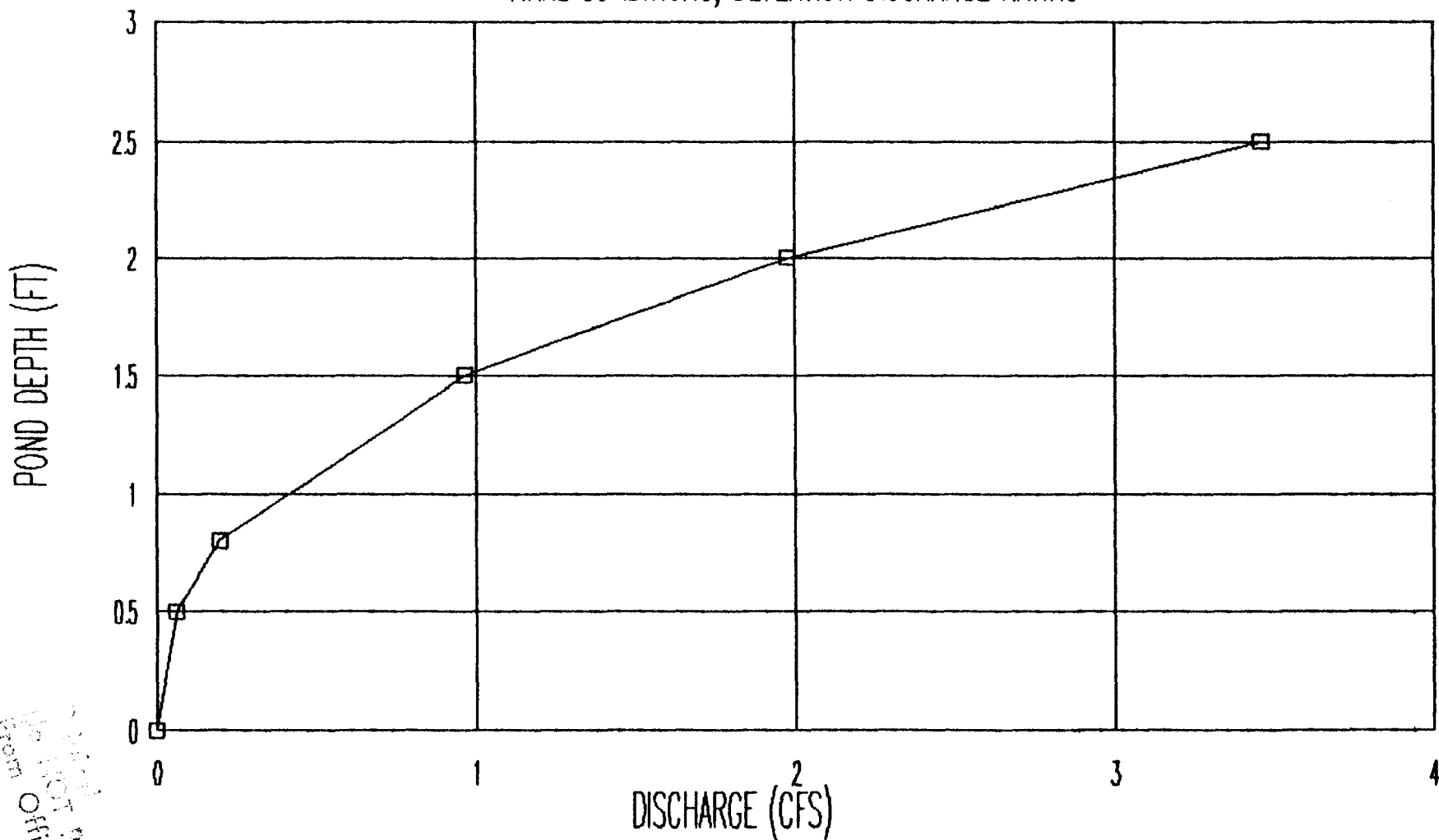


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FIGURE 7

ST MARY'S PARKING

FINAL CONDITIONS, DETENTION DISCHARGE RATING



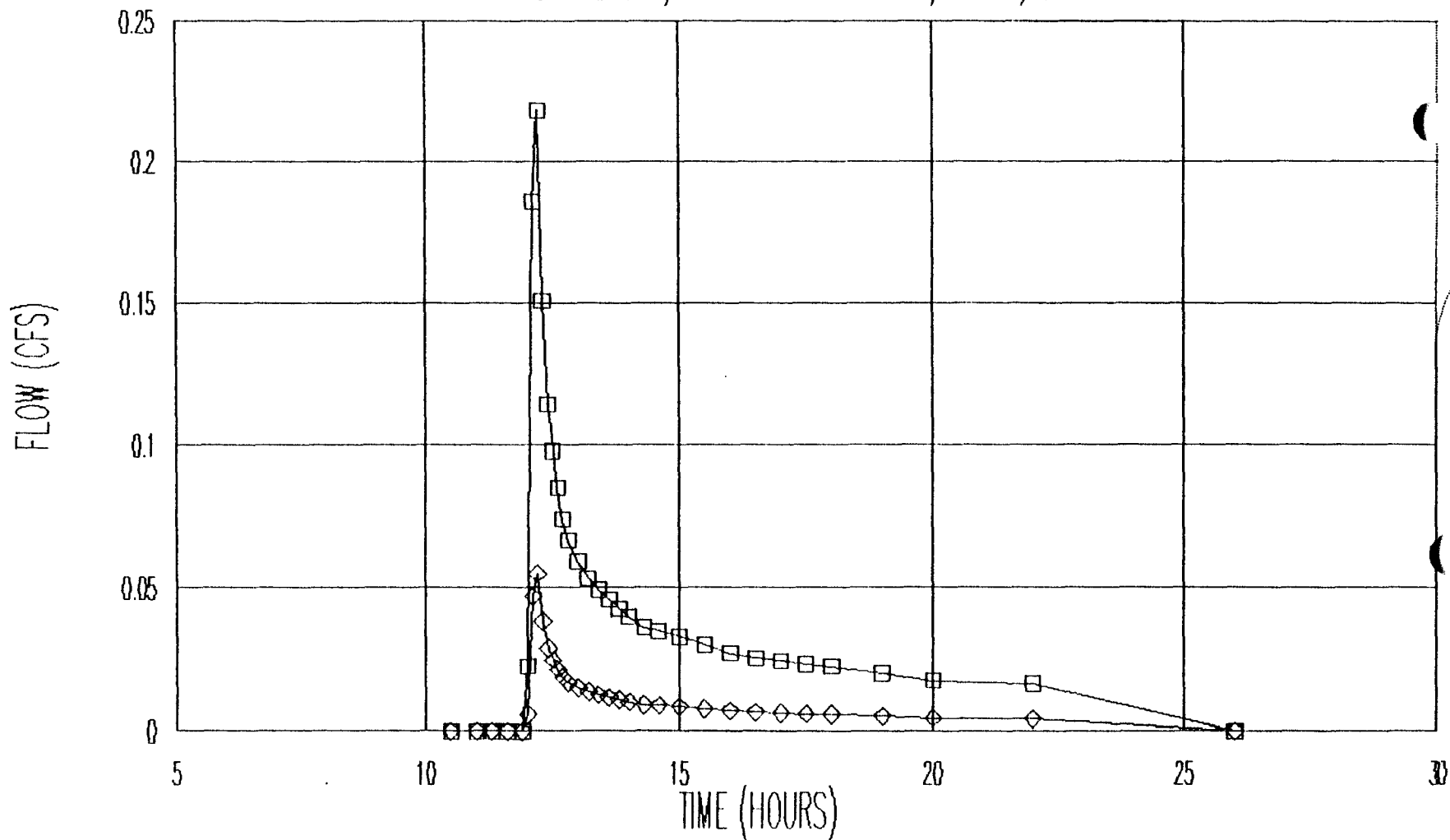
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FIGURE 8

ST MARY'S PARKING

SCS METHOD, ORIGINAL CONDITIONS, 24 HR, 2 YR



□ ON-SITE RUNOFF

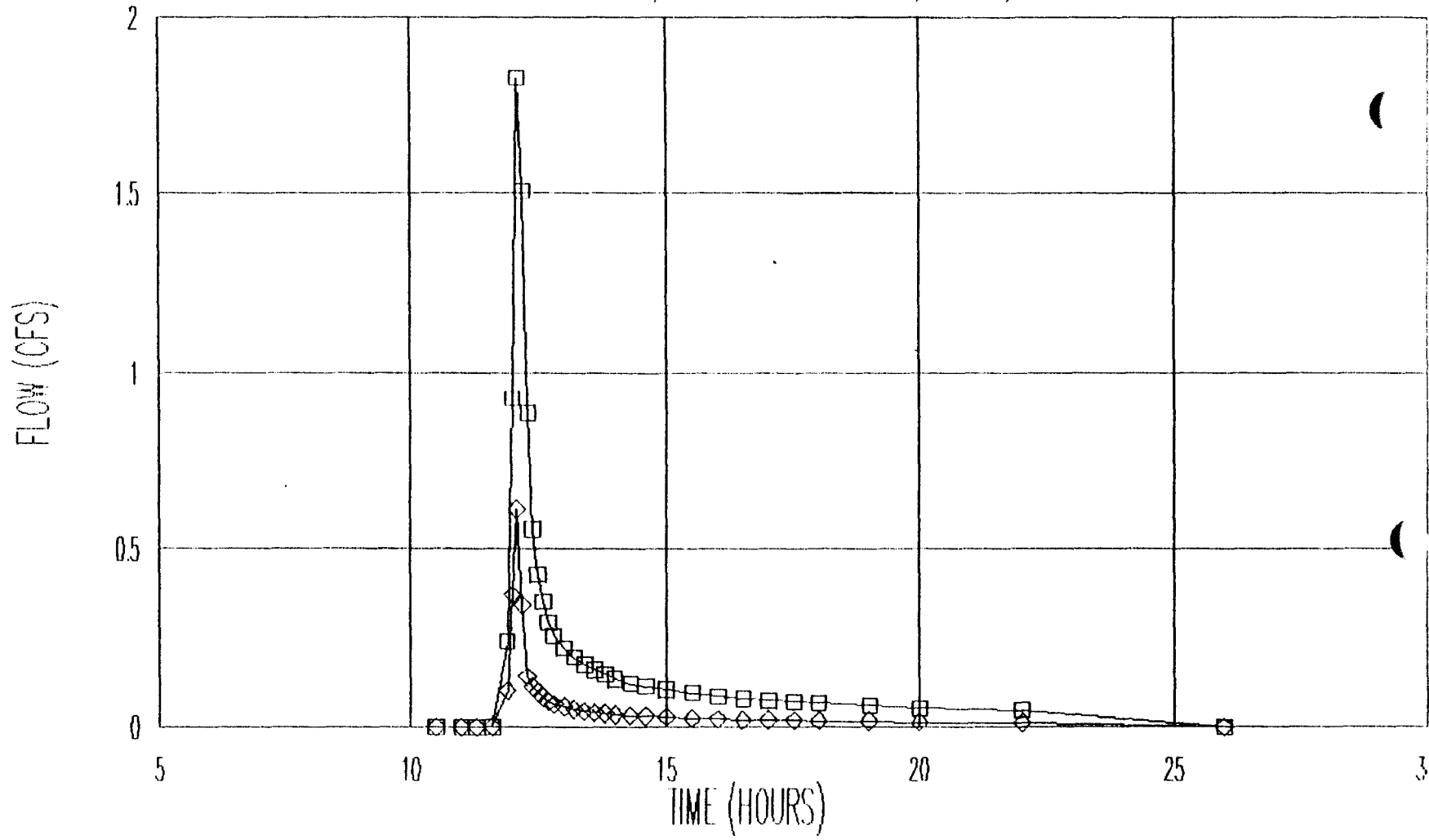
◇ OFF-SITE DISCHARGE

FIGURE 9

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ST MARY'S PARKING

SSCS METHOD, ORIGINAL CONDITIONS, 24 HR, 10 YR



□ ON-SITE RUNOFF

◇ OFF-SITE DISCHARGE

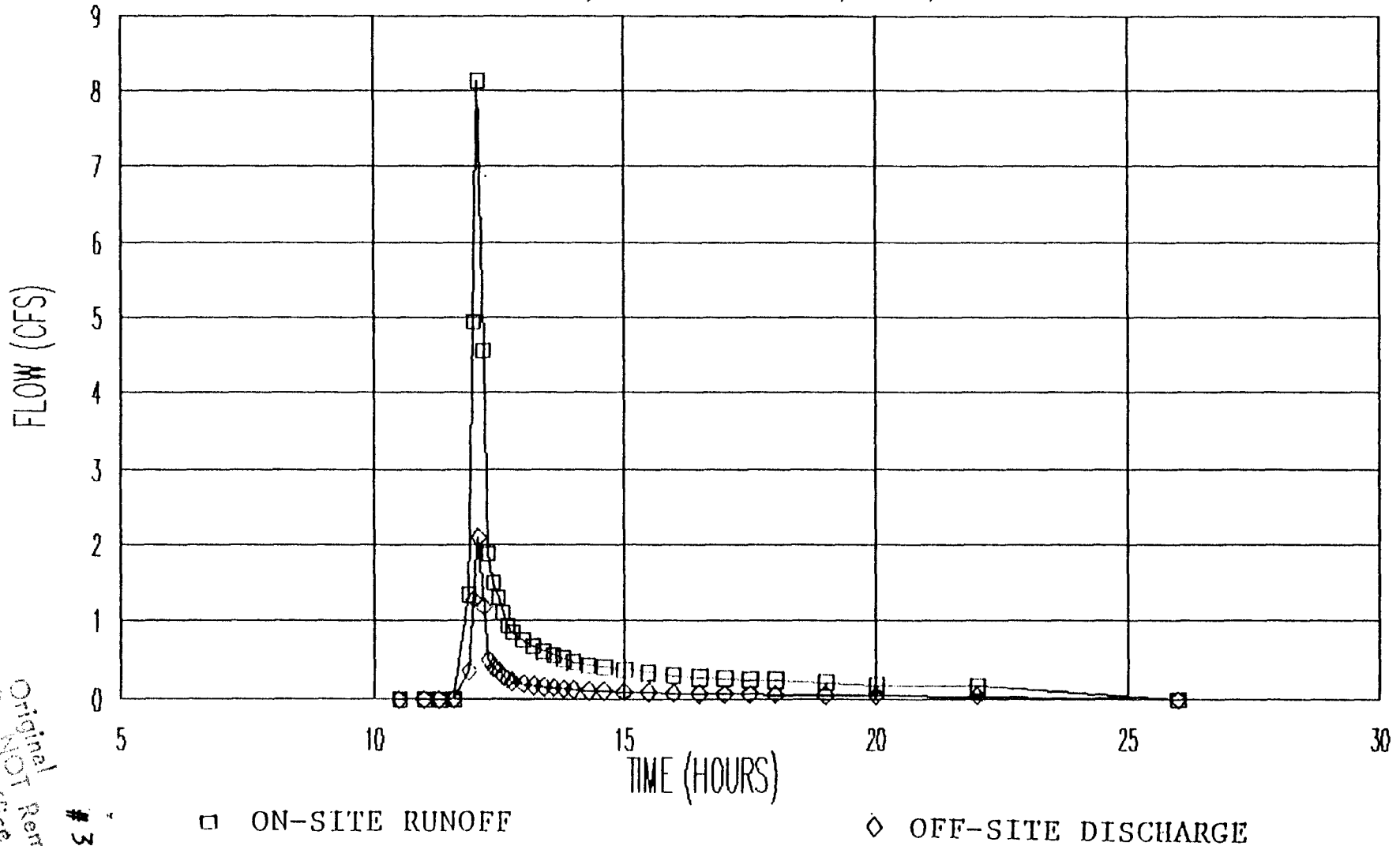
FIGURE 10

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ST MARY'S PARKING

SCS METHOD, ORIGINAL CONDITIONS, 24 HR, 100 YEAR



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FIGURE 11

ST MARY'S PARKING

SCS METHOD, ORIGINAL CONDITIONS, 6 HR, 2 YR

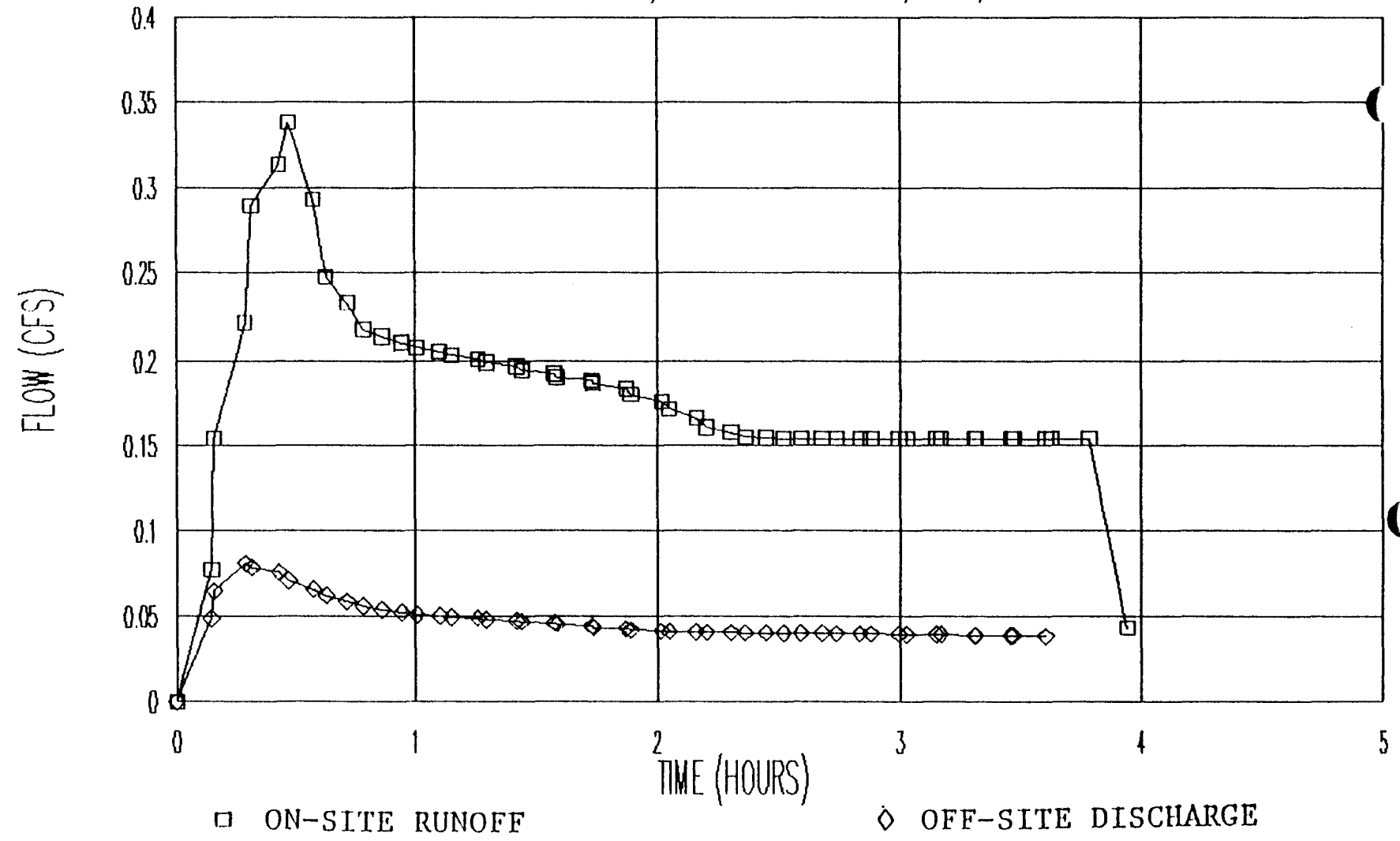


FIGURE 12

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ST MARY'S PARKING

SCS METHOD, ORIGINAL CONDITIONS, 6 HR, 2 YR

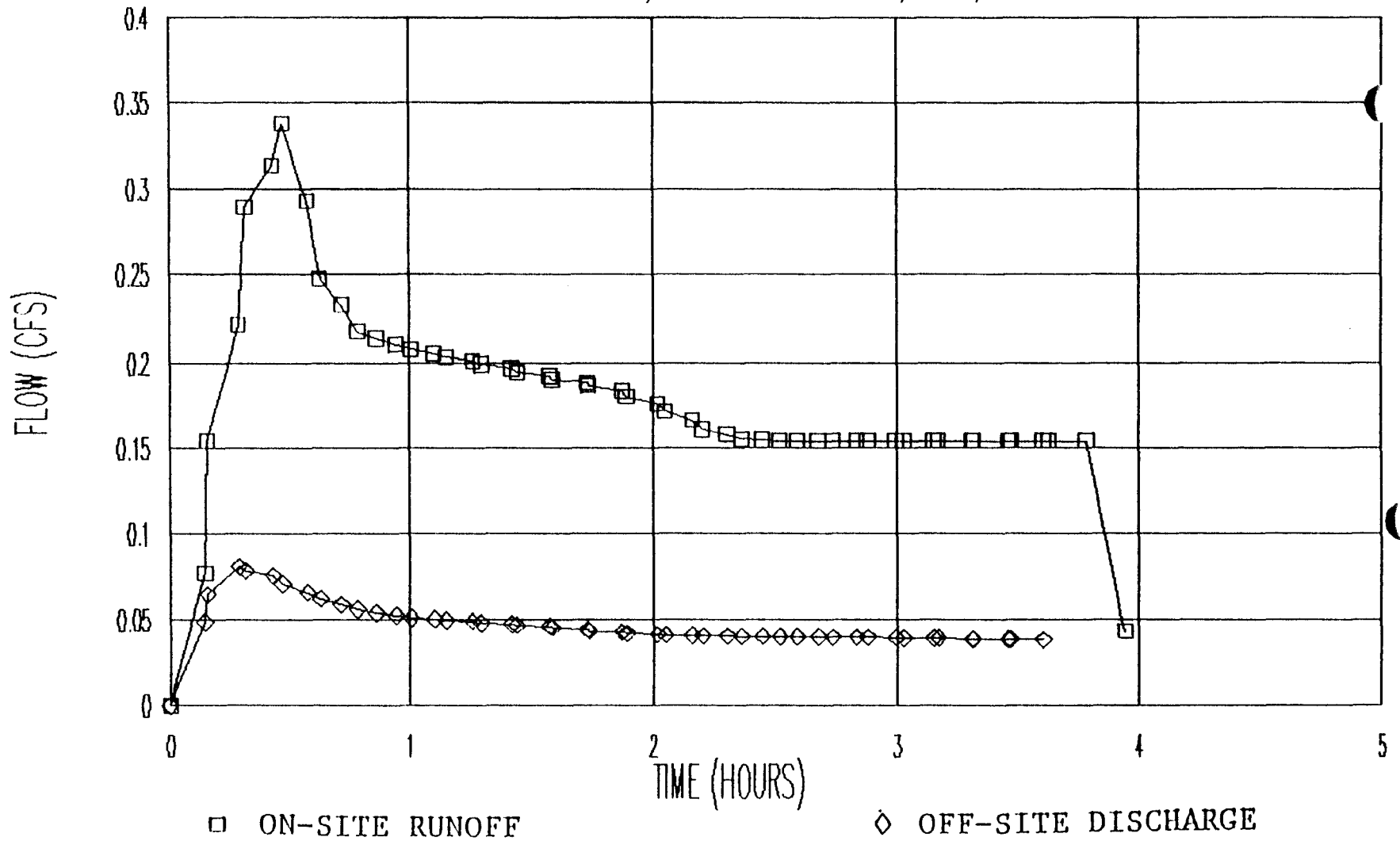
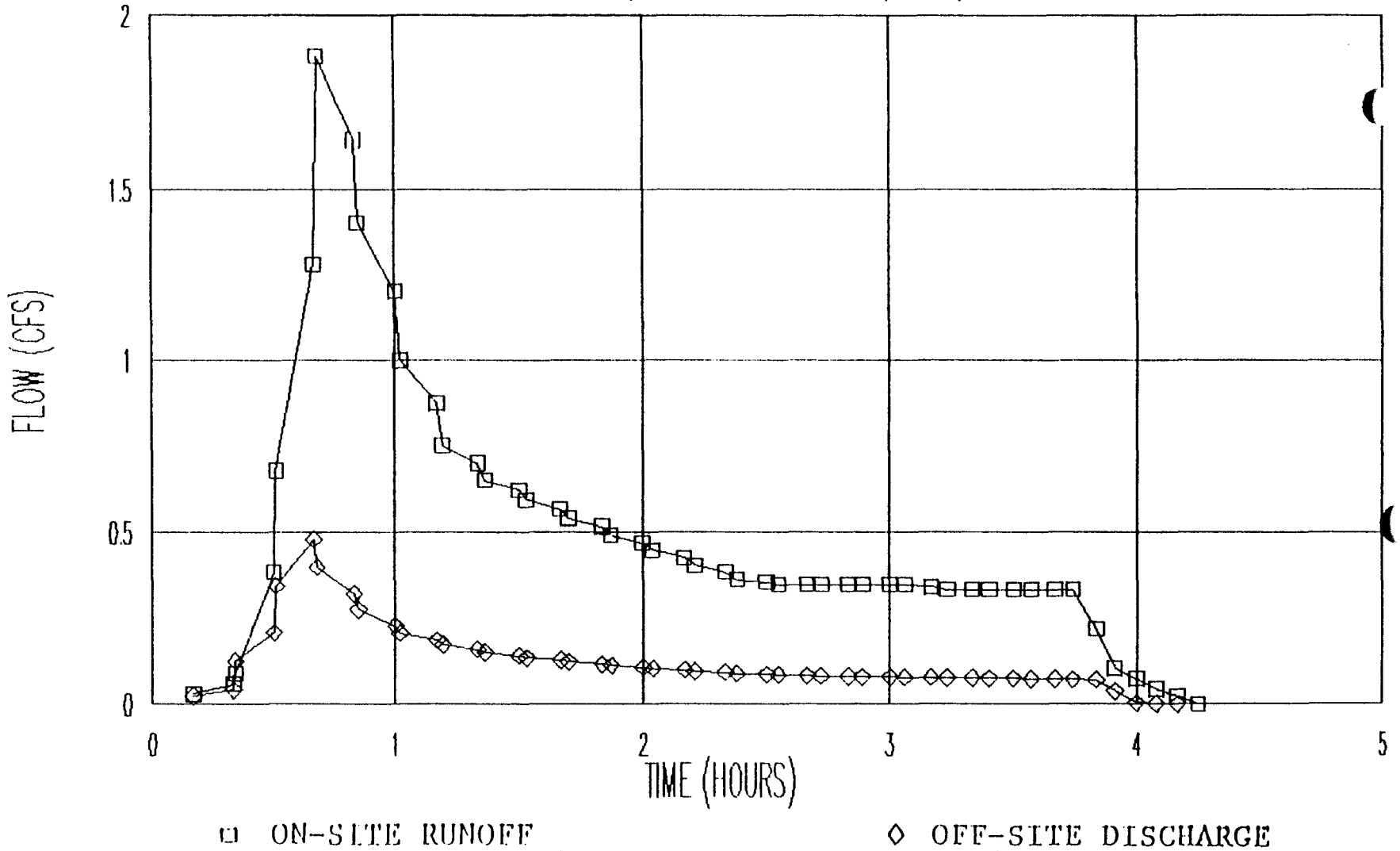


FIGURE 12

ST MARY'S PARKING

SCS METHOD, ORIGINAL CONDITIONS, 6 HR, 10 YR



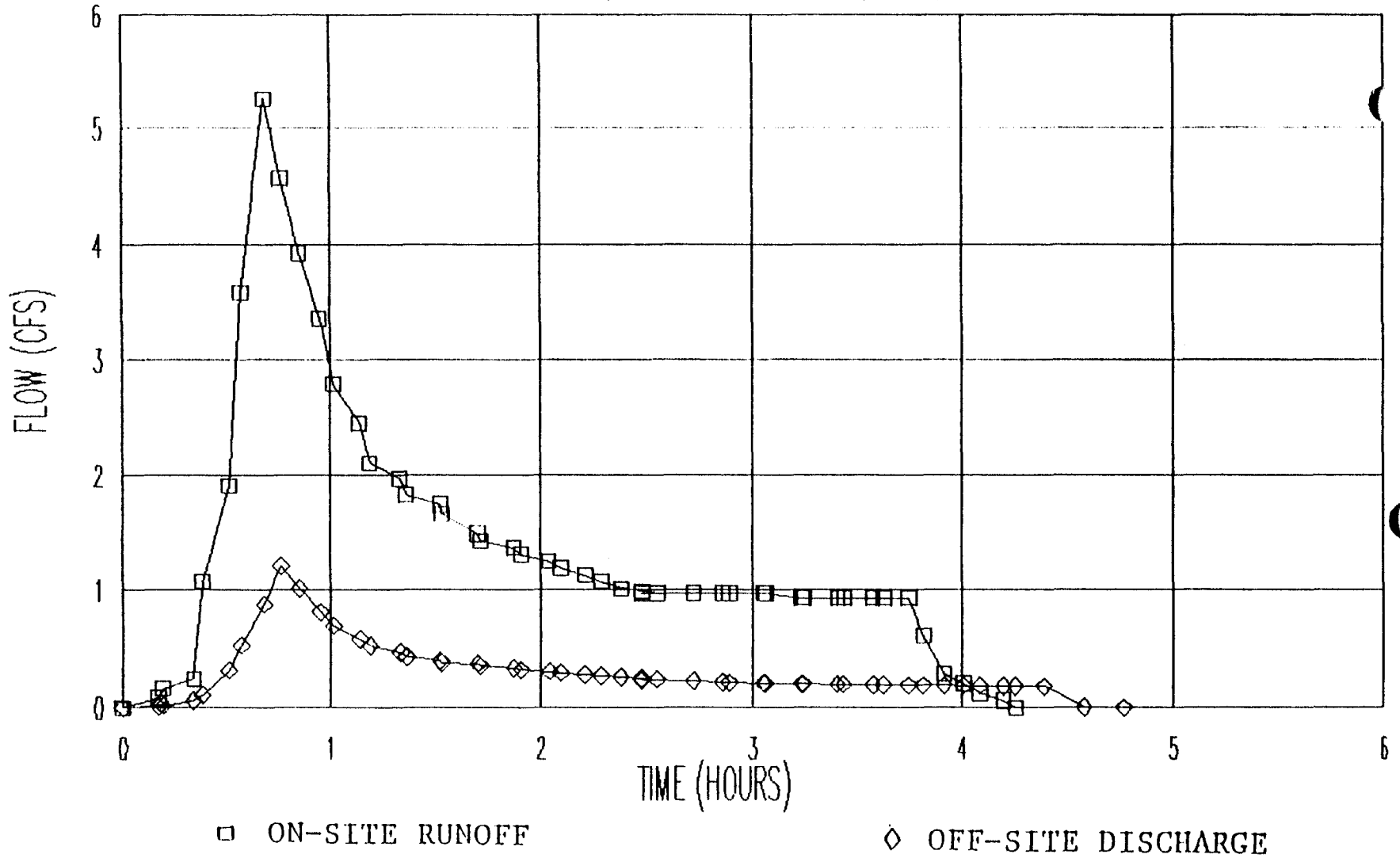
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FIGURE 13

ST MARY'S PARKING

SCS METHOD, ORIGINAL CONDITIONS, 6 HR, 100 YR

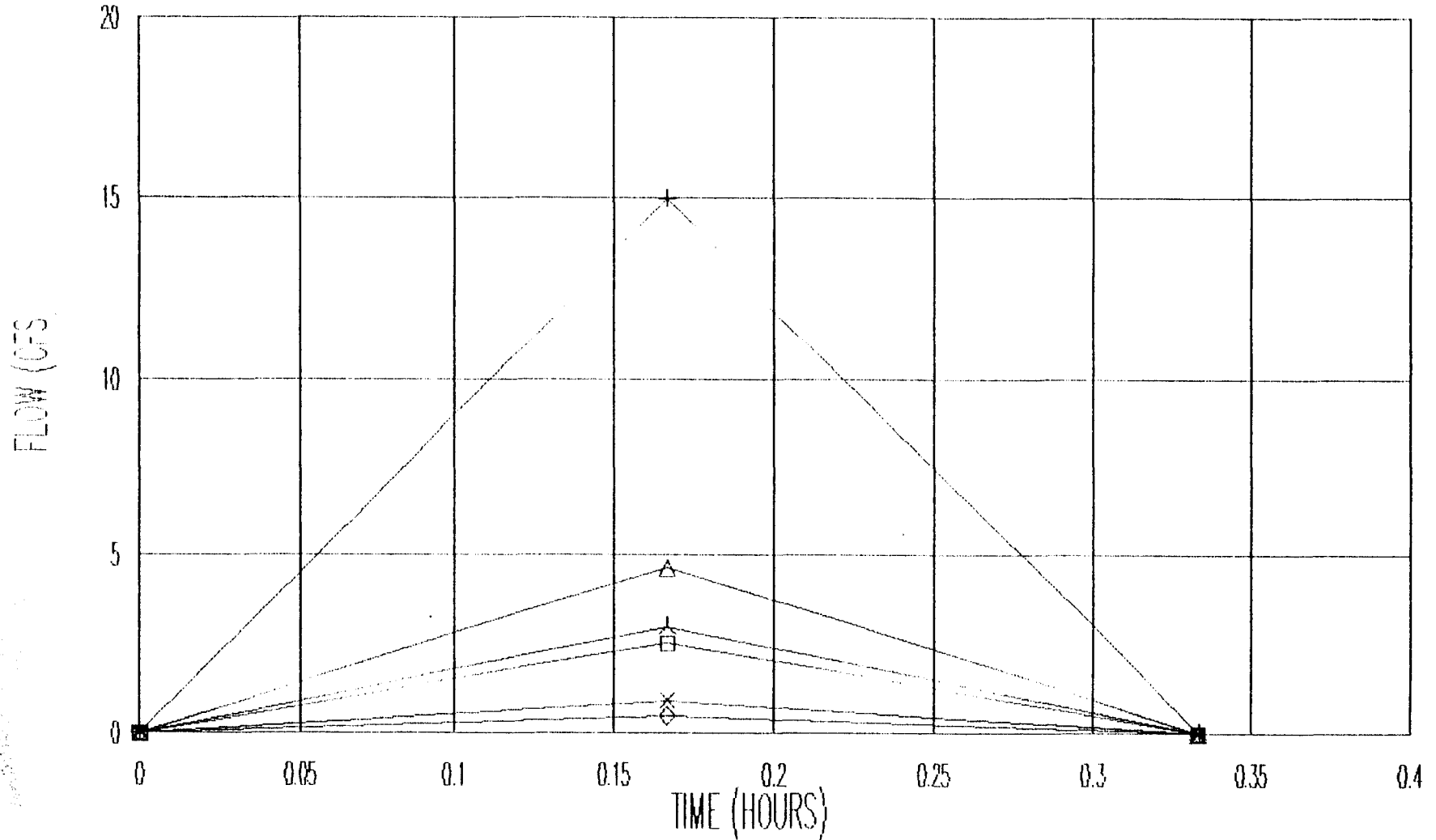


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FIGURE 14

ST MARY'S PARKING

RATIONAL METHOD



+ 100 YEAR RUNOFF

Δ 10 YEAR RUNOFF

□ 2 YEAR RUNOFF

^ 100 YEAR SITE DISCHARGE

x 10 YEAR SITE DISCHARGE

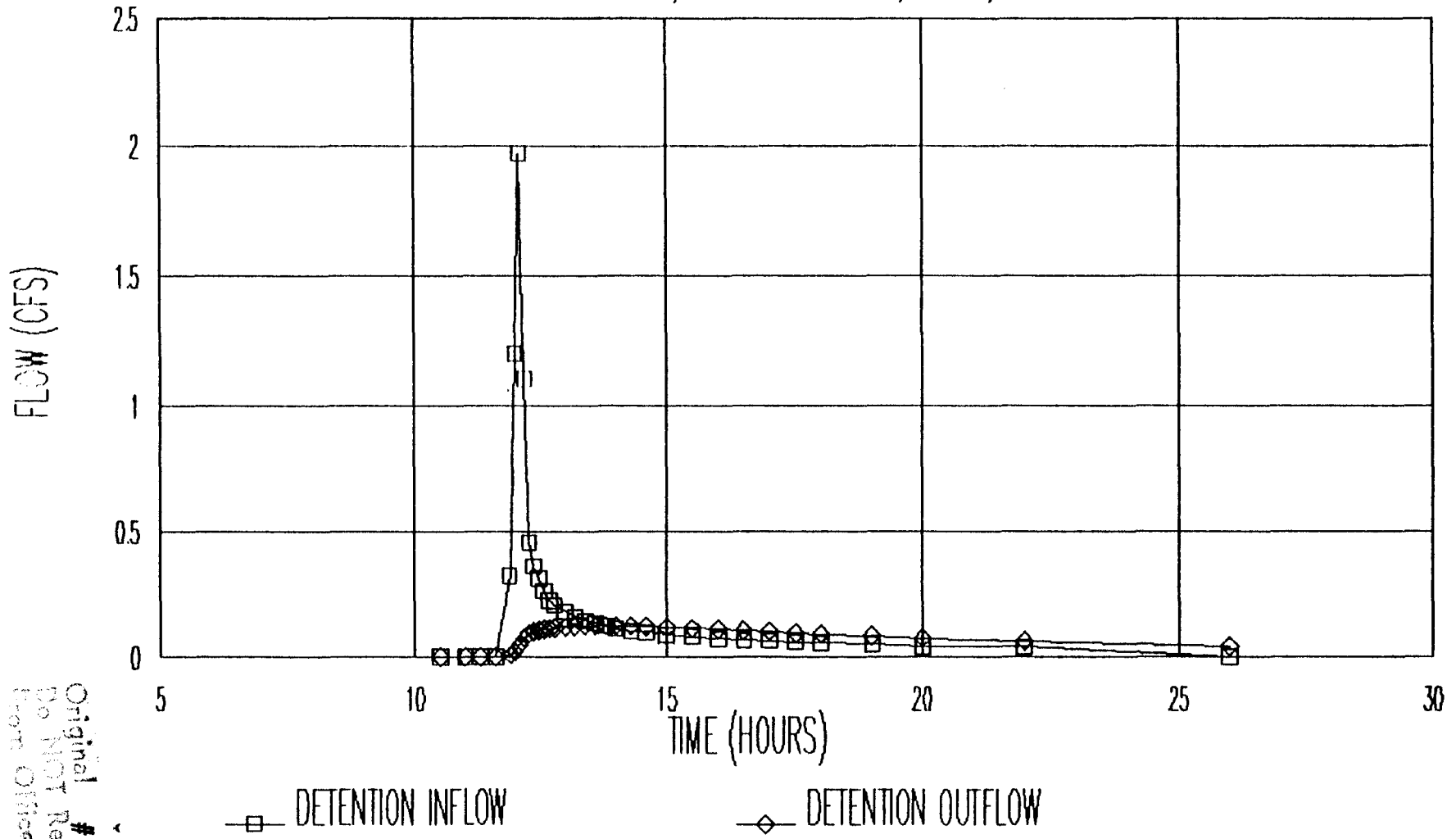
◇ 2 YEAR SITE DISCHARGE

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FIGURE 15

ST MARY'S PARKING

SCS METHOD, FINAL CONDITIONS, 24 HR, 2 YR

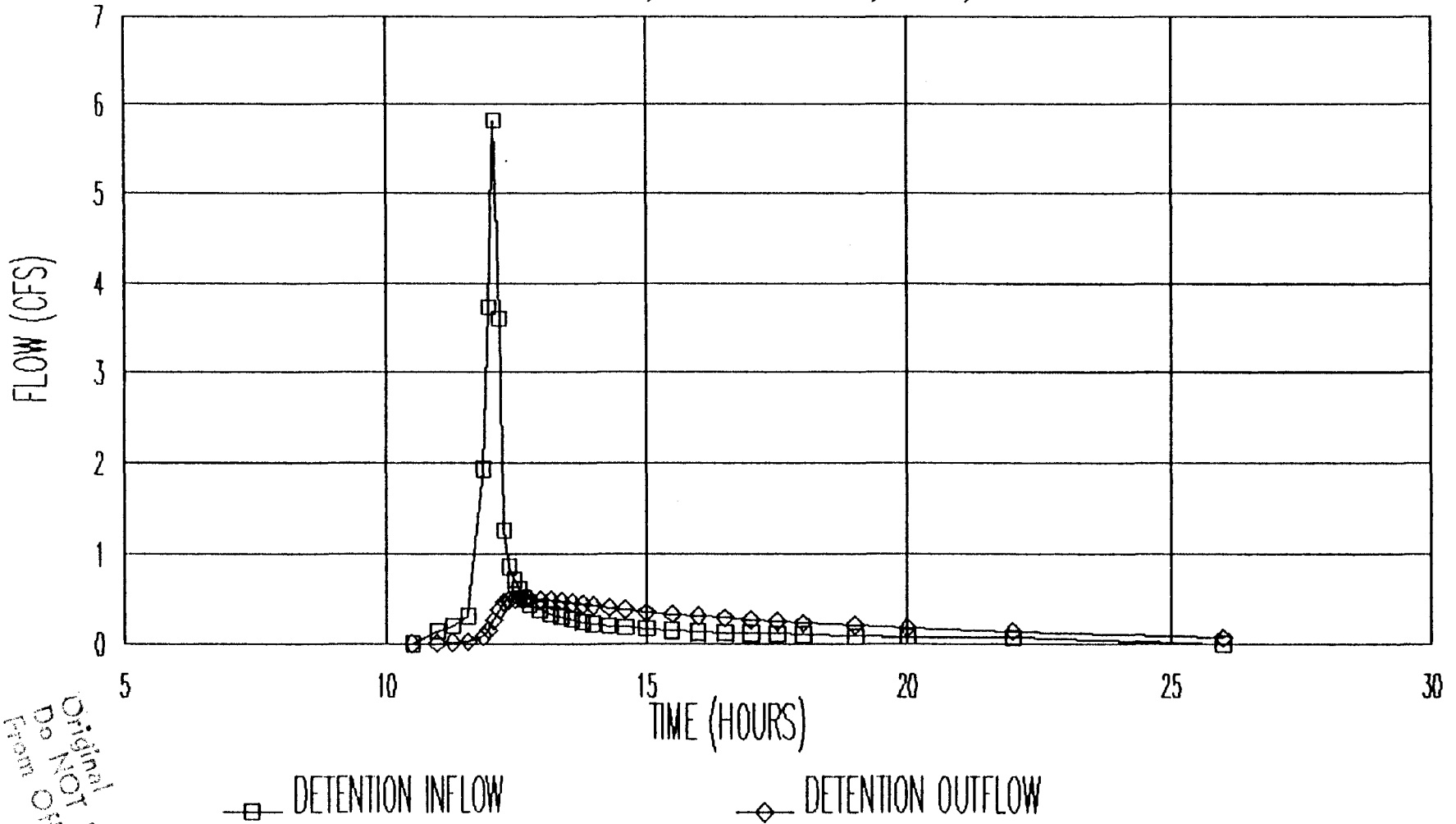


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FIGURE 16

ST MARY'S PARKING

SCS METHOD, FINAL CONDITIONS, 24 HR, 10 YR



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FIGURE 17

ST MARY'S PARKING

SCS METHOD, FINAL CONDITIONS, 24 HR, 100 YR

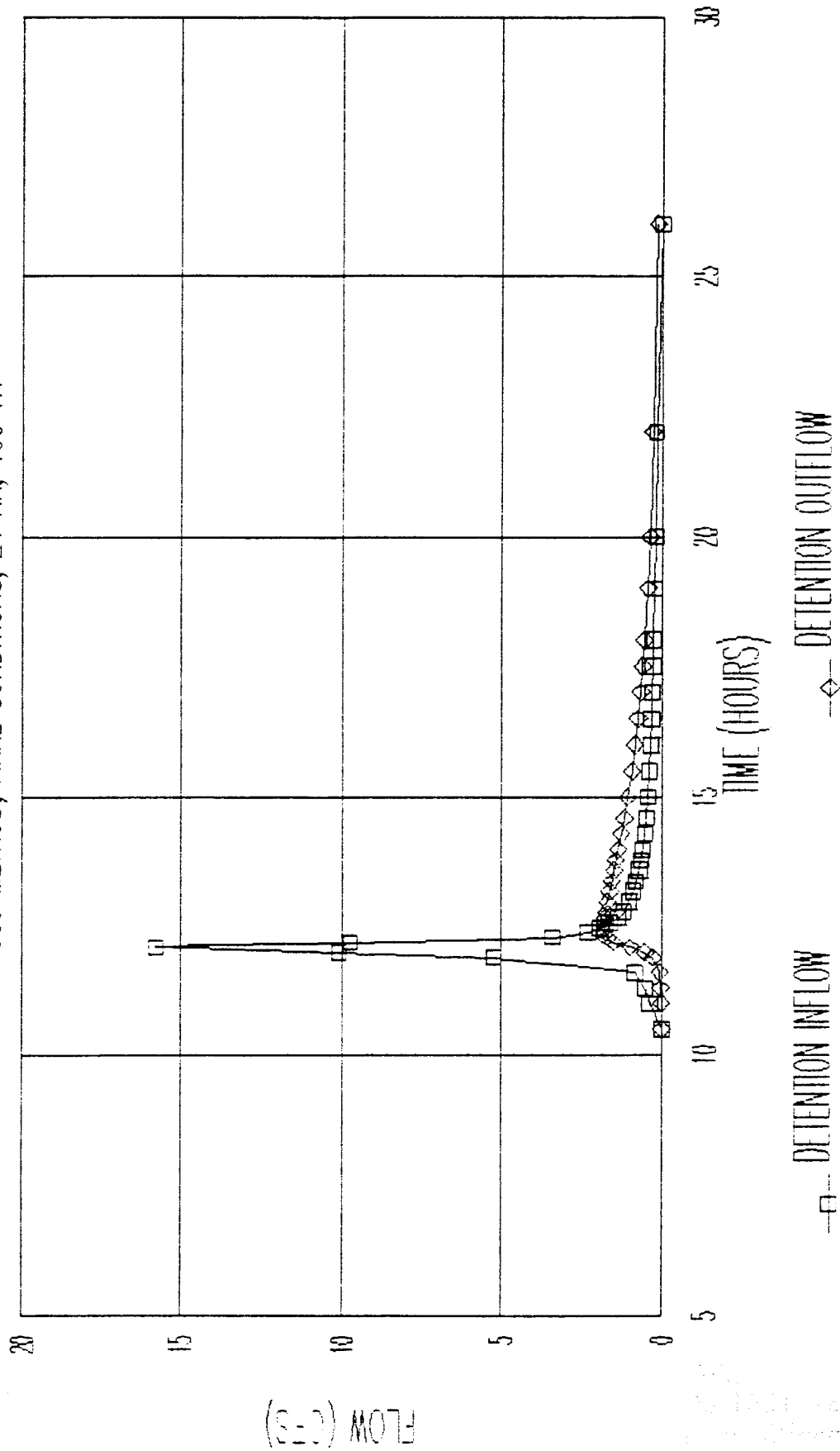
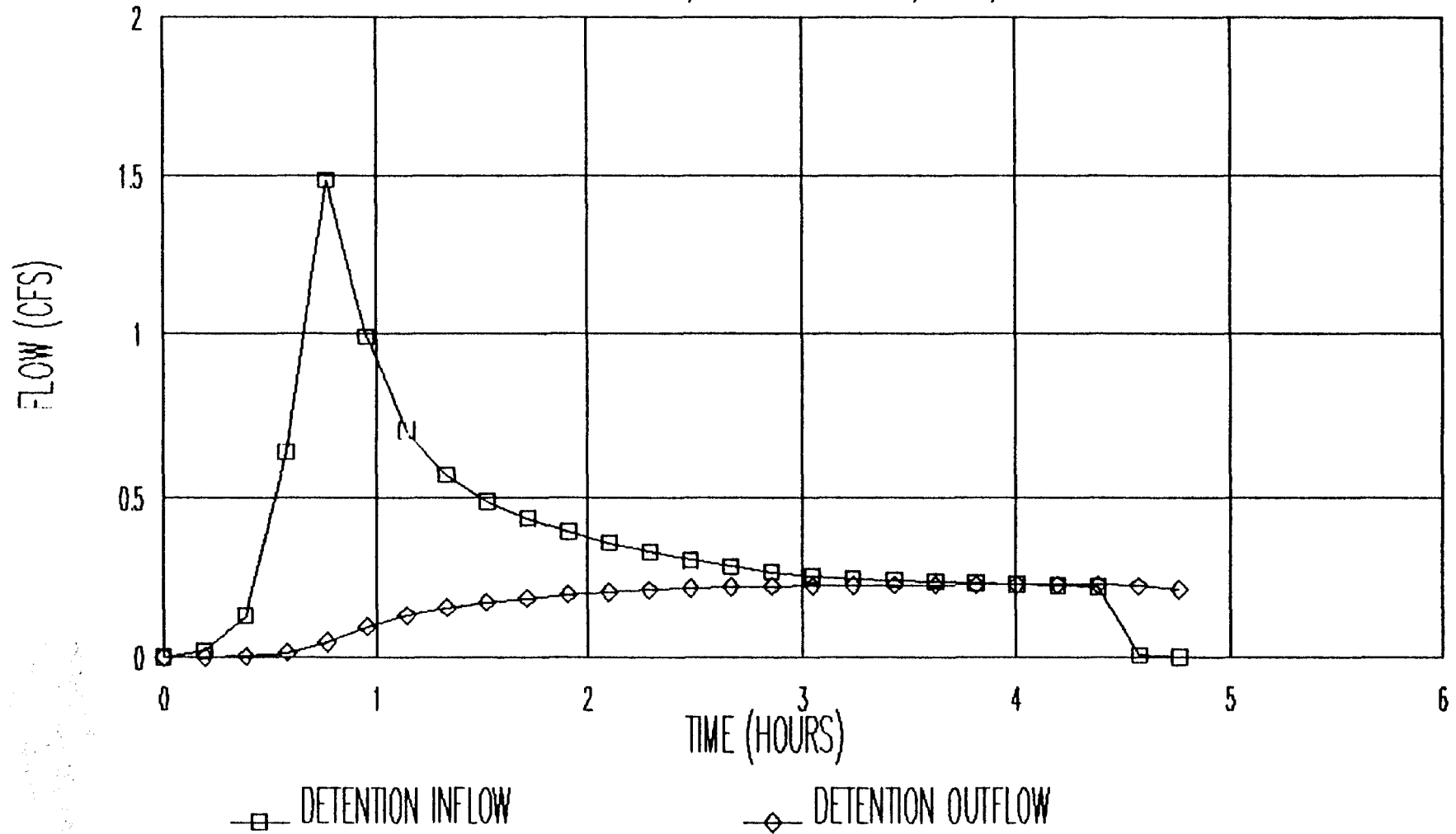


FIGURE 18

ST MARY'S PARKING

SCS METHOD, FINAL CONDITIONS, 6 HR, 2 YR

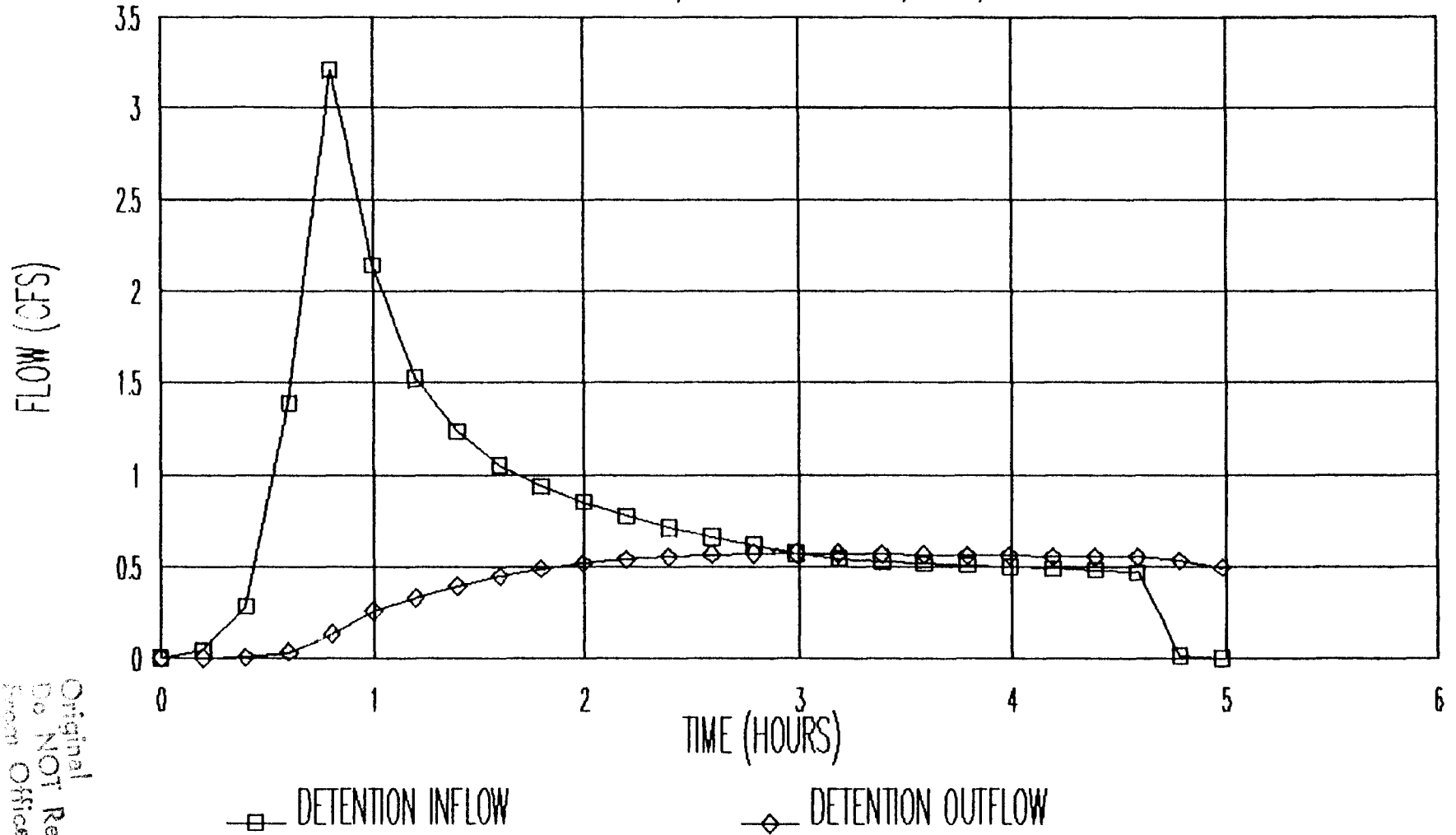


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FIGURE 19

ST MARY'S PARKING

SCS METHOD, FINAL CONDITIONS, 6 HR, 10 YR

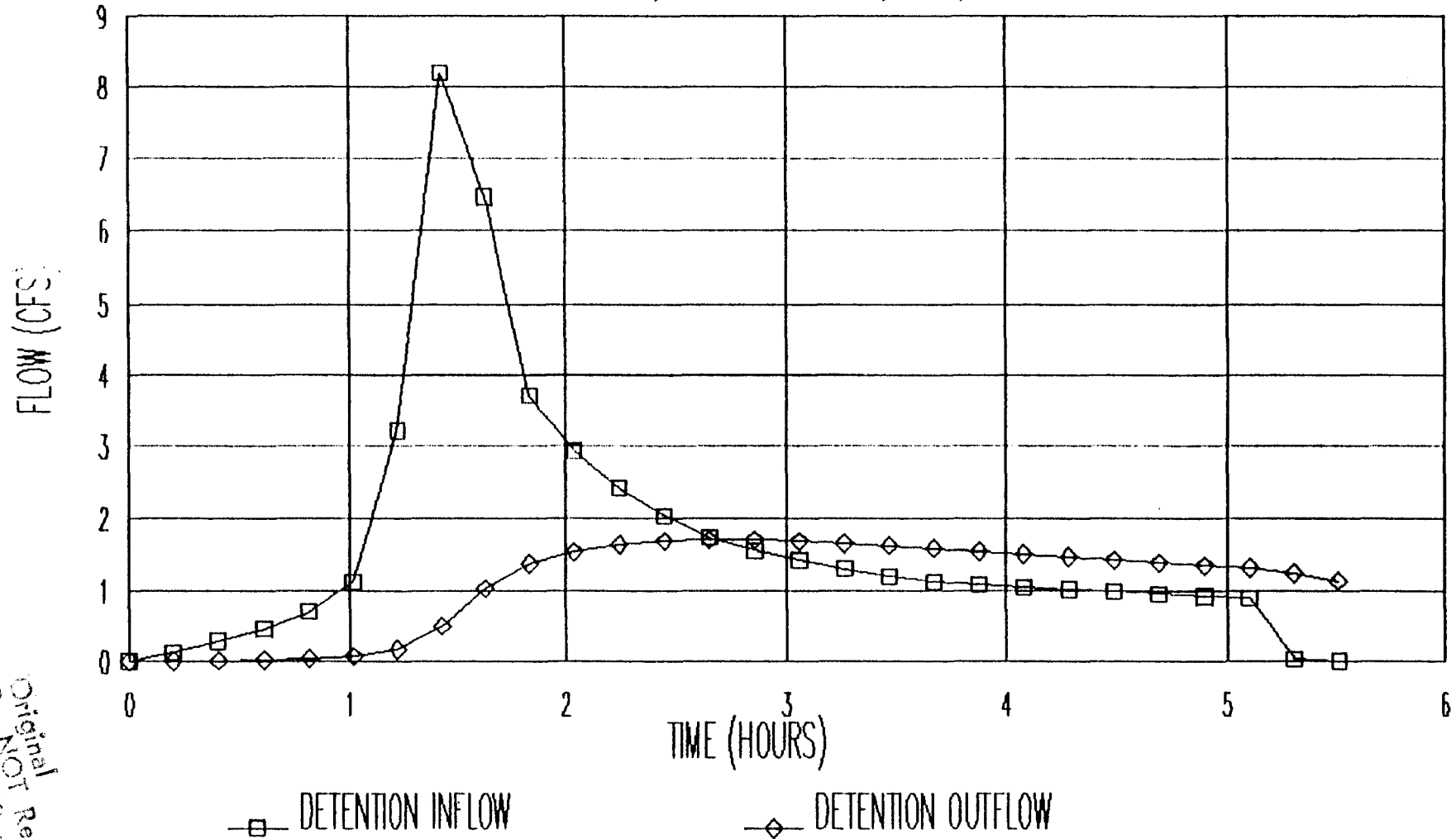


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FIGURE 20

ST MARY'S PARKING

SCS METHOD, FINAL CONDITIONS, 6 HR, 100 YR

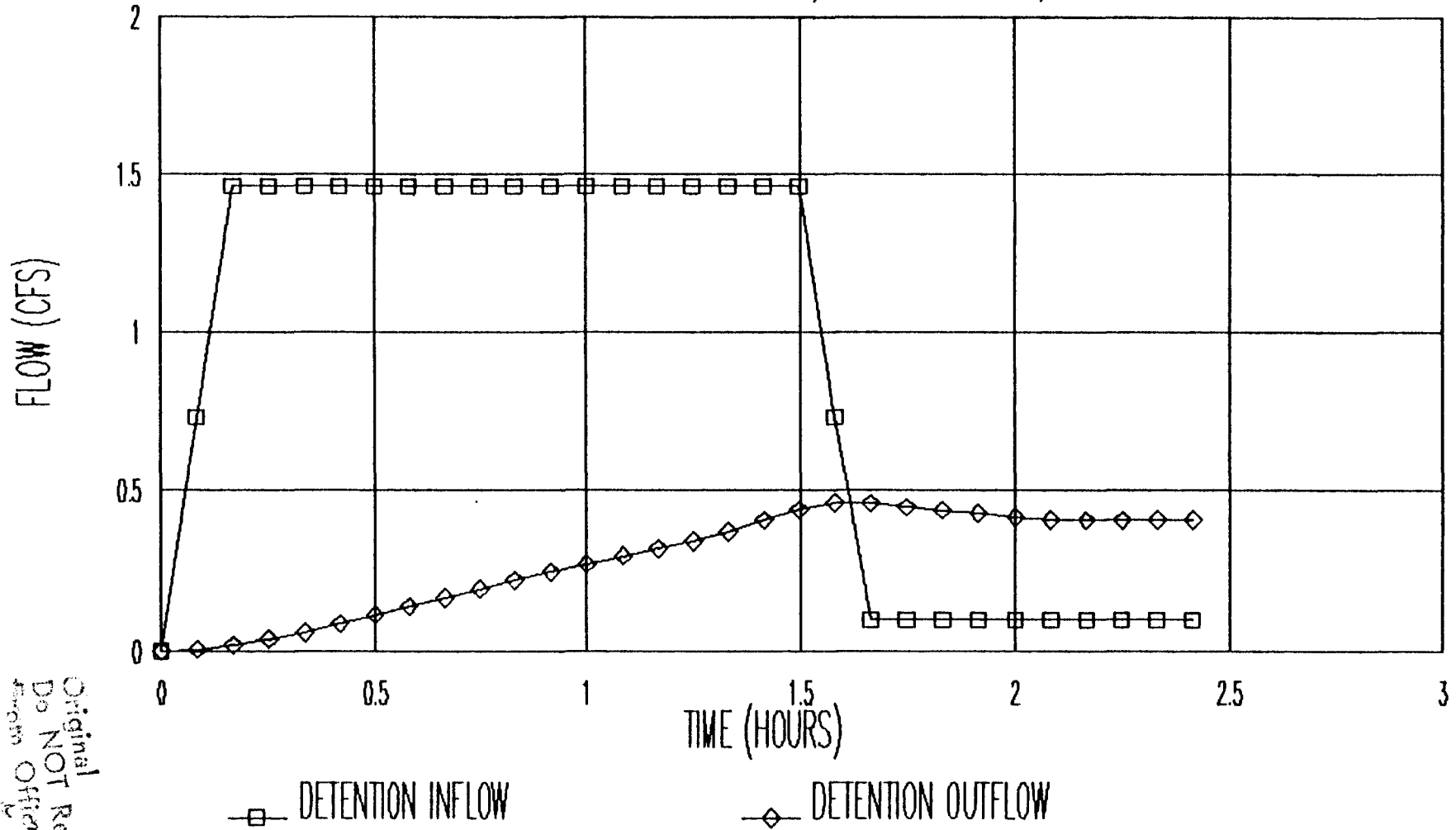


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FIGURE 21

ST MARY'S PARKING

MODIFIED RATIONAL METHOD, FINAL CONDITIONS, 2 YR

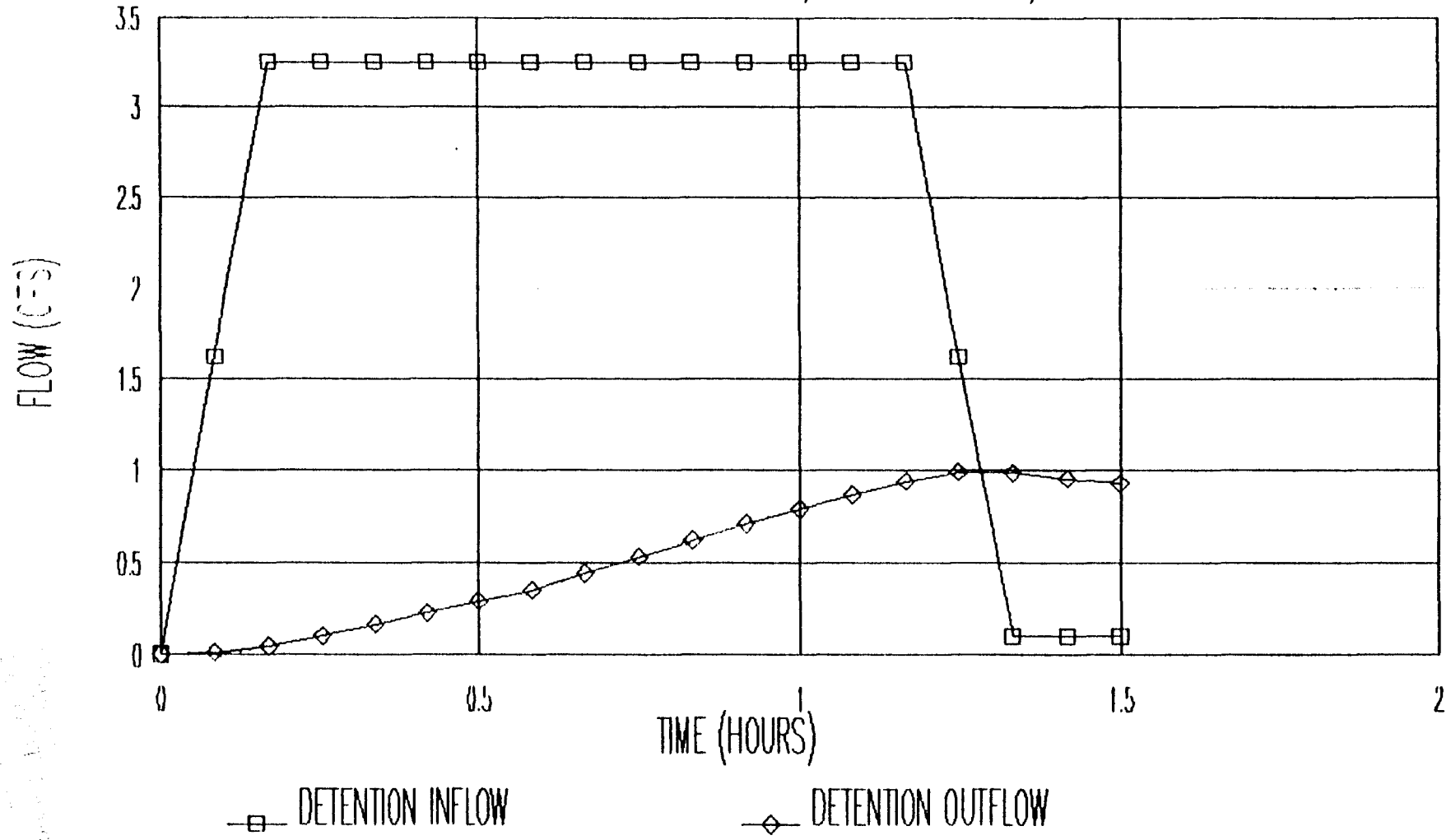


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FIGURE 22

ST MARY'S PARKING

MODIFIED RATIONAL METHOD, FINAL CONDITIONS, 10 YR

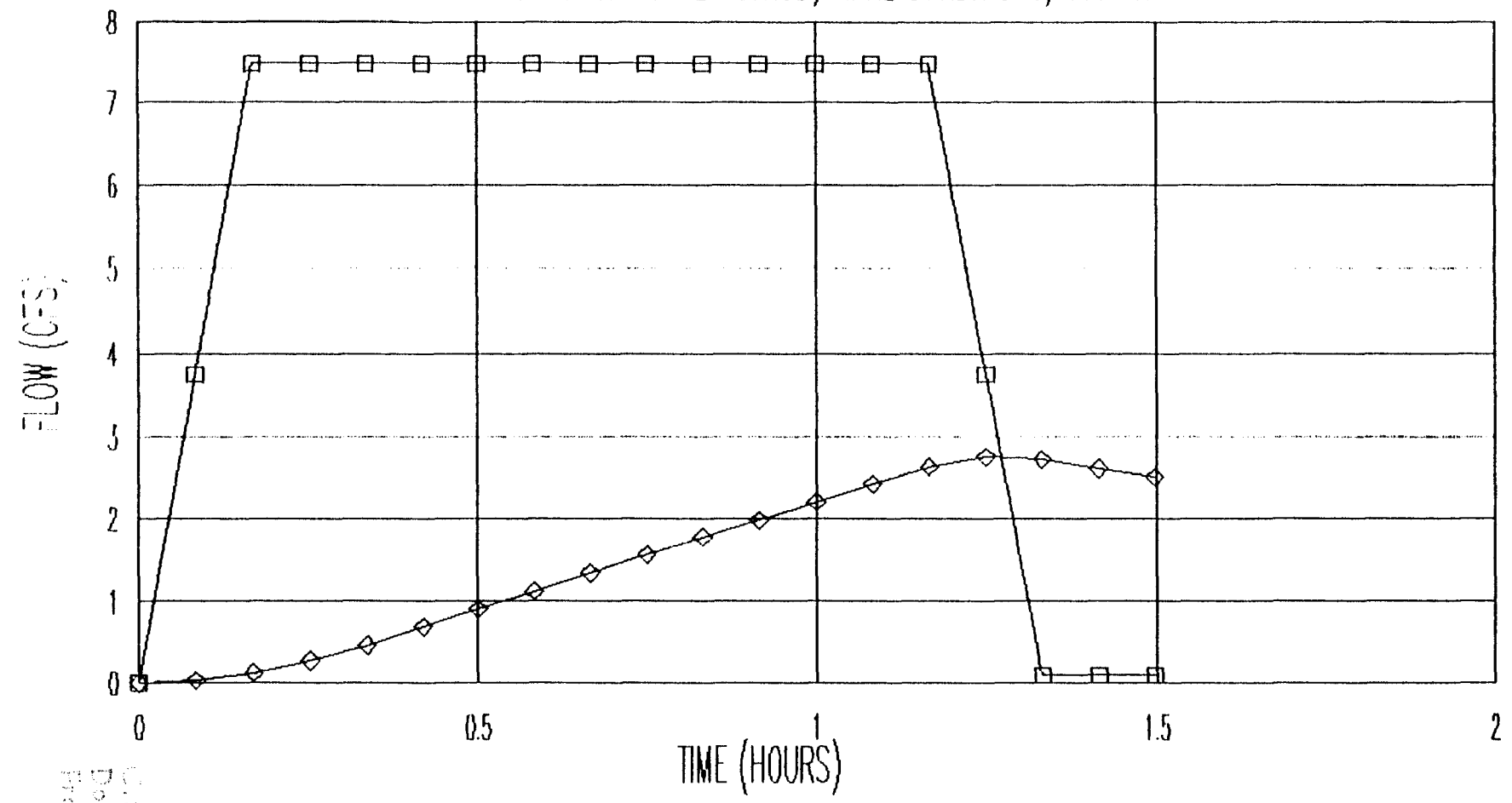


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FIGURE 23

ST MARY'S PARKING

MODIFIED RATIONAL METHOD, FINAL CONDITIONS, 100 YR



—□— DETENTION INFLOW —◇— DETENTION OUTFLOW

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FIGURE 24

REVIEW COMMENTS

(Page 1 of 3)

FILE NO. #34-92

TITLE HEADING: St. Mary's Hospital Parking Lot

ACTIVITY: Revised Final Plan for St. Mary's Hospital Parking Lot

LOCATION: 12th Street & Patterson

PHASE: Final

ACRES:

PETITIONER: St. Mary's Hospital

PETITIONER'S ADDRESS/TELEPHONE: 2635 North 7th Street
Grand Jct, CO 81501
(303) 244-2273

STAFF REPRESENTATIVE: Karl Metzner

**NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS
IS REQUIRED ON OR BEFORE 5:00 P.M., July 3, 1992. }}}**

CITY FIRE DEPARTMENT 06/04/92
George Bennett 244-1400

No problems.

U.S. WEST 06/05/92
Leon Peach 244-4964

No comments at this time.

CITY POLICE DEPARTMENT 06/09/92
Marty Currie 244-3563

Upon review a concern was raised regarding the increase of pedestrian traffic across 7th Street. If the increase in pedestrian traffic uses the traffic light at 7th & Patterson, the effect should be minimal. If shortcuts across 7th Street are used by a large number of pedestrians, it may cause a traffic problem.

CITY ENGINEER 06/04/92

Don Newton 244-1559

A traffic and pedestrian study will be required to analyze the impacts the proposed parking facility will have on "levels of Service" and pedestrian safety on public streets.

The petitioner will be required to close the existing unused curb cut that is west of the proposed exit on Patterson Road.

PUBLIC SERVICE 06/11/92

Harold Ball 244-2693

Public Service gas & electric: No objections.

CITY UTILITIES ENGINEER 06/15/92

Bill Cheney 244-1590

Utility Composite: The stamp or seal of the engineer that prepared the plans needs to be put on the plan.

General: There appears to be no City utilities with the area of the proposed parking lot. Therefore, there is no additional comments.

GRAND JUNCTION DRAINAGE 06/16/92

John Ballagh 242-4343

The Drainage Report and Grading and Drainage Plan are readable and understandable and do meet the intent of on-site detention.

The outlet control manhole appears to be located in the public right-of-way at 7th Street and Wellington, so the City should have control of the structure and be able to keep the runoff weir in place. The facilities within the private property will be privately owned and maintained?

Runoff from the project site does enter the Buthorn Drain which is being upgraded this year as a cooperative project of the City and the Drainage District at a cost of over \$100,000. On-site detention is the answer rather than more costly upsizing of downstream lines.

COMMUNITY DEVELOPMENT 06/18/92

Karl Metzner 244-1439

Landscape plan looks very well done. The concept of expanded parking into this area was previously reviewed with the existing parking approval, and we see no problems.

**MISSING COMMENTS FROM: Transportation Engineer
City Property Agent
City Attorney**

St Mary's

Outstanding Issues

7/7/92

- Improvement Agreement . ✓
- Maintenance Agreement . ✓
- Benchmark on G&D plan . ✓
- Pedestrian Impact Study . ✓

~~Recommended for conditional approval
at 7/7/92 P.C. Mtg.~~

- ✓ Recommend tabling the project on conditional approval with stipulation of no construction beyond earthwork prior to receipt and approval of pedestrian impact study and ~~recommendation~~ implementation of recommendations therein satisfactory to the City Engineer.

DRAFT

ST. MARY'S HOSPITAL
PARKING LOT PROJECT
7/27/92

At the July 7th Planning Commission Meeting this agenda item was tabled until the August meeting with a request from the Planning Commission for representatives from St. Mary's and City Staff to review the issues of potential pedestrian and vehicular traffic problems. Subsequent to the July 7th meeting, 3 meetings between St. Mary's staff and City Staff have occurred, both in the City Offices and on-site at St. Mary's. As a result of these meetings, the following Plan Of Action has been developed to prepare this agenda item for approval at the August meeting of the Planning Commission:

LOCATION -----	ACTION -----
7TH & PATTERSON	<ul style="list-style-type: none">- Improve line-of-sight at intersection by taking existing parking spaces out of service- Move Stop-Bar back- Lengthen walk signal- Add new sign - "No Right Turn on Red When Pedestrians in Crosswalk"
7TH Street	<ul style="list-style-type: none">- Add fencing (See attached drawing)
PATTERSON	<ul style="list-style-type: none">- Parking Lot (Entrance/Exit)

This Plan Of Action was developed after extensive studying of existing and projected pedestrian and vehicular traffic patterns in the areas adjacent to the new parking lot. It was determined that no additional action should be required either at 7Th and Wellington or on 7TH between Patterson and Wellington.

ST. MARY'S HOSPITAL PARKING EXPANSION

RESPONSE TO CITY REVIEW COMMENTS

The following comments are intended as a response to Grand Junction City review of the plan submitted for expanding the employee parking lot for St. Mary's Hospital located between Patterson Rd. and Wellington Ave. east of Seventh St. The only departmental review requesting clarifications and improvements to the plan are addressed as follows:

DEPARTMENT

RESPONSE

POLICE DEPART.

The plan will use restrictive signing and incorporate sidewalk access and landscape barriers that will encourage the proper use of the pedestrian crosswalks at Seventh and Patterson.

CITY ENGINEER

A study has been implemented in which pedestrian population counts have been collected and walking patterns observed. Vehicle counts and patterns have also been observed and the results from both studies are presently being analyzed. Results from these studies are pending and a report of the expected effect on present levels of service will be forthcoming.

Closing the unused curb cut west of the exit at the northeast corner of the project is part of the plan. Included in the plan of this exit onto Patterson are the restrictions of "exit only" and "right turn only".

CITY UTIL'S ENG.

The Utility Composite plan shall bear the seal of the engineer.

CITY DEVEL. ENG.

A response regarding Storm Water Discharge is enclosed.

GRAND JCT. DR. DST.

Applicant has no intention of revising the use of the outlet control manhole located in the public right-of-way and is satisfied with the request for public maintenance of same. All facilities within the private portion of the the site will be maintained in accordance with standard agreements stipulated by forms provided by the City.

TO: CITY DEVELOPMENT ENGINEER
RE: St Mary's Parking Storm Water Discharge

In accordance with a request by the City of Grand Junction, we have estimated the hydraulic grade lines in the storm water conveyance facilities for the various storm recurrence intervals. The portion of the system evaluated was from the detention pond to the storm drain manhole in Wellington. It is impossible to make this evaluation without knowing the elevation of the hydraulic grade in the City's storm water system and it is well beyond the scope of St. Mary's responsibility to perform a detailed hydraulic evaluation of the City's storm water drainage system. Therefore, the City provided estimates of the hydraulic grade elevation in the manhole for the 2 and 100 year storms. For the 2 year storm, the estimated hydraulic grade elevation was the top of the 15 inch pipe (elevation=37.65) and for the 100 year event the estimated elevation was one foot above the adjacent gutter flow line (elevation=42.50). For the 10 year event, the hydraulic grade elevation was estimated based on the assumption that the flow velocity in the storm drain during the 2 year storm would be about 4 ft/sec, that the ratio of the 10 year storm flow in the storm drain to the 2 year flow would be the same as the ratio of the respective storm intensities and that the total hydraulic energy in the manhole relative to the manhole invert would be directly proportional to the square of the pipe velocity.

Attached is an estimation of the hydraulic grade lines for the three events along this stretch of the system based on the information provided by the City and the assumptions described above. At this point, it should be noted that, the original storm water evaluation as presented in the drainage report was performed based on the assumption that the City's system has the capacity to accept the metered discharge from the weir without restricting the flow.

The calculations showed that, under all three events, the final discharge to the City's system would not be significantly greater for the final conditions than for the conditions prior to development of any of the parking areas. However, the calculated hydraulic grade lines based on the above considerations as shown on the attached sheets, indicate some interesting conditions. The 2-year flows discharge without restriction as indicated in the drainage report. The 10 year flows through the metering weir result in significant downstream submergence which will decrease the discharge capacity. As far as the impact on the City's storm water system, this will simply mean that the flows under final conditions will be even lower than shown in the drainage report, and that the impact will be substantially lower under the proposed final conditions than prior to construction of any of the parking lots. However, it also means that, greater storage in the detention pond will occur than indicated in the report. The maximum estimated storm water runoff volume from the site

under the proposed final conditions for the 10 year event is about 13,700 cu ft. The maximum detention pond capacity at the spill overflow elevation in the driveway of 40.8 is about 27,000 cu ft. Therefore, even with no detention pond discharge during the 10 event, there is sufficient storage capacity to hold the entire 10 year runoff volume without spilling into the street. On the other hand, as indicated in the drainage report, under the most favorable 10 year flow conditions with no submergence restrictions on the metering weir, the discharge will be no greater with the proposed final conditions than it was before the parking lot improvements. For the 100 year event, the estimated maximum detention pond water depth with no restrictions to the discharge flows was 2.26, or a water surface elevation of 40.30. If the hydraulic grade elevation at the manhole is 42.50, the result will be reverse flow from the City's storm drain system into the detention pond. In fact, since the estimated 100 year hydraulic grade elevation at the manhole is above the detention pond spill elevation, there will be reverse flow into the detention pond with, obviously no discharge. The maximum estimated storm water runoff volume from the site under the proposed final conditions for the 100 year event is about 36,240 cu ft. Since the maximum detention pond capacity at the spill overflow elevation of 40.8 is about 27,000 cu ft, there is not sufficient capacity to store the 100 year runoff volume without discharge. The original analysis, which was based on the assumption that the metering weir would freely discharge without backwater restrictions, required about 25,000 cu ft of storage in addition to the discharge through the weir to prevent spills. We did not re-evaluate the 100 year storm discharge into the City's system under the conditions assumed above, since we were uncertain how to handle the reverse hydraulic gradient. It is interesting to note that, if in fact the hydraulic grade elevation in the manhole during the 100 year event is above the water surface elevation in the detention pond required to store the entire 100 year runoff volume, the St Mary's detention pond will provide some storage for the street flows. On the other hand, as with the 10 year conditions, under the most favorable 100 year flow conditions with no submergence restrictions on the metering weir, the discharge will be no greater with the proposed final conditions than it was before the parking lot improvements.

It should also be noted that the final design conditions for the detention pond have changed slightly from the preliminary ones used in the drainage report. Following is a comparison of the two conditions:

PREVIOUS:			FINAL:		
ELEVATION	DEPTH	VOLUME	ELEVATION	DEPTH	VOLUME
38.5	0	0	38.0	0	0
39.0	0.5	1,350	39.0	1.0	2,628
40.0	1.5	11,250	40.0	2.0	11,725
40.5	2.0	19,671	40.8	2.8	27,000
41.0	2.5	30,000			

ST. MARY'S HOSPITAL PARKING EXPANSION

RESPONSE TO CITY REVIEW COMMENTS

The following comments are intended as a response to Grand Junction City review of the plan submitted for expanding the employee parking lot for St. Mary's Hospital located between Patterson Rd. and Wellington Ave. east of Seventh St. The only departmental review requesting clarifications and improvements to the plan are addressed as follows:

DEPARTMENT

RESPONSE

POLICE DEPART.

The plan will use restrictive signing and incorporate sidewalk access and landscape barriers that will encourage the proper use of the pedestrian crosswalks at Seventh and Patterson.

CITY ENGINEER

A study has been implemented in which pedestrian population counts have been collected and walking patterns observed. Vehicle counts and patterns have also been observed and the results from both studies are presently being analyzed. Results from these studies are pending and a report of the expected effect on present levels of service will be forthcoming.

Closing the unused curb cut west of the exit at the northeast corner of the project is part of the plan. Included in the plan of this exit onto Patterson are the restrictions of "exit only" and "right turn only".

CITY UTIL'S ENG.

The Utility Composite plan shall bear the seal of the engineer.

CITY DEVEL. ENG.

A response regarding Storm Water Discharge is enclosed.

GRAND JCT. DR. DST.

Applicant has no intention of revising the use of the outlet control manhole located in the public right-of-way and is satisfied with the request for public maintenance of same. All facilities within the private portion of the the site will be maintained in accordance with standard agreements stipulated by forms provided by the City.

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The calculations showed that, under all three events, the final discharge to the City's system would not be significantly greater for the final conditions than for the conditions prior to development of any of the parking areas. However, the calculated hydraulic grade lines based on the above considerations as shown on the attached sheets, indicate some interesting conditions. The 2 year flows discharge without restriction as indicated in the drainage report. The 10 year flows through the metering weir result in significant downstream submergence which will decrease the discharge capacity. As far as the impact on the City's storm water system, this will simply mean that the flows under final conditions will be even lower than shown in the drainage report, and that the impact will be substantially lower under the proposed final conditions than prior to construction of any of the parking lots. However, it also means that, greater storage in the detention pond will occur than indicated in the report. The maximum estimated storm water runoff volume from the site

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PREVIOUS:

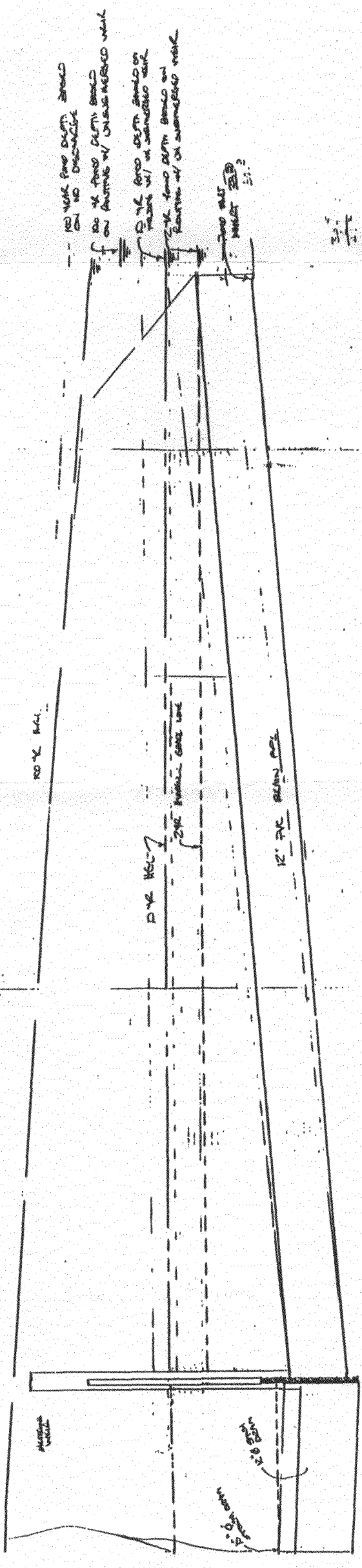
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Hydrologic data summary at various stream points and
cross sections provided by City of Canton

7-1-42
5 Miles
from Canton



25'
1"

