MASTER DRAINAGE PLAN

AUGUST 19, 1996

WILLIAMS GATEWAY AIRPORT

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

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WILLIAMS
GATEWAY
AIRPORT

August 20, 1996

Dear Property Owner

Enclosed is a copy of the final Master Drainage Plan report for the former Williams Air Force Base property. I want to thank the members of the subcommittee who worked on this project including Harry Hartman at ASU East, Peter Knudson at the City of Mesa, and Jim Burke and Alfonzo Rodriguez from the Gila River Indian Community.

The airport is prepared to adopt the report at the August meeting of the Airport Authority Board. I encourage each of your agencies to use the report in planning future changes and upgrades to the storm drainage systems on your property. The consultant attempted to incorporate any available plans for future development and uses of the property around the former base.

I appreciate your cooperation with this project. If you have any questions, please call me at 988-1013.

Sincerely,

Lisa Laird

Lisa K. Laird
Environmental Manager

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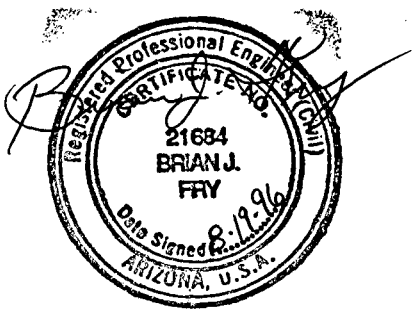
MASTER DRAINAGE PLAN

MASTER PLAN REPORT

Prepared For:

WILLIAMS GATEWAY AIRPORT AUTHORITY



Prepared By:

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AUGUST 19, 1996

Catherine Regester - FCDX

From: Bobbie Ohler - FCDX
Sent: Tuesday, February 11, 2003 12:54 PM
To: Catherine Regester - FCDX; Dave Degerness - FCDX
Cc: Amir Motamedi - FCDX
Subject: FW: Drainage studies for ASU East area

-[- Bobbie] Cathy and Dave - I think ASU east would be more interested in EMF routing. What do you think? -
[- Bobbie]

---Original Message-----
From: Don Rerick - FCDX
Sent: Tuesday, February 11, 2003 12:47 PM
To: Bobbie Ohler - FCDX; Amir Motamedi - FCDX
Cc: Michael Smith - FCDX; David Boggs - FCDX; Joe Tram - FCDX
Subject: RE: Drainage studies for ASU East area

I believe Bobbie and Amir have information that may be helpful to the consultant. The Ellsworth Road Channel project probably has the best information and Amir and Bobbie could make this available to the consultant. Bobbie and Amir, could you please respond to this request. Thanks

> -----Original Message-----
> **From:** Joe Tram - FCDX
> **Sent:** Tuesday, February 11, 2003 9:50 AM
> **To:** Don Rerick - FCDX
> **Cc:** Michael Smith - FCDX; David Boggs - FCDX
> **Subject:** RE: Drainage studies for ASU East area
>
> Don;
>
> Who upstairs is working on this area that you can forward this to such that they can respond to this inquiry. Believe he is talking out Williams Air Force Base, Power line Floodway, and the EMF.....Is this Scott's or Bobbi"s....It is all yours....thanks
>
> > -----Original Message-----
> > **From:** Michael Smith - FCDX
> > **Sent:** Tuesday, February 11, 2003 6:11 AM
> > **To:** David Boggs - FCDX; Joe Tram - FCDX
> > **Subject:** FW: Drainage studies for ASU East area
> >
> > I've received a follow-up inquiry from this gentleman. He originally sent an email to Kelli Setich, Todd Williams, Mark, George, you and I. Who is best equipped to answer his inquiry and provide the appropriate maps/photos/studies. I've already explained that I don't have immediate access to what he's after but that I'd point his inquiry to the right person.
> > Thanks,
> > Mike.
> > -----Original Message-----
> > **From:** Richard Collins [mailto:Richard.Collins@asu.edu]
> > **Sent:** Monday, February 03, 2003 9:54 AM
> > **To:** kas@mail.maricopa.gov; tgw@mail.maricopa.gov; dbb@mail.maricopa.gov; mkm@mail.maricopa.gov; mis@mail.maricopa.gov; gdl@mail.maricopa.gove

Subject: FW: Drainage studies for ASU East area

-----Original Message-----
From: Richard Collins
Sent: Thursday, January 30, 2003 11:41 AM
To: 'kas@mail.maricopa.gov'
Cc: Douglas Sanford
Subject: Drainage studies for ASU East area

To whom it may concern:

Arizona State University East campus is in the process of developing as storm water management program in response ADEQ's requirement for obtaining coverage for a municipal storm water discharge (MS4) permit. Do you or your agency have any recent maps and/or studies for the area covering ASU East campus area since we do have a rather large drainage swale which seemingly drains our campus and empties in to the large concrete East Mesa Flood drain (located east of Power Road) in the Chandler Blvd./Williams Field Road area? ASU East is generally located south of Ray Road, west of Sossaman Road, north of Pecos Road (extended), and east of Power Road.

Your prompt response would be most appreciated. Thank you.

Rick Collins, AICP
Campus Planner
Arizona State University
Fax : 480-727-1114
Voice : 480-727-1313
Cell : 602-717-1889
E-Mail : Richard.Collins@asu.edu

WILLIAMS GATEWAY AIRPORT
MASTER DRAINAGE PLAN

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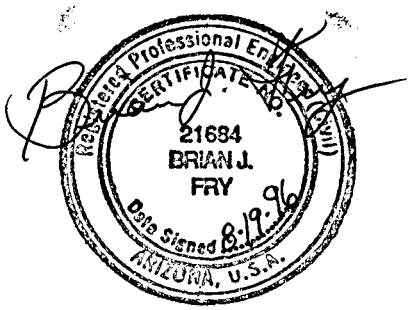

WILLIAMS GATEWAY AIRPORT
MASTER DRAINAGE PLAN

I. INTRODUCTION

A. Objective

This report summarizes the Master Drainage Plan (MDP) developed for the former Williams Air Force Base property. The MDP accounts for present and future uses of the property. The project consists of analysis of the present system, review of previous studies and data on the system, and review of the future owners land use plans. Based upon the analysis, a plan is presented that incorporates conclusions and recommendations on the upgrade, repair, and maintenance of the system to meet the present and future needs of the owners.

B. Background

In September 1991 the Department of Defense announced that Williams Air Force Base would be closed as of September 1993. In response to that decision the Governor of Arizona appointed the Williams Air Force Base Economic Reuse Advisory Board to develop a long-range plan for the future reuse of the Williams Air Force Base facility. As part of that plan several different land uses were identified including establishment of an education, research, and training (ERT) campus, creation of a public reliever airport for Sky Harbor International Airport, and development of new industrial / commercial activities around the airport. This Drainage Master Plan is funded by a cooperative effort of the land owners for the entire former Williams Air Force Base. The contract is administered by the Williams Gateway Airport Authority which consists of the City of Mesa, Town of Gilbert, Town of Queen Creek, and the Gila River Indian Community.

C. Study Area

The study area consists of the entire former Williams Air Force Base property. The property consists of two distinct proposed land use areas: The Educational, Research, and Training (ERT) campus, and the Williams Gateway Airport (WGA). The ERT campus consists of most of the existing housing and developed area from the base. The WGA consists of the airfield and surrounding areas. Within the WGA property, there is a significant amount of undeveloped land around the runways which is planned for development. The Project Location is shown on **Figure 1**. The former Williams Air Force Base consists of approximately six square miles, bounded by Ellsworth Road on the east, the Powerline Floodway on the north (Ray Road alignment), Power Road to the west, and Pecos Road to the south.

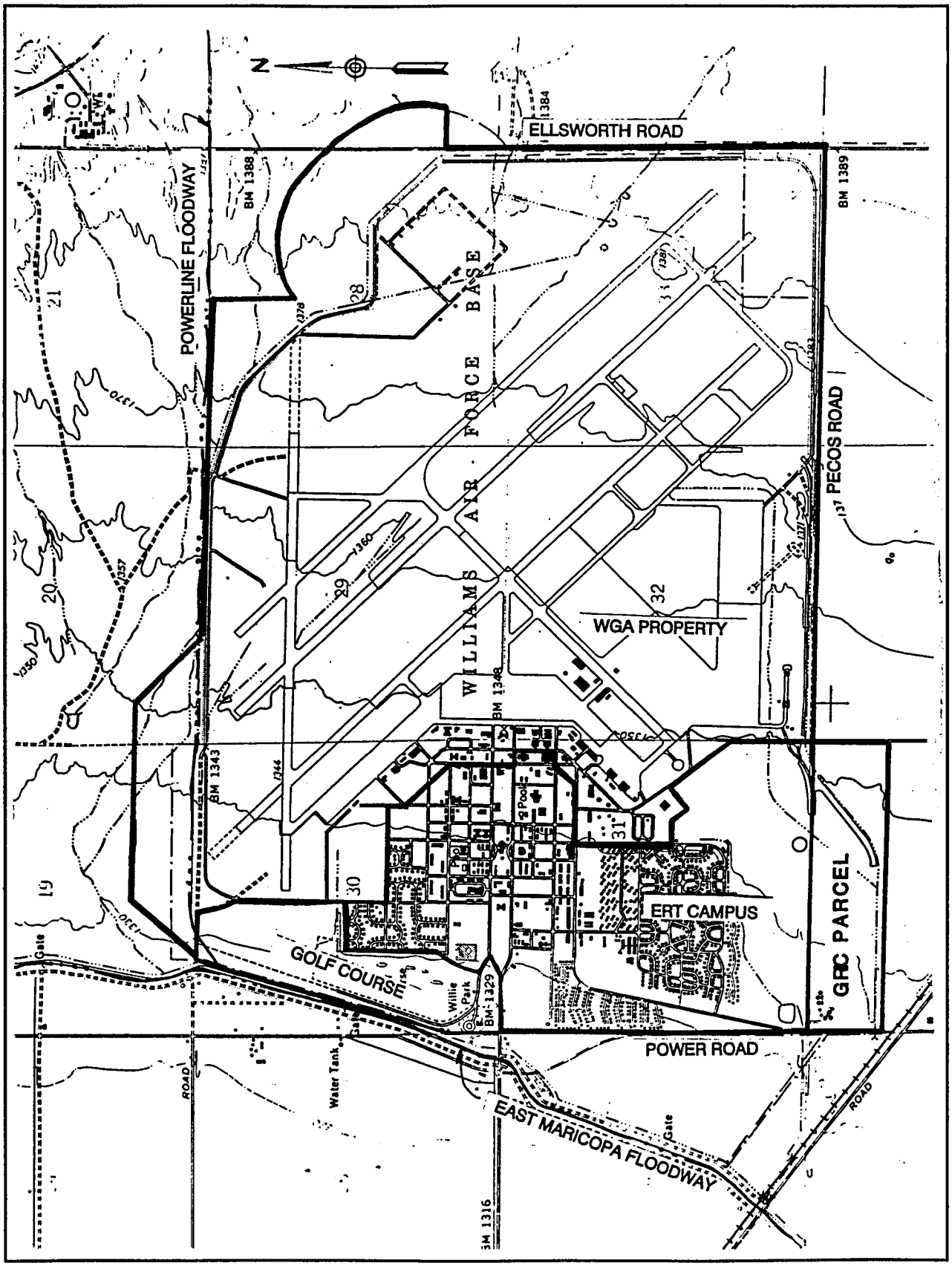

Figure 1 - Project Location

Existing drainage patterns are from east to west. Off-site runoff reaching the site is intercepted by channels along the east and north sides of the site and conveyed around the north site boundary in the Powerline Floodway (PLF) to the East Maricopa Floodway (EMF). The EMF is the outfall for all runoff in the contributing watershed. Since off-site runoff is intercepted and diverted around the site, runoff analyzed in this report is limited to runoff generated by rain falling on the site.

D. Land Use

The ERT campus consists primarily of existing housing and classroom space. Open space is present in the mall area and the golf course. Long-term planned land use consists of similar uses with the addition of more parking and classroom space. The mall area will be enlarged and existing buildings removed to create additional landscaped open space. The WGA consists of aircraft runways, taxiways, aprons, hangers, and related aircraft uses. There are large undeveloped areas to the northeast and southwest of the runways. The runway and infield areas will remain open with industrial and commercial land uses eventually occupying the remaining open space. New access roadways and a passenger terminal will be added to the northeast side of the runways for public access.

E. Project Approach

The existing drainage system was studied in 1988 under an Air Force contract before the base closure. The resulting report is entitled *A Study for Rehabilitation and Maintenance of the Drainage System at Williams Air Force Base, Arizona*, September 1988, Franzoy Corey Engineers & Architects (Rehabilitation Study). The Rehabilitation Study identified existing drainage channels and storm drains and presented estimated hydraulic capacities. A hydrology model was developed to establish 10-year peak discharges and to identify channels and storm drains that are undersized. Problem areas were identified and discussed and a rehabilitation plan was recommended.

As part of the Rehabilitation Study, extensive field surveys and observations were made and hydraulic computations were performed to estimate the capacity of existing storm drains and channels. The approach used in this study is to make maximum use of the Rehabilitation Study. The Rehabilitation Study is supplemented with new field data where the existing data is found to be insufficient.

The Rehabilitation Study data was reviewed and tabulated in the office. Gaps in the data were identified and field surveys were performed to fill the gaps. The field data was then used as a basis for hydraulic computations to estimate the capacity of existing storm drains, channels, and culverts.

The study area was divided into drainage subareas for the hydrologic analysis based on existing topography and planned land use. Planned land use for the WGA is from *The Vision, Williams Gateway Airport*, March 1995, Cornoyer Hedrick and for the ERT campus from *Williams ERT Campus Master Plan*, Final Draft, October 1995, BRW, Inc. As part of the subsequent development of the Phase I improvements for WGA, the land use plan for the Phase I area was refined. The refined land use plan is incorporated into this Master Drainage Plan from the *Williams Gateway Airport, Business Park - Phase I*, Coffman Associates. Drainage subareas were delineated to correspond to land use areas and individual parcel owner/developers to allow identification of required retention and peak runoff rates generated within each area.

A hydrology model was developed for the existing and developed land use for the 5-, 10-, and 100-year rainfall. The existing conditions model is used to identify existing deficiencies in the storm drain system. The developed condition model is used to size recommended storm drains, channels, and culverts.

Based on the planned land use a conceptual drainage system layout is presented. The conceptual system should be implemented as the area is developed.

II. HYDROLOGY

A. Methodology

Runoff is computed using the Rational Method as described in *Drainage Design Manual for Maricopa County, Arizona, Volume I Hydrology*, January 1995. The Rational equation relates rainfall intensity, a runoff coefficient, and the watershed size to the generated peak discharge. The following shows this relationship:

$$Q = CiA$$

where

Q = the peak discharge (cfs)

C = a coefficient relating the runoff to rainfall

i = average rainfall intensity (inches/hour), lasting for a Tc.

Tc = the time of concentration (hours)

A = drainage area (acres)

The Rational Equation is based on the concept that the application of a steady, uniform rainfall intensity

will produce a peak discharge at such a time when all points of the watershed are contributing to the outflow at the point of design. Such a condition is met when the elapsed time is equal to the time of concentration, Tc, which is defined as the floodwave travel time from the most remote part of the watershed to the point of design. The time of concentration is computed by the following equation:

$$Tc = 11.4\, L^{0.5}\, K_b^{0.52}\, S^{-0.31}\, i^{-0.38}$$

where

Tc = time of concentration (hours)

L = length of the longest flow path (miles)

K_b = watershed resistance coefficient

S = watercourse slope (feet/mile)

i = rainfall intensity (in/hour)

Guidance is provided in the Drainage Design Manual for determining the values of C, K_b, and i. A, L, and S are determined from the drainage area map for each subarea.

Peak runoff rates and volumes increase as development takes place due to addition of impervious surfaces that prevent infiltration and increased runoff conveyance efficiency from smooth paved surfaces. The effect of development is evaluated with the Rational Equation by increasing the runoff coefficient based on the extent and type of development. C factors are tabulated for existing development conditions and used for the existing conditions hydrology. Developed condition C factors are then tabulated based on planned land use and developed conditions runoff is computed. The impact of increased runoff from development is offset by providing retention to store runoff during the storm and "bleed" it off at lower rates following the storm. On-site retention is evaluated by adjusting the C factor. A C factor of zero is used for the retained area. It is assumed that retention will be provided for 70 to 80 percent of the subarea with the remainder running off. This assumption is made to account for areas that won't be captured in on-site retention areas due to site grading, streets, or future aprons and taxiways that drain to common area basins.

The Rational method produces only peak discharge values, not a complete hydrograph. Combined runoff effects from more than one subarea are determined by computing a composite C factor for the combined areas and re-evaluating the Rational equation with the composite C factor, the total combined watershed area, and the rainfall intensity from the longest time of concentration. The longest time of concentration is determined by comparing the individual times of concentration for each subarea plus the total travel

time from the subarea to the point of interest.

With this methodology, peak runoff rates are computed for each individual subarea. The individual subarea runoff parameters are then combined according to the flood routing to determine the total peak discharge at each concentration point. The total peak discharge includes the runoff from all upstream subareas.

B. Hydrologic Criteria

Peak runoff rates are computed for the 5-, 10-, and 100-year rainfall events. Drainage system planning for the airfield areas is based on providing a drainage network sized to convey the 5-year storm, according to FAA drainage criteria. Planning in all other areas is based on providing a drainage network sized to convey the 10-year storm, according to City of Mesa and Maricopa County requirements.

Retention, sized to retain the total runoff from the 100-year, 2-hour storm, is required for all new development. The retention areas must drain within 36 hours. The areas that are already developed will not be required to retro-fit retention facilities. However, if any re-development takes place, retention will be required for the new improvements. Areas that are currently undeveloped will be required to meet the retention requirement as part of new development plans.

C. Drainage Area Characteristics

Planned land use is shown on **Exhibit A**, bound separately. Runoff coefficients for developed conditions are based on the planned land use. The study area has been subdivided into individual drainage subareas for the evaluation of runoff. Runoff is computed for each individual subarea and for subareas combined according to the flow routing through the system. The drainage subareas and flow routing, along with points of concentration and 10-year peak discharge for existing conditions are shown on **Exhibit B**. Peak discharges in major channels are also shown for the 100-year storm. The drainage area runoff parameters and computed peak discharges are tabulated in **Appendix A**. The output contained in **Appendix A** for each storm and development condition consists of five reports described as follows:

Subarea Runoff:	Contains the area designators, parameter values, and computed peak discharges for each individual subarea.
Routing:	Contains the routing parameters, cumulative areas and C factors and the peak discharge including all subareas tributary to the point of interest.

Summary Table:	Contains the area designators, composite parameter values, and computed peak discharges leaving the subarea, including all subareas tributary to the subarea of interest. Also contains accumulated 100 yr, 2 hr retention requirement for proposed conditions.
C Factors:	Contains the C factors for each land use type and the derivation of the composite C factor for each individual subarea.
Time of Concentration:	Contains time of concentration parameters and calculated times for each individual subarea.

III. EXISTING CONDITIONS

A. Introduction

This section describes the results of the analysis of existing conditions. Existing conditions runoff rates are identified for the 5-, 10-, and 100- year rainfall. Flooding problem areas are then identified. Existing drainage facilities are shown on **Exhibit C.**

B. Runoff Quantities

The computed peak runoff rates are tabulated in **Appendix A.** The drainage subarea boundaries, area designator's and 10-year peak discharge rates are shown on **Exhibit B.**

C. Areas of Flooding

Flooding problems exist within the ERT Campus areas and along the north and south apron areas. The flooding problems are almost universally due to inadequate system capacity to convey runoff generated during storm events.

North and South Apron Areas

Within the north and south apron areas it appears that inlets and storm drains were probably not sized to clear the aprons *during* a storm but were provided with the intent of draining low areas *after* the storm to eliminate nuisance ponding. Curbs and swales are not provided to direct runoff to the inlets and the inlets themselves are small. The grates are even with the natural ground around them which limits the interception capacity by not allowing runoff to accumulate over the grate. Many of the existing grates are within curbed areas that have been covered with cobbles. The curbs and cobbles actually prevent runoff from reaching the inlets.

The storm drains drain around the north and south sides of the aprons and discharge into existing channels. Runoff that is not intercepted by the storm drain does not flow to the channels as intended but flows to the west in an overland fashion causing flooding of hangars and streets in the ERT campus area.

ERT Campus Areas

Runoff in the ERT campus area flows primarily in an overland fashion to streets, which convey the runoff in a westerly direction to on-site drainage channels and pipes whose eventual outfall is the East Maricopa Floodway. The street drainage network is ineffective at conveying runoff to suitable outfalls. Many streets have no curb and gutter which limits their ability to convey any runoff at all. Many streets that have curb and gutter have had so many pavement overlays that the gutter is either covered with AC or there is a large lip at the gutter where the asphalt from the overlays projects above the gutter. The asphalt occupies area within the street cross-section that originally was available to carry runoff. When runoff reaches street intersections there are flow splits and ponding problems. The street crowns prevent runoff from flowing efficiently across side streets. Complaints have been registered about ponding at many of the intersections. Storm drains and inlets that exist in the ERT area are undersized for the design storm. Problem areas within the ERT area are identified on **Exhibit C**.

Airfield Areas

The airfield areas and undeveloped areas within the WGA area have not experienced flooding problems. There are large open space areas that are graded in wide shallow swales that convey runoff north to the Powerline Floodway and southwest to the Rittenhouse Channel.

D. Sanitary Sewer Cross-ties

The Rehabilitation Report identifies locations where storm water flows into sanitary sewers through sanitary sewer manhole lids and from storm drain pipes cross-connected to sanitary sewers. The report makes recommendations to eliminate the cross-connections. A field investigation of known sanitary sewer cross-connections was made on March 18, 1996. Cross-connections identified in the Rehabilitation Study were located to determine the current status of the cross-connections and an attempt was made to locate cross-connections not previously identified. A detailed report of the findings of the field investigation is contained in **Appendix B**.

IV. RECOMMENDED PLAN

A recommended drainage plan is presented for the build-out condition that is to be used as a guiding plan

to direct the development of the WGA and ERT improvements. Recommendations are also made for interim improvements to alleviate existing flooding problems.

A. Build-Out Conditions

The following recommendations are made for build-out conditions. General development guidelines are presented to be applied to individual parcel "leased areas" as they develop throughout the study area and specific recommendations are made for area wide collection systems and shared common areas.

Development Guidelines

The following development guidelines are recommended to be implemented throughout the study area and by individual parcels as they are developed:

1. On-site retention shall be provided to retain the entire 100-year, 2-hour storm runoff within the parcel boundaries.
2. Runoff from common areas such as aprons, taxiways, and roads shall be retained in area wide basins.
3. New arterial streets shall have storm drain pipes and inlets sized to carry:
   a.) 10-year pavement runoff from curb to curb, and
   b.) bleed-off from retention basins within 36 hours.
4. All local streets shall have 18 to 24 inch pipes where needed to drain on-site retention basins.
5. Individual parcel developers are required to tie into storm drains to drain retention basins. Dry wells are not allowed.

The land use plans used as a basis for this Master Drainage Plan are conceptual. It is anticipated that the plans will be refined and modified as development takes place. As the refinement occurs, road alignments and parcel configurations will change. As a result, this master plan does not attempt to identify all improvements, or every storm drain, that will be required as a result of the development guidelines. The guidelines will need to be enforced during the site development process. As planners and engineers develop more detailed site development plans, provision should be made to provide required retention by including the required land area for retention in the planning. As an aid to planners, **Figure 2** shows the approximate land area required for retention based on the land area contributing runoff to the retention site and the composite runoff coefficient. The required storage volume in acre-feet is also shown. The land area requirements shown on **Figure 2** are based on an average basin depth of two feet. The City of Mesa limits basin depths to a maximum of three feet. The

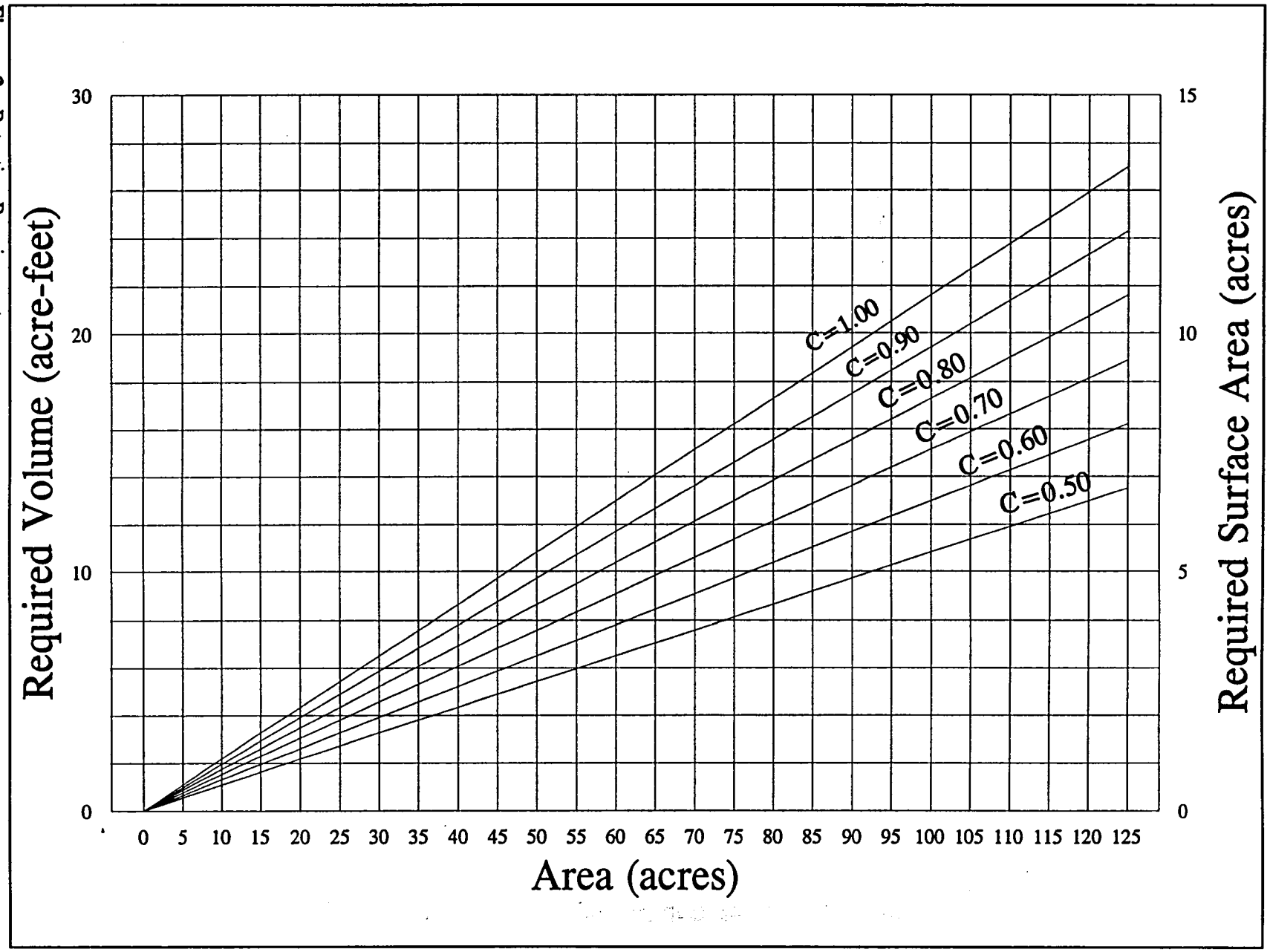

Figure 2 - Retention Requirements

average depth of two feet allows for land area required for sideslopes and bottom slopes required to drain the basin.

In conjunction with the general development guidelines, the following specific master plan improvements are recommended. The recommended improvements are shown on **Exhibit D**.

Williams Gateway Airport - North and South Apron Areas

Runoff from the apron areas that is not intercepted by the existing storm drain flows westerly into the ERT campus area. The new Sossaman Road alignment is in the path of the apron area runoff. It is recommended that new storm drains be constructed adjacent to aprons and taxiways sized to intercept 10-year runoff from the apron area. The existing storm drains are deteriorated and under-sized and should be removed as part of the new storm drain projects. Flows in excess of the storm drain capacity will continue to flow westerly toward Sossaman Road. It is recommended that as new development takes place within the area between the aprons and Sossaman Road that the sites be raised to ensure that all finished floors are high enough to prevent inundation from sheet flow.

Parcels adjacent to existing and proposed apron areas should be graded so that the runoff from the aprons is intercepted by the storm drain proposed along the edge of the apron. In this study a shallow "vee" ditch is planned along the edge of the aprons. For parcels contiguous with the apron, a strip 20 feet wide is assumed to be graded to drain toward the apron. Runoff from this strip is accounted for in the preliminary storm drain design. In addition to the 10-year runoff conveyed in the storm drain, provision must be made to direct the 100-year flows to the intended outfalls. This is required to prevent runoff from crossing Sossaman Road and flowing into the ERT area. Alternatively, additional retention could be provided along Sossaman Road sized for the apron area runoff.

Two area wide basins are recommended to collect runoff from the taxiways and aprons. The North basin is located on the outside of a curve in Sossaman Road near the golf course. The South basin is located on the east side of Sossaman Road at the south end of the airport.

The North basin is required to provide an outfall for storm drains recommended to drain the North Apron area and Sossaman Road. The planned outfall for the storm drains is the golf course channel. Due to the size and depth of the storm drains, the golf course channel is not deep enough to daylight the storm drain pipes. The basin outfall pipe will be positioned at an elevation that can drain into the golf course

channel. In a storm event the lower portion of the basin will fill without draining until the water surface is high enough to drain into the outfall pipe. Above that level the basin will drain into the golf course channel. The outfall pipe should be sized for maximum peak discharge attenuation for the basin size. Following the storm event the basin will drain by gravity to the level of the outfall pipe invert. The bottom of the basin will need to be drained by percolation or with a small pump. Although the basin is not needed to attenuate peak flows, it is recommended that the basin be constructed as large as practical within the site limits. The basin design will result in lower peak discharges in the golf course channel for a given storm than under existing conditions. There are existing golf cart crossings with small pipes that limit the capacity of the golf course channel. The crossings should be improved to match the capacity of the existing channel. If the crossings are not improved, runoff will continue to spread out and flow across the golf course in a similar manner to existing conditions.

The South basin is required to provide an outfall for storm drains recommended to drain the South Apron area and Sossaman Road. The planned outfall for the storm drains is an existing channel that drains in a southwesterly direction through the ERT and Gila River Indian Community property. As with the North basin, the existing channel is not deep enough to daylight the storm drain pipes or completely drain the basin. A concept similar to that recommended for the North basin can be used to drain the basin or the outfall channel can be re-graded to drain the basin by gravity. The South basin should be sized to retain the 100-year, 2-hour runoff volume of 43 acre-ft.

The storm drain pipes draining into both basins are sized for the 10-year peak discharge. The basins are intended to collect the 100-year runoff. During site development, conveyance must be provided to ensure that runoff in excess of the pipe capacity, up to the 100-year flow, will be directed to the basins. The conveyance can be provided by overall site grading, swales or open channels, or pipes. The method of conveyance will be left to the designer. Critical locations where 100-year flows are to be re-directed are shown on **Exhibit E**.

Williams Gateway Airport - Sossaman Road

A new storm drain is planned to be constructed in Sossaman Road, sized to collect the pavement runoff. There are two discharge points for runoff collected along Sossaman Road. Runoff from the north end of the alignment will drain to the North basin. Runoff from the south end of the alignment will drain to the South basin. There is an area between the proposed apron area stormdrain and Sossaman Road that will drain toward Sossaman Road. This area should be provided with on-lot retention. Laterals should be

provided in the Sossaman Road storm drain to allow connection from the retention basins so they can be drained. It is anticipated that retention basin drains will be small and can be neglected in the storm drain sizing calculations.

Williams Gateway Airport - Airfield Areas

It is recommended that the airfield areas be designed to drain directly to primary outfalls and not allowed to drain into the apron area or ERT area. The north two-thirds of the runway and infield area is planned to drain north to the Powerline Floodway. The south one-third of the runway and infield area is planned to drain south to the south perimeter channel. Although the airfield areas have not been identified as problem areas, runoff from the airfield areas contributes to flooding on the remainder of the airport. Re-routing the runoff will be a contribution to the solution of the existing problems previously described. Grading of infield areas must follow FAA requirements and not present an excessive hazard to aircraft that may leave the runway. There is enough room to provide channels that are well outside both the runway safety area and object free area. A typical cross-section is shown on **Figure 3** depicting the recommended grading between runways. Although the design criteria for culvert sizing in the infield areas requires a 5-year storm capacity, the culverts should be upsized as needed to ensure that 100-year flows do not pond to the point where the runways are overtopped.

Williams Gateway Airport - Northeast Area

Storm drains are recommended to drain the new passenger terminal area northeast of the airfield. Storm drains should be located along the future apron and within the streets to direct runoff north to the Powerline Floodway. Common areas such as taxiways and aprons will need to be provided with area wide retention basins. A recommended basin location is shown adjacent to the Powerline Floodway on **Exhibit D**.

ERT Campus Areas

The ERT campus area is mostly developed. Retention is not required for existing development. However, retention will be required when re-development takes place. Even though retention is not required for existing developed areas, it is recommended that retention be provided to the greatest extent practical to alleviate flooding problems and reduce or eliminate the need for new storm drains. It is assumed that vacant areas within the ERT will eventually be developed with retention. Therefore, retention is assumed in those areas for purposes of runoff calculations and preliminary storm drain sizing for the developed condition. Areas modeled with on-site retention are identified on **Exhibit E** with an R

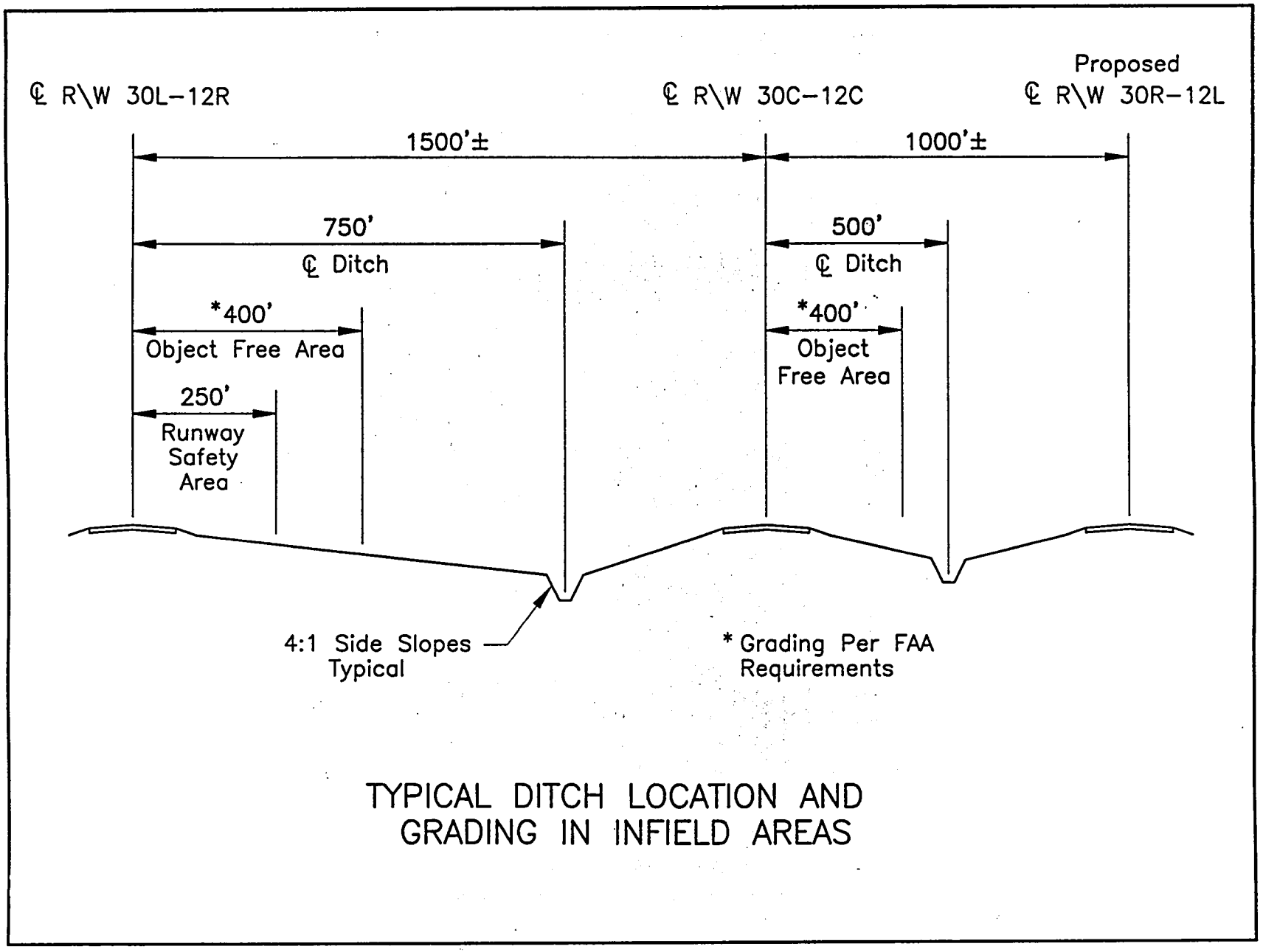

Figure 3 - Typical Grading Between Runways

inside a circle. The exact area assumed to be totally retained can be found in the calculations in the **Appendix**.

Recommended retention sites are shown on **Exhibit D**. The mall area is planned as an open area and would be a good candidate for retention. There is a lot of open space around existing buildings that could be economically re-graded to provide retention. New storm drains are recommended as well to drain the ERT campus area. New retention areas should be connected to the storm drains.

Gila River Indian Community Areas

The Gila River Indian Community owns the golf course at the northwest corner of the study area and a parcel located south of the Pecos Road alignment at the south end of the study area. Existing channels are adequate in both areas for the planned runoff at build-out conditions. As mentioned previously, the golf cart crossings along the golf course channel restrict the capacity of the channel and should be upgraded to match the capacity of the channel. If the crossings are not upgraded, ponding caused by the restriction will not be worse than under existing conditions due to retention provided upstream and flows redirected to other outfalls. The channel crossing the south Community parcel is adequate as is. However, alternative alignments could be developed as part of future development plans for the parcel.

Drainage Outfalls

All runoff from the site reaches the Powerline Floodway (PLF) or the East Maricopa Floodway (EMF). The PLF is located along the north boundary and discharges into the EMF at the northwest corner of the site. The EMF drains south along the west boundary. The estimated 100-year peak discharges entering the PLF and the EMF are tabulated below for the existing and proposed condition.

The sum of flows entering the PLF is increased slightly with the recommended improvements due to flow diversions directing a larger drainage area into the PLF. Flows at all direct entry points into the EMF are substantially reduced as a result of the proposed improvements. If the peak discharges at all points are directly added, the sum of flows is less under the proposed conditions than the existing. The flow entering the PLF from subarea 9.02 east of runway 30R is not reduced to account for retention in the basin shown on **Exhibit E**. As a minimum, the basin should be sized to reduce the peak discharge to the existing flow level. Alternatively, the basin could be sized to retain the entire 100-yr, 2-hr storm runoff.

There is a planned runway extension that will extend over the existing Powerline Floodway alignment. It

is recommended that the Powerline Floodway be re-aligned around the north property line. Alternative alignments for the Powerline Floodway will be considered as part of the Southeast Mesa Area Drainage Master Plan (ADMP) which is currently being prepared by the Flood Control District of Maricopa County (FCDMC). If an alternative alignment is recommended for the Powerline Floodway a smaller, local, channel will still be required to convey the airfield and northeast area runoff to the EMF.

OUTFALL LOCATION		Q 100 (EXIST)	Q 100 (PROP)
Subarea	Powerline Floodway		
7.01	Vic. NE Prop Cor.	482 cfs	
9.02	E. of Runway 30R	348 cfs	853 cfs
11.01	W. of Runway 30R	311 cfs	
11.48	E. of Runway 30L		677 cfs
	East Maricopa Floodway		
17.03	SW Prop Corner	1006 cfs	504 cfs
19.03	N. of Sewage Plant	335 cfs	138 cfs
19.22	S. of Main Entrance	667 cfs	432 cfs
29.02	N. of Main Entrance	78 cfs	78 cfs
29.01	Golf Course Chann.	869 cfs	494 cfs

B. Interim Improvements

To alleviate existing flooding problems, interim improvements have been considered in the existing north and south apron areas and within the ERT campus area. The intent is to identify improvements that can be made with minimal capital expenditure that can provide some measure of relief from existing flooding problems until the permanent improvements can be made.

In the north and south apron areas, flooding is caused by direct runoff from large paved areas. The runoff is not intercepted by existing storm drains or inlets and proceeds westerly, flooding existing hangars and proceeding into the ERT area. No interim improvements are identified for this area. To realize flooding relief, the recommended storm drain pipes and inlets need to be constructed to intercept the runoff and remove it from the surface.

In the ERT area shallow retention areas can be excavated in the open space between buildings. The

retention areas could retain runoff generated on individual lots preventing it from leaving the site. Additionally, overland flow or street flow that flows into the retention area would be retained. Due to the interim nature of the improvements, outfalls would not be available to drain the basins. It is therefore recommended that the basins be limited to approximately one foot in depth to allow the basins to drain by percolating into the underlying soil.

As previously described, the street capacity to carry storm runoff has been substantially reduced in many areas from numerous pavement overlays. Milling and reconstruction of streets and addition of curb and gutter would provide a drainage benefit in addition to the street maintenance benefit.

V. HYDRAULICS

A. Introduction

This section describes the results of the hydraulic analysis of existing and planned storm drains and channels. Hydraulic design criteria are presented for design of new storm drains.

B. Design Criteria

Design discharges for storm drain design are developed using the Rational Method as described in Section II. Hydrology. New culverts in the airfield areas are sized for the five year peak discharge per FAA criteria and new storm drains in non-airfield areas are sized for the ten year peak discharge per City of Mesa standards. Culverts in infield areas are upsized to ensure that 100 year flows do not overtop the runways. In areas where on-site retention is planned, storm drains on arterial streets are sized for the ten year discharge generated within the roadway. Runoff generated outside the roadway area will be retained on-site. Non-arterial streets will be provided with storm drains as required to drain the retention basins. Storm drains on non-arterial streets will be small pipes with diameters of 18 to 24 inches.

C. Existing System Capacity

The existing storm drain system was analyzed to determine the capacity to carry runoff. The existing system consists of pipes ranging in size from 12 inches to 54 inches in diameter. Most of the pipes are 24 inches and smaller. The capacity of the existing storm drains was estimated by evaluating the hydraulic grade line for each storm drain. The pipe profiles were used to compute a hydraulic grade line for the reach. The analysis considered pressure flow with the hydraulic grade line elevation limited to a minimum of six inches below the grate elevations. As a result, the capacity of each pipe segment reflects

the maximum allowable downstream hydraulic grade line condition. The existing storm drain capacity calculations are tabulated in **Appendix C**. Printer plots of the pipe and hydraulic grade line profiles are also shown as a visual aid in interpreting the results. The table shows the flowing full pipe capacity based on a hydraulic grade line slope equal to the pipe slope and the design discharge based on the hydraulic grade line profile used for the entire reach. The design discharge is considered the pipe capacity.

Due to the small pipe sizes, existing capacities are well below the required capacity to convey the design storm. Existing pipes can be utilized, where they exist, in non-arterial streets to drain retention areas. Existing pipes in apron areas and arterial streets will need to be replaced.

Existing channel and culvert capacities were computed from survey data presented in the Rehabilitation Report. Data included channel cross-section, slope, and manning's n value for channels and type, size, slope, and length for culverts. The capacity calculations are contained in **Appendix D** for channels and **Appendix E** for culverts.

D. Design Calculations

New storm drains, channels, and culverts are sized based on projected peak runoff rates under fully developed conditions. The existing conditions hydrology is updated to reflect developed runoff conditions by adjusting the runoff coefficients and modifying the flow routing. Parcels that are required to provide retention are modeled with no runoff leaving the parcel. Common areas such as taxiways and aprons are modeled with high runoff coefficients to reflect the addition of impervious area resulting from their construction. The areas that generate runoff are routed to channels and storm drains. Runoff is routed through the proposed system to the outfall at the Powerline Floodway and the East Maricopa Floodway. The peak runoff rates from the new hydrology analysis are used for preliminary sizing of storm drains and channels. The developed conditions flow routing is shown on **Exhibit E**.

New stormdrain pipes are sized using manning's equation for full pipe flow assuming the maximum hydraulic grade line slope is equal to the average ground slope in the reach. Recommended storm drains are shown on **Exhibit D**. The storm drain sizing calculations are contained in **Appendix F**.

Similarly, new channels are sized using manning's equation for trapezoidal channels assuming the hydraulic grade line slope is equal to the average ground slope in the reach. Recommended channels are

shown on **Exhibit D**. The channel sizing calculations are contained in **Appendix G**.

New culverts are sized using standard culvert design methodology considering inlet or outlet control with a pipe slope of 0.001 ft/ft. New culverts are planned as reinforced concrete pipe with headwalls. Recommended culverts are shown on **Exhibit D**. Culvert sizing calculations are contained in **Appendix H**.

VI. PHASING AND IMPLEMENTATION

A. Introduction

For budgeting purposes, capital improvements must be prioritized and constructed in phases as funding permits. To identify phasing of capital improvements, three priority categories are used. Priority 1 projects are current needs that should be constructed as soon as possible to correct existing system deficiencies. Priority 2 projects are projects that should be budgeted now for construction over the next five years and are needed to accommodate the anticipated development over the next five years. Priority 3 projects are improvements that are not needed within the next five years but will be needed as development occurs. Construction scheduling of priority 3 projects will be dictated by development timing and patterns.

B. Cost Estimates

Cost estimates are included in Appendices F, G, and H for the proposed channels, storm drains, and culverts. Projects are prioritized based on input from the Storm Water Subcommittee at the Draft Final Report Review meeting. The total estimated cost of drainage improvements is $18,127,381.

C. Priority No. 1

Priority one projects are those necessary for construction of the north portion of Sossaman Road and the Phase I site improvements on Williams Gateway Airport as well as initial storm drain improvements to relieve flooding problems within the ASU East campus. The total estimated cost of Priority one improvements is $3,946,411.

D. Priority No. 2

Priority two projects are those needed to complete the storm drain system within the core area of ASU East and the existing taxiways and aprons within the Airport. Completion of the Sossaman Road drainage system is also included in Priority 2. The total estimated cost of Priority two improvements is

$4,675,550.

E. Priority No. 3

Priority three projects are all remaining recommended improvements. Priority three projects will be implemented as funding becomes available and as areas begin to develop. The total estimated cost of Priority three improvements is $9,505,420.

Appendix A

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	50.5	0.35	17.68	19.45	2.54	45.0
2.01	14.7	0.35	5.15	22.66	2.33	12.0
2.02	55.0	0.30	16.50	23.70	2.27	37.4
3.01	20.2	0.30	6.06	21.14	2.42	14.7
3.02	43.6	0.30	13.08	16.94	2.76	36.0
3.03	9.5	0.30	2.85	10.64	3.45	9.8
3.04	17.8	0.30	5.34	18.70	2.60	13.9
3.05	69.3	0.30	20.79	33.48	1.84	38.2
3.06	43.6	0.30	13.08	16.94	2.76	36.0
4.01	16.1	0.35	5.64	18.17	2.65	14.9
5.01	13.0	0.30	3.90	22.99	2.31	9.0
5.02	39.6	0.35	13.86	28.79	2.03	28.1
6.01	33.1	0.35	11.59	22.86	2.32	26.8
7.01	17.2	0.35	6.02	22.64	2.33	14.0
7.02	8.9	0.30	2.67	15.78	2.87	7.7
8.01	25.4	0.30	7.62	27.61	2.08	15.8
8.02	22.8	0.30	6.84	22.26	2.35	16.1
9.01	28.2	0.30	8.46	15.70	2.88	24.4
9.02	31.1	0.30	9.33	13.38	3.11	29.0
10.01	34.3	0.36	12.21	21.31	2.41	29.5
10.02	9.9	0.53	5.27	11.00	3.40	17.9
10.03	39.2	0.36	14.12	17.28	2.72	38.5
10.04	57.0	0.35	19.95	20.61	2.46	49.1
10.05	9.9	0.35	3.47	14.05	3.04	10.5
10.06	4.8	0.35	1.68	13.33	3.12	5.2
10.07	28.0	0.35	9.80	18.22	2.64	25.9
10.08	22.9	0.35	8.02	15.78	2.87	23.0
10.09	9.8	0.35	3.43	17.69	2.69	9.2
10.10	6.6	0.41	2.70	13.13	3.14	8.5
10.11	8.3	0.70	5.79	13.70	3.08	17.8
10.12	23.4	0.37	8.67	23.53	2.28	19.8
10.13	6.8	0.74	5.07	11.76	3.30	16.7
10.14	10.9	0.45	4.92	12.01	3.27	16.1
10.15	6.5	0.79	5.14	13.13	3.14	16.1
10.16	8.6	0.80	6.88	11.00	3.40	23.4
10.17	9.6	0.85	8.16	17.78	2.68	21.9

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.85	8.25	17.19	2.73	22.5
10.19	7.5	0.80	6.00	15.84	2.86	17.2
10.20	22.3	0.85	18.96	18.07	2.65	50.3
10.21	9.4	0.85	7.99	16.74	2.77	22.2
10.22	5.0	0.48	2.40	10.22	3.52	8.4
10.23	11.3	0.85	9.61	27.09	2.10	20.2
10.24	6.1	0.75	4.58	10.87	3.42	15.7
10.25	8.7	0.85	7.40	22.74	2.32	17.2
10.26	12.0	0.70	8.40	24.69	2.22	18.6
10.27	17.6	0.75	13.20	26.35	2.13	28.2
10.28	10.4	0.85	8.84	24.42	2.23	19.7
10.29	7.9	0.45	3.57	15.15	2.94	10.5
10.30	17.1	0.58	9.99	20.04	2.50	25.0
10.31	3.8	0.60	2.28	12.26	3.24	7.4
10.32	7.0	0.60	4.20	27.06	2.10	8.8
10.33	3.2	0.47	1.51	14.09	3.04	4.6
10.34	6.6	0.37	2.42	9.36	3.65	8.8
10.35	11.6	0.34	3.92	18.78	2.60	10.2
10.36	3.5	0.20	0.70	11.01	3.40	2.4
10.37	7.7	0.30	2.31	12.62	3.20	7.4
10.38	8.8	0.60	5.28	22.72	2.33	12.3
10.39	3.5	0.85	2.98	24.96	2.20	6.6
10.40	4.9	0.85	4.17	14.55	3.00	12.5
10.41	3.5	0.85	2.98	16.96	2.75	8.2
11.01	44.9	0.36	16.00	22.66	2.33	37.3
11.02	20.2	0.52	10.46	18.17	2.65	27.7
11.03	24.0	0.39	9.40	18.82	2.59	24.4
11.04	45.8	0.42	19.13	20.94	2.44	46.6
11.05	48.3	0.62	30.17	35.36	1.77	53.3
11.06	15.6	0.49	7.65	17.54	2.70	20.7
11.07	28.3	0.40	11.46	14.80	2.97	34.1
11.08	18.8	0.36	6.69	14.79	2.97	19.9
11.09	24.4	0.39	9.63	15.64	2.89	27.8
11.10	20.0	0.48	9.52	17.00	2.75	26.2
11.11	5.8	0.52	3.01	17.94	2.67	8.0
11.12	8.0	0.40	3.17	15.14	2.94	9.3

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	29.6	0.45	13.39	20.36	2.48	33.2
11.14	19.5	0.38	7.45	22.81	2.32	17.3
11.15	23.0	0.44	10.15	17.81	2.68	27.2
11.16	8.1	0.59	4.74	16.88	2.76	13.1
11.17	12.0	0.45	5.42	21.70	2.39	12.9
11.18	7.2	0.45	3.21	13.55	3.09	9.9
11.19	25.6	0.38	9.83	19.28	2.56	25.1
11.20	57.4	0.41	23.77	24.17	2.24	53.3
11.21	35.9	0.35	12.59	22.75	2.32	29.2
11.23	34.3	0.49	16.89	22.81	2.32	39.2
11.24	35.0	0.48	16.88	14.29	3.02	51.0
11.25	12.9	0.39	5.03	17.72	2.68	13.5
11.26	15.1	0.38	5.69	14.96	2.96	16.8
11.27	15.7	0.39	6.20	16.03	2.84	17.6
11.28	21.5	0.37	7.88	20.74	2.45	19.3
11.29	22.8	0.42	9.48	13.45	3.11	29.4
11.30	22.5	0.44	9.83	15.96	2.85	28.0
11.31	32.6	0.40	12.97	40.32	1.61	20.9
11.32	31.1	0.38	11.97	19.89	2.51	30.1
11.33	29.3	0.46	13.41	24.42	2.23	29.9
11.34	19.1	0.44	8.37	17.34	2.72	22.7
11.35	22.0	0.40	8.69	18.48	2.62	22.8
11.36	22.8	0.45	10.20	15.70	2.88	29.3
11.37	21.1	0.43	9.08	15.77	2.87	26.1
11.38	23.9	0.39	9.21	18.39	2.63	24.2
11.39	23.2	0.48	11.20	19.23	2.56	28.7
11.40	13.3	0.42	5.59	11.37	3.35	18.7
11.41	89.8	0.32	29.14	28.54	2.04	59.4
11.42	14.9	0.33	4.97	21.51	2.40	11.9
11.43	43.9	0.32	14.05	12.67	3.19	44.8
11.44	8.9	0.35	3.12	17.54	2.70	8.4
11.45	26.5	0.35	9.28	34.15	1.81	16.8
11.46	4.3	0.35	1.51	11.85	3.29	5.0
11.47	122.3	0.35	42.81	27.82	2.07	88.5
11.48	42.0	0.32	13.32	19.02	2.58	34.3
11.49	30.4	0.38	11.54	18.65	2.61	30.1

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	36.3	0.35	12.60	18.46	2.62	33.0
11.51	15.1	0.51	7.67	12.53	3.21	24.6
11.52	22.6	0.33	7.44	20.07	2.50	18.6
12.01	13.3	0.42	5.53	12.37	3.23	17.8
12.02	26.7	0.32	8.51	17.88	2.67	22.7
12.03	17.2	0.61	10.57	17.13	2.74	28.9
12.04	12.0	0.30	3.60	12.43	3.22	11.6
13.01	31.7	0.32	10.17	19.59	2.53	25.8
13.02	72.5	0.30	21.75	25.19	2.19	47.6
13.03	7.7	0.37	2.86	11.91	3.28	9.4
13.04	6.0	0.30	1.80	12.06	3.26	5.9
13.05	16.2	0.34	5.52	21.68	2.39	13.2
13.06	4.6	0.30	1.38	10.26	3.51	4.8
14.01	25.9	0.32	8.32	24.67	2.22	18.4
14.02	70.9	0.38	26.62	36.59	1.73	45.9
14.03	36.4	0.36	12.99	15.07	2.95	38.3
15.01	20.6	0.30	6.18	19.03	2.58	15.9
16.01	24.1	0.35	8.44	18.81	2.59	21.9
16.02	47.6	0.35	16.66	39.62	1.63	27.2
17.01	68.3	0.35	23.91	26.91	2.11	50.4
17.02	56.4	0.35	19.74	22.78	2.32	45.8
17.03	19.4	0.35	6.79	25.80	2.16	14.7
18.01	13.0	0.65	8.45	16.45	2.80	23.7
19.01	10.7	0.35	3.75	18.36	2.63	9.8
19.02	11.5	0.35	4.03	19.16	2.57	10.3
19.03	82.0	0.35	28.70	40.90	1.60	45.8
19.04	11.1	0.35	3.89	17.87	2.67	10.4
19.05	20.9	0.35	7.32	13.68	3.08	22.5
19.06	25.3	0.40	10.12	23.22	2.30	23.2
19.07	33.4	0.35	11.69	18.55	2.61	30.6
19.08	74.7	0.40	29.88	27.03	2.10	62.8
19.09	9.9	0.35	3.47	20.65	2.46	8.5
19.10	14.4	0.40	5.76	16.36	2.81	16.2
19.11	9.7	0.40	3.88	16.67	2.78	10.8
19.12	14.6	0.40	5.84	18.05	2.66	15.5
19.13	25.2	0.20	5.04	18.86	2.59	13.1

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	15.4	0.65	10.01	20.16	2.49	24.9
19.15	14.4	0.55	7.86	23.20	2.30	18.1
19.16	11.4	0.80	9.14	13.95	3.05	27.9
19.17	7.6	0.43	3.23	20.46	2.47	8.0
19.18	3.8	0.42	1.58	15.96	2.85	4.5
19.20	11.0	0.53	5.78	21.87	2.38	13.7
19.21	10.2	0.60	6.12	28.92	2.02	12.4
19.22	19.8	0.35	6.86	18.59	2.61	17.9
19.23	4.5	0.34	1.52	13.87	3.06	4.6
19.24	6.7	0.60	4.02	13.31	3.12	12.5
19.25	5.8	0.20	1.16	17.94	2.67	3.1
19.26	8.1	0.50	4.05	22.23	2.35	9.5
19.27	8.4	0.68	5.74	22.18	2.36	13.5
19.28	6.2	0.39	2.39	17.88	2.67	6.4
19.29	6.5	0.40	2.62	22.48	2.34	6.1
19.30	8.6	0.60	5.16	24.46	2.23	11.5
19.31	3.7	0.60	2.22	11.45	3.34	7.4
19.32	7.3	0.72	5.28	22.35	2.35	12.4
19.33	5.4	0.60	3.24	10.37	3.49	11.3
19.34	1.6	0.85	1.36	12.40	3.22	4.4
19.35	6.9	0.71	4.89	24.74	2.21	10.8
19.36	6.7	0.60	4.02	15.28	2.92	11.8
19.37	39.5	0.40	15.80	20.17	2.49	39.3
19.38	1.9	0.71	1.34	20.03	2.50	3.4
19.39	5.6	0.60	3.36	13.72	3.08	10.3
19.40	7.4	0.60	4.44	20.02	2.50	11.1
19.41	4.7	0.60	2.82	13.34	3.12	8.8
19.42	5.4	0.32	1.73	11.81	3.29	5.7
19.43	6.8	0.46	3.16	16.01	2.85	9.0
20.01	17.3	0.53	9.11	18.10	2.65	24.1
20.02	5.3	0.45	2.39	12.07	3.26	7.8
21.01	6.1	0.65	3.97	11.99	3.27	13.0
21.02	2.0	0.65	1.30	12.28	3.24	4.2
21.03	1.9	0.65	1.24	15.33	2.92	3.6
22.01	6.7	0.60	4.02	13.60	3.09	12.4
22.02	4.7	0.60	2.82	10.43	3.49	9.8

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	2.4	0.60	1.44	12.18	3.25	4.7
24.01	2.7	0.60	1.62	12.11	3.26	5.3
25.01	8.9	0.40	3.56	15.05	2.95	10.5
25.02	5.7	0.40	2.28	18.98	2.58	5.9
26.01	5.6	0.40	2.24	15.42	2.91	6.5
27.01	2.4	0.60	1.44	15.16	2.94	4.2
28.01	1.8	0.60	1.08	7.24	4.04	4.4
29.01	73.6	0.20	14.72	25.88	2.16	31.7
29.02	76.0	0.20	15.20	36.84	1.72	26.1
30.01	14.5	0.41	5.92	17.22	2.73	16.2
30.02	3.5	0.38	1.33	16.02	2.84	3.8
30.03	15.3	0.62	9.54	13.90	3.06	29.2
30.04	9.1	0.65	5.92	15.39	2.91	17.2
30.05	5.1	0.35	1.81	13.48	3.10	5.6
31.01	5.9	0.65	3.84	17.93	2.67	10.2
31.02	3.1	0.65	2.02	12.89	3.17	6.4
32.01	1.9	0.30	0.57	15.73	2.88	1.6
32.02	2.2	0.25	0.55	16.43	2.80	1.5
32.03	1.8	0.25	0.45	14.73	2.98	1.3
32.04	1.9	0.25	0.48	15.12	2.94	1.4
32.05	2.6	0.30	0.78	13.35	3.12	2.4
32.06	4.4	0.30	1.32	21.60	2.39	3.2
32.07	4.4	0.45	1.98	18.16	2.65	5.2
32.08	1.6	0.64	1.03	11.73	3.30	3.4
32.09	2.7	0.63	1.71	18.96	2.58	4.4
32.10	2.5	0.57	1.42	17.91	2.67	3.8
32.11	4.4	0.71	3.12	23.23	2.30	7.2
32.12	2.3	0.38	0.87	15.77	2.87	2.5
32.13	3.0	0.30	0.90	25.10	2.20	2.0
32.14	1.9	0.30	0.57	19.31	2.55	1.5
32.15	3.7	0.30	1.11	20.31	2.48	2.8
32.16	2.0	0.30	0.60	14.75	2.98	1.8

ROUTING
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
Begin	**Northeast Airfield Area**								
3.04	10.08	1,400	3.00	17.80	5.34	18.70	2.60	13.89	7.78
3.03	10.08	1,100	3.00	9.50	2.85	10.64	3.45	9.84	6.11
10.08	10.07	1,300	3.00	50.20	16.21	26.48	2.13	34.49	7.22
10.07	10.05	1,000	3.00	78.20	26.01	33.70	1.83	47.50	5.56
10.05	3.06	800	3.00	88.10	29.47	39.26	1.64	48.42	4.44
3.01	3.02	1,000	3.00	20.20	6.06	21.14	2.42	14.69	5.56
2.02	3.02	1,500	3.00	55.00	16.50	23.70	2.27	37.44	8.33
3.02	3.06	1,600	3.00	118.80	35.64	32.03	1.89	67.44	8.89
3.06	8.02	1,500	3.00	250.50	78.19	43.70	1.53	119.24	8.33
8.02	7.02	500	3.00	273.30	85.03	52.04	1.35	114.87	2.78
5.01	7.02	800	3.00	13.00	3.90	22.99	2.31	9.01	4.44
7.02	7.01	800	3.00	295.20	91.60	54.81	1.30	119.36	4.44
2.01	1.01	800	3.00	14.70	5.15	22.66	2.33	11.98	4.44
1.01	5.02	3,200	3.00	65.20	22.82	27.10	2.10	47.92	17.78
4.01	5.02	1,500	3.00	16.10	5.64	18.17	2.65	14.91	8.33
5.02	7.01	1,600	3.00	120.90	42.32	44.88	1.50	63.35	8.89
6.01	7.01	1,100	3.00	33.10	11.59	22.86	2.32	26.84	6.11
7.01	7.01		3.00	466.40	151.52	59.26	1.23	187.03	0.00
End	**Northeast Airfield Area**								
Begin	**Ditch Paralleling East Runway**								
3.05	10.09	1,200	3.00	69.30	20.79	33.48	1.84	38.15	6.67
10.09	11.25	1,100	3.00	79.10	24.22	40.15	1.62	39.18	6.11
11.42	11.31	3,100	3.00	14.90	4.97	21.51	2.40	11.92	17.22
11.31	11.25	1,200	3.00	47.50	17.94	40.32	1.61	28.92	6.67
11.25	11.19	2,400	3.00	139.50	47.18	46.99	1.45	68.42	13.33
10.04	11.19	300	3.00	57.00	19.95	20.61	2.46	49.07	1.67
11.19	11.12	700	3.00	222.10	76.96	60.32	1.22	93.74	3.89
11.12	10.03	700	3.00	230.10	80.13	64.21	1.15	92.46	3.89
10.03	10.01	1,800	3.00	269.30	94.25	68.10	1.10	103.36	10.00
8.01	9.01	1,200	3.00	25.40	7.62	27.61	2.08	15.83	6.67
9.01	10.01	1,100	3.00	53.60	16.08	34.28	1.81	29.03	6.11
11.11	11.06	1,000	3.00	5.80	3.01	17.94	2.67	8.01	5.56
10.02	11.06	500	3.00	9.90	5.27	11.00	3.40	17.91	2.78
11.06	10.01	600	3.00	31.30	15.92	23.50	2.28	36.31	3.33
10.01	11.52	1,900	3.00	388.50	138.45	78.10	0.97	134.87	10.56
9.02	11.52	300	3.00	31.10	9.33	13.38	3.11	29.04	1.67
11.52	11.52		3.00	442.20	155.22	88.65	0.87	135.50	0.00
End	**Ditch Paralleling East Runway**								
Begin	**Area Between Center and East Runways**								
11.43	11.40	500	3.00	43.90	14.05	12.67	3.19	44.83	2.78
11.40	11.33	2,500	3.00	57.20	19.64	15.45	2.91	57.05	13.89

ROUTING
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
11.33	11.27	1,200	3.00	86.50	33.05	29.34	2.01	66.29	6.67
11.27	11.20	2,300	3.00	102.20	39.24	36.00	1.74	68.47	12.78
11.32	11.26	1,200	3.00	31.10	11.97	19.89	2.51	30.05	6.67
11.26	11.20	2,500	3.00	46.20	17.66	26.56	2.12	37.51	13.89
11.20	11.13	1,200	3.00	205.80	80.66	48.78	1.41	113.97	6.67
11.13	11.07	1,200	3.00	235.40	94.05	55.45	1.29	121.57	6.67
11.07	11.02	900	3.00	263.70	105.51	62.11	1.19	125.30	5.00
11.02	11.01	1,900	3.00	283.90	115.97	67.11	1.11	128.80	10.56
11.01	11.01		3.00	328.80	131.97	77.67	0.98	129.17	0.00
End	**Area Between Center and East Runways**								
Begin	**Channel Along South Property Line**								
Begin	Initial Reach of Channel Along South Property Line								
11.41	14.03	1,600	3.00	89.80	29.14	28.54	2.04	59.40	8.89
11.39	14.03	1,200	3.00	23.20	11.20	19.23	2.56	28.67	6.67
14.03	16.02	4,800	3.00	149.40	53.33	37.43	1.70	90.57	26.67
16.02	17.01	2,900	3.00	197.00	69.99	64.09	1.16	80.89	16.11
End	Initial Reach of Channel Along South Property Line								
Begin	Channel Approx 700' North of South Property Line								
11.37	11.34	1,400	3.00	21.10	9.08	15.77	2.87	26.07	7.78
11.34	11.35	700	3.00	40.20	17.45	23.55	2.28	39.75	3.89
11.38	11.35	1,200	3.00	23.90	9.21	18.39	2.63	24.18	6.67
11.35	11.36	700	3.00	86.10	35.35	27.43	2.09	73.71	3.89
11.36	14.02	3,700	3.00	108.90	45.54	31.32	1.92	87.52	20.56
11.30	14.02	3,900	3.00	22.50	9.83	15.96	2.85	28.03	21.67
14.02	16.01	1,100	3.00	202.30	81.99	51.88	1.35	110.99	6.11
16.01	15.01	900	3.00	226.40	90.42	57.99	1.25	113.30	5.00
13.06	15.01	700	3.00	4.60	1.38	10.26	3.51	4.85	3.89
13.03	15.01	700	3.00	7.70	2.86	11.91	3.28	9.39	3.89
15.01	32.16	50	3.00	259.30	100.84	62.99	1.17	118.31	0.28
32.16	19.01	700	3.00	261.30	101.44	63.27	1.17	118.57	3.89
19.01	19.04	200	3.00	272.00	105.19	67.16	1.11	116.76	1.11
End	Channel Approx 700' North of South Property Line								
Begin	Drainage Along South Edge of Old Cross Wind Runway								
11.28	11.21	2,000	3.00	21.50	7.88	20.74	2.45	19.31	11.11
11.21	11.23	700	3.00	57.40	20.47	31.85	1.90	38.88	3.89
11.17	11.23	300	3.00	12.00	5.42	21.70	2.39	12.93	1.67
11.29	11.23	1,600	3.00	22.80	9.48	13.45	3.11	29.44	8.89
11.23	11.24	800	3.00	126.50	52.25	35.74	1.75	91.62	4.44
11.18	11.24	100	3.00	7.20	3.21	13.55	3.09	9.92	0.56
11.24	12.01	900	3.00	168.70	72.34	40.19	1.62	116.93	5.00
12.01	12.02	1,700	3.00	182.00	77.87	45.19	1.49	116.02	9.44
12.02	12.03	1,000	3.00	208.70	86.37	54.63	1.31	112.80	5.56

ROUTING
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	I (in/hr)	Q (cfs)	Travel Time (min)
13.04	12.04	200	3.00	6.00	1.80	12.06	3.26	5.87	1.11
12.04	13.01	2,200	3.00	18.00	5.40	13.17	3.14	16.93	12.22
14.01	13.02	1,400	3.00	25.90	8.32	24.67	2.22	18.45	7.78
13.02	13.05	300	3.00	98.40	30.07	32.45	1.88	56.39	1.67
13.05	13.01	600	3.00	114.60	35.59	34.12	1.81	64.46	3.33
13.01	12.03	800	3.00	164.30	51.16	37.45	1.70	86.85	4.44
12.03	32.15	200	3.00	390.20	148.10	60.19	1.22	180.74	1.11
End	Drainage Along South Edge of Old Cross Wind Runway								
Begin	South Apron Area								
11.16	10.20	1,400	3.00	8.10	4.74	16.88	2.76	13.09	7.78
10.20	10.22	200	3.00	30.40	23.70	24.66	2.22	52.56	1.11
10.22	10.24	500	3.00	35.40	26.10	25.77	2.16	56.42	2.78
10.23	10.24	50	3.00	11.30	9.61	27.09	2.10	20.18	0.28
10.24	10.27	1,500	3.00	52.80	40.28	28.54	2.04	82.09	8.33
10.39	10.27	0	3.00	3.50	2.98	24.96	2.20	6.55	0.00
32.13	10.27	900	3.00	3.00	0.90	25.10	2.20	1.98	5.00
10.27	10.29	300	3.00	76.90	57.35	36.88	1.72	98.41	1.67
32.14	10.29	400	3.00	1.90	0.57	19.31	2.55	1.46	2.22
10.25	10.28	1,400	3.00	8.70	7.40	22.74	2.32	17.19	7.78
10.28	10.29	500	3.00	19.10	16.24	30.51	1.96	31.77	2.78
10.29	32.12	100	3.00	105.80	77.73	38.54	1.66	129.34	0.56
32.12	32.15	1,100	3.00	108.10	78.60	39.10	1.65	129.49	6.11
32.15	19.04		3.00	502.00	227.81	61.30	1.20	273.65	0.00
End	South Apron Area								
Begin	Final Reach of Channel Along South Property Line								
19.04	19.02	800	3.00	785.10	336.88	68.27	1.09	368.68	4.44
19.02	17.01	1,500	3.00	796.60	340.90	72.71	1.04	353.27	8.33
17.01	17.03	2,500	3.00	1061.90	434.79	81.05	0.94	410.20	13.89
17.03	17.03		3.00	1081.30	441.58	94.93	0.82	363.32	0.00
End	Final Reach of Channel Along South Property Line								
End	**Channel Along South Property Line**								
Begin	**Channel Along South End of ERT Campus**								
19.07	19.05	400	3.00	33.40	11.69	18.55	2.61	30.56	2.22
19.05	19.03	3,600	3.00	54.30	19.01	20.77	2.45	46.54	20.00
19.09	19.03	400	3.00	9.90	3.47	20.65	2.46	8.51	2.22
17.02	18.01	700	3.00	56.40	19.74	22.78	2.32	45.83	3.89
18.01	19.03	0	3.00	69.40	28.19	26.67	2.12	59.75	0.00
19.03	19.03		3.00	215.60	79.36	40.90	1.60	126.72	0.00
End	**Channel Along South End of ERT Campus**								
Begin	**South ERT Campus**								
10.26	32.11	100	3.00	12.00	8.40	24.69	2.22	18.62	0.56
32.11	10.32	500	3.00	16.40	11.52	25.24	2.19	25.21	2.78

ROUTING
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.32	22.02	600	3.00	23.40	15.72	28.02	2.06	32.38	3.33
10.31	22.02	700	3.00	3.80	2.28	12.26	3.24	7.38	3.89
10.30	22.01	500	3.00	17.10	9.99	20.04	2.50	24.97	2.78
22.01	22.02	300	3.00	23.80	14.01	22.82	2.32	32.49	1.67
22.02	19.14	1,500	3.00	55.70	34.83	31.36	1.92	66.89	8.33
19.14	19.18	500	3.00	71.10	44.84	39.69	1.63	73.11	2.78
19.18	20.02	700	3.00	74.90	46.42	42.47	1.56	72.22	3.89
20.02	20.01	700	3.00	80.20	48.81	46.36	1.46	71.44	3.89
20.01	19.11	300	3.00	97.50	57.91	50.24	1.38	80.16	1.67
19.13	19.10	100	3.00	25.20	5.04	18.86	2.59	13.05	0.56
19.10	19.11	1,200	3.00	39.60	10.80	19.41	2.55	27.50	6.67
19.11	19.08	100	3.00	146.80	72.59	51.91	1.35	98.23	0.56
19.06	19.08	900	3.00	25.30	10.12	23.22	2.30	23.24	5.00
19.08	19.12	1,300	3.00	246.80	112.59	52.47	1.34	151.23	7.22
19.12	25.01	400	3.00	261.40	118.43	59.69	1.23	145.45	2.22
25.01	25.02	600	3.00	270.30	121.99	61.91	1.19	145.29	3.33
19.17	26.01	700	3.00	7.60	3.23	20.46	2.47	7.98	3.89
26.01	25.02	200	3.00	13.20	5.47	24.35	2.23	12.22	1.11
19.20	24.01	300	3.00	11.00	5.78	21.87	2.38	13.73	1.67
24.01	23.01	300	3.00	13.70	7.40	23.53	2.28	16.85	1.67
23.01	19.15	1,300	3.00	16.10	8.84	25.20	2.19	19.35	7.22
19.15	19.22	1,800	3.00	30.50	16.70	32.42	1.88	31.33	10.00
25.02	19.22	600	3.00	289.20	129.74	65.24	1.14	147.66	3.33
End	**South ERT Campus**								
Begin	**Central ERT Campus**								
19.29	19.30	900	3.00	6.50	2.62	22.48	2.34	6.13	5.00
19.30	19.31	400	3.00	15.10	7.78	27.48	2.08	16.21	2.22
19.31	19.32	800	3.00	18.80	10.00	29.71	1.99	19.92	4.44
19.32	19.33	200	3.00	26.10	15.28	34.15	1.81	27.66	1.11
19.33	19.25	400	3.00	31.50	18.52	35.26	1.77	32.78	2.22
19.38	31.02	400	3.00	1.90	1.34	20.03	2.50	3.35	2.22
31.02	19.28	700	3.00	5.00	3.36	22.25	2.35	7.90	3.89
19.28	19.27	900	3.00	11.20	5.75	26.14	2.14	12.32	5.00
19.27	19.26	900	3.00	19.60	11.49	31.14	1.93	22.16	5.00
19.26	19.25	700	3.00	27.70	15.54	36.14	1.74	27.03	3.89
19.25	28.01	200	3.00	65.00	35.22	40.03	1.62	57.08	1.11
28.01	19.23	500	3.00	66.80	36.30	41.14	1.59	57.72	2.78
10.38	32.10	100	3.00	8.80	5.28	22.72	2.33	12.28	0.56
32.10	21.02	200	3.00	11.30	6.70	23.28	2.29	15.35	1.11
21.03	21.02	0	3.00	1.90	1.24	15.33	2.92	3.60	0.00
21.02	21.01	400	3.00	15.20	9.23	24.39	2.23	20.60	2.22
21.01	19.39	700	3.00	21.30	13.20	26.61	2.12	28.00	3.89

ROUTING
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
19.39	19.40	1,000	3.00	26.90	16.56	30.50	1.96	32.41	5.56
19.40	19.16	900	3.00	34.30	21.00	36.06	1.74	36.59	5.00
19.21	19.16	900	3.00	10.20	6.12	28.92	2.02	12.38	5.00
19.16	19.24	600	3.00	55.90	36.26	41.06	1.59	57.74	3.33
27.01	19.24	300	3.00	2.40	1.44	15.16	2.94	4.23	1.67
19.24	19.23	900	3.00	65.00	41.72	44.39	1.51	62.93	5.00
19.23	19.22	500	3.00	136.30	79.53	49.39	1.40	111.40	2.78
19.22	19.22		3.00	475.80	232.82	68.58	1.09	253.80	0.00
End	**Central ERT Campus**								
Begin	**North ERT Campus**								
30.03	30.01	1,700	3.00	15.30	9.54	13.90	3.06	29.18	9.44
30.01	30.04	300	3.00	29.80	15.46	23.35	2.29	35.39	1.67
30.02	30.04	700	3.00	3.50	1.33	16.02	2.84	3.77	3.89
19.36	30.05	600	3.00	6.70	4.02	15.28	2.92	11.75	3.33
30.05	30.04	1,100	3.00	11.80	5.83	18.61	2.61	15.20	6.11
30.04	19.35	500	3.00	54.20	28.53	25.01	2.20	62.74	2.78
10.19	32.09	100	3.00	7.50	6.00	15.84	2.86	17.18	0.56
32.09	19.41	200	3.00	10.20	7.71	18.96	2.58	19.90	1.11
19.41	31.01	350	3.00	14.90	10.53	20.08	2.50	26.30	1.94
31.01	19.42	700	3.00	20.80	14.37	22.02	2.37	34.01	3.89
19.42	19.43	900	3.00	26.20	16.10	25.91	2.16	34.69	5.00
19.43	19.35	1,000	3.00	33.00	19.26	30.91	1.94	37.35	5.56
19.35	19.34	200	3.00	94.10	52.67	36.46	1.73	91.09	1.11
19.34	19.37	1,900	3.00	95.70	54.03	37.58	1.69	91.51	10.56
End	**North ERT Campus**								
Begin	**Channel Across Golf Course**								
Begin	Area Between West and Center Runway								
11.14	11.08	1,200	3.00	19.50	7.45	22.81	2.32	17.27	6.67
11.08	11.03	1,600	3.00	38.30	14.13	29.48	2.00	28.27	8.89
11.03	11.04	1,100	3.00	62.30	23.53	38.37	1.67	39.28	6.11
11.15	11.09	1,300	3.00	23.00	10.15	17.81	2.68	27.15	7.22
11.09	11.04	2,400	3.00	47.40	19.78	25.03	2.20	43.48	13.33
11.04	11.05	900	3.00	155.50	62.44	44.48	1.51	94.06	5.00
11.51	11.10	1,300	3.00	15.10	7.67	12.53	3.21	24.58	7.22
10.17	11.10	300	3.00	9.60	8.16	17.78	2.68	21.86	1.67
10.21	11.10	600	3.00	9.40	7.99	16.74	2.77	22.16	3.33
11.10	11.05	2,700	3.00	54.10	33.34	20.08	2.50	83.25	15.00
11.05	10.11	300	3.00	257.90	125.94	49.48	1.40	176.20	1.67
End	Area Between West and Center Runway								
Begin	North Apron Area								
10.18	10.15	700	3.00	9.70	8.25	17.19	2.73	22.52	3.89
10.15	10.13	900	3.00	16.20	13.39	21.08	2.43	32.50	5.00

ROUTING
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	I (in/hr)	Q (cfs)	Travel Time (min)
10.13	10.11	1,000	3.00	23.00	18.45	26.08	2.15	39.61	5.56
10.11	10.41	800	3.00	289.20	150.18	51.14	1.37	205.33	4.44
10.41	10.12	500	3.00	292.70	153.15	55.59	1.29	197.62	2.78
32.08	10.16	0	3.00	1.60	1.03	11.73	3.30	3.40	0.00
10.16	10.14	1,100	3.00	10.20	7.91	11.73	3.30	26.14	6.11
32.07	10.14	0	3.00	4.40	1.98	18.16	2.65	5.24	0.00
10.14	10.12	2,000	3.00	25.50	14.81	18.16	2.65	39.20	11.11
10.12	32.06	100	3.00	341.60	176.63	58.37	1.25	220.33	0.56
10.33	32.06	0	3.00	3.20	1.51	14.09	3.04	4.59	0.00
End	North Apron Area								
Begin	North End of Runways Draining Back to Golf Cource Channel								
11.49	11.48	1,400	3.00	30.40	11.54	18.65	2.61	30.07	7.78
11.48	11.50	1,100	3.00	72.40	24.86	26.43	2.13	52.96	6.11
11.50	32.03	50	3.00	108.70	37.45	32.54	1.87	70.09	0.28
32.03	32.04	800	3.00	110.50	37.90	32.82	1.86	70.52	4.44
10.10	32.05	100	3.00	6.60	2.70	13.13	3.14	8.46	0.56
10.40	32.05	500	3.00	4.90	4.17	14.55	3.00	12.48	2.78
10.35	32.05	0	3.00	11.60	3.92	18.78	2.60	10.17	0.00
32.05	10.34	500	3.00	25.70	11.56	18.78	2.60	30.00	2.78
10.34	32.04	50	3.00	32.30	13.98	21.56	2.40	33.51	0.28
32.04	32.06	200	3.00	144.70	52.36	37.26	1.70	89.20	1.11
End	North End of Runways Draining Back to Golf Cource Channel								
Begin	Main Golf Course Channel								
32.06	19.37	850	3.00	493.90	231.82	58.92	1.24	287.28	4.72
19.37	29.01	900	3.00	629.10	301.65	63.64	1.16	350.78	5.00
29.01	29.01		3.00	702.70	316.37	68.64	1.09	344.60	0.00
End	Main Golf Course Channel								
End	**Channel Across Golf Course**								
Begin	**Northwest Corner**								
32.02	10.36	600	3.00	2.20	0.55	16.43	2.80	1.54	3.33
10.36	10.36		3.00	5.70	1.25	19.77	2.52	3.15	0.00
End	**Northwest Corner**								

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	65.2	0.35	22.82	27.10	2.10	47.9
2.01	14.7	0.35	5.15	22.66	2.33	12.0
2.02	55.0	0.30	16.50	23.70	2.27	37.4
3.01	20.2	0.30	6.06	21.14	2.42	14.7
3.02	118.8	0.30	35.64	32.03	1.89	67.4
3.03	9.5	0.30	2.85	10.64	3.45	9.8
3.04	17.8	0.30	5.34	18.70	2.60	13.9
3.05	69.3	0.30	20.79	33.48	1.84	38.2
3.06	250.5	0.31	78.19	43.70	1.53	119.2
4.01	16.1	0.35	5.64	18.17	2.65	14.9
5.01	13.0	0.30	3.90	22.99	2.31	9.0
5.02	120.9	0.35	42.32	44.88	1.50	63.4
6.01	33.1	0.35	11.59	22.86	2.32	26.8
7.01	466.4	0.32	151.52	59.26	1.23	187.0
7.02	295.2	0.31	91.60	54.81	1.30	119.4
8.01	25.4	0.30	7.62	27.61	2.08	15.8
8.02	273.3	0.31	85.03	52.04	1.35	114.9
9.01	53.6	0.30	16.08	34.28	1.81	29.0
9.02	31.1	0.30	9.33	13.38	3.11	29.0
10.01	388.5	0.36	138.45	78.10	0.97	134.9
10.02	9.9	0.53	5.27	11.00	3.40	17.9
10.03	269.3	0.35	94.25	68.10	1.10	103.4
10.04	57.0	0.35	19.95	20.61	2.46	49.1
10.05	88.1	0.33	29.47	39.26	1.64	48.4
10.06	4.8	0.35	1.68	13.33	3.12	5.2
10.07	78.2	0.33	26.01	33.70	1.83	47.5
10.08	50.2	0.32	16.21	26.48	2.13	34.5
10.09	79.1	0.31	24.22	40.15	1.62	39.2
10.10	6.6	0.41	2.70	13.13	3.14	8.5
10.11	289.2	0.52	150.18	51.14	1.37	205.3
10.12	341.6	0.52	176.63	58.37	1.25	220.3
10.13	23.0	0.80	18.45	26.08	2.15	39.6
10.14	25.5	0.58	14.81	18.16	2.65	39.2
10.15	16.2	0.83	13.39	21.08	2.43	32.5
10.16	10.2	0.78	7.91	11.73	3.30	26.1
10.17	9.6	0.85	8.16	17.78	2.68	21.9

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.85	8.25	17.19	2.73	22.5
10.19	7.5	0.80	6.00	15.84	2.86	17.2
10.20	30.4	0.78	23.70	24.66	2.22	52.6
10.21	9.4	0.85	7.99	16.74	2.77	22.2
10.22	35.4	0.74	26.10	25.77	2.16	56.4
10.23	11.3	0.85	9.61	27.09	2.10	20.2
10.24	52.8	0.76	40.28	28.54	2.04	82.1
10.25	8.7	0.85	7.40	22.74	2.32	17.2
10.26	12.0	0.70	8.40	24.69	2.22	18.6
10.27	76.9	0.75	57.35	36.88	1.72	98.4
10.28	19.1	0.85	16.24	30.51	1.96	31.8
10.29	105.8	0.73	77.73	38.54	1.66	129.3
10.30	17.1	0.58	9.99	20.04	2.50	25.0
10.31	3.8	0.60	2.28	12.26	3.24	7.4
10.32	23.4	0.67	15.72	28.02	2.06	32.4
10.33	3.2	0.47	1.51	14.09	3.04	4.6
10.34	32.3	0.43	13.98	21.56	2.40	33.5
10.35	11.6	0.34	3.92	18.78	2.60	10.2
10.36	5.7	0.22	1.25	19.77	2.52	3.1
10.37	7.7	0.30	2.31	12.62	3.20	7.4
10.38	8.8	0.60	5.28	22.72	2.33	12.3
10.39	3.5	0.85	2.98	24.96	2.20	6.6
10.40	4.9	0.85	4.17	14.55	3.00	12.5
10.41	292.7	0.52	153.15	55.59	1.29	197.6
11.01	328.8	0.40	131.97	77.67	0.98	129.2
11.02	283.9	0.41	115.97	67.11	1.11	128.8
11.03	62.3	0.38	23.53	38.37	1.67	39.3
11.04	155.5	0.40	62.44	44.48	1.51	94.1
11.05	257.9	0.49	125.94	49.48	1.40	176.2
11.06	31.3	0.51	15.92	23.50	2.28	36.3
11.07	263.7	0.40	105.51	62.11	1.19	125.3
11.08	38.3	0.37	14.13	29.48	2.00	28.3
11.09	47.4	0.42	19.78	25.03	2.20	43.5
11.10	54.1	0.62	33.34	20.08	2.50	83.2
11.11	5.8	0.52	3.01	17.94	2.67	8.0
11.12	230.1	0.35	80.13	64.21	1.15	92.5

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	235.4	0.40	94.05	55.45	1.29	121.6
11.14	19.5	0.38	7.45	22.81	2.32	17.3
11.15	23.0	0.44	10.15	17.81	2.68	27.2
11.16	8.1	0.59	4.74	16.88	2.76	13.1
11.17	12.0	0.45	5.42	21.70	2.39	12.9
11.18	7.2	0.45	3.21	13.55	3.09	9.9
11.19	222.1	0.35	76.96	60.32	1.22	93.7
11.20	205.8	0.39	80.66	48.78	1.41	114.0
11.21	57.4	0.36	20.47	31.85	1.90	38.9
11.23	126.5	0.41	52.25	35.74	1.75	91.6
11.24	168.7	0.43	72.34	40.19	1.62	116.9
11.25	139.5	0.34	47.18	46.99	1.45	68.4
11.26	46.2	0.38	17.66	26.56	2.12	37.5
11.27	102.2	0.38	39.24	36.00	1.74	68.5
11.28	21.5	0.37	7.88	20.74	2.45	19.3
11.29	22.8	0.42	9.48	13.45	3.11	29.4
11.30	22.5	0.44	9.83	15.96	2.85	28.0
11.31	47.5	0.38	17.94	40.32	1.61	28.9
11.32	31.1	0.38	11.97	19.89	2.51	30.1
11.33	86.5	0.38	33.05	29.34	2.01	66.3
11.34	40.2	0.43	17.45	23.55	2.28	39.7
11.35	86.1	0.41	35.35	27.43	2.09	73.7
11.36	108.9	0.42	45.54	31.32	1.92	87.5
11.37	21.1	0.43	9.08	15.77	2.87	26.1
11.38	23.9	0.39	9.21	18.39	2.63	24.2
11.39	23.2	0.48	11.20	19.23	2.56	28.7
11.40	57.2	0.34	19.64	15.45	2.91	57.1
11.41	89.8	0.32	29.14	28.54	2.04	59.4
11.42	14.9	0.33	4.97	21.51	2.40	11.9
11.43	43.9	0.32	14.05	12.67	3.19	44.8
11.44	8.9	0.35	3.12	17.54	2.70	8.4
11.45	26.5	0.35	9.28	34.15	1.81	16.8
11.46	4.3	0.35	1.51	11.85	3.29	5.0
11.47	122.3	0.35	42.81	27.82	2.07	88.5
11.48	72.4	0.34	24.86	26.43	2.13	53.0
11.49	30.4	0.38	11.54	18.65	2.61	30.1

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	108.7	0.34	37.45	32.54	1.87	70.1
11.51	15.1	0.51	7.67	12.53	3.21	24.6
11.52	442.2	0.35	155.22	88.65	0.87	135.5
12.01	182.0	0.43	77.87	45.19	1.49	116.0
12.02	208.7	0.41	86.37	54.63	1.31	112.8
12.03	390.2	0.38	148.10	60.19	1.22	180.7
12.04	18.0	0.30	5.40	13.17	3.14	16.9
13.01	164.3	0.31	51.16	37.45	1.70	86.8
13.02	98.4	0.31	30.07	32.45	1.88	56.4
13.03	7.7	0.37	2.86	11.91	3.28	9.4
13.04	6.0	0.30	1.80	12.06	3.26	5.9
13.05	114.6	0.31	35.59	34.12	1.81	64.5
13.06	4.6	0.30	1.38	10.26	3.51	4.8
14.01	25.9	0.32	8.32	24.67	2.22	18.4
14.02	202.3	0.41	81.99	51.88	1.35	111.0
14.03	149.4	0.36	53.33	37.43	1.70	90.6
15.01	259.3	0.39	100.84	62.99	1.17	118.3
16.01	226.4	0.40	90.42	57.99	1.25	113.3
16.02	197.0	0.36	69.99	64.09	1.16	80.9
17.01	1061.9	0.41	434.79	81.05	0.94	410.2
17.02	56.4	0.35	19.74	22.78	2.32	45.8
17.03	1081.3	0.41	441.58	94.93	0.82	363.3
18.01	69.4	0.41	28.19	26.67	2.12	59.8
19.01	272.0	0.39	105.19	67.16	1.11	116.8
19.02	796.6	0.43	340.90	72.71	1.04	353.3
19.03	215.6	0.37	79.36	40.90	1.60	126.7
19.04	785.1	0.43	336.88	68.27	1.09	368.7
19.05	54.3	0.35	19.01	20.77	2.45	46.5
19.06	25.3	0.40	10.12	23.22	2.30	23.2
19.07	33.4	0.35	11.69	18.55	2.61	30.6
19.08	246.8	0.46	112.59	52.47	1.34	151.2
19.09	9.9	0.35	3.47	20.65	2.46	8.5
19.10	39.6	0.27	10.80	19.41	2.55	27.5
19.11	146.8	0.49	72.59	51.91	1.35	98.2
19.12	261.4	0.45	118.43	59.69	1.23	145.4
19.13	25.2	0.20	5.04	18.86	2.59	13.1

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	71.1	0.63	44.84	39.69	1.63	73.1
19.15	30.5	0.55	16.70	32.42	1.88	31.3
19.16	55.9	0.65	36.26	41.06	1.59	57.7
19.17	7.6	0.43	3.23	20.46	2.47	8.0
19.18	74.9	0.62	46.42	42.47	1.56	72.2
19.20	11.0	0.53	5.78	21.87	2.38	13.7
19.21	10.2	0.60	6.12	28.92	2.02	12.4
19.22	475.8	0.49	232.82	68.58	1.09	253.8
19.23	136.3	0.58	79.53	49.39	1.40	111.4
19.24	65.0	0.64	41.72	44.39	1.51	62.9
19.25	65.0	0.54	35.22	40.03	1.62	57.1
19.26	27.7	0.56	15.54	36.14	1.74	27.0
19.27	19.6	0.59	11.49	31.14	1.93	22.2
19.28	11.2	0.51	5.75	26.14	2.14	12.3
19.29	6.5	0.40	2.62	22.48	2.34	6.1
19.30	15.1	0.52	7.78	27.48	2.08	16.2
19.31	18.8	0.53	10.00	29.71	1.99	19.9
19.32	26.1	0.59	15.28	34.15	1.81	27.7
19.33	31.5	0.59	18.52	35.26	1.77	32.8
19.34	95.7	0.56	54.03	37.58	1.69	91.5
19.35	94.1	0.56	52.67	36.46	1.73	91.1
19.36	6.7	0.60	4.02	15.28	2.92	11.8
19.37	629.1	0.48	301.65	63.64	1.16	350.8
19.38	1.9	0.71	1.34	20.03	2.50	3.4
19.39	26.9	0.62	16.56	30.50	1.96	32.4
19.40	34.3	0.61	21.00	36.06	1.74	36.6
19.41	14.9	0.71	10.53	20.08	2.50	26.3
19.42	26.2	0.61	16.10	25.91	2.16	34.7
19.43	33.0	0.58	19.26	30.91	1.94	37.4
20.01	97.5	0.59	57.91	50.24	1.38	80.2
20.02	80.2	0.61	48.81	46.36	1.46	71.4
21.01	21.3	0.62	13.20	26.61	2.12	28.0
21.02	15.2	0.61	9.23	24.39	2.23	20.6
21.03	1.9	0.65	1.24	15.33	2.92	3.6
22.01	23.8	0.59	14.01	22.82	2.32	32.5
22.02	55.7	0.63	34.83	31.36	1.92	66.9

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	16.1	0.55	8.84	25.20	2.19	19.4
24.01	13.7	0.54	7.40	23.53	2.28	16.8
25.01	270.3	0.45	121.99	61.91	1.19	145.3
25.02	289.2	0.45	129.74	65.24	1.14	147.7
26.01	13.2	0.41	5.47	24.35	2.23	12.2
27.01	2.4	0.60	1.44	15.16	2.94	4.2
28.01	66.8	0.54	36.30	41.14	1.59	57.7
29.01	702.7	0.45	316.37	68.64	1.09	344.6
29.02	76.0	0.20	15.20	36.84	1.72	26.1
30.01	29.8	0.52	15.46	23.35	2.29	35.4
30.02	3.5	0.38	1.33	16.02	2.84	3.8
30.03	15.3	0.62	9.54	13.90	3.06	29.2
30.04	54.2	0.53	28.53	25.01	2.20	62.7
30.05	11.8	0.49	5.83	18.61	2.61	15.2
31.01	20.8	0.69	14.37	22.02	2.37	34.0
31.02	5.0	0.67	3.36	22.25	2.35	7.9
32.01	1.9	0.30	0.57	15.73	2.88	1.6
32.02	2.2	0.25	0.55	16.43	2.80	1.5
32.03	110.5	0.34	37.90	32.82	1.86	70.5
32.04	144.7	0.36	52.36	37.26	1.70	89.2
32.05	25.7	0.45	11.56	18.78	2.60	30.0
32.06	493.9	0.47	231.82	58.92	1.24	287.3
32.07	4.4	0.45	1.98	18.16	2.65	5.2
32.08	1.6	0.64	1.03	11.73	3.30	3.4
32.09	10.2	0.76	7.71	18.96	2.58	19.9
32.10	11.3	0.59	6.70	23.28	2.29	15.4
32.11	16.4	0.70	11.52	25.24	2.19	25.2
32.12	108.1	0.73	78.60	39.10	1.65	129.5
32.13	3.0	0.30	0.90	25.10	2.20	2.0
32.14	1.9	0.30	0.57	19.31	2.55	1.5
32.15	502.0	0.45	227.81	61.30	1.20	273.7
32.16	261.3	0.39	101.44	63.27	1.17	118.6

'C' FACTORS - EXISTING CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
1.01	50.5												50.5	17.7	0.350
2.01	14.7												14.7	5.1	0.350
2.02	55.0											55.0		16.5	0.300
3.01	20.2											20.2		6.1	0.300
3.02	43.6											43.6		13.1	0.300
3.03	9.5											9.5		2.9	0.300
3.04	17.8											17.8		5.3	0.300
3.05	69.3											69.3		20.8	0.300
3.06	43.6											43.6		13.1	0.300
4.01	16.1												16.1	5.6	0.350
5.01	13.0											13.0		3.9	0.300
5.02	39.6												39.6	13.9	0.350
6.01	33.1												33.1	11.6	0.350
7.01	17.2												17.2	6.0	0.350
7.02	8.9											8.9		2.7	0.300
8.01	25.4											25.4		7.6	0.300
8.02	22.8											22.8		6.8	0.300
9.01	28.2											28.2		8.5	0.300
9.02	31.1											31.1		9.3	0.300
10.01	34.3	0.4											33.9	12.2	0.356
10.02	9.9	3.6											6.3	5.3	0.532
10.03	39.2	0.8											38.4	14.1	0.360
10.04	57.0												57.0	20.0	0.350
10.05	9.9												9.9	3.5	0.350
10.06	4.8												4.8	1.7	0.350
10.07	28.0												28.0	9.8	0.350
10.08	22.9												22.9	8.0	0.350
10.09	9.8												9.8	3.4	0.350
10.10	6.6	1.3										5.3		2.7	0.408
10.11	8.3	6.0										2.3		5.8	0.698
10.12	23.4	3.0										20.4		8.7	0.371
10.13	6.8	5.5										1.3		5.1	0.745
10.14	10.9						5.5					5.4		4.9	0.451
10.15	6.5	5.8										0.7		5.1	0.791
10.16	8.6					8.6								6.9	0.800
10.17	9.6	9.6												8.2	0.850
10.18	9.7	9.7												8.2	0.850
10.19	7.5					7.5								6.0	0.800
10.20	22.3	22.3												19.0	0.850
10.21	9.4	9.4												8.0	0.850
10.22	5.0	1.0			1.0							3.0		2.4	0.480
10.23	11.3	11.3												9.6	0.850

'C' FACTORS - EXISTING CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
10.24	6.1			6.1										4.6	0.750
10.25	8.7	8.7												7.4	0.850
10.26	12.0		12.0											8.4	0.700
10.27	17.6			17.6										13.2	0.750
10.28	10.4	10.4												8.8	0.850
10.29	7.9						4.0					3.9		3.6	0.452
10.30	17.1	5.4					6.3					5.4		10.0	0.584
10.31	3.8						3.8							2.3	0.600
10.32	7.0						7.0							4.2	0.600
10.33	3.2	1.0										2.2		1.5	0.472
10.34	6.6	0.8										5.8		2.4	0.367
10.35	11.6	0.8										10.8		3.9	0.338
10.36	3.5									3.5				0.7	0.200
10.37	7.7											7.7		2.3	0.300
10.38	8.8						8.8							5.3	0.600
10.39	3.5	3.5												3.0	0.850
10.40	4.9	4.9												4.2	0.850
10.41	3.5	3.5												3.0	0.850
11.01	44.9	4.6										40.3		16.0	0.356
11.02	20.2	8.0										12.2		10.5	0.518
11.03	24.0	4.0										20.0		9.4	0.392
11.04	45.8	9.8										36.0		19.1	0.418
11.05	48.3	28.5										19.8		30.2	0.625
11.06	15.6	5.4										10.2		7.7	0.490
11.07	28.3	5.4										22.9		11.5	0.405
11.08	18.8	1.9										16.9		6.7	0.356
11.09	24.4	4.2										20.2		9.6	0.395
11.10	20.0	6.4										13.6		9.5	0.476
11.11	5.8	2.3										3.5		3.0	0.518
11.12	8.0	1.4										6.6		3.2	0.396
11.13	29.6	8.2										21.4		13.4	0.452
11.14	19.5	2.9										16.6		7.4	0.382
11.15	23.0	5.9										17.1		10.1	0.441
11.16	8.1	4.2										3.9		4.7	0.585
11.17	12.0	3.3										8.7		5.4	0.451
11.18	7.2	1.9										5.3		3.2	0.445
11.19	25.6	3.9										21.7		9.8	0.384
11.20	57.4	11.9										45.5		23.8	0.414
11.21	35.9	3.3										32.6		12.6	0.351
11.23	34.3	12.0										22.3		16.9	0.492
11.24	35.0	11.6										23.4		16.9	0.482
11.25	12.9	2.1										10.8		5.0	0.390

'C' FACTORS - EXISTING CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
11.26	15.1	2.1										13.0		5.7	0.376
11.27	15.7	2.7										13.0		6.2	0.395
11.28	21.5	2.6										18.9		7.9	0.367
11.29	22.8	4.8										18.0		9.5	0.416
11.30	22.5	5.6										16.9		9.8	0.437
11.31	32.6	5.8										26.8		13.0	0.398
11.32	31.1	4.8										26.3		12.0	0.385
11.33	29.3	8.4										20.9		13.4	0.458
11.34	19.1	4.8										14.3		8.4	0.438
11.35	22.0	3.8										18.2		8.7	0.395
11.36	22.8	6.1										16.7		10.2	0.447
11.37	21.1	5.0										16.1		9.1	0.430
11.38	23.9	3.7										20.2		9.2	0.385
11.39	23.2	7.7										15.5		11.2	0.483
11.40	13.3	2.9										10.4		5.6	0.420
11.41	89.8	4.0										85.8		29.1	0.324
11.42	14.9	0.9										14.0		5.0	0.333
11.43	43.9	1.6										42.3		14.1	0.320
11.44	8.9												8.9	3.1	0.350
11.45	26.5												26.5	9.3	0.350
11.46	4.3												4.3	1.5	0.350
11.47	122.3												122.3	42.8	0.350
11.48	42.0	1.3										40.7		13.3	0.317
11.49	30.4	4.4										26.0		11.5	0.380
11.50	36.3	3.1										33.2		12.6	0.347
11.51	15.1	5.7										9.4		7.7	0.508
11.52	22.6	1.2										21.4		7.4	0.329
12.01	13.3	2.8										10.5		5.5	0.416
12.02	26.7	0.9										25.8		8.5	0.319
12.03	17.2	1.0					16.2							10.6	0.615
12.04	12.0											12.0		3.6	0.300
13.01	31.7	1.2										30.5		10.2	0.321
13.02	72.5											72.5		21.8	0.300
13.03	7.7	1.0										6.7		2.9	0.371
13.04	6.0											6.0		1.8	0.300
13.05	16.2	1.2										15.0		5.5	0.341
13.06	4.6											4.6		1.4	0.300
14.01	25.9	1.0										24.9		8.3	0.321
14.02	70.9	3.6											67.3	26.6	0.375
14.03	36.4	0.5											35.9	13.0	0.357
15.01	20.6											20.6		6.2	0.300
16.01	24.1												24.1	8.4	0.350

'C' FACTORS - EXISTING CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
16.02	47.6												47.6	16.7	0.350
17.01	68.3												68.3	23.9	0.350
17.02	56.4												56.4	19.7	0.350
17.03	19.4												19.4	6.8	0.350
18.01	13.0				13.0									8.5	0.650
19.01	10.7												10.7	3.7	0.350
19.02	11.5												11.5	4.0	0.350
19.03	82.0												82.0	28.7	0.350
19.04	11.1												11.1	3.9	0.350
19.05	20.9												20.9	7.3	0.350
19.06	25.3							25.3						10.1	0.400
19.07	33.4												33.4	11.7	0.350
19.08	74.7							74.7						29.9	0.400
19.09	9.9												9.9	3.5	0.350
19.10	14.4							14.4						5.8	0.400
19.11	9.7							9.7						3.9	0.400
19.12	14.6							14.6						5.8	0.400
19.13	25.2									25.2				5.0	0.200
19.14	15.4				15.4									10.0	0.650
19.15	14.4						11.8					2.6		7.9	0.546
19.16	11.4	9.2					2.2							9.1	0.802
19.17	7.6						1.9	3.8				1.9		3.2	0.425
19.18	3.8	0.8										3.0		1.6	0.416
19.20	11.0						5.5				5.5			5.8	0.525
19.21	10.2						10.2							6.1	0.600
19.22	19.8	0.8								9.5	9.5			6.9	0.346
19.23	4.5	0.3										4.2		1.5	0.337
19.24	6.7						6.7							4.0	0.600
19.25	5.8									5.8				1.2	0.200
19.26	8.1						5.4					2.7		4.1	0.500
19.27	8.4	2.8					5.6							5.7	0.683
19.28	6.2	1.0	1.0							4.2				2.4	0.385
19.29	6.5						3.3			3.2				2.6	0.403
19.30	8.6						8.6							5.2	0.600
19.31	3.7						3.7							2.2	0.600
19.32	7.3	3.6					3.7							5.3	0.723
19.33	5.4						5.4							3.2	0.600
19.34	1.6	1.6												1.4	0.850
19.35	6.9	3.0					3.9							4.9	0.709
19.36	6.7						6.7							4.0	0.600
19.37	39.5							39.5						15.8	0.400
19.38	1.9	1.4										0.5		1.3	0.705

'C' FACTORS - EXISTING CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
19.39	5.6						5.6							3.4	0.600
19.40	7.4						7.4							4.4	0.600
19.41	4.7						4.7							2.8	0.600
19.42	5.4	1.0								4.4				1.7	0.320
19.43	6.8						4.5			2.3				3.2	0.465
20.01	17.3						8.8				8.5			9.1	0.526
20.02	5.3										5.3			2.4	0.450
21.01	6.1				6.1									4.0	0.650
21.02	2.0				2.0									1.3	0.650
21.03	1.9				1.9									1.2	0.650
22.01	6.7						6.7							4.0	0.600
22.02	4.7						4.7							2.8	0.600
23.01	2.4						2.4							1.4	0.600
24.01	2.7						2.7							1.6	0.600
25.01	8.9							8.9						3.6	0.400
25.02	5.7							5.7						2.3	0.400
26.01	5.6							5.6						2.2	0.400
27.01	2.4						2.4							1.4	0.600
28.01	1.8						1.8							1.1	0.600
29.01	73.6									73.6				14.7	0.200
29.02	76.0									76.0				15.2	0.200
30.01	14.5							14.8						5.9	0.408
30.02	3.5	0.5										3.0		1.3	0.379
30.03	15.3						15.9							9.5	0.624
30.04	9.1								9.1					5.9	0.650
30.05	5.1	0.5										4.6		1.8	0.354
31.01	5.9				5.9									3.8	0.650
31.02	3.1				3.1									2.0	0.650
32.01	1.9											1.9		0.6	0.300
32.02	2.2									1.1		1.1		0.6	0.250
32.03	1.8									0.9		0.9		0.5	0.250
32.04	1.9									0.9		1.0		0.5	0.253
32.05	2.6											2.6		0.8	0.300
32.06	4.4											4.4		1.3	0.300
32.07	4.4						2.2					2.2		2.0	0.450
32.08	1.6	1.0										0.6		1.0	0.644
32.09	2.7	1.0			1.0							0.7		1.7	0.633
32.10	2.5				1.9							0.6		1.4	0.566
32.11	4.4	1.0	1.2		2.2									3.1	0.709
32.12	2.3										1.2	1.1		0.9	0.378
32.13	3.0											3.0		0.9	0.300
32.14	1.9											1.9		0.6	0.300

'C' FACTORS - EXISTING CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
32.15	3.7											3.7		1.1	0.300
32.16	2.0											2.0		0.60	0.300

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
1.01	50.5	0.350	1,800	5.00	0.28	14.7	A	-0.00625	0.04	0.0294	2.54	19.45	87.78
2.01	14.7	0.350	1,600	3.00	0.19	9.9	A	-0.00625	0.04	0.0327	2.33	22.66	94.35
2.02	55.0	0.300	1,800	3.00	0.17	8.8	A	-0.00625	0.04	0.0291	2.27	23.70	111.02
3.01	20.2	0.300	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0318	2.42	21.14	96.17
3.02	43.6	0.300	1,500	4.50	0.30	15.8	A	-0.00625	0.04	0.0298	2.76	16.94	83.31
3.03	9.5	0.300	900	5.00	0.56	29.3	A	-0.00625	0.04	0.0339	3.45	10.64	52.55
3.04	17.8	0.300	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0322	2.60	18.70	86.65
3.05	69.3	0.300	3,300	6.00	0.18	9.6	A	-0.00625	0.04	0.0285	1.84	33.48	146.02
3.06	43.6	0.300	1,500	4.50	0.30	15.8	A	-0.00625	0.04	0.0298	2.76	16.94	83.31
4.01	16.1	0.350	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0325	2.65	18.17	79.36
5.01	13.0	0.300	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0330	2.31	22.99	100.86
5.02	39.6	0.350	3,100	8.00	0.26	13.6	A	-0.00625	0.04	0.0300	2.03	28.79	118.06
6.01	33.1	0.350	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0305	2.32	22.86	97.64
7.01	17.2	0.350	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0323	2.33	22.64	94.56
7.02	8.9	0.300	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0341	2.87	15.78	73.65
8.01	25.4	0.300	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0312	2.08	27.61	119.71
8.02	22.8	0.300	2,100	6.00	0.29	15.1	A	-0.00625	0.04	0.0315	2.35	22.26	100.19
9.01	28.2	0.300	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0309	2.88	15.70	76.91
9.02	31.1	0.300	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0307	3.11	13.38	67.18
10.01	34.3	0.356	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0304	2.41	21.31	91.35
10.02	9.9	0.532	1,000	6.00	0.60	31.7	A	-0.00625	0.04	0.0338	3.40	11.00	38.35
10.03	39.2	0.360	1,800	7.00	0.39	20.5	A	-0.00625	0.04	0.0300	2.72	17.28	77.40
10.04	57.0	0.350	2,500	10.00	0.40	21.1	A	-0.00625	0.04	0.0290	2.46	20.61	91.61
10.05	9.9	0.350	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0338	3.04	14.05	62.73
10.06	4.8	0.350	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0357	3.12	13.33	58.41
10.07	28.0	0.350	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0310	2.64	18.22	81.23
10.08	22.9	0.350	1,600	7.00	0.44	23.1	A	-0.00625	0.04	0.0315	2.87	15.78	71.13
10.09	9.8	0.350	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0338	2.69	17.69	75.41
10.10	6.6	0.408	800	2.20	0.28	14.5	A	-0.00625	0.04	0.0349	3.14	13.13	54.15
10.11	8.3	0.698	1,200	5.50	0.46	24.2	A	-0.00625	0.04	0.0343	3.08	13.70	32.54
10.12	23.4	0.371	1,900	4.00	0.21	11.1	A	-0.00625	0.04	0.0314	2.28	23.53	96.21
10.13	6.8	0.745	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0348	3.30	11.76	25.13
10.14	10.9	0.451	1,100	6.00	0.55	28.8	A	-0.00625	0.04	0.0335	3.27	12.01	47.39
10.15	6.5	0.791	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0349	3.14	13.13	24.08
10.16	8.6	0.800	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0342	3.40	11.00	20.65
10.17	9.6	0.850	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0339	2.68	17.78	25.52
10.18	9.7	0.850	1,200	3.00	0.25	13.2	A	-0.00625	0.04	0.0338	2.73	17.19	24.75
10.19	7.5	0.800	900	1.80	0.20	10.6	A	-0.00625	0.04	0.0345	2.86	15.84	27.70
10.20	22.3	0.850	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0316	2.65	18.07	26.53
10.21	9.4	0.850	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0339	2.77	16.74	24.33
10.22	5.0	0.480	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0356	3.52	10.22	38.79
10.23	11.3	0.850	1,400	1.40	0.10	5.3	A	-0.00625	0.04	0.0334	2.10	27.09	36.28
10.24	6.1	0.750	700	2.60	0.37	19.6	A	-0.00625	0.04	0.0351	3.42	10.87	23.19
10.25	8.7	0.850	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.32	22.74	31.24
10.26	12.0	0.700	1,500	2.10	0.14	7.4	A	-0.00625	0.04	0.0333	2.22	24.69	53.70
10.27	17.6	0.750	1,600	2.00	0.13	6.6	A	-0.00625	0.04	0.0322	2.13	26.35	50.40
10.28	10.4	0.850	1,500	2.20	0.15	7.7	A	-0.00625	0.04	0.0336	2.23	24.42	33.05

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
10.29	7.9	0.452	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	2.94	15.15	57.78
10.30	17.1	0.584	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0323	2.50	20.04	58.95
10.31	3.8	0.600	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0364	3.24	12.26	36.15
10.32	7.0	0.600	1,200	1.00	0.08	4.4	A	-0.00625	0.04	0.0347	2.10	27.06	71.38
10.33	3.2	0.472	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0368	3.04	14.09	50.76
10.34	6.6	0.367	500	1.60	0.32	16.9	A	-0.00625	0.04	0.0349	3.65	9.36	43.15
10.35	11.6	0.338	1,500	4.20	0.28	14.8	A	-0.00625	0.04	0.0333	2.60	18.78	81.21
10.36	3.5	0.200	600	1.80	0.30	15.8	A	-0.00625	0.04	0.0366	3.40	11.01	59.28
10.37	7.7	0.300	800	2.40	0.30	15.8	A	-0.00625	0.04	0.0345	3.20	12.62	60.84
10.38	8.8	0.600	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.33	22.72	62.47
10.39	3.5	0.850	1,500	2.40	0.16	8.4	A	-0.00625	0.04	0.0366	2.20	24.96	32.10
10.40	4.9	0.850	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0357	3.00	14.55	20.91
10.41	3.5	0.850	1,000	2.20	0.22	11.6	A	-0.00625	0.04	0.0366	2.75	16.96	23.57
11.01	44.9	0.356	2,700	10.00	0.37	19.6	A	-0.00625	0.04	0.0297	2.33	22.66	96.85
11.02	20.2	0.518	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0318	2.65	18.17	61.77
11.03	24.0	0.392	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	2.59	18.82	77.39
11.04	45.8	0.418	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0296	2.44	20.94	83.75
11.05	48.3	0.625	3,600	7.00	0.19	10.3	A	-0.00625	0.04	0.0295	1.77	35.36	88.64
11.06	15.6	0.490	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0325	2.70	17.54	62.34
11.07	28.3	0.405	1,600	8.00	0.50	26.4	A	-0.00625	0.04	0.0309	2.97	14.80	63.05
11.08	18.8	0.356	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0320	2.97	14.79	66.50
11.09	24.4	0.395	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0313	2.89	15.64	66.74
11.10	20.0	0.476	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0319	2.75	17.00	62.74
11.11	5.8	0.518	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	2.67	17.94	59.25
11.12	8.0	0.396	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	2.94	15.14	62.74
11.13	29.6	0.452	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0308	2.48	20.36	77.20
11.14	19.5	0.382	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0319	2.32	22.81	92.53
11.15	23.0	0.441	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0315	2.68	17.81	69.72
11.16	8.1	0.585	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0343	2.76	16.88	50.11
11.17	12.0	0.451	1,300	2.00	0.15	8.1	A	-0.00625	0.04	0.0333	2.39	21.70	78.58
11.18	7.2	0.445	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0346	3.09	13.55	52.92
11.19	25.6	0.384	2,400	12.00	0.50	26.4	A	-0.00625	0.04	0.0312	2.56	19.28	79.57
11.20	57.4	0.414	2,800	9.00	0.32	17.0	A	-0.00625	0.04	0.0290	2.24	24.17	95.38
11.21	35.9	0.351	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0303	2.32	22.75	97.57
11.23	34.3	0.492	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0304	2.32	22.81	79.10
11.24	35.0	0.482	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0303	3.02	14.29	55.18
11.25	12.9	0.390	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0331	2.68	17.72	72.65
11.26	15.1	0.376	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0326	2.96	14.96	64.63
11.27	15.7	0.395	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0325	2.84	16.03	66.74
11.28	21.5	0.367	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0317	2.45	20.74	87.44
11.29	22.8	0.416	1,500	9.00	0.60	31.7	A	-0.00625	0.04	0.0315	3.11	13.45	56.55
11.30	22.5	0.437	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0315	2.85	15.96	64.54
11.31	32.6	0.398	3,200	4.00	0.13	6.6	A	-0.00625	0.04	0.0305	1.61	40.32	142.99
11.32	31.1	0.385	2,500	12.00	0.48	25.3	A	-0.00625	0.04	0.0307	2.51	19.89	82.20
11.33	29.3	0.458	2,600	8.00	0.31	16.2	A	-0.00625	0.04	0.0308	2.23	24.42	87.33
11.34	19.1	0.438	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0320	2.72	17.34	67.67
11.35	22.0	0.395	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0316	2.62	18.48	76.36

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
11.36	22.8	0.447	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0315	2.88	15.70	61.77
11.37	21.1	0.430	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0317	2.87	15.77	63.36
11.38	23.9	0.385	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0314	2.63	18.39	77.42
11.39	23.2	0.483	1,400	3.00	0.21	11.3	A	-0.00625	0.04	0.0315	2.56	19.23	69.49
11.40	13.3	0.420	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0330	3.35	11.37	48.12
11.41	89.8	0.324	4,000	14.00	0.35	18.5	A	-0.00625	0.04	0.0278	2.04	28.54	125.27
11.42	14.9	0.333	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0327	2.40	21.51	92.18
11.43	43.9	0.320	1,400	8.00	0.57	30.2	A	-0.00625	0.04	0.0297	3.19	12.67	63.30
11.44	8.9	0.350	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0341	2.70	17.54	76.37
11.45	26.5	0.350	1,600	1.00	0.06	3.3	A	-0.00625	0.04	0.0311	1.81	34.15	136.07
11.46	4.3	0.350	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0360	3.29	11.85	54.00
11.47	122.3	0.350	3,500	10.00	0.29	15.1	A	-0.00625	0.04	0.0270	2.07	27.82	121.26
11.48	42.0	0.317	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0299	2.58	19.02	89.49
11.49	30.4	0.380	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0307	2.61	18.65	79.35
11.50	36.3	0.347	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0303	2.62	18.46	82.94
11.51	15.1	0.508	1,000	4.00	0.40	21.1	A	-0.00625	0.04	0.0326	3.21	12.53	45.76
11.52	22.6	0.329	1,900	6.00	0.32	16.7	A	-0.00625	0.04	0.0315	2.50	20.07	88.81
12.01	13.3	0.416	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0330	3.23	12.37	52.15
12.02	26.7	0.319	1,800	6.80	0.38	19.9	A	-0.00625	0.04	0.0311	2.67	17.88	82.55
12.03	17.2	0.615	1,200	2.80	0.23	12.3	A	-0.00625	0.04	0.0323	2.74	17.13	49.17
12.04	12.0	0.300	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0333	3.22	12.43	60.98
13.01	31.7	0.321	2,300	10.00	0.43	23.0	A	-0.00625	0.04	0.0306	2.53	19.59	88.79
13.02	72.5	0.300	3,300	12.00	0.36	19.2	A	-0.00625	0.04	0.0284	2.19	25.19	115.89
13.03	7.7	0.371	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0345	3.28	11.91	52.63
13.04	6.0	0.300	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0351	3.26	12.06	57.79
13.05	16.2	0.341	2,200	7.60	0.35	18.2	A	-0.00625	0.04	0.0324	2.39	21.68	91.36
13.06	4.6	0.300	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0359	3.51	10.26	50.05
14.01	25.9	0.321	2,000	4.00	0.20	10.6	A	-0.00625	0.04	0.0312	2.22	24.67	107.20
14.02	70.9	0.375	3,800	7.00	0.18	9.7	A	-0.00625	0.04	0.0284	1.73	36.59	141.31
14.03	36.4	0.357	1,800	10.00	0.56	29.3	A	-0.00625	0.04	0.0302	2.95	15.07	69.03
15.01	20.6	0.300	1,700	5.20	0.31	16.2	A	-0.00625	0.04	0.0318	2.58	19.03	88.12
16.01	24.1	0.350	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	2.59	18.81	81.94
16.02	47.6	0.350	5,200	14.00	0.27	14.2	A	-0.00625	0.04	0.0295	1.63	39.62	150.76
17.01	68.3	0.350	3,000	8.00	0.27	14.1	A	-0.00625	0.04	0.0285	2.11	26.91	114.88
17.02	56.4	0.350	2,400	7.00	0.29	15.4	A	-0.00625	0.04	0.0291	2.32	22.78	99.73
17.03	19.4	0.350	2,400	6.00	0.25	13.2	A	-0.00625	0.04	0.0320	2.16	25.80	104.98
18.01	13.0	0.650	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0330	2.80	16.45	43.80
19.01	10.7	0.350	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0336	2.63	18.36	79.03
19.02	11.5	0.350	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0334	2.57	19.16	81.23
19.03	82.0	0.350	4,000	6.00	0.15	7.9	A	-0.00625	0.04	0.0280	1.60	40.90	160.69
19.04	11.1	0.350	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0335	2.67	17.87	76.69
19.05	20.9	0.350	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0317	3.08	13.68	62.98
19.06	25.3	0.400	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0312	2.30	23.22	91.13
19.07	33.4	0.350	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0305	2.61	18.55	82.61
19.08	74.7	0.400	3,300	10.00	0.30	16.0	A	-0.00625	0.04	0.0283	2.10	27.03	107.76
19.09	9.9	0.350	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0338	2.46	20.65	85.72
19.10	14.4	0.400	1,700	8.00	0.47	24.8	A	-0.00625	0.04	0.0328	2.81	16.36	66.79

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
19.11	9.7	0.400	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0338	2.78	16.67	67.29
19.12	14.6	0.400	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0327	2.66	18.05	73.77
19.13	25.2	0.200	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0312	2.59	18.86	99.13
19.14	15.4	0.650	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0326	2.49	20.16	51.43
19.15	14.4	0.546	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0328	2.30	23.20	71.40
19.16	11.4	0.802	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0334	3.05	13.95	24.95
19.17	7.6	0.425	1,200	2.00	0.17	8.8	A	-0.00625	0.04	0.0345	2.47	20.46	76.48
19.18	3.8	0.416	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0364	2.85	15.96	62.33
19.20	11.0	0.525	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0335	2.38	21.87	70.51
19.21	10.2	0.600	1,700	2.00	0.12	6.2	A	-0.00625	0.04	0.0337	2.02	28.92	75.73
19.22	19.8	0.346	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0319	2.61	18.59	81.64
19.23	4.5	0.337	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0359	3.06	13.87	61.69
19.24	6.7	0.600	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0348	3.12	13.31	40.06
19.25	5.8	0.200	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	2.67	17.94	91.64
19.26	8.1	0.500	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0343	2.35	22.23	73.58
19.27	8.4	0.683	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0342	2.36	22.18	51.10
19.28	6.2	0.385	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0350	2.67	17.88	72.75
19.29	6.5	0.403	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0349	2.34	22.48	85.47
19.30	8.6	0.600	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0342	2.23	24.46	66.38
19.31	3.7	0.600	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0364	3.34	11.45	34.41
19.32	7.3	0.723	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0346	2.35	22.35	46.20
19.33	5.4	0.600	600	2.00	0.33	17.6	A	-0.00625	0.04	0.0354	3.49	10.37	31.79
19.34	1.6	0.850	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0387	3.22	12.40	18.00
19.35	6.9	0.709	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0348	2.21	24.74	51.95
19.36	6.7	0.600	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0348	2.92	15.28	44.58
19.37	39.5	0.400	2,200	8.00	0.36	19.2	A	-0.00625	0.04	0.0300	2.49	20.17	82.80
19.38	1.9	0.705	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0383	2.50	20.03	41.60
19.39	5.6	0.600	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0353	3.08	13.72	40.41
19.40	7.4	0.600	900	1.00	0.11	5.9	A	-0.00625	0.04	0.0346	2.50	20.02	56.16
19.41	4.7	0.600	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0358	3.12	13.34	38.94
19.42	5.4	0.320	800	3.00	0.38	19.8	A	-0.00625	0.04	0.0354	3.29	11.81	55.04
19.43	6.8	0.465	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0348	2.85	16.01	58.48
20.01	17.3	0.526	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0323	2.65	18.10	60.70
20.02	5.3	0.450	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0355	3.26	12.07	47.00
21.01	6.1	0.650	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0351	3.27	11.99	32.54
21.02	2.0	0.650	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0381	3.24	12.28	32.40
21.03	1.9	0.650	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0383	2.92	15.33	39.02
22.01	6.7	0.600	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0348	3.09	13.60	40.41
22.02	4.7	0.600	700	3.00	0.43	22.6	A	-0.00625	0.04	0.0358	3.49	10.43	31.58
23.01	2.4	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0376	3.25	12.18	36.00
24.01	2.7	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0373	3.26	12.11	36.00
25.01	8.9	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0341	2.95	15.05	62.41
25.02	5.7	0.400	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0353	2.58	18.98	73.77
26.01	5.6	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0353	2.91	15.42	62.41
27.01	2.4	0.600	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0376	2.94	15.16	43.36
28.01	1.8	0.600	300	1.00	0.33	17.6	A	-0.00625	0.04	0.0384	4.04	7.24	22.48
29.01	73.6	0.200	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0283	2.16	25.88	134.67

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
29.02	76.0	0.200	3,100	4.00	0.13	6.8	A	-0.00625	0.04	0.0282	1.72	36.84	178.50
30.01	14.5	0.408	1,600	6.00	0.38	19.8	A	-0.00625	0.04	0.0327	2.73	17.22	69.06
30.02	3.5	0.379	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0366	2.84	16.02	65.72
30.03	15.3	0.624	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0326	3.06	13.90	40.01
30.04	9.1	0.650	1,200	4.00	0.33	17.6	A	-0.00625	0.04	0.0340	2.91	15.39	40.47
30.05	5.1	0.354	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0356	3.10	13.48	59.77
31.01	5.9	0.650	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	2.67	17.93	45.82
31.02	3.1	0.650	600	1.20	0.20	10.6	A	-0.00625	0.04	0.0369	3.17	12.89	33.93
32.01	1.9	0.300	800	1.60	0.20	10.6	A	-0.00625	0.04	0.0383	2.88	15.73	69.65
32.02	2.2	0.250	860	1.70	0.20	10.4	A	-0.00625	0.04	0.0379	2.80	16.43	77.02
32.03	1.8	0.250	730	1.50	0.21	10.8	A	-0.00625	0.04	0.0384	2.98	14.73	70.05
32.04	1.9	0.253	770	1.60	0.21	11.0	A	-0.00625	0.04	0.0383	2.94	15.12	71.46
32.05	2.6	0.300	720	1.80	0.25	13.2	A	-0.00625	0.04	0.0374	3.12	13.35	61.34
32.06	4.4	0.300	1,620	4.10	0.25	13.4	A	-0.00625	0.04	0.0360	2.39	21.60	91.63
32.07	4.4	0.450	1,370	4.10	0.30	15.8	A	-0.00625	0.04	0.0360	2.65	18.16	64.74
32.08	1.6	0.644	630	1.90	0.30	15.9	A	-0.00625	0.04	0.0387	3.30	11.73	30.74
32.09	2.7	0.633	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0373	2.58	18.96	47.64
32.10	2.5	0.566	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0375	2.67	17.91	51.98
32.11	4.4	0.709	1,800	4.50	0.25	13.2	A	-0.00625	0.04	0.0360	2.30	23.23	47.39
32.12	2.3	0.378	930	2.30	0.25	13.1	A	-0.00625	0.04	0.0377	2.87	15.77	63.12
32.13	3.0	0.300	1,730	3.50	0.20	10.7	A	-0.00625	0.04	0.0370	2.20	25.10	102.03
32.14	1.9	0.300	1,120	2.30	0.21	10.8	A	-0.00625	0.04	0.0383	2.55	19.31	81.68
32.15	3.7	0.300	1,440	3.60	0.25	13.2	A	-0.00625	0.04	0.0364	2.48	20.31	86.74
32.16	2.0	0.300	820	2.00	0.24	12.9	A	-0.00625	0.04	0.0381	2.98	14.75	66.00

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	50.5	0.35	17.68	17.78	3.22	56.9
2.01	14.7	0.35	5.15	20.71	2.95	15.2
2.02	55.0	0.30	16.50	21.66	2.88	47.5
3.01	20.2	0.30	6.06	19.33	3.07	18.6
3.02	43.6	0.30	13.08	15.49	3.48	45.6
3.03	9.5	0.30	2.85	9.84	4.25	12.1
3.04	17.8	0.30	5.34	17.10	3.29	17.6
3.05	69.3	0.30	20.79	30.39	2.37	49.2
3.06	43.6	0.30	13.08	15.49	3.48	45.6
4.01	16.1	0.35	5.64	16.62	3.35	18.9
5.01	13.0	0.30	3.90	21.01	2.93	11.4
5.02	39.6	0.35	13.86	26.29	2.58	35.7
6.01	33.1	0.35	11.59	20.89	2.94	34.0
7.01	17.2	0.35	6.02	20.69	2.95	17.8
7.02	8.9	0.30	2.67	14.47	3.60	9.6
8.01	25.4	0.30	7.62	25.21	2.64	20.1
8.02	22.8	0.30	6.84	20.34	2.98	20.4
9.01	28.2	0.30	8.46	14.41	3.61	30.5
9.02	31.1	0.30	9.33	12.33	3.86	36.0
10.01	34.3	0.36	12.21	19.47	3.06	37.3
10.02	9.9	0.53	5.27	10.16	4.19	22.1
10.03	39.2	0.36	14.12	15.81	3.44	48.6
10.04	57.0	0.35	19.95	18.84	3.12	62.1
10.05	9.9	0.35	3.47	12.94	3.78	13.1
10.06	4.8	0.35	1.68	12.28	3.87	6.5
10.07	28.0	0.35	9.80	16.66	3.34	32.7
10.08	22.9	0.35	8.02	14.48	3.60	28.9
10.09	9.8	0.35	3.43	16.17	3.40	11.7
10.10	6.6	0.41	2.70	12.11	3.89	10.5
10.11	8.3	0.70	5.79	12.62	3.82	22.1
10.12	23.4	0.37	8.67	21.50	2.89	25.0
10.13	6.8	0.74	5.07	10.86	4.07	20.6
10.14	10.9	0.45	4.92	11.09	4.04	19.9
10.15	6.5	0.79	5.14	12.11	3.89	20.0
10.16	8.6	0.80	6.88	10.16	4.19	28.8
10.17	9.6	0.85	8.16	16.26	3.39	27.7

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.85	8.25	15.73	3.45	28.5
10.19	7.5	0.80	6.00	14.52	3.60	21.6
10.20	22.3	0.85	18.96	16.52	3.36	63.6
10.21	9.4	0.85	7.99	15.32	3.51	28.0
10.22	5.0	0.48	2.40	9.46	4.31	10.4
10.23	11.3	0.85	9.61	24.74	2.67	25.6
10.24	6.1	0.75	4.58	10.04	4.21	19.3
10.25	8.7	0.85	7.40	20.78	2.95	21.8
10.26	12.0	0.70	8.40	22.56	2.81	23.6
10.27	17.6	0.75	13.20	24.07	2.71	35.8
10.28	10.4	0.85	8.84	22.32	2.83	25.0
10.29	7.9	0.45	3.57	13.93	3.66	13.1
10.30	17.1	0.58	9.99	18.32	3.17	31.6
10.31	3.8	0.60	2.28	11.31	4.00	9.1
10.32	7.0	0.60	4.20	24.72	2.67	11.2
10.33	3.2	0.47	1.51	12.98	3.78	5.7
10.34	6.6	0.37	2.42	8.67	4.46	10.8
10.35	11.6	0.34	3.92	17.17	3.28	12.9
10.36	3.5	0.20	0.70	10.17	4.19	2.9
10.37	7.7	0.30	2.31	11.64	3.96	9.1
10.38	8.8	0.60	5.28	20.77	2.95	15.6
10.39	3.5	0.85	2.98	22.80	2.79	8.3
10.40	4.9	0.85	4.17	13.39	3.72	15.5
10.41	3.5	0.85	2.98	15.51	3.48	10.4
11.01	44.9	0.36	16.00	20.71	2.95	47.2
11.02	20.2	0.52	10.46	16.62	3.35	35.0
11.03	24.0	0.39	9.40	17.21	3.28	30.8
11.04	45.8	0.42	19.13	19.14	3.09	59.1
11.05	48.3	0.62	30.17	32.09	2.28	68.8
11.06	15.6	0.49	7.65	16.04	3.42	26.1
11.07	28.3	0.40	11.46	13.62	3.70	42.4
11.08	18.8	0.36	6.69	13.61	3.70	24.7
11.09	24.4	0.39	9.63	14.35	3.62	34.8
11.10	20.0	0.48	9.52	15.55	3.48	33.1
11.11	5.8	0.52	3.01	16.41	3.37	10.1
11.12	8.0	0.40	3.17	13.92	3.66	11.6

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	29.6	0.45	13.39	18.61	3.14	42.0
11.14	19.5	0.38	7.45	20.84	2.94	21.9
11.15	23.0	0.44	10.15	16.29	3.39	34.3
11.16	8.1	0.59	4.74	15.44	3.49	16.5
11.17	12.0	0.45	5.42	19.83	3.03	16.4
11.18	7.2	0.45	3.21	12.49	3.84	12.3
11.19	25.6	0.38	9.83	17.63	3.24	31.8
11.20	57.4	0.41	23.77	22.08	2.85	67.6
11.21	35.9	0.35	12.59	20.79	2.95	37.1
11.23	34.3	0.49	16.89	20.84	2.94	49.7
11.24	35.0	0.48	16.88	13.16	3.75	63.3
11.25	12.9	0.39	5.03	16.21	3.39	17.1
11.26	15.1	0.38	5.69	13.77	3.68	20.9
11.27	15.7	0.39	6.20	14.69	3.58	22.2
11.28	21.5	0.37	7.88	18.96	3.10	24.5
11.29	22.8	0.42	9.48	12.40	3.85	36.5
11.30	22.5	0.44	9.83	14.62	3.59	35.3
11.31	32.6	0.40	12.97	36.58	2.08	27.0
11.32	31.1	0.38	11.97	18.19	3.18	38.1
11.33	29.3	0.46	13.41	22.31	2.83	37.9
11.34	19.1	0.44	8.37	15.86	3.44	28.8
11.35	22.0	0.40	8.69	16.90	3.32	28.8
11.36	22.8	0.45	10.20	14.40	3.61	36.8
11.37	21.1	0.43	9.08	14.46	3.60	32.7
11.38	23.9	0.39	9.21	16.82	3.32	30.6
11.39	23.2	0.48	11.20	17.58	3.24	36.3
11.40	13.3	0.42	5.59	10.50	4.13	23.1
11.41	89.8	0.32	29.14	26.06	2.59	75.4
11.42	14.9	0.33	4.97	19.66	3.04	15.1
11.43	43.9	0.32	14.05	11.68	3.95	55.5
11.44	8.9	0.35	3.12	16.05	3.41	10.6
11.45	26.5	0.35	9.28	31.00	2.34	21.7
11.46	4.3	0.35	1.51	10.94	4.06	6.1
11.47	122.3	0.35	42.81	25.41	2.63	112.4
11.48	42.0	0.32	13.32	17.39	3.26	43.4
11.49	30.4	0.38	11.54	17.06	3.30	38.1

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	36.3	0.35	12.60	16.88	3.32	41.8
11.51	15.1	0.51	7.67	11.55	3.97	30.4
11.52	22.6	0.33	7.44	18.35	3.16	23.5
12.01	13.3	0.42	5.53	11.41	3.99	22.1
12.02	26.7	0.32	8.51	16.36	3.38	28.7
12.03	17.2	0.61	10.57	15.67	3.46	36.6
12.04	12.0	0.30	3.60	11.47	3.98	14.3
13.01	31.7	0.32	10.17	17.91	3.21	32.6
13.02	72.5	0.30	21.75	23.01	2.78	60.4
13.03	7.7	0.37	2.86	10.99	4.05	11.6
13.04	6.0	0.30	1.80	11.12	4.03	7.3
13.05	16.2	0.34	5.52	19.82	3.03	16.7
13.06	4.6	0.30	1.38	9.50	4.31	5.9
14.01	25.9	0.32	8.32	22.54	2.81	23.4
14.02	70.9	0.38	26.62	33.20	2.23	59.3
14.03	36.4	0.36	12.99	13.86	3.67	47.7
15.01	20.6	0.30	6.18	17.40	3.26	20.1
16.01	24.1	0.35	8.44	17.20	3.28	27.7
16.02	47.6	0.35	16.66	35.94	2.11	35.1
17.01	68.3	0.35	23.91	24.58	2.68	64.0
17.02	56.4	0.35	19.74	20.82	2.94	58.1
17.03	19.4	0.35	6.79	23.57	2.74	18.6
18.01	13.0	0.65	8.45	15.05	3.54	29.9
19.01	10.7	0.35	3.75	16.79	3.33	12.5
19.02	11.5	0.35	4.03	17.52	3.25	13.1
19.03	82.0	0.35	28.70	37.11	2.06	59.2
19.04	11.1	0.35	3.89	16.34	3.38	13.1
19.05	20.9	0.35	7.32	12.60	3.82	28.0
19.06	25.3	0.40	10.12	21.22	2.91	29.5
19.07	33.4	0.35	11.69	16.96	3.31	38.7
19.08	74.7	0.40	29.88	24.69	2.67	79.8
19.09	9.9	0.35	3.47	18.88	3.11	10.8
19.10	14.4	0.40	5.76	14.97	3.55	20.5
19.11	9.7	0.40	3.88	15.25	3.52	13.6
19.12	14.6	0.40	5.84	16.51	3.36	19.6
19.13	25.2	0.20	5.04	17.24	3.28	16.5

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	15.4	0.65	10.01	18.43	3.15	31.6
19.15	14.4	0.55	7.86	21.20	2.91	22.9
19.16	11.4	0.80	9.14	12.85	3.79	34.7
19.17	7.6	0.43	3.23	18.70	3.13	10.1
19.18	3.8	0.42	1.58	14.62	3.59	5.7
19.20	11.0	0.53	5.78	19.99	3.01	17.4
19.21	10.2	0.60	6.12	26.40	2.57	15.7
19.22	19.8	0.35	6.86	17.00	3.30	22.6
19.23	4.5	0.34	1.52	12.77	3.80	5.8
19.24	6.7	0.60	4.02	12.26	3.87	15.5
19.25	5.8	0.20	1.16	16.41	3.37	3.9
19.26	8.1	0.50	4.05	20.31	2.98	12.1
19.27	8.4	0.68	5.74	20.27	2.99	17.1
19.28	6.2	0.39	2.39	16.35	3.38	8.1
19.29	6.5	0.40	2.62	20.55	2.96	7.8
19.30	8.6	0.60	5.16	22.35	2.83	14.6
19.31	3.7	0.60	2.22	10.57	4.12	9.1
19.32	7.3	0.72	5.28	20.42	2.98	15.7
19.33	5.4	0.60	3.24	9.59	4.29	13.9
19.34	1.6	0.85	1.36	11.44	3.99	5.4
19.35	6.9	0.71	4.89	22.61	2.81	13.7
19.36	6.7	0.60	4.02	14.05	3.65	14.7
19.37	39.5	0.40	15.80	18.44	3.15	49.8
19.38	1.9	0.71	1.34	18.31	3.17	4.2
19.39	5.6	0.60	3.36	12.64	3.82	12.8
19.40	7.4	0.60	4.44	18.30	3.17	14.1
19.41	4.7	0.60	2.82	12.29	3.86	10.9
19.42	5.4	0.32	1.73	10.90	4.07	7.0
19.43	6.8	0.46	3.16	14.67	3.58	11.3
20.01	17.3	0.53	9.11	16.55	3.35	30.5
20.02	5.3	0.45	2.39	11.14	4.03	9.6
21.01	6.1	0.65	3.97	11.06	4.04	16.0
21.02	2.0	0.65	1.30	11.32	4.00	5.2
21.03	1.9	0.65	1.24	14.08	3.65	4.5
22.01	6.7	0.60	4.02	12.53	3.83	15.4
22.02	4.7	0.60	2.82	9.65	4.28	12.1

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	2.4	0.60	1.44	11.23	4.02	5.8
24.01	2.7	0.60	1.62	11.17	4.03	6.5
25.01	8.9	0.40	3.56	13.85	3.67	13.1
25.02	5.7	0.40	2.28	17.35	3.27	7.4
26.01	5.6	0.40	2.24	14.17	3.64	8.1
27.01	2.4	0.60	1.44	13.94	3.66	5.3
28.01	1.8	0.60	1.08	6.71	4.93	5.3
29.01	73.6	0.20	14.72	23.64	2.74	40.3
29.02	76.0	0.20	15.20	33.43	2.22	33.7
30.01	14.5	0.41	5.92	15.75	3.45	20.4
30.02	3.5	0.38	1.33	14.68	3.58	4.7
30.03	15.3	0.62	9.54	12.81	3.80	36.2
30.04	9.1	0.65	5.92	14.14	3.64	21.5
30.05	5.1	0.35	1.81	12.43	3.85	6.9
31.01	5.9	0.65	3.84	16.39	3.37	12.9
31.02	3.1	0.65	2.02	11.89	3.92	7.9
32.01	1.9	0.30	0.57	14.43	3.61	2.1
32.02	2.2	0.25	0.55	15.03	3.54	1.9
32.03	1.8	0.25	0.45	13.56	3.71	1.7
32.04	1.9	0.25	0.48	13.90	3.67	1.8
32.05	2.6	0.30	0.78	12.30	3.86	3.0
32.06	4.4	0.30	1.32	19.75	3.03	4.0
32.07	4.4	0.45	1.98	16.60	3.35	6.6
32.08	1.6	0.64	1.03	10.83	4.08	4.2
32.09	2.7	0.63	1.71	17.34	3.27	5.6
32.10	2.5	0.57	1.42	16.38	3.38	4.8
32.11	4.4	0.71	3.12	21.22	2.91	9.1
32.12	2.3	0.38	0.87	14.47	3.60	3.1
32.13	3.0	0.30	0.90	22.93	2.78	2.5
32.14	1.9	0.30	0.57	17.65	3.23	1.8
32.15	3.7	0.30	1.11	18.56	3.14	3.5
32.16	2.0	0.30	0.60	13.57	3.70	2.2

ROUTING
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
Begin	**Northeast Airfield Area**								
3.04	10.08	1,400	3.00	17.80	5.34	17.10	3.29	17.58	7.78
3.03	10.08	1,100	3.00	9.50	2.85	9.84	4.25	12.11	6.11
10.08	10.07	1,300	3.00	50.20	16.21	24.88	2.66	43.08	7.22
10.07	10.05	1,000	3.00	78.20	26.01	32.10	2.28	59.29	5.56
10.05	3.06	800	3.00	88.10	29.47	37.66	2.04	60.20	4.44
3.01	3.02	1,000	3.00	20.20	6.06	19.33	3.07	18.61	5.56
2.02	3.02	1,500	3.00	55.00	16.50	21.66	2.88	47.48	8.33
3.02	3.06	1,600	3.00	118.80	35.64	29.99	2.39	85.15	8.89
3.06	8.02	1,500	3.00	250.50	78.19	42.10	1.89	147.93	8.33
8.02	7.02	500	3.00	273.30	85.03	50.43	1.67	142.07	2.78
5.01	7.02	800	3.00	13.00	3.90	21.01	2.93	11.42	4.44
7.02	7.01	800	3.00	295.20	91.60	53.21	1.61	147.50	4.44
2.01	1.01	800	3.00	14.70	5.15	20.71	2.95	15.19	4.44
1.01	5.02	3,200	3.00	65.20	22.82	25.15	2.64	60.28	17.78
4.01	5.02	1,500	3.00	16.10	5.64	16.62	3.35	18.86	8.33
5.02	7.01	1,600	3.00	120.90	42.32	42.93	1.87	78.99	8.89
6.01	7.01	1,100	3.00	33.10	11.59	20.89	2.94	34.03	6.11
7.01	7.01		3.00	466.40	151.52	57.66	1.52	230.89	0.00
End	**Northeast Airfield Area**								
Begin	**Ditch Paralleling East Runway**								
3.05	10.09	1,200	3.00	69.30	20.79	30.39	2.37	49.22	6.67
10.09	11.25	1,100	3.00	79.10	24.22	37.06	2.07	50.03	6.11
11.42	11.31	3,100	3.00	14.90	4.97	19.66	3.04	15.10	17.22
11.31	11.25	1,200	3.00	47.50	17.94	36.88	2.07	37.17	6.67
11.25	11.19	2,400	3.00	139.50	47.18	43.55	1.85	87.21	13.33
10.04	11.19	300	3.00	57.00	19.95	18.84	3.12	62.15	1.67
11.19	11.12	700	3.00	222.10	76.96	56.88	1.54	118.36	3.89
11.12	10.03	700	3.00	230.10	80.13	60.77	1.47	117.48	3.89
10.03	10.01	1,800	3.00	269.30	94.25	64.66	1.39	130.93	10.00
8.01	9.01	1,200	3.00	25.40	7.62	25.21	2.64	20.10	6.67
9.01	10.01	1,100	3.00	53.60	16.08	31.88	2.29	36.84	6.11
11.11	11.06	1,000	3.00	5.80	3.01	16.41	3.37	10.13	5.56
10.02	11.06	500	3.00	9.90	5.27	10.16	4.19	22.07	2.78
11.06	10.01	600	3.00	31.30	15.92	21.96	2.85	45.44	3.33
10.01	11.52	1,900	3.00	388.50	138.45	74.66	1.23	169.72	10.56
9.02	11.52	300	3.00	31.10	9.33	12.33	3.86	36.00	1.67
11.52	11.52		3.00	442.20	155.22	85.21	1.09	169.60	0.00
End	**Ditch Paralleling East Runway**								
Begin	**Area Between Center and East Runways**								
11.43	11.40	500	3.00	43.90	14.05	11.68	3.95	55.49	2.78
11.40	11.33	2,500	3.00	57.20	19.64	14.46	3.60	70.78	13.89

ROUTING
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
11.33	11.27	1,200	3.00	86.50	33.05	28.35	2.47	81.53	6.67
11.27	11.20	2,300	3.00	102.20	39.24	35.02	2.15	84.27	12.78
11.32	11.26	1,200	3.00	31.10	11.97	18.19	3.18	38.05	6.67
11.26	11.20	2,500	3.00	46.20	17.66	24.85	2.66	46.96	13.89
11.20	11.13	1,200	3.00	205.80	80.66	47.79	1.73	139.85	6.67
11.13	11.07	1,200	3.00	235.40	94.05	54.46	1.58	149.05	6.67
11.07	11.02	900	3.00	263.70	105.51	61.13	1.46	153.92	5.00
11.02	11.01	1,900	3.00	283.90	115.97	66.13	1.36	157.99	10.56
11.01	11.01		3.00	328.80	131.97	76.68	1.20	158.05	0.00
End	**Area Between Center and East Runways**								
Begin	**Channel Along South Property Line**								
Begin	Initial Reach of Channel Along South Property Line								
11.41	14.03	1,600	3.00	89.80	29.14	26.06	2.59	75.44	8.89
11.39	14.03	1,200	3.00	23.20	11.20	17.58	3.24	36.29	6.67
14.03	16.02	4,800	3.00	149.40	53.33	34.95	2.15	114.68	26.67
16.02	17.01	2,900	3.00	197.00	69.99	61.61	1.45	101.39	16.11
End	Initial Reach of Channel Along South Property Line								
Begin	Channel Approx 700' North of South Property Line								
11.37	11.34	1,400	3.00	21.10	9.08	14.46	3.60	32.73	7.78
11.34	11.35	700	3.00	40.20	17.45	22.24	2.83	49.45	3.89
11.38	11.35	1,200	3.00	23.90	9.21	16.82	3.32	30.60	6.67
11.35	11.36	700	3.00	86.10	35.35	26.13	2.58	91.36	3.89
11.36	14.02	3,700	3.00	108.90	45.54	30.02	2.39	108.74	20.56
11.30	14.02	3,900	3.00	22.50	9.83	14.62	3.59	35.26	21.67
14.02	16.01	1,100	3.00	202.30	81.99	50.57	1.67	136.72	6.11
16.01	15.01	900	3.00	226.40	90.42	56.68	1.54	139.40	5.00
13.06	15.01	700	3.00	4.60	1.38	9.50	4.31	5.94	3.89
13.03	15.01	700	3.00	7.70	2.86	10.99	4.05	11.59	3.89
15.01	32.16	50	3.00	259.30	100.84	61.68	1.45	145.95	0.28
32.16	19.01	700	3.00	261.30	101.44	61.96	1.44	146.24	3.89
19.01	19.04	200	3.00	272.00	105.19	65.85	1.37	143.82	1.11
End	Channel Approx 700' North of South Property Line								
Begin	Drainage Along South Edge of Old Cross Wind Runway								
11.28	11.21	2,000	3.00	21.50	7.88	18.96	3.10	24.46	11.11
11.21	11.23	700	3.00	57.40	20.47	30.07	2.38	48.80	3.89
11.17	11.23	300	3.00	12.00	5.42	19.83	3.03	16.38	1.67
11.29	11.23	1,600	3.00	22.80	9.48	12.40	3.85	36.50	8.89
11.23	11.24	800	3.00	126.50	52.25	33.96	2.19	114.60	4.44
11.18	11.24	100	3.00	7.20	3.21	12.49	3.84	12.30	0.56
11.24	12.01	900	3.00	168.70	72.34	38.41	2.02	145.78	5.00
12.01	12.02	1,700	3.00	182.00	77.87	43.41	1.85	144.25	9.44
12.02	12.03	1,000	3.00	208.70	86.37	52.85	1.62	139.74	5.56

ROUTING
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
13.04	12.04	200	3.00	6.00	1.80	11.12	4.03	7.26	1.11
12.04	13.01	2,200	3.00	18.00	5.40	12.24	3.87	20.91	12.22
14.01	13.02	1,400	3.00	25.90	8.32	22.54	2.81	23.40	7.78
13.02	13.05	300	3.00	98.40	30.07	30.32	2.37	71.31	1.67
13.05	13.01	600	3.00	114.60	35.59	31.99	2.29	81.34	3.33
13.01	12.03	800	3.00	164.30	51.16	35.32	2.13	109.22	4.44
12.03	32.15	200	3.00	390.20	148.10	58.41	1.51	223.68	1.11
End	Drainage Along South Edge of Old Cross Wind Runway								
Begin	South Apron Area								
11.16	10.20	1,400	3.00	8.10	4.74	15.44	3.49	16.55	7.78
10.20	10.22	200	3.00	30.40	23.70	23.22	2.77	65.52	1.11
10.22	10.24	500	3.00	35.40	26.10	24.33	2.69	70.26	2.78
10.23	10.24	50	3.00	11.30	9.61	24.74	2.67	25.61	0.28
10.24	10.27	1,500	3.00	52.80	40.28	27.10	2.53	101.95	8.33
10.39	10.27	0	3.00	3.50	2.98	22.80	2.79	8.31	0.00
32.13	10.27	900	3.00	3.00	0.90	22.93	2.78	2.51	5.00
10.27	10.29	300	3.00	76.90	57.35	35.44	2.13	122.16	1.67
32.14	10.29	400	3.00	1.90	0.57	17.65	3.23	1.84	2.22
10.25	10.28	1,400	3.00	8.70	7.40	20.78	2.95	21.79	7.78
10.28	10.29	500	3.00	19.10	16.24	28.56	2.46	39.89	2.78
10.29	32.12	100	3.00	105.80	77.73	37.10	2.06	160.40	0.56
32.12	32.15	1,100	3.00	108.10	78.60	37.66	2.04	160.55	6.11
32.15	19.04		3.00	502.00	227.81	59.52	1.49	339.63	0.00
End	South Apron Area								
Begin	Final Reach of Channel Along South Property Line								
19.04	19.02	800	3.00	785.10	336.88	66.96	1.35	453.96	4.44
19.02	17.01	1,500	3.00	796.60	340.90	71.41	1.27	434.40	8.33
17.01	17.03	2,500	3.00	1061.90	434.79	79.74	1.16	503.31	13.89
17.03	17.03		3.00	1081.30	441.58	93.63	1.01	444.53	0.00
End	Final Reach of Channel Along South Property Line								
End	**Channel Along South Property Line**								
Begin	**Channel Along South End of ERT Campus**								
19.07	19.05	400	3.00	33.40	11.69	16.96	3.31	38.67	2.22
19.05	19.03	3,600	3.00	54.30	19.01	19.18	3.08	58.60	20.00
19.09	19.03	400	3.00	9.90	3.47	18.88	3.11	10.78	2.22
17.02	18.01	700	3.00	56.40	19.74	20.82	2.94	58.09	3.89
18.01	19.03	0	3.00	69.40	28.19	24.71	2.67	75.23	0.00
19.03	19.03		3.00	215.60	79.36	39.18	1.99	157.74	0.00
End	**Channel Along South End of ERT Campus**								
Begin	**South ERT Campus**								
10.26	32.11	100	3.00	12.00	8.40	22.56	2.81	23.61	0.56
32.11	10.32	500	3.00	16.40	11.52	23.11	2.77	31.94	2.78

ROUTING
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.32	22.02	600	3.00	23.40	15.72	25.89	2.60	40.85	3.33
10.31	22.02	700	3.00	3.80	2.28	11.31	4.00	9.13	3.89
10.30	22.01	500	3.00	17.10	9.99	18.32	3.17	31.62	2.78
22.01	22.02	300	3.00	23.80	14.01	21.10	2.92	40.91	1.67
22.02	19.14	1,500	3.00	55.70	34.83	29.22	2.42	84.46	8.33
19.14	19.18	500	3.00	71.10	44.84	37.56	2.05	91.77	2.78
19.18	20.02	700	3.00	74.90	46.42	40.33	1.95	90.45	3.89
20.02	20.01	700	3.00	80.20	48.81	44.22	1.83	89.26	3.89
20.01	19.11	300	3.00	97.50	57.91	48.11	1.73	99.95	1.67
19.13	19.10	100	3.00	25.20	5.04	17.24	3.28	16.52	0.56
19.10	19.11	1,200	3.00	39.60	10.80	17.80	3.22	34.76	6.67
19.11	19.08	100	3.00	146.80	72.59	49.78	1.69	122.38	0.56
19.06	19.08	900	3.00	25.30	10.12	21.22	2.91	29.46	5.00
19.08	19.12	1,300	3.00	246.80	112.59	50.33	1.67	188.38	7.22
19.12	25.01	400	3.00	261.40	118.43	57.56	1.53	180.68	2.22
25.01	25.02	600	3.00	270.30	121.99	59.78	1.49	181.33	3.33
19.17	26.01	700	3.00	7.60	3.23	18.70	3.13	10.10	3.89
26.01	25.02	200	3.00	13.20	5.47	22.59	2.81	15.36	1.11
19.20	24.01	300	3.00	11.00	5.78	19.99	3.01	17.40	1.67
24.01	23.01	300	3.00	13.70	7.40	21.65	2.88	21.28	1.67
23.01	19.15	1,300	3.00	16.10	8.84	23.32	2.76	24.37	7.22
19.15	19.22	1,800	3.00	30.50	16.70	30.54	2.36	39.39	10.00
25.02	19.22	600	3.00	289.20	129.74	63.11	1.42	184.08	3.33
End	**South ERT Campus**								
Begin	**Central ERT Campus**								
19.29	19.30	900	3.00	6.50	2.62	20.55	2.96	7.77	5.00
19.30	19.31	400	3.00	15.10	7.78	25.55	2.62	20.37	2.22
19.31	19.32	800	3.00	18.80	10.00	27.77	2.50	24.96	4.44
19.32	19.33	200	3.00	26.10	15.28	32.21	2.27	34.75	1.11
19.33	19.25	400	3.00	31.50	18.52	33.32	2.22	41.15	2.22
19.38	31.02	400	3.00	1.90	1.34	18.31	3.17	4.24	2.22
31.02	19.28	700	3.00	5.00	3.36	20.53	2.97	9.95	3.89
19.28	19.27	900	3.00	11.20	5.75	24.42	2.69	15.43	5.00
19.27	19.26	900	3.00	19.60	11.49	29.42	2.42	27.74	5.00
19.26	19.25	700	3.00	27.70	15.54	34.42	2.17	33.76	3.89
19.25	28.01	200	3.00	65.00	35.22	38.31	2.02	71.09	1.11
28.01	19.23	500	3.00	66.80	36.30	39.42	1.98	71.84	2.78
10.38	32.10	100	3.00	8.80	5.28	20.77	2.95	15.56	0.56
32.10	21.02	200	3.00	11.30	6.70	21.32	2.90	19.44	1.11
21.03	21.02	0	3.00	1.90	1.24	14.08	3.65	4.50	0.00
21.02	21.01	400	3.00	15.20	9.23	22.43	2.82	26.03	2.22
21.01	19.39	700	3.00	21.30	13.20	24.65	2.67	35.26	3.89

ROUTING
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
19.39	19.40	1,000	3.00	26.90	16.56	28.54	2.46	40.69	5.56
19.40	19.16	900	3.00	34.30	21.00	34.10	2.19	45.92	5.00
19.21	19.16	900	3.00	10.20	6.12	26.40	2.57	15.72	5.00
19.16	19.24	600	3.00	55.90	36.26	39.10	1.99	72.17	3.33
27.01	19.24	300	3.00	2.40	1.44	13.94	3.66	5.27	1.67
19.24	19.23	900	3.00	65.00	41.72	42.43	1.88	78.50	5.00
19.23	19.22	500	3.00	136.30	79.53	47.43	1.74	138.60	2.78
19.22	19.22		3.00	475.80	232.82	66.44	1.36	315.86	0.00
End	**Central ERT Campus**								
Begin	**North ERT Campus**								
30.03	30.01	1,700	3.00	15.30	9.54	12.81	3.80	36.22	9.44
30.01	30.04	300	3.00	29.80	15.46	22.25	2.83	43.80	1.67
30.02	30.04	700	3.00	3.50	1.33	14.68	3.58	4.75	3.89
19.36	30.05	600	3.00	6.70	4.02	14.05	3.65	14.67	3.33
30.05	30.04	1,100	3.00	11.80	5.83	17.38	3.26	19.00	6.11
30.04	19.35	500	3.00	54.20	28.53	23.92	2.72	77.55	2.78
10.19	32.09	100	3.00	7.50	6.00	14.52	3.60	21.59	0.56
32.09	19.41	200	3.00	10.20	7.71	17.34	3.27	25.19	1.11
19.41	31.01	350	3.00	14.90	10.53	18.45	3.15	33.20	1.94
31.01	19.42	700	3.00	20.80	14.37	20.40	2.98	42.77	3.89
19.42	19.43	900	3.00	26.20	16.10	24.28	2.70	43.38	5.00
19.43	19.35	1,000	3.00	33.00	19.26	29.28	2.42	46.63	5.56
19.35	19.34	200	3.00	94.10	52.67	34.84	2.16	113.51	1.11
19.34	19.37	1,900	3.00	95.70	54.03	35.95	2.11	113.95	10.56
End	**North ERT Campus**								
Begin	**Channel Across Golf Course**								
Begin	Area Between West and Center Runway								
11.14	11.08	1,200	3.00	19.50	7.45	20.84	2.94	21.89	6.67
11.08	11.03	1,600	3.00	38.30	14.13	27.51	2.51	35.46	8.89
11.03	11.04	1,100	3.00	62.30	23.53	36.40	2.09	49.20	6.11
11.15	11.09	1,300	3.00	23.00	10.15	16.29	3.39	34.34	7.22
11.09	11.04	2,400	3.00	47.40	19.78	23.51	2.75	54.29	13.33
11.04	11.05	900	3.00	155.50	62.44	42.51	1.88	117.34	5.00
11.51	11.10	1,300	3.00	15.10	7.67	11.55	3.97	30.41	7.22
10.17	11.10	300	3.00	9.60	8.16	16.26	3.39	27.65	1.67
10.21	11.10	600	3.00	9.40	7.99	15.32	3.51	28.02	3.33
11.10	11.05	2,700	3.00	54.10	33.34	18.78	3.12	104.06	15.00
11.05	10.11	300	3.00	257.90	125.94	47.51	1.74	219.24	1.67
End	Area Between West and Center Runway								
Begin	North Apron Area								
10.18	10.15	700	3.00	9.70	8.25	15.73	3.45	28.48	3.89
10.15	10.13	900	3.00	16.20	13.39	19.62	3.04	40.75	5.00

ROUTING
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.13	10.11	1,000	3.00	23.00	18.45	24.62	2.67	49.34	5.56
10.11	10.41	800	3.00	289.20	150.18	49.18	1.70	255.31	4.44
10.41	10.12	500	3.00	292.70	153.15	53.62	1.60	245.32	2.78
32.08	10.16	0	3.00	1.60	1.03	10.83	4.08	4.20	0.00
10.16	10.14	1,100	3.00	10.20	7.91	10.83	4.08	32.27	6.11
32.07	10.14	0	3.00	4.40	1.98	16.60	3.35	6.63	0.00
10.14	10.12	2,000	3.00	25.50	14.81	16.94	3.31	49.03	11.11
10.12	32.06	100	3.00	341.60	176.63	56.40	1.55	273.27	0.56
10.33	32.06	0	3.00	3.20	1.51	12.98	3.78	5.70	0.00
End	North Apron Area								
Begin	North End of Runways Draining Back to Golf Cource Channel								
11.49	11.48	1,400	3.00	30.40	11.54	17.06	3.30	38.05	7.78
11.48	11.50	1,100	3.00	72.40	24.86	24.83	2.66	66.14	6.11
11.50	32.03	50	3.00	108.70	37.45	30.95	2.34	87.57	0.28
32.03	32.04	800	3.00	110.50	37.90	31.22	2.32	88.08	4.44
10.10	32.05	100	3.00	6.60	2.70	12.11	3.89	10.48	0.56
10.40	32.05	500	3.00	4.90	4.17	13.39	3.72	15.51	2.78
10.35	32.05	0	3.00	11.60	3.92	17.17	3.28	12.88	0.00
32.05	10.34	500	3.00	25.70	11.56	17.17	3.28	37.97	2.78
10.34	32.04	50	3.00	32.30	13.98	19.95	3.02	42.15	0.28
32.04	32.06	200	3.00	144.70	52.36	35.67	2.12	111.03	1.11
End	North End of Runways Draining Back to Golf Cource Channel								
Begin	Main Golf Course Channel								
32.06	19.37	850	3.00	493.90	231.82	56.96	1.54	356.24	4.72
19.37	29.01	900	3.00	629.10	301.65	61.68	1.45	436.63	5.00
29.01	29.01		3.00	702.70	316.37	66.68	1.35	427.91	0.00
End	Main Golf Course Channel								
End	**Channel Across Golf Course**								
Begin	**Northwest Corner**								
32.02	10.36	600	3.00	2.20	0.55	15.03	3.54	1.95	3.33
10.36	10.36		3.00	5.70	1.25	18.37	3.16	3.95	0.00
End	**Northwest Corner**								

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	65.2	0.35	22.82	25.15	2.64	60.3
2.01	14.7	0.35	5.15	20.71	2.95	15.2
2.02	55.0	0.30	16.50	21.66	2.88	47.5
3.01	20.2	0.30	6.06	19.33	3.07	18.6
3.02	118.8	0.30	35.64	29.99	2.39	85.2
3.03	9.5	0.30	2.85	9.84	4.25	12.1
3.04	17.8	0.30	5.34	17.10	3.29	17.6
3.05	69.3	0.30	20.79	30.39	2.37	49.2
3.06	250.5	0.31	78.19	42.10	1.89	147.9
4.01	16.1	0.35	5.64	16.62	3.35	18.9
5.01	13.0	0.30	3.90	21.01	2.93	11.4
5.02	120.9	0.35	42.32	42.93	1.87	79.0
6.01	33.1	0.35	11.59	20.89	2.94	34.0
7.01	466.4	0.32	151.52	57.66	1.52	230.9
7.02	295.2	0.31	91.60	53.21	1.61	147.5
8.01	25.4	0.30	7.62	25.21	2.64	20.1
8.02	273.3	0.31	85.03	50.43	1.67	142.1
9.01	53.6	0.30	16.08	31.88	2.29	36.8
9.02	31.1	0.30	9.33	12.33	3.86	36.0
10.01	388.5	0.36	138.45	74.66	1.23	169.7
10.02	9.9	0.53	5.27	10.16	4.19	22.1
10.03	269.3	0.35	94.25	64.66	1.39	130.9
10.04	57.0	0.35	19.95	18.84	3.12	62.1
10.05	88.1	0.33	29.47	37.66	2.04	60.2
10.06	4.8	0.35	1.68	12.28	3.87	6.5
10.07	78.2	0.33	26.01	32.10	2.28	59.3
10.08	50.2	0.32	16.21	24.88	2.66	43.1
10.09	79.1	0.31	24.22	37.06	2.07	50.0
10.10	6.6	0.41	2.70	12.11	3.89	10.5
10.11	289.2	0.52	150.18	49.18	1.70	255.3
10.12	341.6	0.52	176.63	56.40	1.55	273.3
10.13	23.0	0.80	18.45	24.62	2.67	49.3
10.14	25.5	0.58	14.81	16.94	3.31	49.0
10.15	16.2	0.83	13.39	19.62	3.04	40.8
10.16	10.2	0.78	7.91	10.83	4.08	32.3
10.17	9.6	0.85	8.16	16.26	3.39	27.7

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.85	8.25	15.73	3.45	28.5
10.19	7.5	0.80	6.00	14.52	3.60	21.6
10.20	30.4	0.78	23.70	23.22	2.77	65.5
10.21	9.4	0.85	7.99	15.32	3.51	28.0
10.22	35.4	0.74	26.10	24.33	2.69	70.3
10.23	11.3	0.85	9.61	24.74	2.67	25.6
10.24	52.8	0.76	40.28	27.10	2.53	101.9
10.25	8.7	0.85	7.40	20.78	2.95	21.8
10.26	12.0	0.70	8.40	22.56	2.81	23.6
10.27	76.9	0.75	57.35	35.44	2.13	122.2
10.28	19.1	0.85	16.24	28.56	2.46	39.9
10.29	105.8	0.73	77.73	37.10	2.06	160.4
10.30	17.1	0.58	9.99	18.32	3.17	31.6
10.31	3.8	0.60	2.28	11.31	4.00	9.1
10.32	23.4	0.67	15.72	25.89	2.60	40.8
10.33	3.2	0.47	1.51	12.98	3.78	5.7
10.34	32.3	0.43	13.98	19.95	3.02	42.2
10.35	11.6	0.34	3.92	17.17	3.28	12.9
10.36	5.7	0.22	1.25	18.37	3.16	4.0
10.37	7.7	0.30	2.31	11.64	3.96	9.1
10.38	8.8	0.60	5.28	20.77	2.95	15.6
10.39	3.5	0.85	2.98	22.80	2.79	8.3
10.40	4.9	0.85	4.17	13.39	3.72	15.5
10.41	292.7	0.52	153.15	53.62	1.60	245.3
11.01	328.8	0.40	131.97	76.68	1.20	158.1
11.02	283.9	0.41	115.97	66.13	1.36	158.0
11.03	62.3	0.38	23.53	36.40	2.09	49.2
11.04	155.5	0.40	62.44	42.51	1.88	117.3
11.05	257.9	0.49	125.94	47.51	1.74	219.2
11.06	31.3	0.51	15.92	21.96	2.85	45.4
11.07	263.7	0.40	105.51	61.13	1.46	153.9
11.08	38.3	0.37	14.13	27.51	2.51	35.5
11.09	47.4	0.42	19.78	23.51	2.75	54.3
11.10	54.1	0.62	33.34	18.78	3.12	104.1
11.11	5.8	0.52	3.01	16.41	3.37	10.1
11.12	230.1	0.35	80.13	60.77	1.47	117.5

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	235.4	0.40	94.05	54.46	1.58	149.1
11.14	19.5	0.38	7.45	20.84	2.94	21.9
11.15	23.0	0.44	10.15	16.29	3.39	34.3
11.16	8.1	0.59	4.74	15.44	3.49	16.5
11.17	12.0	0.45	5.42	19.83	3.03	16.4
11.18	7.2	0.45	3.21	12.49	3.84	12.3
11.19	222.1	0.35	76.96	56.88	1.54	118.4
11.20	205.8	0.39	80.66	47.79	1.73	139.8
11.21	57.4	0.36	20.47	30.07	2.38	48.8
11.23	126.5	0.41	52.25	33.96	2.19	114.6
11.24	168.7	0.43	72.34	38.41	2.02	145.8
11.25	139.5	0.34	47.18	43.55	1.85	87.2
11.26	46.2	0.38	17.66	24.85	2.66	47.0
11.27	102.2	0.38	39.24	35.02	2.15	84.3
11.28	21.5	0.37	7.88	18.96	3.10	24.5
11.29	22.8	0.42	9.48	12.40	3.85	36.5
11.30	22.5	0.44	9.83	14.62	3.59	35.3
11.31	47.5	0.38	17.94	36.88	2.07	37.2
11.32	31.1	0.38	11.97	18.19	3.18	38.1
11.33	86.5	0.38	33.05	28.35	2.47	81.5
11.34	40.2	0.43	17.45	22.24	2.83	49.5
11.35	86.1	0.41	35.35	26.13	2.58	91.4
11.36	108.9	0.42	45.54	30.02	2.39	108.7
11.37	21.1	0.43	9.08	14.46	3.60	32.7
11.38	23.9	0.39	9.21	16.82	3.32	30.6
11.39	23.2	0.48	11.20	17.58	3.24	36.3
11.40	57.2	0.34	19.64	14.46	3.60	70.8
11.41	89.8	0.32	29.14	26.06	2.59	75.4
11.42	14.9	0.33	4.97	19.66	3.04	15.1
11.43	43.9	0.32	14.05	11.68	3.95	55.5
11.44	8.9	0.35	3.12	16.05	3.41	10.6
11.45	26.5	0.35	9.28	31.00	2.34	21.7
11.46	4.3	0.35	1.51	10.94	4.06	6.1
11.47	122.3	0.35	42.81	25.41	2.63	112.4
11.48	72.4	0.34	24.86	24.83	2.66	66.1
11.49	30.4	0.38	11.54	17.06	3.30	38.1

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	108.7	0.34	37.45	30.95	2.34	87.6
11.51	15.1	0.51	7.67	11.55	3.97	30.4
11.52	442.2	0.35	155.22	85.21	1.09	169.6
12.01	182.0	0.43	77.87	43.41	1.85	144.3
12.02	208.7	0.41	86.37	52.85	1.62	139.7
12.03	390.2	0.38	148.10	58.41	1.51	223.7
12.04	18.0	0.30	5.40	12.24	3.87	20.9
13.01	164.3	0.31	51.16	35.32	2.13	109.2
13.02	98.4	0.31	30.07	30.32	2.37	71.3
13.03	7.7	0.37	2.86	10.99	4.05	11.6
13.04	6.0	0.30	1.80	11.12	4.03	7.3
13.05	114.6	0.31	35.59	31.99	2.29	81.3
13.06	4.6	0.30	1.38	9.50	4.31	5.9
14.01	25.9	0.32	8.32	22.54	2.81	23.4
14.02	202.3	0.41	81.99	50.57	1.67	136.7
14.03	149.4	0.36	53.33	34.95	2.15	114.7
15.01	259.3	0.39	100.84	61.68	1.45	145.9
16.01	226.4	0.40	90.42	56.68	1.54	139.4
16.02	197.0	0.36	69.99	61.61	1.45	101.4
17.01	1061.9	0.41	434.79	79.74	1.16	503.3
17.02	56.4	0.35	19.74	20.82	2.94	58.1
17.03	1081.3	0.41	441.58	93.63	1.01	444.5
18.01	69.4	0.41	28.19	24.71	2.67	75.2
19.01	272.0	0.39	105.19	65.85	1.37	143.8
19.02	796.6	0.43	340.90	71.41	1.27	434.4
19.03	215.6	0.37	79.36	39.18	1.99	157.7
19.04	785.1	0.43	336.88	66.96	1.35	454.0
19.05	54.3	0.35	19.01	19.18	3.08	58.6
19.06	25.3	0.40	10.12	21.22	2.91	29.5
19.07	33.4	0.35	11.69	16.96	3.31	38.7
19.08	246.8	0.46	112.59	50.33	1.67	188.4
19.09	9.9	0.35	3.47	18.88	3.11	10.8
19.10	39.6	0.27	10.80	17.80	3.22	34.8
19.11	146.8	0.49	72.59	49.78	1.69	122.4
19.12	261.4	0.45	118.43	57.56	1.53	180.7
19.13	25.2	0.20	5.04	17.24	3.28	16.5

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	71.1	0.63	44.84	37.56	2.05	91.8
19.15	30.5	0.55	16.70	30.54	2.36	39.4
19.16	55.9	0.65	36.26	39.10	1.99	72.2
19.17	7.6	0.43	3.23	18.70	3.13	10.1
19.18	74.9	0.62	46.42	40.33	1.95	90.5
19.20	11.0	0.53	5.78	19.99	3.01	17.4
19.21	10.2	0.60	6.12	26.40	2.57	15.7
19.22	475.8	0.49	232.82	66.44	1.36	315.9
19.23	136.3	0.58	79.53	47.43	1.74	138.6
19.24	65.0	0.64	41.72	42.43	1.88	78.5
19.25	65.0	0.54	35.22	38.31	2.02	71.1
19.26	27.7	0.56	15.54	34.42	2.17	33.8
19.27	19.6	0.59	11.49	29.42	2.42	27.7
19.28	11.2	0.51	5.75	24.42	2.69	15.4
19.29	6.5	0.40	2.62	20.55	2.96	7.8
19.30	15.1	0.52	7.78	25.55	2.62	20.4
19.31	18.8	0.53	10.00	27.77	2.50	25.0
19.32	26.1	0.59	15.28	32.21	2.27	34.8
19.33	31.5	0.59	18.52	33.32	2.22	41.2
19.34	95.7	0.56	54.03	35.95	2.11	114.0
19.35	94.1	0.56	52.67	34.84	2.16	113.5
19.36	6.7	0.60	4.02	14.05	3.65	14.7
19.37	629.1	0.48	301.65	61.68	1.45	436.6
19.38	1.9	0.71	1.34	18.31	3.17	4.2
19.39	26.9	0.62	16.56	28.54	2.46	40.7
19.40	34.3	0.61	21.00	34.10	2.19	45.9
19.41	14.9	0.71	10.53	18.45	3.15	33.2
19.42	26.2	0.61	16.10	24.28	2.70	43.4
19.43	33.0	0.58	19.26	29.28	2.42	46.6
20.01	97.5	0.59	57.91	48.11	1.73	99.9
20.02	80.2	0.61	48.81	44.22	1.83	89.3
21.01	21.3	0.62	13.20	24.65	2.67	35.3
21.02	15.2	0.61	9.23	22.43	2.82	26.0
21.03	1.9	0.65	1.24	14.08	3.65	4.5
22.01	23.8	0.59	14.01	21.10	2.92	40.9
22.02	55.7	0.63	34.83	29.22	2.42	84.5

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	16.1	0.55	8.84	23.32	2.76	24.4
24.01	13.7	0.54	7.40	21.65	2.88	21.3
25.01	270.3	0.45	121.99	59.78	1.49	181.3
25.02	289.2	0.45	129.74	63.11	1.42	184.1
26.01	13.2	0.41	5.47	22.59	2.81	15.4
27.01	2.4	0.60	1.44	13.94	3.66	5.3
28.01	66.8	0.54	36.30	39.42	1.98	71.8
29.01	702.7	0.45	316.37	66.68	1.35	427.9
29.02	76.0	0.20	15.20	33.43	2.22	33.7
30.01	29.8	0.52	15.46	22.25	2.83	43.8
30.02	3.5	0.38	1.33	14.68	3.58	4.7
30.03	15.3	0.62	9.54	12.81	3.80	36.2
30.04	54.2	0.53	28.53	23.92	2.72	77.5
30.05	11.8	0.49	5.83	17.38	3.26	19.0
31.01	20.8	0.69	14.37	20.40	2.98	42.8
31.02	5.0	0.67	3.36	20.53	2.97	10.0
32.01	1.9	0.30	0.57	14.43	3.61	2.1
32.02	2.2	0.25	0.55	15.03	3.54	1.9
32.03	110.5	0.34	37.90	31.22	2.32	88.1
32.04	144.7	0.36	52.36	35.67	2.12	111.0
32.05	25.7	0.45	11.56	17.17	3.28	38.0
32.06	493.9	0.47	231.82	56.96	1.54	356.2
32.07	4.4	0.45	1.98	16.60	3.35	6.6
32.08	1.6	0.64	1.03	10.83	4.08	4.2
32.09	10.2	0.76	7.71	17.34	3.27	25.2
32.10	11.3	0.59	6.70	21.32	2.90	19.4
32.11	16.4	0.70	11.52	23.11	2.77	31.9
32.12	108.1	0.73	78.60	37.66	2.04	160.5
32.13	3.0	0.30	0.90	22.93	2.78	2.5
32.14	1.9	0.30	0.57	17.65	3.23	1.8
32.15	502.0	0.45	227.81	59.52	1.49	339.6
32.16	261.3	0.39	101.44	61.96	1.44	146.2

'C' FACTORS - EXISTING CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
1.01	50.5												50.5	17.7	0.350
2.01	14.7												14.7	5.1	0.350
2.02	55.0											55.0		16.5	0.300
3.01	20.2											20.2		6.1	0.300
3.02	43.6											43.6		13.1	0.300
3.03	9.5											9.5		2.9	0.300
3.04	17.8											17.8		5.3	0.300
3.05	69.3											69.3		20.8	0.300
3.06	43.6											43.6		13.1	0.300
4.01	16.1												16.1	5.6	0.350
5.01	13.0											13.0		3.9	0.300
5.02	39.6												39.6	13.9	0.350
6.01	33.1												33.1	11.6	0.350
7.01	17.2												17.2	6.0	0.350
7.02	8.9											8.9		2.7	0.300
8.01	25.4											25.4		7.6	0.300
8.02	22.8											22.8		6.8	0.300
9.01	28.2											28.2		8.5	0.300
9.02	31.1											31.1		9.3	0.300
10.01	34.3	0.4											33.9	12.2	0.356
10.02	9.9	3.6											6.3	5.3	0.532
10.03	39.2	0.8											38.4	14.1	0.360
10.04	57.0												57.0	20.0	0.350
10.05	9.9												9.9	3.5	0.350
10.06	4.8												4.8	1.7	0.350
10.07	28.0												28.0	9.8	0.350
10.08	22.9												22.9	8.0	0.350
10.09	9.8												9.8	3.4	0.350
10.10	6.6	1.3										5.3		2.7	0.408
10.11	8.3	6.0										2.3		5.8	0.698
10.12	23.4	3.0										20.4		8.7	0.371
10.13	6.8	5.5										1.3		5.1	0.745
10.14	10.9						5.5					5.4		4.9	0.451
10.15	6.5	5.8										0.7		5.1	0.791
10.16	8.6					8.6								6.9	0.800
10.17	9.6	9.6												8.2	0.850
10.18	9.7	9.7												8.2	0.850
10.19	7.5					7.5								6.0	0.800
10.20	22.3	22.3												19.0	0.850
10.21	9.4	9.4												8.0	0.850
10.22	5.0	1.0			1.0							3.0		2.4	0.480
10.23	11.3	11.3												9.6	0.850

'C' FACTORS - EXISTING CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
10.24	6.1			6.1										4.6	0.750
10.25	8.7	8.7												7.4	0.850
10.26	12.0		12.0											8.4	0.700
10.27	17.6			17.6										13.2	0.750
10.28	10.4	10.4												8.8	0.850
10.29	7.9						4.0					3.9		3.6	0.452
10.30	17.1	5.4					6.3					5.4		10.0	0.584
10.31	3.8						3.8							2.3	0.600
10.32	7.0						7.0							4.2	0.600
10.33	3.2	1.0										2.2		1.5	0.472
10.34	6.6	0.8										5.8		2.4	0.367
10.35	11.6	0.8										10.8		3.9	0.338
10.36	3.5									3.5				0.7	0.200
10.37	7.7											7.7		2.3	0.300
10.38	8.8						8.8							5.3	0.600
10.39	3.5	3.5												3.0	0.850
10.40	4.9	4.9												4.2	0.850
10.41	3.5	3.5												3.0	0.850
11.01	44.9	4.6										40.3		16.0	0.356
11.02	20.2	8.0										12.2		10.5	0.518
11.03	24.0	4.0										20.0		9.4	0.392
11.04	45.8	9.8										36.0		19.1	0.418
11.05	48.3	28.5										19.8		30.2	0.625
11.06	15.6	5.4										10.2		7.7	0.490
11.07	28.3	5.4										22.9		11.5	0.405
11.08	18.8	1.9										16.9		6.7	0.356
11.09	24.4	4.2										20.2		9.6	0.395
11.10	20.0	6.4										13.6		9.5	0.476
11.11	5.8	2.3										3.5		3.0	0.518
11.12	8.0	1.4										6.6		3.2	0.396
11.13	29.6	8.2										21.4		13.4	0.452
11.14	19.5	2.9										16.6		7.4	0.382
11.15	23.0	5.9										17.1		10.1	0.441
11.16	8.1	4.2										3.9		4.7	0.585
11.17	12.0	3.3										8.7		5.4	0.451
11.18	7.2	1.9										5.3		3.2	0.445
11.19	25.6	3.9										21.7		9.8	0.384
11.20	57.4	11.9										45.5		23.8	0.414
11.21	35.9	3.3										32.6		12.6	0.351
11.23	34.3	12.0										22.3		16.9	0.492
11.24	35.0	11.6										23.4		16.9	0.482
11.25	12.9	2.1										10.8		5.0	0.390

'C' FACTORS - EXISTING CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
11.26	15.1	2.1										13.0		5.7	0.376
11.27	15.7	2.7										13.0		6.2	0.395
11.28	21.5	2.6										18.9		7.9	0.367
11.29	22.8	4.8										18.0		9.5	0.416
11.30	22.5	5.6										16.9		9.8	0.437
11.31	32.6	5.8										26.8		13.0	0.398
11.32	31.1	4.8										26.3		12.0	0.385
11.33	29.3	8.4										20.9		13.4	0.458
11.34	19.1	4.8										14.3		8.4	0.438
11.35	22.0	3.8										18.2		8.7	0.395
11.36	22.8	6.1										16.7		10.2	0.447
11.37	21.1	5.0										16.1		9.1	0.430
11.38	23.9	3.7										20.2		9.2	0.385
11.39	23.2	7.7										15.5		11.2	0.483
11.40	13.3	2.9										10.4		5.6	0.420
11.41	89.8	4.0										85.8		29.1	0.324
11.42	14.9	0.9										14.0		5.0	0.333
11.43	43.9	1.6										42.3		14.1	0.320
11.44	8.9												8.9	3.1	0.350
11.45	26.5												26.5	9.3	0.350
11.46	4.3												4.3	1.5	0.350
11.47	122.3												122.3	42.8	0.350
11.48	42.0	1.3										40.7		13.3	0.317
11.49	30.4	4.4										26.0		11.5	0.380
11.50	36.3	3.1										33.2		12.6	0.347
11.51	15.1	5.7										9.4		7.7	0.508
11.52	22.6	1.2										21.4		7.4	0.329
12.01	13.3	2.8										10.5		5.5	0.416
12.02	26.7	0.9										25.8		8.5	0.319
12.03	17.2	1.0					16.2							10.6	0.615
12.04	12.0											12.0		3.6	0.300
13.01	31.7	1.2										30.5		10.2	0.321
13.02	72.5											72.5		21.8	0.300
13.03	7.7	1.0										6.7		2.9	0.371
13.04	6.0											6.0		1.8	0.300
13.05	16.2	1.2										15.0		5.5	0.341
13.06	4.6											4.6		1.4	0.300
14.01	25.9	1.0										24.9		8.3	0.321
14.02	70.9	3.6											67.3	26.6	0.375
14.03	36.4	0.5											35.9	13.0	0.357
15.01	20.6											20.6		6.2	0.300
16.01	24.1												24.1	8.4	0.350

'C' FACTORS - EXISTING CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
16.02	47.6												47.6	16.7	0.350
17.01	68.3												68.3	23.9	0.350
17.02	56.4												56.4	19.7	0.350
17.03	19.4												19.4	6.8	0.350
18.01	13.0				13.0									8.5	0.650
19.01	10.7												10.7	3.7	0.350
19.02	11.5												11.5	4.0	0.350
19.03	82.0												82.0	28.7	0.350
19.04	11.1												11.1	3.9	0.350
19.05	20.9												20.9	7.3	0.350
19.06	25.3							25.3						10.1	0.400
19.07	33.4												33.4	11.7	0.350
19.08	74.7							74.7						29.9	0.400
19.09	9.9												9.9	3.5	0.350
19.10	14.4							14.4						5.8	0.400
19.11	9.7							9.7						3.9	0.400
19.12	14.6							14.6						5.8	0.400
19.13	25.2									25.2				5.0	0.200
19.14	15.4				15.4									10.0	0.650
19.15	14.4						11.8					2.6		7.9	0.546
19.16	11.4	9.2					2.2							9.1	0.802
19.17	7.6						1.9	3.8				1.9		3.2	0.425
19.18	3.8	0.8										3.0		1.6	0.416
19.20	11.0						5.5				5.5			5.8	0.525
19.21	10.2						10.2							6.1	0.600
19.22	19.8	0.8								9.5	9.5			6.9	0.346
19.23	4.5	0.3										4.2		1.5	0.337
19.24	6.7						6.7							4.0	0.600
19.25	5.8									5.8				1.2	0.200
19.26	8.1						5.4					2.7		4.1	0.500
19.27	8.4	2.8					5.6							5.7	0.683
19.28	6.2	1.0	1.0							4.2				2.4	0.385
19.29	6.5						3.3			3.2				2.6	0.403
19.30	8.6						8.6							5.2	0.600
19.31	3.7						3.7							2.2	0.600
19.32	7.3	3.6					3.7							5.3	0.723
19.33	5.4						5.4							3.2	0.600
19.34	1.6	1.6												1.4	0.850
19.35	6.9	3.0					3.9							4.9	0.709
19.36	6.7						6.7							4.0	0.600
19.37	39.5							39.5						15.8	0.400
19.38	1.9	1.4										0.5		1.3	0.705

'C' FACTORS - EXISTING CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
19.39	5.6						5.6							3.4	0.600
19.40	7.4						7.4							4.4	0.600
19.41	4.7						4.7							2.8	0.600
19.42	5.4	1.0								4.4				1.7	0.320
19.43	6.8						4.5			2.3				3.2	0.465
20.01	17.3						8.8				8.5			9.1	0.526
20.02	5.3										5.3			2.4	0.450
21.01	6.1				6.1									4.0	0.650
21.02	2.0				2.0									1.3	0.650
21.03	1.9				1.9									1.2	0.650
22.01	6.7						6.7							4.0	0.600
22.02	4.7						4.7							2.8	0.600
23.01	2.4						2.4							1.4	0.600
24.01	2.7						2.7							1.6	0.600
25.01	8.9							8.9						3.6	0.400
25.02	5.7							5.7						2.3	0.400
26.01	5.6							5.6						2.2	0.400
27.01	2.4						2.4							1.4	0.600
28.01	1.8						1.8							1.1	0.600
29.01	73.6									73.6				14.7	0.200
29.02	76.0									76.0				15.2	0.200
30.01	14.5							14.8						5.9	0.408
30.02	3.5	0.5										3.0		1.3	0.379
30.03	15.3						15.9							9.5	0.624
30.04	9.1								9.1					5.9	0.650
30.05	5.1	0.5										4.6		1.8	0.354
31.01	5.9				5.9									3.8	0.650
31.02	3.1				3.1									2.0	0.650
32.01	1.9											1.9		0.6	0.300
32.02	2.2									1.1		1.1		0.6	0.250
32.03	1.8									0.9		0.9		0.5	0.250
32.04	1.9									0.9		1.0		0.5	0.253
32.05	2.6											2.6		0.8	0.300
32.06	4.4											4.4		1.3	0.300
32.07	4.4						2.2					2.2		2.0	0.450
32.08	1.6	1.0										0.6		1.0	0.644
32.09	2.7	1.0			1.0							0.7		1.7	0.633
32.10	2.5				1.9							0.6		1.4	0.566
32.11	4.4	1.0	1.2		2.2									3.1	0.709
32.12	2.3										1.2	1.1		0.9	0.378
32.13	3.0											3.0		0.9	0.300
32.14	1.9											1.9		0.6	0.300

'C' FACTORS - EXISTING CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
32.15	3.7											3.7		1.1	0.300
32.16	2.0											2.0		0.60	0.300

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
1.01	50.5	0.350	1,800	5.00	0.28	14.7	A	-0.00625	0.04	0.0294	3.22	17.78	87.78
2.01	14.7	0.350	1,600	3.00	0.19	9.9	A	-0.00625	0.04	0.0327	2.95	20.71	94.35
2.02	55.0	0.300	1,800	3.00	0.17	8.8	A	-0.00625	0.04	0.0291	2.88	21.66	111.02
3.01	20.2	0.300	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0318	3.07	19.33	96.17
3.02	43.6	0.300	1,500	4.50	0.30	15.8	A	-0.00625	0.04	0.0298	3.48	15.49	83.31
3.03	9.5	0.300	900	5.00	0.56	29.3	A	-0.00625	0.04	0.0339	4.25	9.84	52.55
3.04	17.8	0.300	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0322	3.29	17.10	86.65
3.05	69.3	0.300	3,300	6.00	0.18	9.6	A	-0.00625	0.04	0.0285	2.37	30.39	146.02
3.06	43.6	0.300	1,500	4.50	0.30	15.8	A	-0.00625	0.04	0.0298	3.48	15.49	83.31
4.01	16.1	0.350	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0325	3.35	16.62	79.36
5.01	13.0	0.300	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0330	2.93	21.01	100.86
5.02	39.6	0.350	3,100	8.00	0.26	13.6	A	-0.00625	0.04	0.0300	2.58	26.29	118.06
6.01	33.1	0.350	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0305	2.94	20.89	97.64
7.01	17.2	0.350	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0323	2.95	20.69	94.56
7.02	8.9	0.300	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0341	3.60	14.47	73.65
8.01	25.4	0.300	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0312	2.64	25.21	119.71
8.02	22.8	0.300	2,100	6.00	0.29	15.1	A	-0.00625	0.04	0.0315	2.98	20.34	100.19
9.01	28.2	0.300	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0309	3.61	14.41	76.91
9.02	31.1	0.300	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0307	3.86	12.33	67.18
10.01	34.3	0.356	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0304	3.06	19.47	91.35
10.02	9.9	0.532	1,000	6.00	0.60	31.7	A	-0.00625	0.04	0.0338	4.19	10.16	38.35
10.03	39.2	0.360	1,800	7.00	0.39	20.5	A	-0.00625	0.04	0.0300	3.44	15.81	77.40
10.04	57.0	0.350	2,500	10.00	0.40	21.1	A	-0.00625	0.04	0.0290	3.12	18.84	91.61
10.05	9.9	0.350	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0338	3.78	12.94	62.73
10.06	4.8	0.350	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0357	3.87	12.28	58.41
10.07	28.0	0.350	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0310	3.34	16.66	81.23
10.08	22.9	0.350	1,600	7.00	0.44	23.1	A	-0.00625	0.04	0.0315	3.60	14.48	71.13
10.09	9.8	0.350	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0338	3.40	16.17	75.41
10.10	6.6	0.408	800	2.20	0.28	14.5	A	-0.00625	0.04	0.0349	3.89	12.11	54.15
10.11	8.3	0.698	1,200	5.50	0.46	24.2	A	-0.00625	0.04	0.0343	3.82	12.62	32.54
10.12	23.4	0.371	1,900	4.00	0.21	11.1	A	-0.00625	0.04	0.0314	2.89	21.50	96.21
10.13	6.8	0.745	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0348	4.07	10.86	25.13
10.14	10.9	0.451	1,100	6.00	0.55	28.8	A	-0.00625	0.04	0.0335	4.04	11.09	47.39
10.15	6.5	0.791	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0349	3.89	12.11	24.08
10.16	8.6	0.800	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0342	4.19	10.16	20.65
10.17	9.6	0.850	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0339	3.39	16.26	25.52
10.18	9.7	0.850	1,200	3.00	0.25	13.2	A	-0.00625	0.04	0.0338	3.45	15.73	24.75
10.19	7.5	0.800	900	1.80	0.20	10.6	A	-0.00625	0.04	0.0345	3.60	14.52	27.70
10.20	22.3	0.850	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0316	3.36	16.52	26.53
10.21	9.4	0.850	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0339	3.51	15.32	24.33
10.22	5.0	0.480	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0356	4.31	9.46	38.79
10.23	11.3	0.850	1,400	1.40	0.10	5.3	A	-0.00625	0.04	0.0334	2.67	24.74	36.28
10.24	6.1	0.750	700	2.60	0.37	19.6	A	-0.00625	0.04	0.0351	4.21	10.04	23.19
10.25	8.7	0.850	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.95	20.78	31.24
10.26	12.0	0.700	1,500	2.10	0.14	7.4	A	-0.00625	0.04	0.0333	2.81	22.56	53.70
10.27	17.6	0.750	1,600	2.00	0.13	6.6	A	-0.00625	0.04	0.0322	2.71	24.07	50.40
10.28	10.4	0.850	1,500	2.20	0.15	7.7	A	-0.00625	0.04	0.0336	2.83	22.32	33.05

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
10.29	7.9	0.452	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	3.66	13.93	57.78
10.30	17.1	0.584	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0323	3.17	18.32	58.95
10.31	3.8	0.600	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0364	4.00	11.31	36.15
10.32	7.0	0.600	1,200	1.00	0.08	4.4	A	-0.00625	0.04	0.0347	2.67	24.72	71.38
10.33	3.2	0.472	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0368	3.78	12.98	50.76
10.34	6.6	0.367	500	1.60	0.32	16.9	A	-0.00625	0.04	0.0349	4.46	8.67	43.15
10.35	11.6	0.338	1,500	4.20	0.28	14.8	A	-0.00625	0.04	0.0333	3.28	17.17	81.21
10.36	3.5	0.200	600	1.80	0.30	15.8	A	-0.00625	0.04	0.0366	4.19	10.17	59.28
10.37	7.7	0.300	800	2.40	0.30	15.8	A	-0.00625	0.04	0.0345	3.96	11.64	60.84
10.38	8.8	0.600	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.95	20.77	62.47
10.39	3.5	0.850	1,500	2.40	0.16	8.4	A	-0.00625	0.04	0.0366	2.79	22.80	32.10
10.40	4.9	0.850	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0357	3.72	13.39	20.91
10.41	3.5	0.850	1,000	2.20	0.22	11.6	A	-0.00625	0.04	0.0366	3.48	15.51	23.57
11.01	44.9	0.356	2,700	10.00	0.37	19.6	A	-0.00625	0.04	0.0297	2.95	20.71	96.85
11.02	20.2	0.518	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0318	3.35	16.62	61.77
11.03	24.0	0.392	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	3.28	17.21	77.39
11.04	45.8	0.418	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0296	3.09	19.14	83.75
11.05	48.3	0.625	3,600	7.00	0.19	10.3	A	-0.00625	0.04	0.0295	2.28	32.09	88.64
11.06	15.6	0.490	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0325	3.42	16.04	62.34
11.07	28.3	0.405	1,600	8.00	0.50	26.4	A	-0.00625	0.04	0.0309	3.70	13.62	63.05
11.08	18.8	0.356	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0320	3.70	13.61	66.50
11.09	24.4	0.395	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0313	3.62	14.35	66.74
11.10	20.0	0.476	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0319	3.48	15.55	62.74
11.11	5.8	0.518	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	3.37	16.41	59.25
11.12	8.0	0.396	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	3.66	13.92	62.74
11.13	29.6	0.452	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0308	3.14	18.61	77.20
11.14	19.5	0.382	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0319	2.94	20.84	92.53
11.15	23.0	0.441	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0315	3.39	16.29	69.72
11.16	8.1	0.585	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0343	3.49	15.44	50.11
11.17	12.0	0.451	1,300	2.00	0.15	8.1	A	-0.00625	0.04	0.0333	3.03	19.83	78.58
11.18	7.2	0.445	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0346	3.84	12.49	52.92
11.19	25.6	0.384	2,400	12.00	0.50	26.4	A	-0.00625	0.04	0.0312	3.24	17.63	79.57
11.20	57.4	0.414	2,800	9.00	0.32	17.0	A	-0.00625	0.04	0.0290	2.85	22.08	95.38
11.21	35.9	0.351	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0303	2.95	20.79	97.57
11.23	34.3	0.492	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0304	2.94	20.84	79.10
11.24	35.0	0.482	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0303	3.75	13.16	55.18
11.25	12.9	0.390	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0331	3.39	16.21	72.65
11.26	15.1	0.376	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0326	3.68	13.77	64.63
11.27	15.7	0.395	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0325	3.58	14.69	66.74
11.28	21.5	0.367	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0317	3.10	18.96	87.44
11.29	22.8	0.416	1,500	9.00	0.60	31.7	A	-0.00625	0.04	0.0315	3.85	12.40	56.55
11.30	22.5	0.437	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0315	3.59	14.62	64.54
11.31	32.6	0.398	3,200	4.00	0.13	6.6	A	-0.00625	0.04	0.0305	2.08	36.58	142.99
11.32	31.1	0.385	2,500	12.00	0.48	25.3	A	-0.00625	0.04	0.0307	3.18	18.19	82.20
11.33	29.3	0.458	2,600	8.00	0.31	16.2	A	-0.00625	0.04	0.0308	2.83	22.31	87.33
11.34	19.1	0.438	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0320	3.44	15.86	67.67
11.35	22.0	0.395	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0316	3.32	16.90	76.36

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
11.36	22.8	0.447	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0315	3.61	14.40	61.77
11.37	21.1	0.430	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0317	3.60	14.46	63.36
11.38	23.9	0.385	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0314	3.32	16.82	77.42
11.39	23.2	0.483	1,400	3.00	0.21	11.3	A	-0.00625	0.04	0.0315	3.24	17.58	69.49
11.40	13.3	0.420	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0330	4.13	10.50	48.12
11.41	89.8	0.324	4,000	14.00	0.35	18.5	A	-0.00625	0.04	0.0278	2.59	26.06	125.27
11.42	14.9	0.333	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0327	3.04	19.66	92.18
11.43	43.9	0.320	1,400	8.00	0.57	30.2	A	-0.00625	0.04	0.0297	3.95	11.68	63.30
11.44	8.9	0.350	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0341	3.41	16.05	76.37
11.45	26.5	0.350	1,600	1.00	0.06	3.3	A	-0.00625	0.04	0.0311	2.34	31.00	136.07
11.46	4.3	0.350	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0360	4.06	10.94	54.00
11.47	122.3	0.350	3,500	10.00	0.29	15.1	A	-0.00625	0.04	0.0270	2.63	25.41	121.26
11.48	42.0	0.317	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0299	3.26	17.39	89.49
11.49	30.4	0.380	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0307	3.30	17.06	79.35
11.50	36.3	0.347	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0303	3.32	16.88	82.94
11.51	15.1	0.508	1,000	4.00	0.40	21.1	A	-0.00625	0.04	0.0326	3.97	11.55	45.76
11.52	22.6	0.329	1,900	6.00	0.32	16.7	A	-0.00625	0.04	0.0315	3.16	18.35	88.81
12.01	13.3	0.416	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0330	3.99	11.41	52.15
12.02	26.7	0.319	1,800	6.80	0.38	19.9	A	-0.00625	0.04	0.0311	3.38	16.36	82.55
12.03	17.2	0.615	1,200	2.80	0.23	12.3	A	-0.00625	0.04	0.0323	3.46	15.67	49.17
12.04	12.0	0.300	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0333	3.98	11.47	60.98
13.01	31.7	0.321	2,300	10.00	0.43	23.0	A	-0.00625	0.04	0.0306	3.21	17.91	88.79
13.02	72.5	0.300	3,300	12.00	0.36	19.2	A	-0.00625	0.04	0.0284	2.78	23.01	115.89
13.03	7.7	0.371	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0345	4.05	10.99	52.63
13.04	6.0	0.300	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0351	4.03	11.12	57.79
13.05	16.2	0.341	2,200	7.60	0.35	18.2	A	-0.00625	0.04	0.0324	3.03	19.82	91.36
13.06	4.6	0.300	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0359	4.31	9.50	50.05
14.01	25.9	0.321	2,000	4.00	0.20	10.6	A	-0.00625	0.04	0.0312	2.81	22.54	107.20
14.02	70.9	0.375	3,800	7.00	0.18	9.7	A	-0.00625	0.04	0.0284	2.23	33.20	141.31
14.03	36.4	0.357	1,800	10.00	0.56	29.3	A	-0.00625	0.04	0.0302	3.67	13.86	69.03
15.01	20.6	0.300	1,700	5.20	0.31	16.2	A	-0.00625	0.04	0.0318	3.26	17.40	88.12
16.01	24.1	0.350	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	3.28	17.20	81.94
16.02	47.6	0.350	5,200	14.00	0.27	14.2	A	-0.00625	0.04	0.0295	2.11	35.94	150.76
17.01	68.3	0.350	3,000	8.00	0.27	14.1	A	-0.00625	0.04	0.0285	2.68	24.58	114.88
17.02	56.4	0.350	2,400	7.00	0.29	15.4	A	-0.00625	0.04	0.0291	2.94	20.82	99.73
17.03	19.4	0.350	2,400	6.00	0.25	13.2	A	-0.00625	0.04	0.0320	2.74	23.57	104.98
18.01	13.0	0.650	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0330	3.54	15.05	43.80
19.01	10.7	0.350	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0336	3.33	16.79	79.03
19.02	11.5	0.350	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0334	3.25	17.52	81.23
19.03	82.0	0.350	4,000	6.00	0.15	7.9	A	-0.00625	0.04	0.0280	2.06	37.11	160.69
19.04	11.1	0.350	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0335	3.38	16.34	76.69
19.05	20.9	0.350	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0317	3.82	12.60	62.98
19.06	25.3	0.400	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0312	2.91	21.22	91.13
19.07	33.4	0.350	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0305	3.31	16.96	82.61
19.08	74.7	0.400	3,300	10.00	0.30	16.0	A	-0.00625	0.04	0.0283	2.67	24.69	107.76
19.09	9.9	0.350	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0338	3.11	18.88	85.72
19.10	14.4	0.400	1,700	8.00	0.47	24.8	A	-0.00625	0.04	0.0328	3.55	14.97	66.79

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
19.11	9.7	0.400	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0338	3.52	15.25	67.29
19.12	14.6	0.400	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0327	3.36	16.51	73.77
19.13	25.2	0.200	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0312	3.28	17.24	99.13
19.14	15.4	0.650	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0326	3.15	18.43	51.43
19.15	14.4	0.546	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0328	2.91	21.20	71.40
19.16	11.4	0.802	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0334	3.79	12.85	24.95
19.17	7.6	0.425	1,200	2.00	0.17	8.8	A	-0.00625	0.04	0.0345	3.13	18.70	76.48
19.18	3.8	0.416	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0364	3.59	14.62	62.33
19.20	11.0	0.525	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0335	3.01	19.99	70.51
19.21	10.2	0.600	1,700	2.00	0.12	6.2	A	-0.00625	0.04	0.0337	2.57	26.40	75.73
19.22	19.8	0.346	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0319	3.30	17.00	81.64
19.23	4.5	0.337	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0359	3.80	12.77	61.69
19.24	6.7	0.600	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0348	3.87	12.26	40.06
19.25	5.8	0.200	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	3.37	16.41	91.64
19.26	8.1	0.500	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0343	2.98	20.31	73.58
19.27	8.4	0.683	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0342	2.99	20.27	51.10
19.28	6.2	0.385	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0350	3.38	16.35	72.75
19.29	6.5	0.403	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0349	2.96	20.55	85.47
19.30	8.6	0.600	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0342	2.83	22.35	66.38
19.31	3.7	0.600	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0364	4.12	10.57	34.41
19.32	7.3	0.723	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0346	2.98	20.42	46.20
19.33	5.4	0.600	600	2.00	0.33	17.6	A	-0.00625	0.04	0.0354	4.29	9.59	31.79
19.34	1.6	0.850	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0387	3.99	11.44	18.00
19.35	6.9	0.709	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0348	2.81	22.61	51.95
19.36	6.7	0.600	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0348	3.65	14.05	44.58
19.37	39.5	0.400	2,200	8.00	0.36	19.2	A	-0.00625	0.04	0.0300	3.15	18.44	82.80
19.38	1.9	0.705	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0383	3.17	18.31	41.60
19.39	5.6	0.600	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0353	3.82	12.64	40.41
19.40	7.4	0.600	900	1.00	0.11	5.9	A	-0.00625	0.04	0.0346	3.17	18.30	56.16
19.41	4.7	0.600	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0358	3.86	12.29	38.94
19.42	5.4	0.320	800	3.00	0.38	19.8	A	-0.00625	0.04	0.0354	4.07	10.90	55.04
19.43	6.8	0.465	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0348	3.58	14.67	58.48
20.01	17.3	0.526	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0323	3.35	16.55	60.70
20.02	5.3	0.450	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0355	4.03	11.14	47.00
21.01	6.1	0.650	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0351	4.04	11.06	32.54
21.02	2.0	0.650	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0381	4.00	11.32	32.40
21.03	1.9	0.650	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0383	3.65	14.08	39.02
22.01	6.7	0.600	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0348	3.83	12.53	40.41
22.02	4.7	0.600	700	3.00	0.43	22.6	A	-0.00625	0.04	0.0358	4.28	9.65	31.58
23.01	2.4	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0376	4.02	11.23	36.00
24.01	2.7	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0373	4.03	11.17	36.00
25.01	8.9	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0341	3.67	13.85	62.41
25.02	5.7	0.400	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0353	3.27	17.35	73.77
26.01	5.6	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0353	3.64	14.17	62.41
27.01	2.4	0.600	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0376	3.66	13.94	43.36
28.01	1.8	0.600	300	1.00	0.33	17.6	A	-0.00625	0.04	0.0384	4.93	6.71	22.48
29.01	73.6	0.200	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0283	2.74	23.64	134.67

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
29.02	76.0	0.200	3,100	4.00	0.13	6.8	A	-0.00625	0.04	0.0282	2.22	33.43	178.50
30.01	14.5	0.408	1,600	6.00	0.38	19.8	A	-0.00625	0.04	0.0327	3.45	15.75	69.06
30.02	3.5	0.379	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0366	3.58	14.68	65.72
30.03	15.3	0.624	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0326	3.80	12.81	40.01
30.04	9.1	0.650	1,200	4.00	0.33	17.6	A	-0.00625	0.04	0.0340	3.64	14.14	40.47
30.05	5.1	0.354	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0356	3.85	12.43	59.77
31.01	5.9	0.650	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	3.37	16.39	45.82
31.02	3.1	0.650	600	1.20	0.20	10.6	A	-0.00625	0.04	0.0369	3.92	11.89	33.93
32.01	1.9	0.300	800	1.60	0.20	10.6	A	-0.00625	0.04	0.0383	3.61	14.43	69.65
32.02	2.2	0.250	860	1.70	0.20	10.4	A	-0.00625	0.04	0.0379	3.54	15.03	77.02
32.03	1.8	0.250	730	1.50	0.21	10.8	A	-0.00625	0.04	0.0384	3.71	13.56	70.05
32.04	1.9	0.253	770	1.60	0.21	11.0	A	-0.00625	0.04	0.0383	3.67	13.90	71.46
32.05	2.6	0.300	720	1.80	0.25	13.2	A	-0.00625	0.04	0.0374	3.86	12.30	61.34
32.06	4.4	0.300	1,620	4.10	0.25	13.4	A	-0.00625	0.04	0.0360	3.03	19.75	91.63
32.07	4.4	0.450	1,370	4.10	0.30	15.8	A	-0.00625	0.04	0.0360	3.35	16.60	64.74
32.08	1.6	0.644	630	1.90	0.30	15.9	A	-0.00625	0.04	0.0387	4.08	10.83	30.74
32.09	2.7	0.633	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0373	3.27	17.34	47.64
32.10	2.5	0.566	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0375	3.38	16.38	51.98
32.11	4.4	0.709	1,800	4.50	0.25	13.2	A	-0.00625	0.04	0.0360	2.91	21.22	47.39
32.12	2.3	0.378	930	2.30	0.25	13.1	A	-0.00625	0.04	0.0377	3.60	14.47	63.12
32.13	3.0	0.300	1,730	3.50	0.20	10.7	A	-0.00625	0.04	0.0370	2.78	22.93	102.03
32.14	1.9	0.300	1,120	2.30	0.21	10.8	A	-0.00625	0.04	0.0383	3.23	17.65	81.68
32.15	3.7	0.300	1,440	3.60	0.25	13.2	A	-0.00625	0.04	0.0364	3.14	18.56	86.74
32.16	2.0	0.300	820	2.00	0.24	12.9	A	-0.00625	0.04	0.0381	3.70	13.57	66.00

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)	Subarea Required 100yr,2hr Retention Volume (ac-ft)
1.01	50.5	0.44	22.09	14.29	5.73	126.5	4.77
2.01	14.7	0.44	6.43	16.56	5.32	34.2	1.39
2.02	55.0	0.38	20.63	17.31	5.19	107.0	4.46
3.01	20.2	0.38	7.58	15.46	5.53	41.9	1.64
3.02	43.6	0.38	16.35	12.59	6.01	98.3	3.53
3.03	9.5	0.38	3.56	8.08	7.13	25.4	0.77
3.04	17.8	0.38	6.68	13.78	5.81	38.8	1.44
3.05	69.3	0.38	25.99	24.24	4.29	111.6	5.61
3.06	43.6	0.38	16.35	12.59	6.01	98.3	3.53
4.01	16.1	0.44	7.04	13.43	5.87	41.3	1.52
5.01	13.0	0.38	4.88	16.80	5.27	25.7	1.05
5.02	39.6	0.44	17.33	21.00	4.65	80.6	3.74
6.01	33.1	0.44	14.48	16.70	5.29	76.6	3.13
7.01	17.2	0.44	7.53	16.54	5.32	40.0	1.63
7.02	8.9	0.38	3.34	11.80	6.17	20.6	0.72
8.01	25.4	0.38	9.53	20.14	4.76	45.4	2.06
8.02	22.8	0.38	8.55	16.27	5.37	45.9	1.85
9.01	28.2	0.38	10.58	11.75	6.18	65.3	2.28
9.02	31.1	0.38	11.66	10.08	6.55	76.4	2.52
10.01	34.3	0.44	15.21	15.58	5.50	83.7	3.29
10.02	9.9	0.62	6.18	8.34	7.05	43.5	1.33
10.03	39.2	0.45	17.56	12.82	5.97	104.8	3.79
10.04	57.0	0.44	24.94	15.07	5.60	139.8	5.39
10.05	9.9	0.44	4.33	10.58	6.43	27.9	0.94
10.06	4.8	0.44	2.10	10.04	6.56	13.8	0.45
10.07	28.0	0.44	12.25	13.46	5.86	71.8	2.65
10.08	22.9	0.44	10.02	11.80	6.17	61.8	2.16
10.09	9.8	0.44	4.29	13.10	5.92	25.4	0.93
10.10	6.6	0.49	3.22	9.90	6.60	21.3	0.70
10.11	8.3	0.79	6.56	10.32	6.49	42.6	1.42
10.12	23.4	0.45	10.50	17.19	5.21	54.7	2.27
10.13	6.8	0.84	5.71	8.90	6.87	39.3	1.23
10.14	10.9	0.56	6.15	9.09	6.82	41.9	1.33
10.15	6.5	0.89	5.77	9.90	6.60	38.1	1.25
10.16	8.6	0.95	8.17	8.34	7.05	57.6	1.76
10.17	9.6	0.95	9.12	13.16	5.91	53.9	1.97

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)	Subarea Required 100yr,2hr Retention Volume (ac-ft)
10.18	9.7	0.95	9.22	12.76	5.98	55.1	1.99
10.19	7.5	0.95	7.13	11.84	6.16	43.9	1.54
10.20	22.3	0.95	21.19	13.36	5.88	124.5	4.58
10.21	9.4	0.95	8.93	12.46	6.04	53.9	1.93
10.22	5.0	0.58	2.89	7.77	7.24	20.9	0.62
10.23	11.3	0.95	10.74	19.76	4.82	51.7	2.32
10.24	6.1	0.94	5.72	8.24	7.08	40.5	1.24
10.25	8.7	0.95	8.27	16.61	5.31	43.9	1.79
10.26	12.0	0.88	10.50	18.03	5.07	53.2	2.27
10.27	17.6	0.94	16.50	19.23	4.89	80.7	3.56
10.28	10.4	0.95	9.88	17.84	5.10	50.4	2.13
10.29	7.9	0.56	4.46	11.37	6.26	27.9	0.96
10.30	17.1	0.69	11.88	14.69	5.67	67.3	2.57
10.31	3.8	0.75	2.85	9.27	6.77	19.3	0.62
10.32	7.0	0.75	5.25	19.75	4.82	25.3	1.13
10.33	3.2	0.55	1.78	10.60	6.43	11.4	0.38
10.34	6.6	0.44	2.94	7.12	7.49	22.0	0.63
10.35	11.6	0.41	4.81	13.84	5.80	27.9	1.04
10.36	3.5	0.25	0.88	8.35	7.04	6.2	0.19
10.37	7.7	0.38	2.89	9.53	6.70	19.3	0.62
10.38	8.8	0.75	6.60	16.60	5.31	35.0	1.43
10.39	3.5	0.95	3.33	18.22	5.04	16.8	0.72
10.40	4.9	0.95	4.66	10.94	6.35	29.6	1.01
10.41	3.5	0.95	3.33	12.61	6.01	20.0	0.72
11.01	44.9	0.43	19.48	16.56	5.32	103.6	4.21
11.02	20.2	0.60	12.18	13.43	5.87	71.4	2.63
11.03	24.0	0.47	11.30	13.86	5.79	65.5	2.44
11.04	45.8	0.50	22.81	15.31	5.56	126.7	4.93
11.05	48.3	0.71	34.50	25.51	4.17	144.0	7.45
11.06	15.6	0.57	8.96	13.00	5.94	53.2	1.93
11.07	28.3	0.48	13.72	11.12	6.31	86.5	2.96
11.08	18.8	0.43	8.14	11.11	6.31	51.4	1.76
11.09	24.4	0.47	11.57	11.70	6.19	71.5	2.50
11.10	20.0	0.56	11.18	12.64	6.01	67.1	2.42
11.11	5.8	0.60	3.50	13.27	5.89	20.6	0.76
11.12	8.0	0.48	3.81	11.36	6.26	23.8	0.82

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)	Subarea Required 100yr,2hr Retention Volume (ac-ft)
11.13	29.6	0.53	15.82	14.90	5.63	89.1	3.42
11.14	19.5	0.46	8.98	16.67	5.30	47.6	1.94
11.15	23.0	0.52	12.02	13.18	5.91	71.0	2.60
11.16	8.1	0.67	5.45	12.55	6.02	32.8	1.18
11.17	12.0	0.53	6.40	15.86	5.45	34.8	1.38
11.18	7.2	0.53	3.79	10.21	6.52	24.7	0.82
11.19	25.6	0.46	11.84	14.18	5.74	68.0	2.56
11.20	57.4	0.49	28.37	17.65	5.13	145.5	6.13
11.21	35.9	0.43	15.36	16.62	5.31	81.5	3.32
11.23	34.3	0.58	19.76	16.67	5.30	104.7	4.27
11.24	35.0	0.57	19.80	10.75	6.39	126.5	4.28
11.25	12.9	0.47	6.05	13.12	5.92	35.8	1.31
11.26	15.1	0.45	6.87	11.24	6.28	43.2	1.48
11.27	15.7	0.47	7.44	11.97	6.13	45.6	1.61
11.28	21.5	0.44	9.56	15.17	5.59	53.4	2.06
11.29	22.8	0.50	11.31	10.14	6.54	74.0	2.44
11.30	22.5	0.52	11.66	11.92	6.14	71.6	2.52
11.31	32.6	0.48	15.56	28.84	3.90	60.6	3.36
11.32	31.1	0.46	14.42	14.58	5.68	81.9	3.12
11.33	29.3	0.54	15.82	17.84	5.10	80.7	3.42
11.34	19.1	0.52	9.92	12.86	5.96	59.2	2.14
11.35	22.0	0.47	10.44	13.63	5.83	60.9	2.25
11.36	22.8	0.53	12.06	11.74	6.18	74.5	2.60
11.37	21.1	0.51	10.79	11.79	6.17	66.5	2.33
11.38	23.9	0.46	11.09	13.58	5.84	64.8	2.40
11.39	23.2	0.57	13.13	14.14	5.75	75.5	2.84
11.40	13.3	0.50	6.66	8.62	6.96	46.3	1.44
11.41	89.8	0.40	35.98	20.81	4.68	168.3	7.77
11.42	14.9	0.41	6.11	15.72	5.47	33.4	1.32
11.43	43.9	0.40	17.38	9.56	6.69	116.2	3.76
11.44	8.9	0.44	3.89	13.00	5.94	23.1	0.84
11.45	26.5	0.44	11.59	24.69	4.25	49.3	2.50
11.46	4.3	0.44	1.88	8.97	6.85	12.9	0.41
11.47	122.3	0.44	53.51	20.30	4.74	253.8	11.56
11.48	42.0	0.39	16.50	14.00	5.77	95.2	3.56
11.49	30.4	0.46	13.93	13.75	5.81	81.0	3.01

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)	Subarea Required 100yr,2hr Retention Volume (ac-ft)
11.50	36.3	0.42	15.40	13.62	5.83	89.8	3.33
11.51	15.1	0.59	8.94	9.46	6.71	60.0	1.93
11.52	22.6	0.41	9.17	14.71	5.66	51.9	1.98
12.01	13.3	0.50	6.60	9.34	6.75	44.5	1.43
12.02	26.7	0.39	10.53	13.23	5.90	62.1	2.27
12.03	17.2	0.76	13.10	12.72	5.99	78.5	2.83
12.04	12.0	0.38	4.50	9.39	6.73	30.3	0.97
13.01	31.7	0.40	12.58	14.38	5.71	71.8	2.72
13.02	72.5	0.38	27.19	18.39	5.01	136.3	5.87
13.03	7.7	0.45	3.46	9.01	6.84	23.7	0.75
13.04	6.0	0.38	2.25	9.12	6.81	15.3	0.49
13.05	16.2	0.42	6.77	15.85	5.45	36.9	1.46
13.06	4.6	0.38	1.73	7.80	7.23	12.5	0.37
14.01	25.9	0.40	10.29	18.02	5.07	52.2	2.22
14.02	70.9	0.46	32.86	26.33	4.10	134.7	7.10
14.03	36.4	0.44	16.18	11.31	6.27	101.4	3.50
15.01	20.6	0.38	7.73	14.01	5.77	44.6	1.67
16.01	24.1	0.44	10.54	13.86	5.79	61.1	2.28
16.02	47.6	0.44	20.83	28.37	3.93	81.9	4.50
17.01	68.3	0.44	29.88	19.64	4.83	144.4	6.46
17.02	56.4	0.44	24.68	16.65	5.30	130.8	5.33
17.03	19.4	0.44	8.49	18.83	4.95	42.0	1.83
18.01	13.0	0.81	10.56	12.26	6.08	64.2	2.28
19.01	10.7	0.44	4.68	13.55	5.84	27.4	1.01
19.02	11.5	0.44	5.03	14.09	5.76	29.0	1.09
19.03	82.0	0.44	35.88	29.23	3.87	138.7	7.75
19.04	11.1	0.44	4.86	13.22	5.90	28.7	1.05
19.05	20.9	0.44	9.14	10.30	6.50	59.4	1.98
19.06	25.3	0.50	12.65	16.96	5.25	66.4	2.73
19.07	33.4	0.44	14.61	13.68	5.82	85.1	3.16
19.08	74.7	0.50	37.35	19.72	4.82	180.0	8.07
19.09	9.9	0.44	4.33	15.10	5.60	24.3	0.94
19.10	14.4	0.50	7.20	12.20	6.09	43.8	1.56
19.11	9.7	0.50	4.85	12.41	6.05	29.3	1.05
19.12	14.6	0.50	7.30	13.34	5.88	42.9	1.58
19.13	25.2	0.25	6.30	13.89	5.79	36.5	1.36

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)	Subarea Required 100yr,2hr Retention Volume (ac-ft)
19.14	15.4	0.81	12.51	14.76	5.65	70.8	2.70
19.15	14.4	0.68	9.83	16.95	5.25	51.6	2.12
19.16	11.4	0.91	10.39	10.50	6.45	67.0	2.24
19.17	7.6	0.53	4.04	14.97	5.63	22.7	0.87
19.18	3.8	0.50	1.89	11.92	6.14	11.6	0.41
19.20	11.0	0.66	7.22	15.98	5.42	39.2	1.56
19.21	10.2	0.75	7.65	21.09	4.64	35.5	1.65
19.22	19.8	0.43	8.48	13.71	5.82	49.3	1.83
19.23	4.5	0.41	1.86	10.44	6.46	12.0	0.40
19.24	6.7	0.75	5.03	10.03	6.57	33.0	1.09
19.25	5.8	0.25	1.45	13.27	5.89	8.5	0.31
19.26	8.1	0.63	5.06	16.24	5.37	27.2	1.09
19.27	8.4	0.82	6.86	16.21	5.38	36.9	1.48
19.28	6.2	0.46	2.88	13.23	5.90	17.0	0.62
19.29	6.5	0.50	3.28	16.43	5.34	17.5	0.71
19.30	8.6	0.75	6.45	17.86	5.10	32.9	1.39
19.31	3.7	0.75	2.78	8.67	6.94	19.3	0.60
19.32	7.3	0.85	6.20	16.33	5.36	33.2	1.34
19.33	5.4	0.75	4.05	7.88	7.20	29.2	0.87
19.34	1.6	0.95	1.52	9.37	6.74	10.2	0.33
19.35	6.9	0.84	5.78	18.07	5.06	29.2	1.25
19.36	6.7	0.75	5.03	11.46	6.24	31.3	1.09
19.37	39.5	0.50	19.75	14.77	5.65	111.7	4.27
19.38	1.9	0.80	1.52	14.68	5.67	8.6	0.33
19.39	5.6	0.75	4.20	10.33	6.49	27.3	0.91
19.40	7.4	0.75	5.55	14.67	5.67	31.5	1.20
19.41	4.7	0.75	3.53	10.05	6.56	23.1	0.76
19.42	5.4	0.38	2.05	8.93	6.86	14.1	0.44
19.43	6.8	0.58	3.95	11.96	6.13	24.2	0.85
20.01	17.3	0.66	11.38	13.38	5.87	66.9	2.46
20.02	5.3	0.56	2.98	9.13	6.81	20.3	0.64
21.01	6.1	0.81	4.96	9.07	6.82	33.8	1.07
21.02	2.0	0.81	1.63	9.28	6.76	11.0	0.35
21.03	1.9	0.81	1.54	11.49	6.23	9.6	0.33
22.01	6.7	0.75	5.03	10.25	6.51	32.7	1.09
22.02	4.7	0.75	3.53	7.92	7.19	25.3	0.76

SUBAREA RUNOFF
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	2.4	0.75	1.80	9.20	6.79	12.2
24.01	2.7	0.75	2.03	9.16	6.80	13.8
25.01	8.9	0.50	4.45	11.30	6.27	27.9
25.02	5.7	0.50	2.85	13.97	5.78	16.5
26.01	5.6	0.50	2.80	11.56	6.22	17.4
27.01	2.4	0.75	1.80	11.37	6.25	11.3
28.01	1.8	0.75	1.35	5.52	8.26	11.1
29.01	73.6	0.25	18.40	18.89	4.94	90.9
29.02	76.0	0.25	19.00	26.51	4.08	77.6
30.01	14.5	0.51	7.40	12.78	5.98	44.2
30.02	3.5	0.46	1.60	11.97	6.13	9.8
30.03	15.3	0.78	11.93	10.47	6.46	77.0
30.04	9.1	0.81	7.39	11.53	6.22	46.0
30.05	5.1	0.43	2.20	10.16	6.53	14.4
31.01	5.9	0.81	4.79	13.26	5.89	28.3
31.02	3.1	0.81	2.52	9.73	6.64	16.7
32.01	1.9	0.38	0.71	11.76	6.17	4.4
32.02	2.2	0.31	0.69	12.25	6.08	4.2
32.03	1.8	0.31	0.56	11.07	6.32	3.6
32.04	1.9	0.32	0.60	11.35	6.26	3.8
32.05	2.6	0.38	0.98	10.06	6.56	6.4
32.06	4.4	0.38	1.65	15.79	5.46	9.0
32.07	4.4	0.56	2.48	13.42	5.87	14.5
32.08	1.6	0.73	1.18	8.88	6.88	8.1
32.09	2.7	0.75	2.03	13.96	5.78	11.7
32.10	2.5	0.71	1.77	13.25	5.90	10.4
32.11	4.4	0.86	3.79	16.97	5.24	19.9
32.12	2.3	0.47	1.09	11.80	6.17	6.7
32.13	3.0	0.38	1.13	18.33	5.02	5.7
32.14	1.9	0.38	0.71	14.19	5.74	4.1
32.15	3.7	0.38	1.39	14.86	5.64	7.8
32.16	2.0	0.38	0.75	11.08	6.32	4.7

ROUTING
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
Begin	**Northeast Airfield Area**								
3.04	10.08	1,400	3.00	17.80	6.68	13.78	5.81	38.76	7.78
3.03	10.08	1,100	3.00	9.50	3.56	8.08	7.13	25.41	6.11
10.08	10.07	1,300	3.00	50.20	20.26	21.56	4.59	92.89	7.22
10.07	10.05	1,000	3.00	78.20	32.51	28.78	3.90	126.77	5.56
10.05	3.06	800	3.00	88.10	36.84	34.34	3.48	128.08	4.44
3.01	3.02	1,000	3.00	20.20	7.58	15.46	5.53	41.86	5.56
2.02	3.02	1,500	3.00	55.00	20.63	17.31	5.19	106.97	8.33
3.02	3.06	1,600	3.00	118.80	44.55	25.65	4.16	185.36	8.89
3.06	8.02	1,500	3.00	250.50	97.74	38.78	3.20	312.90	8.33
8.02	7.02	500	3.00	273.30	106.29	47.12	2.81	298.20	2.78
5.01	7.02	800	3.00	13.00	4.88	16.80	5.27	25.71	4.44
7.02	7.01	800	3.00	295.20	114.50	49.90	2.70	309.00	4.44
2.01	1.01	800	3.00	14.70	6.43	16.56	5.32	34.20	4.44
1.01	5.02	3,200	3.00	65.20	28.53	21.00	4.65	132.75	17.78
4.01	5.02	1,500	3.00	16.10	7.04	13.43	5.87	41.32	8.33
5.02	7.01	1,600	3.00	120.90	52.89	38.78	3.20	169.35	8.89
6.01	7.01	1,100	3.00	33.10	14.48	16.70	5.29	76.63	6.11
7.01	7.01		3.00	466.40	189.40	54.34	2.55	482.40	0.00
End	**Northeast Airfield Area**								
Begin	**Ditch Paralleling East Runway**								
3.05	10.09	1,200	3.00	69.30	25.99	24.24	4.29	111.61	6.67
10.09	11.25	1,100	3.00	79.10	30.28	30.90	3.73	113.06	6.11
11.42	11.31	3,100	3.00	14.90	6.11	15.72	5.47	33.42	17.22
11.31	11.25	1,200	3.00	47.50	21.67	32.95	3.58	77.47	6.67
11.25	11.19	2,400	3.00	139.50	57.99	39.61	3.16	183.00	13.33
10.04	11.19	300	3.00	57.00	24.94	15.07	5.60	139.77	1.67
11.19	11.12	700	3.00	222.10	94.77	52.95	2.59	245.66	3.89
11.12	10.03	700	3.00	230.10	98.57	56.83	2.47	243.53	3.89
10.03	10.01	1,800	3.00	269.30	116.13	60.72	2.36	273.67	10.00
8.01	9.01	1,200	3.00	25.40	9.53	20.14	4.76	45.38	6.67
9.01	10.01	1,100	3.00	53.60	20.10	26.81	4.06	81.58	6.11
11.11	11.06	1,000	3.00	5.80	3.50	13.27	5.89	20.61	5.56
10.02	11.06	500	3.00	9.90	6.18	8.34	7.05	43.52	2.78
11.06	10.01	600	3.00	31.30	18.63	18.83	4.95	92.18	3.33
10.01	11.52	1,900	3.00	388.50	170.07	70.72	2.06	350.60	10.56
9.02	11.52	300	3.00	31.10	11.66	10.08	6.55	76.41	1.67
11.52	11.52		3.00	442.20	190.90	81.28	1.82	348.31	0.00
End	**Ditch Paralleling East Runway**								
Begin	**Area Between Center and East Runways**								
11.43	11.40	500	3.00	43.90	17.38	9.56	6.69	116.22	2.78
11.40	11.33	2,500	3.00	57.20	24.04	12.34	6.06	145.67	13.89

ROUTING
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	I (in/hr)	Q (cfs)	Travel Time (min)
11.33	11.27	1,200	3.00	86.50	39.86	26.23	4.11	163.74	6.67
11.27	11.20	2,300	3.00	102.20	47.30	32.90	3.58	169.29	12.78
11.32	11.26	1,200	3.00	31.10	14.42	14.58	5.68	81.94	6.67
11.26	11.20	2,500	3.00	46.20	21.29	21.25	4.62	98.44	13.89
11.20	11.13	1,200	3.00	205.80	96.96	45.68	2.87	277.81	6.67
11.13	11.07	1,200	3.00	235.40	112.77	52.34	2.61	294.61	6.67
11.07	11.02	900	3.00	263.70	126.49	59.01	2.41	304.65	5.00
11.02	11.01	1,900	3.00	283.90	138.66	64.01	2.25	312.00	10.56
11.01	11.01		3.00	328.80	158.15	74.56	1.97	311.23	0.00
End	**Area Between Center and East Runways**								
Begin	**Channel Along South Property Line**								
Begin	Initial Reach of Channel Along South Property Line								
11.41	14.03	1,600	3.00	89.80	35.98	20.81	4.68	168.27	8.89
11.39	14.03	1,200	3.00	23.20	13.13	14.14	5.75	75.49	6.67
14.03	16.02	4,800	3.00	149.40	65.28	29.70	3.83	250.16	26.67
16.02	17.01	2,900	3.00	197.00	86.11	56.37	2.48	213.94	16.11
End	Initial Reach of Channel Along South Property Line								
Begin	Channel Approx 700' North of South Property Line								
11.37	11.34	1,400	3.00	21.10	10.79	11.79	6.17	66.53	7.78
11.34	11.35	700	3.00	40.20	20.71	19.57	4.84	100.27	3.89
11.38	11.35	1,200	3.00	23.90	11.09	13.58	5.84	64.78	6.67
11.35	11.36	700	3.00	86.10	42.24	23.46	4.37	184.73	3.89
11.36	14.02	3,700	3.00	108.90	54.29	27.35	4.01	217.90	20.56
11.30	14.02	3,900	3.00	22.50	11.66	11.92	6.14	71.60	21.67
14.02	16.01	1,100	3.00	202.30	98.81	47.90	2.77	274.14	6.11
16.01	15.01	900	3.00	226.40	109.36	54.01	2.56	279.67	5.00
13.06	15.01	700	3.00	4.60	1.73	7.80	7.23	12.47	3.89
13.03	15.01	700	3.00	7.70	3.46	9.01	6.84	23.69	3.89
15.01	32.16	50	3.00	259.30	122.27	59.01	2.41	294.47	0.28
32.16	19.01	700	3.00	261.30	123.02	59.29	2.40	295.34	3.89
19.01	19.04	200	3.00	272.00	127.70	63.18	2.28	290.64	1.11
End	Channel Approx 700' North of South Property Line								
Begin	Drainage Along South Edge of Old Cross Wind Runway								
11.28	11.21	2,000	3.00	21.50	9.56	15.17	5.59	53.38	11.11
11.21	11.23	700	3.00	57.40	24.92	26.28	4.10	102.26	3.89
11.17	11.23	300	3.00	12.00	6.40	15.86	5.45	34.85	1.67
11.29	11.23	1,600	3.00	22.80	11.31	10.14	6.54	73.95	8.89
11.23	11.24	800	3.00	126.50	62.39	30.17	3.80	236.82	4.44
11.18	11.24	100	3.00	7.20	3.79	10.21	6.52	24.73	0.56
11.24	12.01	900	3.00	168.70	85.98	34.61	3.46	297.32	5.00
12.01	12.02	1,700	3.00	182.00	92.57	39.61	3.16	292.15	9.44
12.02	12.03	1,000	3.00	208.70	103.10	49.06	2.73	281.46	5.56

ROUTING
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
13.04	12.04	200	3.00	6.00	2.25	9.12	6.81	15.32	1.11
12.04	13.01	2,200	3.00	18.00	6.75	10.23	6.52	43.98	12.22
14.01	13.02	1,400	3.00	25.90	10.29	18.02	5.07	52.17	7.78
13.02	13.05	300	3.00	98.40	37.48	25.80	4.15	155.41	1.67
13.05	13.01	600	3.00	114.60	44.24	27.46	4.00	177.14	3.33
13.01	12.03	800	3.00	164.30	63.57	30.80	3.74	237.96	4.44
12.03	32.15	200	3.00	390.20	179.77	54.61	2.54	456.33	1.11
End	Drainage Along South Edge of Old Cross Wind Runway								
Begin	South Apron Area								
11.16	10.20	1,400	3.00	8.10	5.45	12.55	6.02	32.83	7.78
10.20	10.22	200	3.00	30.40	26.64	20.33	4.74	126.26	1.11
10.22	10.24	500	3.00	35.40	29.53	21.44	4.60	135.83	2.78
10.23	10.24	50	3.00	11.30	10.74	19.76	4.82	51.69	0.28
10.24	10.27	1,500	3.00	52.80	45.98	24.22	4.30	197.55	8.33
10.39	10.27	0	3.00	3.50	3.33	18.22	5.04	16.76	0.00
32.13	10.27	900	3.00	3.00	1.13	18.33	5.02	5.65	5.00
10.27	10.29	300	3.00	76.90	66.93	32.55	3.61	241.30	1.67
32.14	10.29	400	3.00	1.90	0.71	14.19	5.74	4.09	2.22
10.25	10.28	1,400	3.00	8.70	8.27	16.61	5.31	43.87	7.78
10.28	10.29	500	3.00	19.10	18.15	24.39	4.28	77.65	2.78
10.29	32.12	100	3.00	105.80	90.25	34.22	3.49	314.55	0.56
32.12	32.15	1,100	3.00	108.10	91.34	34.77	3.45	314.88	6.11
32.15	19.04		3.00	502.00	272.49	55.72	2.50	682.31	0.00
End	South Apron Area								
Begin	Final Reach of Channel Along South Property Line								
19.04	19.02	800	3.00	785.10	405.05	64.29	2.24	907.87	4.44
19.02	17.01	1,500	3.00	796.60	410.08	68.74	2.11	866.78	8.33
17.01	17.03	2,500	3.00	1061.90	526.07	77.07	1.91	1005.71	13.89
17.03	17.03		3.00	1081.30	534.56	90.96	1.65	883.64	0.00
End	Final Reach of Channel Along South Property Line								
End	**Channel Along South Property Line**								
Begin	**Channel Along South End of ERT Campus**								
19.07	19.05	400	3.00	33.40	14.61	13.68	5.82	85.10	2.22
19.05	19.03	3,600	3.00	54.30	23.76	15.90	5.44	129.21	20.00
19.09	19.03	400	3.00	9.90	4.33	15.10	5.60	24.25	2.22
17.02	18.01	700	3.00	56.40	24.68	16.65	5.30	130.82	3.89
18.01	19.03	0	3.00	69.40	35.24	20.53	4.71	166.07	0.00
19.03	19.03		3.00	215.60	99.20	35.90	3.37	334.64	0.00
End	**Channel Along South End of ERT Campus**								
Begin	**South ERT Campus**								
10.26	32.11	100	3.00	12.00	10.50	18.03	5.07	53.23	0.56
32.11	10.32	500	3.00	16.40	14.29	18.58	4.98	71.21	2.78

ROUTING
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.32	22.02	600	3.00	23.40	19.54	21.36	4.61	90.06	3.33
10.31	22.02	700	3.00	3.80	2.85	9.27	6.77	19.29	3.89
10.30	22.01	500	3.00	17.10	11.88	14.69	5.67	67.32	2.78
22.01	22.02	300	3.00	23.80	16.91	17.46	5.16	87.25	1.67
22.02	19.14	1,500	3.00	55.70	42.82	24.69	4.25	181.96	8.33
19.14	19.18	500	3.00	71.10	55.33	33.03	3.57	197.52	2.78
19.18	20.02	700	3.00	74.90	57.22	35.81	3.38	193.37	3.89
20.02	20.01	700	3.00	80.20	60.20	39.69	3.15	189.71	3.89
20.01	19.11	300	3.00	97.50	71.58	43.58	2.96	211.72	1.67
19.13	19.10	100	3.00	25.20	6.30	13.89	5.79	36.47	0.56
19.10	19.11	1,200	3.00	39.60	13.50	14.45	5.70	76.99	6.67
19.11	19.08	100	3.00	146.80	89.93	45.25	2.88	259.32	0.56
19.06	19.08	900	3.00	25.30	12.65	16.96	5.25	66.36	5.00
19.08	19.12	1,300	3.00	246.80	139.93	45.81	2.86	400.17	7.22
19.12	25.01	400	3.00	261.40	147.23	53.03	2.59	381.26	2.22
25.01	25.02	600	3.00	270.30	151.68	55.25	2.52	382.00	3.33
19.17	26.01	700	3.00	7.60	4.04	14.97	5.63	22.71	3.89
26.01	25.02	200	3.00	13.20	6.84	18.86	4.94	33.80	1.11
19.20	24.01	300	3.00	11.00	7.22	15.98	5.42	39.15	1.67
24.01	23.01	300	3.00	13.70	9.24	17.65	5.13	47.42	1.67
23.01	19.15	1,300	3.00	16.10	11.04	19.32	4.88	53.86	7.22
19.15	19.22	1,800	3.00	30.50	20.87	26.54	4.08	85.18	10.00
25.02	19.22	600	3.00	289.20	161.37	58.58	2.42	390.57	3.33
End	**South ERT Campus**								
Begin	**Central ERT Campus**								
19.29	19.30	900	3.00	6.50	3.28	16.43	5.34	17.49	5.00
19.30	19.31	400	3.00	15.10	9.73	21.43	4.60	44.75	2.22
19.31	19.32	800	3.00	18.80	12.50	23.65	4.35	54.42	4.44
19.32	19.33	200	3.00	26.10	18.70	28.10	3.95	73.90	1.11
19.33	19.25	400	3.00	31.50	22.75	29.21	3.87	87.98	2.22
19.38	31.02	400	3.00	1.90	1.52	14.68	5.67	8.60	2.22
31.02	19.28	700	3.00	5.00	4.04	16.90	5.26	21.22	3.89
19.28	19.27	900	3.00	11.20	6.91	20.79	4.68	32.35	5.00
19.27	19.26	900	3.00	19.60	13.77	25.79	4.15	57.12	5.00
19.26	19.25	700	3.00	27.70	18.83	30.79	3.74	70.51	3.89
19.25	28.01	200	3.00	65.00	43.03	34.68	3.45	148.61	1.11
28.01	19.23	500	3.00	66.80	44.38	35.79	3.38	150.03	2.78
10.38	32.10	100	3.00	8.80	6.60	16.60	5.31	35.04	0.56
32.10	21.02	200	3.00	11.30	8.37	17.16	5.21	43.62	1.11
21.03	21.02	0	3.00	1.90	1.54	11.49	6.23	9.62	0.00
21.02	21.01	400	3.00	15.20	11.54	18.27	5.03	58.06	2.22
21.01	19.39	700	3.00	21.30	16.49	20.49	4.72	77.82	3.89

ROUTING
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
19.39	19.40	1,000	3.00	26.90	20.69	24.38	4.28	88.57	5.56
19.40	19.16	900	3.00	34.30	26.24	29.94	3.81	100.12	5.00
19.21	19.16	900	3.00	10.20	7.65	21.09	4.64	35.52	5.00
19.16	19.24	600	3.00	55.90	44.28	34.94	3.44	152.18	3.33
27.01	19.24	300	3.00	2.40	1.80	11.37	6.25	11.26	1.67
19.24	19.23	900	3.00	65.00	51.11	38.27	3.23	165.11	5.00
19.23	19.22	500	3.00	136.30	97.35	43.27	2.97	289.36	2.78
19.22	19.22		3.00	475.80	288.06	61.92	2.32	667.34	0.00
End	**Central ERT Campus**								
Begin	**North ERT Campus**								
30.03	30.01	1,700	3.00	15.30	11.93	10.47	6.46	77.02	9.44
30.01	30.04	300	3.00	29.80	19.33	19.91	4.80	92.67	1.67
30.02	30.04	700	3.00	3.50	1.60	11.97	6.13	9.81	3.89
19.36	30.05	600	3.00	6.70	5.03	11.46	6.24	31.34	3.33
30.05	30.04	1,100	3.00	11.80	7.23	14.79	5.65	40.83	6.11
30.04	19.35	500	3.00	54.20	35.54	21.58	4.58	162.92	2.78
10.19	32.09	100	3.00	7.50	7.13	11.84	6.16	43.87	0.56
32.09	19.41	200	3.00	10.20	9.15	13.96	5.78	52.87	1.11
19.41	31.01	350	3.00	14.90	12.68	15.07	5.61	71.05	1.94
31.01	19.42	700	3.00	20.80	17.47	17.02	5.24	91.47	3.89
19.42	19.43	900	3.00	26.20	19.52	20.91	4.67	91.07	5.00
19.43	19.35	1,000	3.00	33.00	23.47	25.91	4.14	97.09	5.56
19.35	19.34	200	3.00	94.10	64.79	31.46	3.69	239.03	1.11
19.34	19.37	1,900	3.00	95.70	66.31	32.57	3.60	238.95	10.56
End	**North ERT Campus**								
Begin	**Channel Across Golf Course**								
Begin	Area Between West and Center Runway								
11.14	11.08	1,200	3.00	19.50	8.98	16.67	5.30	47.58	6.67
11.08	11.03	1,600	3.00	38.30	17.12	23.33	4.39	75.12	8.89
11.03	11.04	1,100	3.00	62.30	28.42	32.22	3.63	103.18	6.11
11.15	11.09	1,300	3.00	23.00	12.02	13.18	5.91	71.00	7.22
11.09	11.04	2,400	3.00	47.40	23.58	20.41	4.73	111.54	13.33
11.04	11.05	900	3.00	155.50	74.82	38.33	3.23	241.42	5.00
11.51	11.10	1,300	3.00	15.10	8.94	9.46	6.71	60.02	7.22
10.17	11.10	300	3.00	9.60	9.12	13.16	5.91	53.91	1.67
10.21	11.10	600	3.00	9.40	8.93	12.46	6.04	53.92	3.33
11.10	11.05	2,700	3.00	54.10	38.17	16.68	5.30	202.11	15.00
11.05	10.11	300	3.00	257.90	147.49	43.33	2.97	437.96	1.67
End	Area Between West and Center Runway								
Begin	North Apron Area								
10.18	10.15	700	3.00	9.70	9.22	12.76	5.98	55.12	3.89
10.15	10.13	900	3.00	16.20	14.99	16.65	5.30	79.44	5.00

ROUTING
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.13	10.11	1,000	3.00	23.00	20.70	21.65	4.57	94.70	5.56
10.11	10.41	800	3.00	289.20	174.75	45.00	2.89	505.80	4.44
10.41	10.12	500	3.00	292.70	178.07	49.44	2.72	483.54	2.78
32.08	10.16	0	3.00	1.60	1.18	8.88	6.88	8.08	0.00
10.16	10.14	1,100	3.00	10.20	9.35	8.88	6.88	64.30	6.11
32.07	10.14	0	3.00	4.40	2.48	13.42	5.87	14.52	0.00
10.14	10.12	2,000	3.00	25.50	17.97	14.99	5.62	101.03	11.11
10.12	32.06	100	3.00	341.60	206.54	52.22	2.62	540.44	0.56
10.33	32.06	0	3.00	3.20	1.78	10.60	6.43	11.41	0.00
End	North Apron Area								
Begin	North End of Runways Draining Back to Golf Cource Channel								
11.49	11.48	1,400	3.00	30.40	13.93	13.75	5.81	80.96	7.78
11.48	11.50	1,100	3.00	72.40	30.43	21.53	4.59	139.64	6.11
11.50	32.03	50	3.00	108.70	45.82	27.64	3.99	182.81	0.28
32.03	32.04	800	3.00	110.50	46.39	27.92	3.97	184.02	4.44
10.10	32.05	100	3.00	6.60	3.22	9.90	6.60	21.26	0.56
10.40	32.05	500	3.00	4.90	4.66	10.94	6.35	29.56	2.78
10.35	32.05	0	3.00	11.60	4.81	13.84	5.80	27.89	0.00
32.05	10.34	500	3.00	25.70	13.66	13.84	5.80	79.21	2.78
10.34	32.04	50	3.00	32.30	16.60	16.62	5.31	88.08	0.28
32.04	32.06	200	3.00	144.70	63.58	32.36	3.62	230.13	1.11
End	North End of Runways Draining Back to Golf Cource Channel								
Begin	Main Golf Course Channel								
32.06	19.37	850	3.00	493.90	273.55	52.78	2.60	710.65	4.72
19.37	29.01	900	3.00	629.10	359.61	57.50	2.45	881.48	5.00
29.01	29.01		3.00	702.70	378.01	62.50	2.30	868.55	0.00
End	Main Golf Course Channel								
End	**Channel Across Golf Course**								
Begin	**Northwest Corner**								
32.02	10.36	600	3.00	2.20	0.69	12.25	6.08	4.18	3.33
10.36	10.36		3.00	5.70	1.56	15.58	5.50	8.60	0.00
End	**Northwest Corner**								

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	65.2	0.44	28.53	21.00	4.65	132.8
2.01	14.7	0.44	6.43	16.56	5.32	34.2
2.02	55.0	0.38	20.63	17.31	5.19	107.0
3.01	20.2	0.38	7.58	15.46	5.53	41.9
3.02	118.8	0.38	44.55	25.65	4.16	185.4
3.03	9.5	0.38	3.56	8.08	7.13	25.4
3.04	17.8	0.38	6.68	13.78	5.81	38.8
3.05	69.3	0.38	25.99	24.24	4.29	111.6
3.06	250.5	0.39	97.74	38.78	3.20	312.9
4.01	16.1	0.44	7.04	13.43	5.87	41.3
5.01	13.0	0.38	4.88	16.80	5.27	25.7
5.02	120.9	0.44	52.89	38.78	3.20	169.4
6.01	33.1	0.44	14.48	16.70	5.29	76.6
7.01	466.4	0.41	189.40	54.34	2.55	482.4
7.02	295.2	0.39	114.50	49.90	2.70	309.0
8.01	25.4	0.38	9.53	20.14	4.76	45.4
8.02	273.3	0.39	106.29	47.12	2.81	298.2
9.01	53.6	0.38	20.10	26.81	4.06	81.6
9.02	31.1	0.38	11.66	10.08	6.55	76.4
10.01	388.5	0.44	170.07	70.72	2.06	350.6
10.02	9.9	0.62	6.18	8.34	7.05	43.5
10.03	269.3	0.43	116.13	60.72	2.36	273.7
10.04	57.0	0.44	24.94	15.07	5.60	139.8
10.05	88.1	0.42	36.84	34.34	3.48	128.1
10.06	4.8	0.44	2.10	10.04	6.56	13.8
10.07	78.2	0.42	32.51	28.78	3.90	126.8
10.08	50.2	0.40	20.26	21.56	4.59	92.9
10.09	79.1	0.38	30.28	30.90	3.73	113.1
10.10	6.6	0.49	3.22	9.90	6.60	21.3
10.11	289.2	0.60	174.75	45.00	2.89	505.8
10.12	341.6	0.60	206.54	52.22	2.62	540.4
10.13	23.0	0.90	20.70	21.65	4.57	94.7
10.14	25.5	0.70	17.97	14.99	5.62	101.0
10.15	16.2	0.93	14.99	16.65	5.30	79.4
10.16	10.2	0.92	9.35	8.88	6.88	64.3
10.17	9.6	0.95	9.12	13.16	5.91	53.9

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.95	9.22	12.76	5.98	55.1
10.19	7.5	0.95	7.13	11.84	6.16	43.9
10.20	30.4	0.88	26.64	20.33	4.74	126.3
10.21	9.4	0.95	8.93	12.46	6.04	53.9
10.22	35.4	0.83	29.53	21.44	4.60	135.8
10.23	11.3	0.95	10.74	19.76	4.82	51.7
10.24	52.8	0.87	45.98	24.22	4.30	197.6
10.25	8.7	0.95	8.27	16.61	5.31	43.9
10.26	12.0	0.88	10.50	18.03	5.07	53.2
10.27	76.9	0.87	66.93	32.55	3.61	241.3
10.28	19.1	0.95	18.15	24.39	4.28	77.6
10.29	105.8	0.85	90.25	34.22	3.49	314.5
10.30	17.1	0.69	11.88	14.69	5.67	67.3
10.31	3.8	0.75	2.85	9.27	6.77	19.3
10.32	23.4	0.83	19.54	21.36	4.61	90.1
10.33	3.2	0.55	1.78	10.60	6.43	11.4
10.34	32.3	0.51	16.60	16.62	5.31	88.1
10.35	11.6	0.41	4.81	13.84	5.80	27.9
10.36	5.7	0.27	1.56	15.58	5.50	8.6
10.37	7.7	0.38	2.89	9.53	6.70	19.3
10.38	8.8	0.75	6.60	16.60	5.31	35.0
10.39	3.5	0.95	3.33	18.22	5.04	16.8
10.40	4.9	0.95	4.66	10.94	6.35	29.6
10.41	292.7	0.61	178.07	49.44	2.72	483.5
11.01	328.8	0.48	158.15	74.56	1.97	311.2
11.02	283.9	0.49	138.66	64.01	2.25	312.0
11.03	62.3	0.46	28.42	32.22	3.63	103.2
11.04	155.5	0.48	74.82	38.33	3.23	241.4
11.05	257.9	0.57	147.49	43.33	2.97	438.0
11.06	31.3	0.60	18.63	18.83	4.95	92.2
11.07	263.7	0.48	126.49	59.01	2.41	304.7
11.08	38.3	0.45	17.12	23.33	4.39	75.1
11.09	47.4	0.50	23.58	20.41	4.73	111.5
11.10	54.1	0.71	38.17	16.68	5.30	202.1
11.11	5.8	0.60	3.50	13.27	5.89	20.6
11.12	230.1	0.43	98.57	56.83	2.47	243.5

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	235.4	0.48	112.77	52.34	2.61	294.6
11.14	19.5	0.46	8.98	16.67	5.30	47.6
11.15	23.0	0.52	12.02	13.18	5.91	71.0
11.16	8.1	0.67	5.45	12.55	6.02	32.8
11.17	12.0	0.53	6.40	15.86	5.45	34.8
11.18	7.2	0.53	3.79	10.21	6.52	24.7
11.19	222.1	0.43	94.77	52.95	2.59	245.7
11.20	205.8	0.47	96.96	45.68	2.87	277.8
11.21	57.4	0.43	24.92	26.28	4.10	102.3
11.23	126.5	0.49	62.39	30.17	3.80	236.8
11.24	168.7	0.51	85.98	34.61	3.46	297.3
11.25	139.5	0.42	57.99	39.61	3.16	183.0
11.26	46.2	0.46	21.29	21.25	4.62	98.4
11.27	102.2	0.46	47.30	32.90	3.58	169.3
11.28	21.5	0.44	9.56	15.17	5.59	53.4
11.29	22.8	0.50	11.31	10.14	6.54	74.0
11.30	22.5	0.52	11.66	11.92	6.14	71.6
11.31	47.5	0.46	21.67	32.95	3.58	77.5
11.32	31.1	0.46	14.42	14.58	5.68	81.9
11.33	86.5	0.46	39.86	26.23	4.11	163.7
11.34	40.2	0.52	20.71	19.57	4.84	100.3
11.35	86.1	0.49	42.24	23.46	4.37	184.7
11.36	108.9	0.50	54.29	27.35	4.01	217.9
11.37	21.1	0.51	10.79	11.79	6.17	66.5
11.38	23.9	0.46	11.09	13.58	5.84	64.8
11.39	23.2	0.57	13.13	14.14	5.75	75.5
11.40	57.2	0.42	24.04	12.34	6.06	145.7
11.41	89.8	0.40	35.98	20.81	4.68	168.3
11.42	14.9	0.41	6.11	15.72	5.47	33.4
11.43	43.9	0.40	17.38	9.56	6.69	116.2
11.44	8.9	0.44	3.89	13.00	5.94	23.1
11.45	26.5	0.44	11.59	24.69	4.25	49.3
11.46	4.3	0.44	1.88	8.97	6.85	12.9
11.47	122.3	0.44	53.51	20.30	4.74	253.8
11.48	72.4	0.42	30.43	21.53	4.59	139.6
11.49	30.4	0.46	13.93	13.75	5.81	81.0

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	108.7	0.42	45.82	27.64	3.99	182.8
11.51	15.1	0.59	8.94	9.46	6.71	60.0
11.52	442.2	0.43	190.90	81.28	1.82	348.3
12.01	182.0	0.51	92.57	39.61	3.16	292.1
12.02	208.7	0.49	103.10	49.06	2.73	281.5
12.03	390.2	0.46	179.77	54.61	2.54	456.3
12.04	18.0	0.38	6.75	10.23	6.52	44.0
13.01	164.3	0.39	63.57	30.80	3.74	238.0
13.02	98.4	0.38	37.48	25.80	4.15	155.4
13.03	7.7	0.45	3.46	9.01	6.84	23.7
13.04	6.0	0.38	2.25	9.12	6.81	15.3
13.05	114.6	0.39	44.24	27.46	4.00	177.1
13.06	4.6	0.38	1.73	7.80	7.23	12.5
14.01	25.9	0.40	10.29	18.02	5.07	52.2
14.02	202.3	0.49	98.81	47.90	2.77	274.1
14.03	149.4	0.44	65.28	29.70	3.83	250.2
15.01	259.3	0.47	122.27	59.01	2.41	294.5
16.01	226.4	0.48	109.36	54.01	2.56	279.7
16.02	197.0	0.44	86.11	56.37	2.48	213.9
17.01	1061.9	0.50	526.07	77.07	1.91	1005.7
17.02	56.4	0.44	24.68	16.65	5.30	130.8
17.03	1081.3	0.49	534.56	90.96	1.65	883.6
18.01	69.4	0.51	35.24	20.53	4.71	166.1
19.01	272.0	0.47	127.70	63.18	2.28	290.6
19.02	796.6	0.51	410.08	68.74	2.11	866.8
19.03	215.6	0.46	99.20	35.90	3.37	334.6
19.04	785.1	0.52	405.05	64.29	2.24	907.9
19.05	54.3	0.44	23.76	15.90	5.44	129.2
19.06	25.3	0.50	12.65	16.96	5.25	66.4
19.07	33.4	0.44	14.61	13.68	5.82	85.1
19.08	246.8	0.57	139.93	45.81	2.86	400.2
19.09	9.9	0.44	4.33	15.10	5.60	24.3
19.10	39.6	0.34	13.50	14.45	5.70	77.0
19.11	146.8	0.61	89.93	45.25	2.88	259.3
19.12	261.4	0.56	147.23	53.03	2.59	381.3
19.13	25.2	0.25	6.30	13.89	5.79	36.5

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	71.1	0.78	55.33	33.03	3.57	197.5
19.15	30.5	0.68	20.87	26.54	4.08	85.2
19.16	55.9	0.79	44.28	34.94	3.44	152.2
19.17	7.6	0.53	4.04	14.97	5.63	22.7
19.18	74.9	0.76	57.22	35.81	3.38	193.4
19.20	11.0	0.66	7.22	15.98	5.42	39.2
19.21	10.2	0.75	7.65	21.09	4.64	35.5
19.22	475.8	0.61	288.06	61.92	2.32	667.3
19.23	136.3	0.71	97.35	43.27	2.97	289.4
19.24	65.0	0.79	51.11	38.27	3.23	165.1
19.25	65.0	0.66	43.03	34.68	3.45	148.6
19.26	27.7	0.68	18.83	30.79	3.74	70.5
19.27	19.6	0.70	13.77	25.79	4.15	57.1
19.28	11.2	0.62	6.91	20.79	4.68	32.3
19.29	6.5	0.50	3.28	16.43	5.34	17.5
19.30	15.1	0.64	9.73	21.43	4.60	44.7
19.31	18.8	0.66	12.50	23.65	4.35	54.4
19.32	26.1	0.72	18.70	28.10	3.95	73.9
19.33	31.5	0.72	22.75	29.21	3.87	88.0
19.34	95.7	0.69	66.31	32.57	3.60	238.9
19.35	94.1	0.69	64.79	31.46	3.69	239.0
19.36	6.7	0.75	5.03	11.46	6.24	31.3
19.37	629.1	0.57	359.61	57.50	2.45	881.5
19.38	1.9	0.80	1.52	14.68	5.67	8.6
19.39	26.9	0.77	20.69	24.38	4.28	88.6
19.40	34.3	0.77	26.24	29.94	3.81	100.1
19.41	14.9	0.85	12.68	15.07	5.61	71.0
19.42	26.2	0.74	19.52	20.91	4.67	91.1
19.43	33.0	0.71	23.47	25.91	4.14	97.1
20.01	97.5	0.73	71.58	43.58	2.96	211.7
20.02	80.2	0.75	60.20	39.69	3.15	189.7
21.01	21.3	0.77	16.49	20.49	4.72	77.8
21.02	15.2	0.76	11.54	18.27	5.03	58.1
21.03	1.9	0.81	1.54	11.49	6.23	9.6
22.01	23.8	0.71	16.91	17.46	5.16	87.2
22.02	55.7	0.77	42.82	24.69	4.25	182.0

SUMMARY TABLE
EXISTING CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	16.1	0.69	11.04	19.32	4.88	53.9
24.01	13.7	0.67	9.24	17.65	5.13	47.4
25.01	270.3	0.56	151.68	55.25	2.52	382.0
25.02	289.2	0.56	161.37	58.58	2.42	390.6
26.01	13.2	0.52	6.84	18.86	4.94	33.8
27.01	2.4	0.75	1.80	11.37	6.25	11.3
28.01	66.8	0.66	44.38	35.79	3.38	150.0
29.01	702.7	0.54	378.01	62.50	2.30	868.5
29.02	76.0	0.25	19.00	26.51	4.08	77.6
30.01	29.8	0.65	19.33	19.91	4.80	92.7
30.02	3.5	0.46	1.60	11.97	6.13	9.8
30.03	15.3	0.78	11.93	10.47	6.46	77.0
30.04	54.2	0.66	35.54	21.58	4.58	162.9
30.05	11.8	0.61	7.23	14.79	5.65	40.8
31.01	20.8	0.84	17.47	17.02	5.24	91.5
31.02	5.0	0.81	4.04	16.90	5.26	21.2
32.01	1.9	0.38	0.71	11.76	6.17	4.4
32.02	2.2	0.31	0.69	12.25	6.08	4.2
32.03	110.5	0.42	46.39	27.92	3.97	184.0
32.04	144.7	0.44	63.58	32.36	3.62	230.1
32.05	25.7	0.53	13.66	13.84	5.80	79.2
32.06	493.9	0.55	273.55	52.78	2.60	710.7
32.07	4.4	0.56	2.48	13.42	5.87	14.5
32.08	1.6	0.73	1.18	8.88	6.88	8.1
32.09	10.2	0.90	9.15	13.96	5.78	52.9
32.10	11.3	0.74	8.37	17.16	5.21	43.6
32.11	16.4	0.87	14.29	18.58	4.98	71.2
32.12	108.1	0.84	91.34	34.77	3.45	314.9
32.13	3.0	0.38	1.13	18.33	5.02	5.7
32.14	1.9	0.38	0.71	14.19	5.74	4.1
32.15	502.0	0.54	272.49	55.72	2.50	682.3
32.16	261.3	0.47	123.02	59.29	2.40	295.3

'C' FACTORS - EXISTING CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.44		
1.01	50.5												50.5	22.1	0.438
2.01	14.7												14.7	6.4	0.438
2.02	55.0											55.0		20.6	0.375
3.01	20.2											20.2		7.6	0.375
3.02	43.6											43.6		16.4	0.375
3.03	9.5											9.5		3.6	0.375
3.04	17.8											17.8		6.7	0.375
3.05	69.3											69.3		26.0	0.375
3.06	43.6											43.6		16.4	0.375
4.01	16.1												16.1	7.0	0.438
5.01	13.0											13.0		4.9	0.375
5.02	39.6												39.6	17.3	0.438
6.01	33.1												33.1	14.5	0.438
7.01	17.2												17.2	7.5	0.438
7.02	8.9											8.9		3.3	0.375
8.01	25.4											25.4		9.5	0.375
8.02	22.8											22.8		8.6	0.375
9.01	28.2											28.2		10.6	0.375
9.02	31.1											31.1		11.7	0.375
10.01	34.3	0.4											33.9	15.2	0.443
10.02	9.9	3.6											6.3	6.2	0.624
10.03	39.2	0.8											38.4	17.6	0.448
10.04	57.0												57.0	24.9	0.438
10.05	9.9												9.9	4.3	0.438
10.06	4.8												4.8	2.1	0.438
10.07	28.0												28.0	12.3	0.438
10.08	22.9												22.9	10.0	0.438
10.09	9.8												9.8	4.3	0.438
10.10	6.6	1.3										5.3		3.2	0.488
10.11	8.3	6.0										2.3		6.6	0.791
10.12	23.4	3.0										20.4		10.5	0.449
10.13	6.8	5.5										1.3		5.7	0.840
10.14	10.9						5.5					5.4		6.2	0.564
10.15	6.5	5.8										0.7		5.8	0.888
10.16	8.6					8.6								8.2	0.950
10.17	9.6	9.6												9.1	0.950
10.18	9.7	9.7												9.2	0.950
10.19	7.5					7.5								7.1	0.950
10.20	22.3	22.3												21.2	0.950
10.21	9.4	9.4												8.9	0.950
10.22	5.0	1.0			1.0							3.0		2.9	0.578
10.23	11.3	11.3												10.7	0.950

'C' FACTORS - EXISTING CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.44		
10.24	6.1			6.1										5.7	0.938
10.25	8.7	8.7												8.3	0.950
10.26	12.0		12.0											10.5	0.875
10.27	17.6			17.6										16.5	0.938
10.28	10.4	10.4												9.9	0.950
10.29	7.9						4.0					3.9		4.5	0.565
10.30	17.1	5.4					6.3					5.4		11.9	0.695
10.31	3.8						3.8							2.9	0.750
10.32	7.0						7.0							5.3	0.750
10.33	3.2	1.0										2.2		1.8	0.555
10.34	6.6	0.8										5.8		2.9	0.445
10.35	11.6	0.8										10.8		4.8	0.415
10.36	3.5									3.5				0.9	0.250
10.37	7.7											7.7		2.9	0.375
10.38	8.8						8.8							6.6	0.750
10.39	3.5	3.5												3.3	0.950
10.40	4.9	4.9												4.7	0.950
10.41	3.5	3.5												3.3	0.950
11.01	44.9	4.6										40.3		19.5	0.434
11.02	20.2	8.0										12.2		12.2	0.603
11.03	24.0	4.0										20.0		11.3	0.471
11.04	45.8	9.8										36.0		22.8	0.498
11.05	48.3	28.5										19.8		34.5	0.714
11.06	15.6	5.4										10.2		9.0	0.574
11.07	28.3	5.4										22.9		13.7	0.485
11.08	18.8	1.9										16.9		8.1	0.433
11.09	24.4	4.2										20.2		11.6	0.474
11.10	20.0	6.4										13.6		11.2	0.559
11.11	5.8	2.3										3.5		3.5	0.603
11.12	8.0	1.4										6.6		3.8	0.476
11.13	29.6	8.2										21.4		15.8	0.534
11.14	19.5	2.9										16.6		9.0	0.461
11.15	23.0	5.9										17.1		12.0	0.523
11.16	8.1	4.2										3.9		5.5	0.673
11.17	12.0	3.3										8.7		6.4	0.533
11.18	7.2	1.9										5.3		3.8	0.527
11.19	25.6	3.9										21.7		11.8	0.463
11.20	57.4	11.9										45.5		28.4	0.494
11.21	35.9	3.3										32.6		15.4	0.428
11.23	34.3	12.0										22.3		19.8	0.576
11.24	35.0	11.6										23.4		19.8	0.566
11.25	12.9	2.1										10.8		6.0	0.469

'C' FACTORS - EXISTING CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.44		
11.26	15.1	2.1										13.0		6.9	0.455
11.27	15.7	2.7										13.0		7.4	0.474
11.28	21.5	2.6										18.9		9.6	0.445
11.29	22.8	4.8										18.0		11.3	0.496
11.30	22.5	5.6										16.9		11.7	0.518
11.31	32.6	5.8										26.8		15.6	0.477
11.32	31.1	4.8										26.3		14.4	0.464
11.33	29.3	8.4										20.9		15.8	0.540
11.34	19.1	4.8										14.3		9.9	0.520
11.35	22.0	3.8										18.2		10.4	0.474
11.36	22.8	6.1										16.7		12.1	0.529
11.37	21.1	5.0										16.1		10.8	0.511
11.38	23.9	3.7										20.2		11.1	0.464
11.39	23.2	7.7										15.5		13.1	0.566
11.40	13.3	2.9										10.4		6.7	0.500
11.41	89.8	4.0										85.8		36.0	0.401
11.42	14.9	0.9										14.0		6.1	0.410
11.43	43.9	1.6										42.3		17.4	0.396
11.44	8.9												8.9	3.9	0.438
11.45	26.5												26.5	11.6	0.438
11.46	4.3												4.3	1.9	0.438
11.47	122.3												122.3	53.5	0.438
11.48	42.0	1.3										40.7		16.5	0.393
11.49	30.4	4.4										26.0		13.9	0.458
11.50	36.3	3.1										33.2		15.4	0.424
11.51	15.1	5.7										9.4		8.9	0.592
11.52	22.6	1.2										21.4		9.2	0.406
12.01	13.3	2.8										10.5		6.6	0.496
12.02	26.7	0.9										25.8		10.5	0.394
12.03	17.2	1.0					16.2							13.1	0.762
12.04	12.0											12.0		4.5	0.375
13.01	31.7	1.2										30.5		12.6	0.397
13.02	72.5											72.5		27.2	0.375
13.03	7.7	1.0										6.7		3.5	0.450
13.04	6.0											6.0		2.3	0.375
13.05	16.2	1.2										15.0		6.8	0.418
13.06	4.6											4.6		1.7	0.375
14.01	25.9	1.0										24.9		10.3	0.397
14.02	70.9	3.6											67.3	32.9	0.464
14.03	36.4	0.5											35.9	16.2	0.445
15.01	20.6											20.6		7.7	0.375
16.01	24.1												24.1	10.5	0.438

'C' FACTORS - EXISTING CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.44		
16.02	47.6												47.6	20.8	0.438
17.01	68.3												68.3	29.9	0.438
17.02	56.4												56.4	24.7	0.438
17.03	19.4												19.4	8.5	0.438
18.01	13.0				13.0									10.6	0.813
19.01	10.7												10.7	4.7	0.438
19.02	11.5												11.5	5.0	0.438
19.03	82.0												82.0	35.9	0.438
19.04	11.1												11.1	4.9	0.438
19.05	20.9												20.9	9.1	0.438
19.06	25.3							25.3						12.7	0.500
19.07	33.4												33.4	14.6	0.438
19.08	74.7							74.7						37.4	0.500
19.09	9.9												9.9	4.3	0.438
19.10	14.4							14.4						7.2	0.500
19.11	9.7							9.7						4.9	0.500
19.12	14.6							14.6						7.3	0.500
19.13	25.2									25.2				6.3	0.250
19.14	15.4				15.4									12.5	0.813
19.15	14.4						11.8					2.6		9.8	0.682
19.16	11.4	9.2					2.2							10.4	0.911
19.17	7.6						1.9	3.8				1.9		4.0	0.531
19.18	3.8	0.8										3.0		1.9	0.496
19.20	11.0						5.5				5.5			7.2	0.656
19.21	10.2						10.2							7.7	0.750
19.22	19.8	0.8								9.5	9.5			8.5	0.428
19.23	4.5	0.3										4.2		1.9	0.413
19.24	6.7						6.7							5.0	0.750
19.25	5.8									5.8				1.5	0.250
19.26	8.1						5.4					2.7		5.1	0.625
19.27	8.4	2.8					5.6							6.9	0.817
19.28	6.2	1.0	1.0							4.2				2.9	0.464
19.29	6.5						3.3			3.2				3.3	0.504
19.30	8.6						8.6							6.5	0.750
19.31	3.7						3.7							2.8	0.750
19.32	7.3	3.6					3.7							6.2	0.849
19.33	5.4						5.4							4.1	0.750
19.34	1.6	1.6												1.5	0.950
19.35	6.9	3.0					3.9							5.8	0.837
19.36	6.7						6.7							5.0	0.750
19.37	39.5							39.5						19.8	0.500
19.38	1.9	1.4										0.5		1.5	0.799

'C' FACTORS - EXISTING CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.44		
19.39	5.6						5.6							4.2	0.750
19.40	7.4						7.4							5.6	0.750
19.41	4.7						4.7							3.5	0.750
19.42	5.4	1.0								4.4				2.1	0.380
19.43	6.8						4.5			2.3				4.0	0.581
20.01	17.3						8.8				8.5			11.4	0.658
20.02	5.3										5.3			3.0	0.563
21.01	6.1				6.1									5.0	0.813
21.02	2.0				2.0									1.6	0.813
21.03	1.9				1.9									1.5	0.813
22.01	6.7						6.7							5.0	0.750
22.02	4.7						4.7							3.5	0.750
23.01	2.4						2.4							1.8	0.750
24.01	2.7						2.7							2.0	0.750
25.01	8.9							8.9						4.5	0.500
25.02	5.7							5.7						2.9	0.500
26.01	5.6							5.6						2.8	0.500
27.01	2.4						2.4							1.8	0.750
28.01	1.8						1.8							1.4	0.750
29.01	73.6									73.6				18.4	0.250
29.02	76.0									76.0				19.0	0.250
30.01	14.5							14.8						7.4	0.510
30.02	3.5	0.5										3.0		1.6	0.457
30.03	15.3						15.9							11.9	0.779
30.04	9.1								9.1					7.4	0.813
30.05	5.1	0.5										4.6		2.2	0.431
31.01	5.9				5.9									4.8	0.813
31.02	3.1				3.1									2.5	0.813
32.01	1.9											1.9		0.7	0.375
32.02	2.2									1.1		1.1		0.7	0.313
32.03	1.8									0.9		0.9		0.6	0.313
32.04	1.9									0.9		1.0		0.6	0.316
32.05	2.6											2.6		1.0	0.375
32.06	4.4											4.4		1.7	0.375
32.07	4.4						2.2					2.2		2.5	0.563
32.08	1.6	1.0										0.6		1.2	0.734
32.09	2.7	1.0			1.0							0.7		2.0	0.750
32.10	2.5				1.9							0.6		1.8	0.708
32.11	4.4	1.0	1.2		2.2									3.8	0.861
32.12	2.3										1.2	1.1		1.1	0.473
32.13	3.0											3.0		1.1	0.375
32.14	1.9											1.9		0.7	0.375

'C' FACTORS - EXISTING CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Undev Desert (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.35		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.44		
32.15	3.7											3.7		1.4	0.375
32.16	2.0											2.0		0.75	0.375

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
1.01	50.5	0.438	1,800	5.00	0.28	14.7	A	-0.00625	0.04	0.0294	5.73	14.29	77.54
2.01	14.7	0.438	1,600	3.00	0.19	9.9	A	-0.00625	0.04	0.0327	5.32	16.56	83.34
2.02	55.0	0.375	1,800	3.00	0.17	8.8	A	-0.00625	0.04	0.0291	5.19	17.31	100.61
3.01	20.2	0.375	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0318	5.53	15.46	87.16
3.02	43.6	0.375	1,500	4.50	0.30	15.8	A	-0.00625	0.04	0.0298	6.01	12.59	75.50
3.03	9.5	0.375	900	5.00	0.56	29.3	A	-0.00625	0.04	0.0339	7.13	8.08	47.62
3.04	17.8	0.375	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0322	5.81	13.78	78.52
3.05	69.3	0.375	3,300	6.00	0.18	9.6	A	-0.00625	0.04	0.0285	4.29	24.24	132.33
3.06	43.6	0.375	1,500	4.50	0.30	15.8	A	-0.00625	0.04	0.0298	6.01	12.59	75.50
4.01	16.1	0.438	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0325	5.87	13.43	70.10
5.01	13.0	0.375	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0330	5.27	16.80	91.41
5.02	39.6	0.438	3,100	8.00	0.26	13.6	A	-0.00625	0.04	0.0300	4.65	21.00	104.29
6.01	33.1	0.438	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0305	5.29	16.70	86.25
7.01	17.2	0.438	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0323	5.32	16.54	83.53
7.02	8.9	0.375	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0341	6.17	11.80	66.74
8.01	25.4	0.375	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0312	4.76	20.14	108.49
8.02	22.8	0.375	2,100	6.00	0.29	15.1	A	-0.00625	0.04	0.0315	5.37	16.27	90.80
9.01	28.2	0.375	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0309	6.18	11.75	69.70
9.02	31.1	0.375	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0307	6.55	10.08	60.89
10.01	34.3	0.443	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0304	5.50	15.58	80.59
10.02	9.9	0.624	1,000	6.00	0.60	31.7	A	-0.00625	0.04	0.0338	7.05	8.34	32.13
10.03	39.2	0.448	1,800	7.00	0.39	20.5	A	-0.00625	0.04	0.0300	5.97	12.82	68.22
10.04	57.0	0.438	2,500	10.00	0.40	21.1	A	-0.00625	0.04	0.0290	5.60	15.07	80.92
10.05	9.9	0.438	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0338	6.43	10.58	55.41
10.06	4.8	0.438	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0357	6.56	10.04	51.60
10.07	28.0	0.438	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0310	5.86	13.46	71.75
10.08	22.9	0.438	1,600	7.00	0.44	23.1	A	-0.00625	0.04	0.0315	6.17	11.80	62.83
10.09	9.8	0.438	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0338	5.92	13.10	66.61
10.10	6.6	0.488	800	2.20	0.28	14.5	A	-0.00625	0.04	0.0349	6.60	9.90	47.89
10.11	8.3	0.791	1,200	5.50	0.46	24.2	A	-0.00625	0.04	0.0343	6.49	10.32	25.02
10.12	23.4	0.449	1,900	4.00	0.21	11.1	A	-0.00625	0.04	0.0314	5.21	17.19	85.90
10.13	6.8	0.840	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0348	6.87	8.90	18.39
10.14	10.9	0.564	1,100	6.00	0.55	28.8	A	-0.00625	0.04	0.0335	6.82	9.09	39.15
10.15	6.5	0.888	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0349	6.60	9.90	16.50
10.16	8.6	0.950	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0342	7.05	8.34	10.32
10.17	9.6	0.950	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0339	5.91	13.16	15.31
10.18	9.7	0.950	1,200	3.00	0.25	13.2	A	-0.00625	0.04	0.0338	5.98	12.76	14.85
10.19	7.5	0.950	900	1.80	0.20	10.6	A	-0.00625	0.04	0.0345	6.16	11.84	13.85
10.20	22.3	0.950	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0316	5.88	13.36	15.92
10.21	9.4	0.950	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0339	6.04	12.46	14.60
10.22	5.0	0.578	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0356	7.24	7.77	32.69
10.23	11.3	0.950	1,400	1.40	0.10	5.3	A	-0.00625	0.04	0.0334	4.82	19.76	21.77
10.24	6.1	0.938	700	2.60	0.37	19.6	A	-0.00625	0.04	0.0351	7.08	8.24	10.77
10.25	8.7	0.950	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	5.31	16.61	18.74
10.26	12.0	0.875	1,500	2.10	0.14	7.4	A	-0.00625	0.04	0.0333	5.07	18.03	30.21
10.27	17.6	0.938	1,600	2.00	0.13	6.6	A	-0.00625	0.04	0.0322	4.89	19.23	23.40
10.28	10.4	0.950	1,500	2.20	0.15	7.7	A	-0.00625	0.04	0.0336	5.10	17.84	19.83

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
10.29	7.9	0.565	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	6.26	11.37	47.71
10.30	17.1	0.695	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0323	5.67	14.69	46.32
10.31	3.8	0.750	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0364	6.77	9.27	25.31
10.32	7.0	0.750	1,200	1.00	0.08	4.4	A	-0.00625	0.04	0.0347	4.82	19.75	49.96
10.33	3.2	0.555	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0368	6.43	10.60	44.07
10.34	6.6	0.445	500	1.60	0.32	16.9	A	-0.00625	0.04	0.0349	7.49	7.12	38.56
10.35	11.6	0.415	1,500	4.20	0.28	14.8	A	-0.00625	0.04	0.0333	5.80	13.84	73.03
10.36	3.5	0.250	600	1.80	0.30	15.8	A	-0.00625	0.04	0.0366	7.04	8.35	55.98
10.37	7.7	0.375	800	2.40	0.30	15.8	A	-0.00625	0.04	0.0345	6.70	9.53	55.14
10.38	8.8	0.750	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	5.31	16.60	43.73
10.39	3.5	0.950	1,500	2.40	0.16	8.4	A	-0.00625	0.04	0.0366	5.04	18.22	19.26
10.40	4.9	0.950	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0357	6.35	10.94	12.55
10.41	3.5	0.950	1,000	2.20	0.22	11.6	A	-0.00625	0.04	0.0366	6.01	12.61	14.14
11.01	44.9	0.434	2,700	10.00	0.37	19.6	A	-0.00625	0.04	0.0297	5.32	16.56	86.75
11.02	20.2	0.603	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0318	5.87	13.43	52.76
11.03	24.0	0.471	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	5.79	13.86	68.74
11.04	45.8	0.498	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0296	5.56	15.31	73.89
11.05	48.3	0.714	3,600	7.00	0.19	10.3	A	-0.00625	0.04	0.0295	4.17	25.51	71.90
11.06	15.6	0.574	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0325	5.94	13.00	53.78
11.07	28.3	0.485	1,600	8.00	0.50	26.4	A	-0.00625	0.04	0.0309	6.31	11.12	55.81
11.08	18.8	0.433	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0320	6.31	11.11	59.57
11.09	24.4	0.474	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0313	6.19	11.70	59.23
11.10	20.0	0.559	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0319	6.01	12.64	54.39
11.11	5.8	0.603	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	5.89	13.27	50.60
11.12	8.0	0.476	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	6.26	11.36	55.66
11.13	29.6	0.534	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0308	5.63	14.90	67.44
11.14	19.5	0.461	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0319	5.30	16.67	82.39
11.15	23.0	0.523	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0315	5.91	13.18	61.10
11.16	8.1	0.673	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0343	6.02	12.55	41.55
11.17	12.0	0.533	1,300	2.00	0.15	8.1	A	-0.00625	0.04	0.0333	5.45	15.86	68.66
11.18	7.2	0.527	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0346	6.52	10.21	46.33
11.19	25.6	0.463	2,400	12.00	0.50	26.4	A	-0.00625	0.04	0.0312	5.74	14.18	70.82
11.20	57.4	0.494	2,800	9.00	0.32	17.0	A	-0.00625	0.04	0.0290	5.13	17.65	84.23
11.21	35.9	0.428	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0303	5.31	16.62	87.51
11.23	34.3	0.576	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0304	5.30	16.67	68.20
11.24	35.0	0.566	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0303	6.39	10.75	47.74
11.25	12.9	0.469	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0331	5.92	13.12	64.56
11.26	15.1	0.455	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0326	6.28	11.24	57.62
11.27	15.7	0.474	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0325	6.13	11.97	59.24
11.28	21.5	0.445	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0317	5.59	15.17	78.14
11.29	22.8	0.496	1,500	9.00	0.60	31.7	A	-0.00625	0.04	0.0315	6.54	10.14	49.92
11.30	22.5	0.518	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0315	6.14	11.92	56.64
11.31	32.6	0.477	3,200	4.00	0.13	6.6	A	-0.00625	0.04	0.0305	3.90	28.84	126.81
11.32	31.1	0.464	2,500	12.00	0.48	25.3	A	-0.00625	0.04	0.0307	5.68	14.58	73.14
11.33	29.3	0.540	2,600	8.00	0.31	16.2	A	-0.00625	0.04	0.0308	5.10	17.84	76.15
11.34	19.1	0.520	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0320	5.96	12.86	59.36
11.35	22.0	0.474	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0316	5.83	13.63	67.77

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				I(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
11.36	22.8	0.529	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0315	6.18	11.74	54.04
11.37	21.1	0.511	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0317	6.17	11.79	55.70
11.38	23.9	0.464	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0314	5.84	13.58	68.88
11.39	23.2	0.566	1,400	3.00	0.21	11.3	A	-0.00625	0.04	0.0315	5.75	14.14	60.12
11.40	13.3	0.500	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0330	6.96	8.62	42.43
11.41	89.8	0.401	4,000	14.00	0.35	18.5	A	-0.00625	0.04	0.0278	4.68	20.81	112.98
11.42	14.9	0.410	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0327	5.47	15.72	82.98
11.43	43.9	0.396	1,400	8.00	0.57	30.2	A	-0.00625	0.04	0.0297	6.69	9.56	57.14
11.44	8.9	0.438	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0341	5.94	13.00	67.46
11.45	26.5	0.438	1,600	1.00	0.06	3.3	A	-0.00625	0.04	0.0311	4.25	24.69	120.20
11.46	4.3	0.438	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0360	6.85	8.97	47.70
11.47	122.3	0.438	3,500	10.00	0.29	15.1	A	-0.00625	0.04	0.0270	4.74	20.30	107.11
11.48	42.0	0.393	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0299	5.77	14.00	80.83
11.49	30.4	0.458	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0307	5.81	13.75	70.69
11.50	36.3	0.424	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0303	5.83	13.62	74.44
11.51	15.1	0.592	1,000	4.00	0.40	21.1	A	-0.00625	0.04	0.0326	6.71	9.46	39.24
11.52	22.6	0.406	1,900	6.00	0.32	16.7	A	-0.00625	0.04	0.0315	5.66	14.71	80.01
12.01	13.3	0.496	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0330	6.75	9.34	46.04
12.02	26.7	0.394	1,800	6.80	0.38	19.9	A	-0.00625	0.04	0.0311	5.90	13.23	74.54
12.03	17.2	0.762	1,200	2.80	0.23	12.3	A	-0.00625	0.04	0.0323	5.99	12.72	34.27
12.04	12.0	0.375	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0333	6.73	9.39	55.26
13.01	31.7	0.397	2,300	10.00	0.43	23.0	A	-0.00625	0.04	0.0306	5.71	14.38	80.13
13.02	72.5	0.375	3,300	12.00	0.36	19.2	A	-0.00625	0.04	0.0284	5.01	18.39	105.03
13.03	7.7	0.450	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0345	6.84	9.01	46.98
13.04	6.0	0.375	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0351	6.81	9.12	52.38
13.05	16.2	0.418	2,200	7.60	0.35	18.2	A	-0.00625	0.04	0.0324	5.45	15.85	82.11
13.06	4.6	0.375	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0359	7.23	7.80	45.36
14.01	25.9	0.397	2,000	4.00	0.20	10.6	A	-0.00625	0.04	0.0312	5.07	18.02	96.74
14.02	70.9	0.464	3,800	7.00	0.18	9.7	A	-0.00625	0.04	0.0284	4.10	26.33	124.12
14.03	36.4	0.445	1,800	10.00	0.56	29.3	A	-0.00625	0.04	0.0302	6.27	11.31	60.89
15.01	20.6	0.375	1,700	5.20	0.31	16.2	A	-0.00625	0.04	0.0318	5.77	14.01	79.86
16.01	24.1	0.438	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	5.79	13.86	72.38
16.02	47.6	0.438	5,200	14.00	0.27	14.2	A	-0.00625	0.04	0.0295	3.93	28.37	133.17
17.01	68.3	0.438	3,000	8.00	0.27	14.1	A	-0.00625	0.04	0.0285	4.83	19.64	101.48
17.02	56.4	0.438	2,400	7.00	0.29	15.4	A	-0.00625	0.04	0.0291	5.30	16.65	88.09
17.03	19.4	0.438	2,400	6.00	0.25	13.2	A	-0.00625	0.04	0.0320	4.95	18.83	92.74
18.01	13.0	0.813	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0330	6.08	12.26	27.98
19.01	10.7	0.438	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0336	5.84	13.55	69.81
19.02	11.5	0.438	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0334	5.76	14.09	71.75
19.03	82.0	0.438	4,000	6.00	0.15	7.9	A	-0.00625	0.04	0.0280	3.87	29.23	141.95
19.04	11.1	0.438	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0335	5.90	13.22	67.75
19.05	20.9	0.438	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0317	6.50	10.30	55.64
19.06	25.3	0.500	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0312	5.25	16.96	78.11
19.07	33.4	0.438	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0305	5.82	13.68	72.97
19.08	74.7	0.500	3,300	10.00	0.30	16.0	A	-0.00625	0.04	0.0283	4.82	19.72	92.37
19.09	9.9	0.438	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0338	5.60	15.10	75.72
19.10	14.4	0.500	1,700	8.00	0.47	24.8	A	-0.00625	0.04	0.0328	6.09	12.20	57.25

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
19.11	9.7	0.500	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0338	6.05	12.41	57.68
19.12	14.6	0.500	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0327	5.88	13.34	63.23
19.13	25.2	0.250	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0312	5.79	13.89	93.62
19.14	15.4	0.813	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0326	5.65	14.76	32.86
19.15	14.4	0.682	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0328	5.25	16.95	53.82
19.16	11.4	0.911	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0334	6.45	10.50	15.77
19.17	7.6	0.531	1,200	2.00	0.17	8.8	A	-0.00625	0.04	0.0345	5.63	14.97	64.44
19.18	3.8	0.496	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0364	6.14	11.92	55.02
19.20	11.0	0.656	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0335	5.42	15.98	54.42
19.21	10.2	0.750	1,700	2.00	0.12	6.2	A	-0.00625	0.04	0.0337	4.64	21.09	53.01
19.22	19.8	0.428	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0319	5.82	13.71	72.76
19.23	4.5	0.413	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0359	6.46	10.44	55.49
19.24	6.7	0.750	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0348	6.57	10.03	28.04
19.25	5.8	0.250	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	5.89	13.27	86.55
19.26	8.1	0.625	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0343	5.37	16.24	58.25
19.27	8.4	0.817	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0342	5.38	16.21	34.75
19.28	6.2	0.464	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0350	5.90	13.23	64.79
19.29	6.5	0.504	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0349	5.34	16.43	73.11
19.30	8.6	0.750	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0342	5.10	17.86	46.47
19.31	3.7	0.750	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0364	6.94	8.67	24.09
19.32	7.3	0.849	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0346	5.36	16.33	30.83
19.33	5.4	0.750	600	2.00	0.33	17.6	A	-0.00625	0.04	0.0354	7.20	7.88	22.26
19.34	1.6	0.950	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0387	6.74	9.37	10.80
19.35	6.9	0.837	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0348	5.06	18.07	34.92
19.36	6.7	0.750	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0348	6.24	11.46	31.20
19.37	39.5	0.500	2,200	8.00	0.36	19.2	A	-0.00625	0.04	0.0300	5.65	14.77	70.97
19.38	1.9	0.799	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0383	5.67	14.68	31.75
19.39	5.6	0.750	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0353	6.49	10.33	28.29
19.40	7.4	0.750	900	1.00	0.11	5.9	A	-0.00625	0.04	0.0346	5.67	14.67	39.31
19.41	4.7	0.750	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0358	6.56	10.05	27.26
19.42	5.4	0.380	800	3.00	0.38	19.8	A	-0.00625	0.04	0.0354	6.86	8.93	50.86
19.43	6.8	0.581	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0348	6.13	11.96	47.79
20.01	17.3	0.658	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0323	5.87	13.38	46.78
20.02	5.3	0.563	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0355	6.81	9.13	38.86
21.01	6.1	0.813	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0351	6.82	9.07	20.79
21.02	2.0	0.813	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0381	6.76	9.28	20.70
21.03	1.9	0.813	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0383	6.23	11.49	24.93
22.01	6.7	0.750	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0348	6.51	10.25	28.29
22.02	4.7	0.750	700	3.00	0.43	22.6	A	-0.00625	0.04	0.0358	7.19	7.92	22.11
23.01	2.4	0.750	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0376	6.79	9.20	25.20
24.01	2.7	0.750	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0373	6.80	9.16	25.20
25.01	8.9	0.500	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0341	6.27	11.30	53.49
25.02	5.7	0.500	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0353	5.78	13.97	63.23
26.01	5.6	0.500	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0353	6.22	11.56	53.49
27.01	2.4	0.750	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0376	6.25	11.37	30.35
28.01	1.8	0.750	300	1.00	0.33	17.6	A	-0.00625	0.04	0.0384	8.26	5.52	15.74
29.01	73.6	0.250	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0283	4.94	18.89	127.19

TIME OF CONCENTRATION CALCULATIONS
EXISTING CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
29.02	76.0	0.250	3,100	4.00	0.13	6.8	A	-0.00625	0.04	0.0282	4.08	26.51	168.58
30.01	14.5	0.510	1,600	6.00	0.38	19.8	A	-0.00625	0.04	0.0327	5.98	12.78	58.87
30.02	3.5	0.457	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0366	6.13	11.97	58.56
30.03	15.3	0.779	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0326	6.46	10.47	26.92
30.04	9.1	0.813	1,200	4.00	0.33	17.6	A	-0.00625	0.04	0.0340	6.22	11.53	25.85
30.05	5.1	0.431	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0356	6.53	10.16	53.57
31.01	5.9	0.813	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	5.89	13.26	29.27
31.02	3.1	0.813	600	1.20	0.20	10.6	A	-0.00625	0.04	0.0369	6.64	9.73	21.68
32.01	1.9	0.375	800	1.60	0.20	10.6	A	-0.00625	0.04	0.0383	6.17	11.76	63.12
32.02	2.2	0.313	860	1.70	0.20	10.4	A	-0.00625	0.04	0.0379	6.08	12.25	71.36
32.03	1.8	0.313	730	1.50	0.21	10.8	A	-0.00625	0.04	0.0384	6.32	11.07	64.90
32.04	1.9	0.316	770	1.60	0.21	11.0	A	-0.00625	0.04	0.0383	6.26	11.35	66.13
32.05	2.6	0.375	720	1.80	0.25	13.2	A	-0.00625	0.04	0.0374	6.56	10.06	55.59
32.06	4.4	0.375	1,620	4.10	0.25	13.4	A	-0.00625	0.04	0.0360	5.46	15.79	83.04
32.07	4.4	0.563	1,370	4.10	0.30	15.8	A	-0.00625	0.04	0.0360	5.87	13.42	53.54
32.08	1.6	0.734	630	1.90	0.30	15.9	A	-0.00625	0.04	0.0387	6.88	8.88	24.63
32.09	2.7	0.750	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0373	5.78	13.96	35.73
32.10	2.5	0.708	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0375	5.90	13.25	38.20
32.11	4.4	0.861	1,800	4.50	0.25	13.2	A	-0.00625	0.04	0.0360	5.24	16.97	29.00
32.12	2.3	0.473	930	2.30	0.25	13.1	A	-0.00625	0.04	0.0377	6.17	11.80	54.85
32.13	3.0	0.375	1,730	3.50	0.20	10.7	A	-0.00625	0.04	0.0370	5.02	18.33	92.46
32.14	1.9	0.375	1,120	2.30	0.21	10.8	A	-0.00625	0.04	0.0383	5.74	14.19	74.03
32.15	3.7	0.375	1,440	3.60	0.25	13.2	A	-0.00625	0.04	0.0364	5.64	14.86	78.61
32.16	2.0	0.375	820	2.00	0.24	12.9	A	-0.00625	0.04	0.0381	6.32	11.08	59.81

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	50.5	0.26	12.92	19.45	2.54	32.9
2.01	14.7	0.25	3.74	22.66	2.33	8.7
2.02	55.0	0.26	14.03	23.70	2.27	31.8
3.01	20.2	0.26	5.19	21.14	2.42	12.6
3.02	43.6	0.26	11.14	12.47	3.21	35.8
3.03	9.5	0.26	2.47	10.64	3.45	8.5
3.04	17.8	0.25	4.51	18.70	2.60	11.7
3.05	69.3	0.26	17.85	33.48	1.84	32.8
3.06	43.6	0.26	11.14	15.11	2.94	32.8
4.01	16.1	0.25	4.08	18.17	2.65	10.8
5.01	13.0	0.26	3.32	22.99	2.31	7.7
5.02	39.6	0.26	10.12	28.79	2.03	20.5
6.01	33.1	0.25	8.42	22.86	2.32	19.5
7.01	17.2	0.26	4.42	22.64	2.33	10.3
7.02	8.9	0.26	2.30	15.78	2.87	6.6
8.01	25.4	0.25	6.46	27.61	2.08	13.4
8.02	22.8	0.25	5.78	22.26	2.35	13.6
9.01	28.2	0.26	7.23	15.70	2.88	20.8
9.02	31.1	0.25	7.91	13.38	3.11	24.6
10.01	34.3	0.85	29.16	21.31	2.41	70.4
10.02	9.9	0.85	8.42	11.00	3.40	28.6
10.03	39.2	0.85	33.32	17.28	2.72	90.7
10.04	57.0	0.85	48.45	20.61	2.46	119.2
10.05	9.9	0.85	8.42	14.05	3.04	25.6
10.06	4.8	0.85	4.08	13.33	3.12	12.7
10.07	28.0	0.85	23.80	18.22	2.64	62.9
10.08	22.9	0.85	19.47	15.78	2.87	55.9
10.09	9.8	0.85	8.33	17.69	2.69	22.4
10.10	6.6	0.05	0.34	13.13	3.14	1.1
10.11	8.3	0.85	7.06	13.70	3.08	21.7
10.12	23.4	0.03	0.60	23.53	2.28	1.4
10.13	6.8	0.85	5.78	11.76	3.30	19.1
10.14	10.9	0.04	0.43	12.01	3.27	1.4
10.15	6.5	0.85	5.53	13.13	3.14	17.3
10.16	8.6	0.05	0.43	11.00	3.40	1.4
10.17	9.6	0.85	8.16	17.78	2.68	21.9

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.85	8.25	17.19	2.73	22.5
10.19	7.5	0.05	0.34	15.84	2.86	1.0
10.20	22.3	0.85	18.96	18.07	2.65	50.3
10.21	9.4	0.85	7.99	16.74	2.77	22.2
10.22	5.0	0.03	0.17	10.22	3.52	0.6
10.23	11.3	0.85	9.61	27.09	2.10	20.2
10.24	6.1	0.04	0.26	10.87	3.42	0.9
10.25	8.7	0.85	7.40	22.74	2.32	17.2
10.26	12.0	0.05	0.60	24.69	2.22	1.3
10.27	17.6	0.03	0.60	26.35	2.13	1.3
10.28	10.4	0.85	8.84	24.42	2.23	19.7
10.29	7.9	0.02	0.17	15.15	2.94	0.5
10.30	17.1	0.08	1.45	20.04	2.50	3.6
10.31	3.8	0.09	0.34	12.26	3.24	1.1
10.32	7.0	0.09	0.60	27.06	2.10	1.3
10.33	3.2	0.85	2.72	14.09	3.04	8.3
10.34	6.6	0.00	0.00	10.00	3.55	0.0
10.35	11.6	0.03	0.34	18.78	2.60	0.9
10.36	3.5	0.00	0.00	11.01	3.40	0.0
10.37	7.7	0.00	0.00	12.62	3.20	0.0
10.38	8.8	0.05	0.43	22.72	2.33	1.0
10.39	3.5	0.85	2.98	24.96	2.20	6.6
10.40	4.9	0.85	4.17	14.55	3.00	12.5
10.41	3.5	0.85	2.98	16.96	2.75	8.2
11.01	44.9	0.40	17.98	22.66	2.33	41.9
11.02	20.2	0.54	10.96	18.17	2.65	29.0
11.03	24.0	0.41	9.79	18.82	2.59	25.4
11.04	45.8	0.43	19.52	20.94	2.44	47.6
11.05	48.3	0.61	29.23	35.36	1.77	51.6
11.06	15.6	0.56	8.70	17.54	2.70	23.5
11.07	28.3	0.44	12.51	14.80	2.97	37.2
11.08	18.8	0.40	7.46	14.79	2.97	22.2
11.09	24.4	0.43	10.51	15.64	2.89	30.3
11.10	20.0	0.52	10.40	17.00	2.75	28.6
11.11	5.8	0.58	3.39	17.94	2.67	9.0
11.12	8.0	0.51	4.05	15.14	2.94	11.9

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	29.6	0.47	13.89	20.36	2.48	34.4
11.14	19.5	0.40	7.83	22.81	2.32	18.2
11.15	23.0	0.46	10.59	17.81	2.68	28.3
11.16	8.1	0.59	4.74	16.88	2.76	13.1
11.17	12.0	0.45	5.42	21.70	2.39	12.9
11.18	7.2	0.45	3.21	13.55	3.09	9.9
11.19	25.6	0.47	12.03	19.28	2.56	30.7
11.20	57.4	0.42	24.32	24.17	2.24	54.6
11.21	35.9	0.36	13.03	22.75	2.32	30.3
11.23	34.3	0.50	17.28	22.81	2.32	40.1
11.24	35.0	0.52	18.26	14.29	3.02	55.1
11.25	12.9	0.53	6.84	17.72	2.68	18.4
11.26	15.1	0.41	6.24	14.96	2.96	18.4
11.27	15.7	0.43	6.80	16.03	2.84	19.3
11.28	21.5	0.39	8.38	20.74	2.45	20.5
11.29	22.8	0.44	9.92	13.45	3.11	30.8
11.30	22.5	0.44	9.83	15.96	2.85	28.0
11.31	32.6	0.52	16.82	40.32	1.61	27.1
11.32	31.1	0.40	12.30	19.89	2.51	30.9
11.33	29.3	0.47	13.63	24.42	2.23	30.4
11.34	19.1	0.46	8.70	17.34	2.72	23.6
11.35	22.0	0.42	9.13	18.48	2.62	23.9
11.36	22.8	0.45	10.20	15.70	2.88	29.3
11.37	21.1	0.45	9.52	15.77	2.87	27.3
11.38	23.9	0.41	9.70	18.39	2.63	25.5
11.39	23.2	0.48	11.20	19.23	2.56	28.7
11.40	13.3	0.45	6.03	11.37	3.35	20.2
11.41	89.8	0.32	29.14	28.54	2.04	59.4
11.42	14.9	0.35	5.19	21.51	2.40	12.4
11.43	43.9	0.33	14.66	12.67	3.19	46.8
11.44	8.9	0.40	3.55	17.54	2.70	9.6
11.45	26.5	0.34	9.05	34.15	1.81	16.4
11.46	4.3	0.50	2.17	11.85	3.29	7.1
11.47	122.3	0.32	39.66	27.82	2.07	82.0
11.48	42.0	0.34	14.36	19.02	2.58	37.0
11.49	30.4	0.40	12.26	18.65	2.61	31.9

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	36.3	0.35	12.60	18.46	2.62	33.0
11.51	15.1	0.60	9.10	12.53	3.21	29.2
11.52	22.6	0.43	9.81	20.07	2.50	24.5
12.01	13.3	0.75	9.98	12.37	3.23	32.2
12.02	26.7	0.03	0.68	17.88	2.67	1.8
12.03	17.2	0.02	0.43	17.13	2.74	1.2
12.04	12.0	0.75	9.00	12.43	3.22	29.0
13.01	31.7	0.03	0.85	19.59	2.53	2.2
13.02	72.5	0.26	18.53	25.19	2.19	40.6
13.03	7.7	0.03	0.26	11.91	3.28	0.8
13.04	6.0	0.85	5.10	12.06	3.26	16.6
13.05	16.2	0.85	13.77	21.68	2.39	32.9
13.06	4.6	0.85	3.91	10.26	3.51	13.7
14.01	25.9	0.26	6.63	24.67	2.22	14.7
14.02	70.9	0.26	18.11	36.59	1.73	31.2
14.03	36.4	0.25	9.27	15.07	2.95	27.3
15.01	20.6	0.85	17.51	19.03	2.58	45.1
16.01	24.1	0.25	6.12	18.81	2.59	15.9
16.02	47.6	0.26	12.16	39.62	1.63	19.8
17.01	68.3	0.17	11.65	26.91	2.11	24.6
17.02	56.4	0.17	9.61	22.78	2.32	22.3
17.03	19.4	0.17	3.32	25.80	2.16	7.2
18.01	13.0	0.17	2.21	16.45	2.80	6.2
19.01	10.7	0.17	1.79	18.36	2.63	4.7
19.02	11.5	0.17	1.96	19.16	2.57	5.0
19.03	82.0	0.17	13.94	40.90	1.60	22.3
19.04	11.1	0.17	1.87	17.87	2.67	5.0
19.05	20.9	0.17	3.57	13.68	3.08	11.0
19.06	25.3	0.17	4.34	23.22	2.30	10.0
19.07	33.4	0.17	5.70	18.55	2.61	14.9
19.08	74.7	0.17	12.67	27.03	2.10	26.6
19.09	9.9	0.17	1.70	20.65	2.46	4.2
19.10	14.4	0.17	2.47	16.36	2.81	6.9
19.11	9.7	0.17	1.62	16.67	2.78	4.5
19.12	14.6	0.17	2.47	18.05	2.66	6.5
19.13	25.2	0.17	4.25	18.86	2.59	11.0

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	15.4	0.17	2.64	20.16	2.49	6.6
19.15	14.4	0.73	10.57	23.20	2.30	24.3
19.16	11.4	0.80	9.14	13.95	3.05	27.9
19.17	7.6	0.73	5.51	20.46	2.47	13.6
19.18	3.8	0.85	3.23	15.96	2.85	9.2
19.20	11.0	0.79	8.65	21.87	2.38	20.6
19.21	10.2	0.64	6.48	28.92	2.02	13.1
19.22	19.8	0.17	3.40	18.59	2.61	8.9
19.23	4.5	0.17	0.77	13.87	3.06	2.3
19.24	6.7	0.60	4.02	13.31	3.12	12.5
19.25	5.8	0.18	1.02	17.94	2.67	2.7
19.26	8.1	0.42	3.37	22.23	2.35	7.9
19.27	8.4	0.17	1.45	22.18	2.36	3.4
19.28	6.2	0.16	1.02	17.88	2.67	2.7
19.29	6.5	0.60	3.90	22.48	2.34	9.1
19.30	8.6	0.60	5.16	24.46	2.23	11.5
19.31	3.7	0.60	2.22	11.45	3.34	7.4
19.32	7.3	0.85	6.21	22.35	2.35	14.6
19.33	5.4	0.60	3.24	10.37	3.49	11.3
19.34	1.6	0.85	1.36	12.40	3.22	4.4
19.35	6.9	0.60	4.14	24.74	2.21	9.2
19.36	6.7	0.60	4.02	15.28	2.92	11.8
19.37	39.5	0.17	6.72	20.17	2.49	16.7
19.38	1.9	0.09	0.17	20.03	2.50	0.4
19.39	5.6	0.60	3.36	13.72	3.08	10.3
19.40	7.4	0.65	4.81	20.02	2.50	12.0
19.41	4.7	0.09	0.43	13.34	3.12	1.3
19.42	5.4	0.17	0.94	11.81	3.29	3.1
19.43	6.8	0.80	5.44	16.01	2.85	15.5
20.01	17.3	0.17	2.98	18.10	2.65	7.9
20.02	5.3	0.18	0.94	12.07	3.26	3.0
21.01	6.1	0.65	3.97	11.99	3.27	13.0
21.02	2.0	0.65	1.30	12.28	3.24	4.2
21.03	1.9	0.65	1.24	15.33	2.92	3.6
22.01	6.7	0.80	5.36	13.60	3.09	16.6
22.02	4.7	0.80	3.76	10.43	3.49	13.1

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	2.4	0.60	1.44	12.18	3.25	4.7
24.01	2.7	0.60	1.62	12.11	3.26	5.3
25.01	8.9	0.40	3.56	15.05	2.95	10.5
25.02	5.7	0.40	2.28	18.98	2.58	5.9
26.01	5.6	0.40	2.24	15.42	2.91	6.5
27.01	2.4	0.60	1.44	15.16	2.94	4.2
28.01	1.8	0.60	1.08	10.00	3.55	3.8
29.01	73.6	0.20	14.72	25.88	2.16	31.7
29.02	76.0	0.20	15.20	36.84	1.72	26.1
30.01	14.5	0.17	2.47	17.22	2.73	6.7
30.02	3.5	0.17	0.60	16.02	2.84	1.7
30.03	15.3	0.60	9.18	13.90	3.06	28.1
30.04	9.1	0.65	5.92	15.39	2.91	17.2
30.05	5.1	0.17	0.85	13.48	3.10	2.6
31.01	5.9	0.65	3.84	17.93	2.67	10.2
31.02	3.5	0.17	0.60	12.82	3.17	1.9
32.01	1.9	0.85	1.62	15.73	2.88	4.6
32.02	2.2	0.85	1.87	16.43	2.80	5.2
32.03	1.8	0.85	1.53	14.73	2.98	4.6
32.04	1.9	0.85	1.62	15.12	2.94	4.8
32.05	2.6	0.85	2.21	13.35	3.12	6.9
32.06	4.4	0.85	3.74	21.60	2.39	9.0
32.07	4.4	0.85	3.74	18.16	2.65	9.9
32.08	1.6	0.85	1.36	11.73	3.30	4.5
32.09	2.7	0.85	2.30	18.96	2.58	5.9
32.10	2.5	0.85	2.13	17.91	2.67	5.7
32.11	4.4	0.85	3.74	23.23	2.30	8.6
32.12	2.3	0.85	1.96	15.77	2.87	5.6
32.13	3.0	0.85	2.55	25.10	2.20	5.6
32.14	1.9	0.85	1.62	19.31	2.55	4.1
32.15	3.7	0.85	3.15	20.31	2.48	7.8
32.16	2.0	0.85	1.70	14.75	2.98	5.1

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	2.4	0.60	1.44	12.18	3.25	4.7
24.01	2.7	0.60	1.62	12.11	3.26	5.3
25.01	8.9	0.40	3.56	15.05	2.95	10.5
25.02	5.7	0.40	2.28	18.98	2.58	5.9
26.01	5.6	0.40	2.24	15.42	2.91	6.5
27.01	2.4	0.60	1.44	15.16	2.94	4.2
28.01	1.8	0.60	1.08	10.00	3.55	3.8
29.01	73.6	0.20	14.72	25.88	2.16	31.7
29.02	76.0	0.20	15.20	36.84	1.72	26.1
30.01	14.5	0.17	2.47	17.22	2.73	6.7
30.02	3.5	0.17	0.60	16.02	2.84	1.7
30.03	15.3	0.60	9.18	13.90	3.06	28.1
30.04	9.1	0.65	5.92	15.39	2.91	17.2
30.05	5.1	0.17	0.85	13.48	3.10	2.6
31.01	5.9	0.65	3.84	17.93	2.67	10.2
31.02	3.5	0.17	0.60	12.82	3.17	1.9
32.01	1.9	0.85	1.62	15.73	2.88	4.6
32.02	2.2	0.85	1.87	16.43	2.80	5.2
32.03	1.8	0.85	1.53	14.73	2.98	4.6
32.04	1.9	0.85	1.62	15.12	2.94	4.8
32.05	2.6	0.85	2.21	13.35	3.12	6.9
32.06	4.4	0.85	3.74	21.60	2.39	9.0
32.07	4.4	0.85	3.74	18.16	2.65	9.9
32.08	1.6	0.85	1.36	11.73	3.30	4.5
32.09	2.7	0.85	2.30	18.96	2.58	5.9
32.10	2.5	0.85	2.13	17.91	2.67	5.7
32.11	4.4	0.85	3.74	23.23	2.30	8.6
32.12	2.3	0.85	1.96	15.77	2.87	5.6
32.13	3.0	0.85	2.55	25.10	2.20	5.6
32.14	1.9	0.85	1.62	19.31	2.55	4.1
32.15	3.7	0.85	3.15	20.31	2.48	7.8
32.16	2.0	0.85	1.70	14.75	2.98	5.1
Total Retention Volume Required to Store 100 year, 2 hour Precipitation						

ROUTING
PROPOSED CONDITIONS
Frequency = 5 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	I (in/hr)	Q (cfs)	Travel Time (min)
Begin	**Northwest Airfield Area**								
3.04	3.03	1,100	3.00	17.80	4.51	18.70	2.60	11.72	6.11
2.02	3.03	300	3.00	55.00	14.03	23.70	2.27	31.83	1.67
3.03	10.08	950	3.00	82.30	21.00	25.37	2.18	45.81	5.28
3.05	10.09	1,000	3.00	69.30	17.85	33.48	1.84	32.76	5.56
10.09	10.08	300	3.00	79.10	26.18	39.04	1.65	43.18	1.67
11.42	11.31	3,100	3.00	14.90	5.19	21.51	2.40	12.44	17.22
11.31	10.08	300	3.00	47.50	22.01	40.32	1.61	35.49	1.67
10.08	10.07	700	3.00	231.80	88.65	41.99	1.57	139.00	3.89
3.02	10.07	1,000	3.00	43.60	11.14	12.47	3.21	35.78	5.56
10.07	10.06	600	3.00	303.40	123.58	45.88	1.47	182.21	3.33
11.25	10.06	300	3.00	12.90	6.84	17.72	2.68	18.36	1.67
10.05	10.06	300	3.00	9.90	8.42	14.05	3.04	25.62	1.67
10.06	10.04	2,400	3.00	331.00	142.92	49.21	1.40	200.70	13.33
11.19	10.04	300	3.00	25.60	12.03	19.28	2.56	30.74	1.67
10.04	10.03	1,200	3.00	413.60	203.39	62.54	1.18	240.11	6.67
11.12	11.11	500	3.00	8.00	4.05	15.14	2.94	11.91	2.78
11.11	10.03	400	3.00	13.80	7.44	17.94	2.67	19.83	2.22
10.03	10.02	900	3.00	466.60	244.15	69.21	1.08	264.05	5.00
11.06	10.02	350	3.00	15.60	8.70	17.54	2.70	23.48	1.94
10.02	10.01	600	3.00	492.10	261.26	74.21	1.02	266.01	3.33
10.01	9.02	1,100	3.00	526.40	290.42	77.54	0.98	284.66	6.11
End									
Begin									
2.01	1.01	600	3.00	14.70	3.74	22.66	2.33	8.71	3.33
4.01	1.01	700	3.00	16.10	4.08	18.17	2.65	10.79	3.89
1.01	3.01	800	3.00	81.30	20.74	25.99	2.15	44.62	4.44
3.01	5.01	2,500	3.00	101.50	25.93	30.44	1.96	50.83	13.89
5.01	7.02	1,300	3.00	114.50	29.24	44.33	1.51	44.16	7.22
7.02	7.01	300	3.00	123.40	31.54	51.55	1.36	42.88	1.67
3.06	8.02	300	3.00	43.60	11.14	15.11	2.94	32.77	1.67
8.02	8.01	2,600	3.00	66.40	16.92	22.26	2.35	39.80	14.44
8.01	7.01	50	3.00	91.80	23.38	36.70	1.72	40.24	0.28
6.01	5.02	300	3.00	33.10	8.42	22.86	2.32	19.50	1.67
5.02	7.01	1,700	3.00	72.70	18.53	28.79	2.03	37.58	9.44
7.01	9.01	1,300	3.00	305.10	77.86	53.21	1.33	103.56	7.22
9.01	9.02	1,100	3.00	333.30	85.09	60.44	1.22	103.47	6.11
11.45	9.02	0	3.00	26.50	9.05	34.15	1.81	16.38	0.00
9.02	9.02	0	3.00	917.30	392.46	83.65	0.92	360.25	0.00
End	**Northwest Airfield Area**								
Begin	**Runway Areas**								
11.43	11.40	400	3.00	43.90	14.66	12.67	3.19	46.76	2.22

ROUTING
PROPOSED CONDITIONS
Frequency = 5 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
11.40	11.33	2,500	3.00	57.20	20.68	14.89	2.97	61.32	13.89
11.32	11.33	0	3.00	31.10	12.30	19.89	2.51	30.88	0.00
11.26	11.27	0	3.00	15.10	6.24	14.96	2.96	18.45	0.00
11.33	11.27	1,200	3.00	117.60	46.61	28.78	2.03	94.55	6.67
11.27	11.20	2,300	3.00	148.40	59.65	35.45	1.76	105.20	12.78
11.20	11.13	1,200	3.00	205.80	83.96	48.22	1.42	119.58	6.67
11.13	11.07	1,200	3.00	235.40	97.85	54.89	1.30	127.37	6.67
11.07	11.02	900	3.00	263.70	110.35	61.56	1.20	132.07	5.00
11.02	11.01	1,900	3.00	283.90	121.31	66.56	1.12	135.70	10.56
11.52	11.44	400	3.00	22.60	9.81	20.07	2.50	24.49	2.22
11.44	11.46	700	3.00	31.50	13.36	22.29	2.35	31.39	3.89
11.46	11.01	50	3.00	35.80	15.53	26.18	2.14	33.26	0.28
11.01	11.48	1,800	3.00	364.60	154.81	77.11	0.98	152.47	10.00
End									
Begin									
11.23	11.17	400	3.00	34.30	17.28	22.81	2.32	40.08	2.22
11.21	11.17	0	3.00	35.90	13.03	22.75	2.32	30.27	0.00
11.17	11.15	1,200	3.00	82.20	35.72	25.03	2.20	78.53	6.67
11.14	11.15	0	3.00	19.50	7.83	22.81	2.32	18.17	0.00
11.15	11.09	1,300	3.00	124.70	54.13	31.70	1.91	103.18	7.22
11.08	11.09	0	3.00	18.80	7.46	14.79	2.97	22.18	0.00
11.09	11.04	2,000	3.00	167.90	72.10	38.92	1.65	119.16	11.11
11.03	11.04	0	3.00	24.00	9.79	18.82	2.59	25.37	0.00
11.04	11.49	1,000	3.00	237.70	101.40	50.03	1.39	140.77	5.56
11.49	11.48	1,400	3.00	268.10	113.65	55.59	1.29	146.65	7.78
11.50	11.48	600	3.00	36.30	12.60	18.46	2.62	33.02	3.33
11.48	11.47	800	3.00	711.00	295.42	87.11	0.89	261.83	4.44
11.47	11.47	0	3.00	833.30	335.08	91.56	0.85	284.47	0.00
End	**Runway Areas**								
Begin	**South ERT Campus**								
10.32	22.02	600	3.00	7.00	0.60	27.06	2.10	1.25	3.33
22.02	22.01	500	3.00	11.70	4.36	30.40	1.96	8.55	2.78
10.31	22.01	400	3.00	3.80	0.34	12.26	3.24	1.10	2.22
22.01	10.30	200	3.00	22.20	10.06	33.17	1.85	18.57	1.11
10.30	19.13	1,500	3.00	39.30	11.50	34.28	1.81	20.76	8.33
19.14	19.13	500	3.00	15.40	2.64	20.16	2.49	6.57	2.78
19.10	19.13	0	3.00	14.40	2.47	16.36	2.81	6.93	0.00
19.13	20.01	1,100	3.00	94.30	20.85	42.62	1.55	32.36	6.11
19.11	20.01	200	3.00	9.70	1.62	16.67	2.78	4.49	1.11
19.18	19.17	400	3.00	3.80	3.23	15.96	2.85	9.21	2.22
19.17	20.02	300	3.00	11.40	8.74	20.46	2.47	21.59	1.67
20.02	20.01	700	3.00	16.70	9.68	22.13	2.36	22.84	3.89

ROUTING
PROPOSED CONDITIONS
Frequency = 5 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
20.01	19.08	500	3.00	138.00	35.12	48.73	1.41	49.65	2.78
19.06	19.08	900	3.00	25.30	4.34	23.22	2.30	9.95	5.00
19.08	19.12	1,300	3.00	238.00	52.12	51.51	1.36	70.91	7.22
19.12	25.01	400	3.00	252.60	54.58	58.73	1.24	67.79	2.22
25.01	25.02	600	3.00	261.50	58.14	60.95	1.21	70.19	3.33
26.01	25.02	200	3.00	5.60	2.24	15.42	2.91	6.51	1.11
25.02	19.22	600	3.00	272.80	62.66	64.28	1.15	72.24	3.33
End	**South ERT Campus**								
Begin	**North ERT Campus**								
30.03	30.01	1,700	3.00	15.30	9.18	13.90	3.06	28.08	9.44
30.01	32.04	700	3.00	29.80	11.65	23.35	2.29	26.65	3.89
End									
Begin									
30.02	30.04	700	3.00	3.50	0.60	16.02	2.84	1.69	3.89
19.41	31.01	350	3.00	4.70	0.43	13.34	3.12	1.32	1.94
31.01	19.36	400	3.00	10.60	4.26	17.93	2.67	11.36	2.22
19.36	19.42	300	3.00	17.30	8.28	20.15	2.49	20.64	1.67
19.42	30.05	300	3.00	22.70	9.22	21.81	2.38	21.94	1.67
30.05	19.43	600	3.00	27.80	10.07	23.48	2.28	22.96	3.33
19.43	30.04	400	3.00	34.60	15.51	26.81	2.11	32.76	2.22
30.04	19.35	500	3.00	47.20	22.02	29.04	2.02	44.43	2.78
19.35	19.34	200	3.00	54.10	26.16	31.81	1.90	49.73	1.11
19.34	19.37	1,900	3.00	55.70	27.52	32.93	1.86	51.08	10.56
End	**North ERT Campus**								
Begin	**Central ERT Campus**								
21.03	21.02	300	3.00	1.90	1.24	15.33	2.92	3.60	1.67
21.02	21.01	300	3.00	3.90	2.54	16.99	2.75	6.97	1.67
21.01	31.02	300	3.00	10.00	6.50	18.66	2.61	16.93	1.67
19.38	31.02	300	3.00	1.90	0.17	20.03	2.50	0.43	1.67
31.02	19.28	700	3.00	15.40	7.27	21.70	2.39	17.35	3.89
19.29	19.28	0	3.00	6.50	3.90	22.48	2.34	9.12	0.00
19.30	19.27	0	3.00	8.60	5.16	24.46	2.23	11.50	0.00
19.28	19.27	900	3.00	28.10	12.19	25.59	2.17	26.45	5.00
19.27	19.31	400	3.00	45.10	18.79	30.59	1.95	36.72	2.22
19.31	19.26	500	3.00	48.80	21.01	32.81	1.86	39.10	2.78
19.26	19.32	200	3.00	56.90	24.38	35.59	1.76	42.87	1.11
19.32	19.33	200	3.00	64.20	30.58	36.70	1.72	52.65	1.11
19.33	19.25	400	3.00	69.60	33.82	37.81	1.69	57.04	2.22
19.25	28.01	100	3.00	75.40	34.84	40.03	1.62	56.47	0.56
28.01	19.23	600	3.00	77.20	35.92	40.59	1.61	57.67	3.33
End									
Begin									

ROUTING
PROPOSED CONDITIONS
Frequency = 5 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
19.20	24.01	300	3.00	11.00	8.65	21.87	2.38	20.56	1.67
24.01	23.01	300	3.00	13.70	10.27	23.53	2.28	23.40	1.67
23.01	19.21	300	3.00	16.10	11.71	25.20	2.19	25.65	1.67
19.39	19.40	900	3.00	5.60	3.36	13.72	3.08	10.34	5.00
19.40	19.21	300	3.00	13.00	8.17	20.02	2.50	20.44	1.67
19.21	19.15	900	3.00	39.30	26.36	28.92	2.02	53.33	5.00
19.15	27.01	300	3.00	53.70	36.93	33.92	1.82	67.15	1.67
27.01	19.24	500	3.00	56.10	38.37	35.58	1.76	67.49	2.78
19.16	19.24	550	3.00	11.40	9.14	13.95	3.05	27.91	3.06
19.24	19.23	1,000	3.00	74.20	51.53	38.36	1.67	86.02	5.56
19.23	19.22	400	3.00	155.90	88.21	43.92	1.52	134.06	2.22
19.22	19.22	0	3.00	448.50	154.27	67.62	1.10	170.24	0.00
End	**Central ERT Campus**								
Begin	**Routing to North Retention Basin**								
11.51	11.10	1,300	3.00	15.10	9.10	12.53	3.21	29.17	7.22
10.21	11.10	600	3.00	9.40	7.99	16.74	2.77	22.16	3.33
10.17	11.10	300	3.00	9.60	8.16	17.78	2.68	21.86	1.67
11.10	11.05	2,700	3.00	54.10	35.65	20.08	2.50	89.02	15.00
11.05	10.11	300	3.00	102.40	64.88	35.36	1.77	114.61	1.67
10.19	10.18	200	3.00	7.50	0.34	15.84	2.86	0.97	1.11
10.18	10.15	700	3.00	17.20	8.59	17.19	2.73	23.45	3.89
10.16	10.15	0	3.00	8.60	0.43	11.00	3.40	1.45	0.00
10.15	10.13	900	3.00	32.30	14.54	21.08	2.43	35.29	5.00
10.14	10.13	0	3.00	10.90	0.43	12.01	3.27	1.39	0.00
10.13	10.11	1,000	3.00	50.00	20.74	26.08	2.15	44.53	5.56
10.40	10.11	200	3.00	4.90	4.17	14.55	3.00	12.48	1.11
10.11	10.41	800	3.00	165.60	96.84	37.03	1.71	165.69	4.44
10.10	10.41	0	3.00	6.60	0.34	13.13	3.14	1.07	0.00
10.12	10.41	0	3.00	23.40	0.60	23.53	2.28	1.36	0.00
10.41	32.06	600	3.00	199.10	100.75	41.47	1.58	159.33	3.33
End									
Begin									
32.11	32.10	1,800	3.00	4.40	3.74	23.23	2.30	8.59	10.00
32.10	32.09	1,000	3.00	6.90	5.87	33.23	1.84	10.82	5.56
32.09	32.08	650	3.00	9.60	8.16	38.78	1.66	13.52	3.61
32.08	32.07	1,500	3.00	11.20	9.52	42.39	1.56	14.83	8.33
32.07	32.06	1,650	3.00	15.60	13.26	50.73	1.38	18.23	9.17
32.06	10.33	0	3.00	219.10	117.75	59.89	1.23	144.26	0.00
10.33	10.33	0	3.00	222.30	120.47	59.89	1.23	147.60	0.00
End	**Routing to North Retention Basin**								
Begin	**Channel Across Golf Course**								
32.02	32.03	750	3.00	2.20	1.87	16.43	2.80	5.24	4.17

ROUTING
PROPOSED CONDITIONS
Frequency = 5 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.34	32.05	0	3.00	6.60	0.00	10.00	3.55	0.00	0.00
10.35	32.05	0	3.00	11.60	0.34	18.78	2.60	0.88	0.00
32.05	32.03	0	3.00	20.80	2.55	18.78	2.60	6.62	0.00
32.03	32.04	780	3.00	24.80	5.95	20.60	2.46	14.64	4.33
10.33	32.04	100	3.00	222.30	120.47	59.89	1.23	147.60	0.56
32.04	19.37	800	3.00	278.80	139.68	60.45	1.22	169.82	4.44
19.37	29.01	900	3.00	374.00	173.91	64.89	1.14	198.85	5.00
29.01	29.01	0	3.00	447.60	188.63	69.89	1.07	202.27	0.00
End									
End	**Channel Across Golf Course**								
Begin	**Channel at South End of ERT Campus**								
19.07	19.05	400	3.00	33.40	5.70	18.55	2.61	14.89	2.22
19.05	19.03	3,600	3.00	54.30	9.27	20.77	2.45	22.69	20.00
19.09	19.03	400	3.00	9.90	1.70	20.65	2.46	4.18	2.22
17.02	18.01	700	3.00	56.40	9.61	22.78	2.32	22.30	3.89
18.01	19.03	0	3.00	69.40	11.82	26.67	2.12	25.04	0.00
19.03	19.03	0	3.00	215.60	36.72	40.90	1.60	58.63	0.00
End	**Channel at South End of ERT Campus**								
Begin	**Routing to South Retention Basin**								
11.16	10.20	1,400	3.00	8.10	4.74	16.88	2.76	13.09	7.78
10.20	10.22	200	3.00	30.40	23.70	24.66	2.22	52.56	1.11
10.22	10.24	500	3.00	35.40	23.87	25.77	2.16	51.60	2.78
10.23	10.24	50	3.00	11.30	9.61	27.09	2.10	20.18	0.28
10.24	10.27	1,500	3.00	52.80	33.73	28.54	2.04	68.74	8.33
10.39	10.27	0	3.00	3.50	2.98	24.96	2.20	6.55	0.00
10.27	10.29	300	3.00	73.90	37.30	36.88	1.72	63.99	1.67
10.38	10.25	0	3.00	8.80	0.43	22.72	2.33	0.99	0.00
10.25	10.28	1,400	3.00	17.50	7.82	22.74	2.32	18.18	7.78
10.26	10.28	0	3.00	12.00	0.60	24.69	2.22	1.32	0.00
10.28	10.29	500	3.00	39.90	17.26	30.51	1.96	33.77	2.78
10.29	32.12	100	3.00	121.70	54.72	38.54	1.66	91.06	0.56
32.12	32.14	50	3.00	124.00	56.68	39.10	1.65	93.38	0.28
End									
Begin									
12.01	32.13	1,700	3.00	13.30	9.98	12.37	3.23	32.18	9.44
12.02	32.13	0	3.00	26.70	0.68	17.88	2.67	1.82	0.00
32.13	32.14	1,100	3.00	43.00	13.21	25.10	2.20	28.99	6.11
12.03	32.14	0	3.00	17.20	0.43	17.13	2.74	1.16	0.00
32.14	32.15	500	3.00	186.10	71.92	39.38	1.64	117.91	2.78
End									
Begin									
32.16	32.15	800	3.00	2.00	1.70	14.75	2.98	5.06	4.44

ROUTING
PROPOSED CONDITIONS
Frequency = 5 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
32.15	15.01	0	3.00	191.80	76.77	42.16	1.56	120.04	0.00
End									
Begin									
11.18	11.24	900	3.00	7.20	3.21	13.55	3.09	9.92	5.00
11.24	13.04	800	3.00	42.20	21.46	18.55	2.61	56.09	4.44
12.04	13.04	0	3.00	12.00	9.00	12.43	3.22	28.97	0.00
13.04	13.05	2,200	3.00	60.20	35.56	23.00	2.31	82.11	12.22
13.01	13.05	0	3.00	31.70	0.85	19.59	2.53	2.15	0.00
13.05	13.06	600	3.00	108.10	50.18	35.22	1.77	88.90	3.33
13.03	13.06	0	3.00	7.70	0.26	11.91	3.28	0.84	0.00
13.06	15.01	0	3.00	120.40	54.35	38.55	1.66	90.42	0.00
End									
Begin									
13.02	14.01	300	3.00	72.50	18.53	25.19	2.19	40.59	1.67
14.01	14.02	800	3.00	98.40	25.16	26.86	2.11	53.11	4.44
14.02	16.01	1,300	3.00	169.30	43.27	36.59	1.73	74.65	7.22
16.01	15.01	0	3.00	193.40	49.39	43.81	1.52	75.18	0.00
15.01	15.01	0	3.00	526.20	198.01	43.81	1.52	301.44	0.00
End	**Routing to South Retention Basin**								
Begin	**Southern Most Channel**								
11.37	11.38	0	3.00	21.10	9.52	15.77	2.87	27.34	0.00
11.34	11.35	0	3.00	19.10	8.70	17.34	2.72	23.65	0.00
11.38	11.35	1,200	3.00	45.00	19.22	18.39	2.63	50.49	6.67
11.35	11.36	800	3.00	86.10	37.05	25.06	2.20	81.41	4.44
11.28	11.29	700	3.00	21.50	8.38	20.74	2.45	20.53	3.89
11.29	11.30	1,000	3.00	44.30	18.30	24.63	2.22	40.60	5.56
11.30	11.36	400	3.00	66.80	28.13	30.19	1.97	55.46	2.22
11.36	14.03	1,600	3.00	175.70	75.37	32.41	1.88	141.47	8.89
11.39	14.03	1,200	3.00	23.20	11.20	19.23	2.56	28.67	6.67
11.41	14.03	1,500	3.00	89.80	29.14	28.54	2.04	59.40	8.33
14.03	16.02	4,800	3.00	325.10	124.97	41.30	1.59	198.22	26.67
16.02	19.02	1,600	3.00	372.70	137.13	67.96	1.10	150.65	8.89
19.01	19.04	200	3.00	10.70	1.79	18.36	2.63	4.69	1.11
19.04	19.02	800	3.00	21.80	3.66	19.47	2.54	9.29	4.44
19.02	17.01	1,500	3.00	406.00	142.74	76.85	0.99	140.99	8.33
17.01	17.03	2,500	3.00	474.30	154.38	85.19	0.90	139.50	13.89
17.03	17.03	0	3.00	493.70	157.70	99.08	0.79	125.04	0.00
End	**Southern Most Channel**								

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
1.01	81.3	0.26	20.74	25.99	2.15	44.6	4.48
2.01	14.7	0.25	3.74	22.66	2.33	8.7	0.81
2.02	55.0	0.26	14.03	23.70	2.27	31.8	3.03
3.01	101.5	0.26	25.93	30.44	1.96	50.8	5.60
3.02	43.6	0.26	11.14	12.47	3.21	35.8	2.41
3.03	82.3	0.26	21.00	25.37	2.18	45.8	4.54
3.04	17.8	0.25	4.51	18.70	2.60	11.7	0.97
3.05	69.3	0.26	17.85	33.48	1.84	32.8	3.86
3.06	43.6	0.26	11.14	15.11	2.94	32.8	2.41
4.01	16.1	0.25	4.08	18.17	2.65	10.8	0.88
5.01	114.5	0.26	29.24	44.33	1.51	44.2	6.32
5.02	72.7	0.25	18.53	28.79	2.03	37.6	4.00
6.01	33.1	0.25	8.42	22.86	2.32	19.5	1.82
7.01	305.1	0.26	77.86	53.21	1.33	103.6	16.82
7.02	123.4	0.26	31.54	51.55	1.36	42.9	6.81
8.01	91.8	0.25	23.38	36.70	1.72	40.2	5.05
8.02	66.4	0.25	16.92	22.26	2.35	39.8	3.65
9.01	333.3	0.26	85.09	60.44	1.22	103.5	18.38
9.02	917.3	0.43	392.46	83.65	0.92	360.2	84.78
10.01	526.4	0.55	290.42	77.54	0.98	284.7	62.74
10.02	492.1	0.53	261.26	74.21	1.02	266.0	56.44
10.03	466.6	0.52	244.15	69.21	1.08	264.0	52.74
10.04	413.6	0.49	203.39	62.54	1.18	240.1	43.94
10.05	9.9	0.85	8.42	14.05	3.04	25.6	1.82
10.06	331.0	0.43	142.92	49.21	1.40	200.7	30.87
10.07	303.4	0.41	123.58	45.88	1.47	182.2	26.70
10.08	231.8	0.38	88.65	41.99	1.57	139.0	19.15
10.09	79.1	0.33	26.18	39.04	1.65	43.2	5.66
10.10	6.6	0.05	0.34	13.13	3.14	1.1	0.07
10.11	165.6	0.58	96.84	37.03	1.71	165.7	20.92
10.12	23.4	0.03	0.60	23.53	2.28	1.4	0.13
10.13	50.0	0.41	20.74	26.08	2.15	44.5	4.48
10.14	10.9	0.04	0.43	12.01	3.27	1.4	0.09
10.15	32.3	0.45	14.54	21.08	2.43	35.3	3.14
10.16	8.6	0.05	0.43	11.00	3.40	1.4	0.09
10.17	9.6	0.85	8.16	17.78	2.68	21.9	1.76

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
10.18	17.2	0.50	8.59	17.19	2.73	23.4	1.85
10.19	7.5	0.05	0.34	15.84	2.86	1.0	0.07
10.20	30.4	0.78	23.70	24.66	2.22	52.6	5.12
10.21	9.4	0.85	7.99	16.74	2.77	22.2	1.73
10.22	35.4	0.67	23.87	25.77	2.16	51.6	5.16
10.23	11.3	0.85	9.61	27.09	2.10	20.2	2.08
10.24	52.8	0.64	33.73	28.54	2.04	68.7	7.29
10.25	17.5	0.45	7.82	22.74	2.32	18.2	1.69
10.26	12.0	0.05	0.60	24.69	2.22	1.3	0.13
10.27	73.9	0.50	37.30	36.88	1.72	64.0	8.06
10.28	39.9	0.43	17.26	30.51	1.96	33.8	3.73
10.29	121.7	0.45	54.72	38.54	1.66	91.1	11.82
10.30	39.3	0.29	11.50	34.28	1.81	20.8	2.48
10.31	3.8	0.09	0.34	12.26	3.24	1.1	0.07
10.32	7.0	0.09	0.60	27.06	2.10	1.3	0.13
10.33	222.3	0.54	120.47	59.89	1.23	147.6	26.02
10.34	6.6	0.00	0.00	10.00	3.55	0.0	0.00
10.35	11.6	0.03	0.34	18.78	2.60	0.9	0.07
10.36	3.5	0.00	0.00	11.01	3.40	0.0	0.00
10.37	7.7	0.00	0.00	12.62	3.20	0.0	0.00
10.38	8.8	0.05	0.43	22.72	2.33	1.0	0.09
10.39	3.5	0.85	2.98	24.96	2.20	6.6	0.64
10.40	4.9	0.85	4.17	14.55	3.00	12.5	0.90
10.41	199.1	0.51	100.75	41.47	1.58	159.3	21.76
11.01	364.6	0.42	154.81	77.11	0.98	152.5	33.44
11.02	283.9	0.43	121.31	66.56	1.12	135.7	26.21
11.03	24.0	0.41	9.79	18.82	2.59	25.4	2.11
11.04	237.7	0.43	101.40	50.03	1.39	140.8	21.90
11.05	102.4	0.63	64.88	35.36	1.77	114.6	14.02
11.06	15.6	0.56	8.70	17.54	2.70	23.5	1.88
11.07	263.7	0.42	110.35	61.56	1.20	132.1	23.84
11.08	18.8	0.40	7.46	14.79	2.97	22.2	1.61
11.09	167.9	0.43	72.10	38.92	1.65	119.2	15.57
11.10	54.1	0.66	35.65	20.08	2.50	89.0	7.70
11.11	13.8	0.54	7.44	17.94	2.67	19.8	1.61
11.12	8.0	0.51	4.05	15.14	2.94	11.9	0.87

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
11.13	235.4	0.42	97.85	54.89	1.30	127.4	21.14
11.14	19.5	0.40	7.83	22.81	2.32	18.2	1.69
11.15	124.7	0.43	54.13	31.70	1.91	103.2	11.69
11.16	8.1	0.59	4.74	16.88	2.76	13.1	1.02
11.17	82.2	0.43	35.72	25.03	2.20	78.5	7.72
11.18	7.2	0.45	3.21	13.55	3.09	9.9	0.69
11.19	25.6	0.47	12.03	19.28	2.56	30.7	2.60
11.20	205.8	0.41	83.96	48.22	1.42	119.6	18.14
11.21	35.9	0.36	13.03	22.75	2.32	30.3	2.81
11.23	34.3	0.50	17.28	22.81	2.32	40.1	3.73
11.24	42.2	0.51	21.46	18.55	2.61	56.1	4.64
11.25	12.9	0.53	6.84	17.72	2.68	18.4	1.48
11.26	15.1	0.41	6.24	14.96	2.96	18.4	1.35
11.27	148.4	0.40	59.65	35.45	1.76	105.2	12.89
11.28	21.5	0.39	8.38	20.74	2.45	20.5	1.81
11.29	44.3	0.41	18.30	24.63	2.22	40.6	3.95
11.30	66.8	0.42	28.13	30.19	1.97	55.5	6.08
11.31	47.5	0.46	22.01	40.32	1.61	35.5	4.75
11.32	31.1	0.40	12.30	19.89	2.51	30.9	2.66
11.33	117.6	0.40	46.61	28.78	2.03	94.5	10.07
11.34	19.1	0.46	8.70	17.34	2.72	23.6	1.88
11.35	86.1	0.43	37.05	25.06	2.20	81.4	8.00
11.36	175.7	0.43	75.37	32.41	1.88	141.5	16.28
11.37	21.1	0.45	9.52	15.77	2.87	27.3	2.06
11.38	45.0	0.43	19.22	18.39	2.63	50.5	4.15
11.39	23.2	0.48	11.20	19.23	2.56	28.7	2.42
11.40	57.2	0.36	20.68	14.89	2.97	61.3	4.47
11.41	89.8	0.32	29.14	28.54	2.04	59.4	6.30
11.42	14.9	0.35	5.19	21.51	2.40	12.4	1.12
11.43	43.9	0.33	14.66	12.67	3.19	46.8	3.17
11.44	31.5	0.42	13.36	22.29	2.35	31.4	2.89
11.45	26.5	0.34	9.05	34.15	1.81	16.4	1.96
11.46	35.8	0.43	15.53	26.18	2.14	33.3	3.35
11.47	833.3	0.40	335.08	91.56	0.85	284.5	72.39
11.48	711.0	0.42	295.42	87.11	0.89	261.8	63.82
11.49	268.1	0.42	113.65	55.59	1.29	146.7	24.55

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
11.50	36.3	0.35	12.60	18.46	2.62	33.0	2.72
11.51	15.1	0.60	9.10	12.53	3.21	29.2	1.96
11.52	22.6	0.43	9.81	20.07	2.50	24.5	2.12
12.01	13.3	0.75	9.98	12.37	3.23	32.2	2.15
12.02	26.7	0.03	0.68	17.88	2.67	1.8	0.15
12.03	17.2	0.02	0.43	17.13	2.74	1.2	0.09
12.04	12.0	0.75	9.00	12.43	3.22	29.0	1.94
13.01	31.7	0.03	0.85	19.59	2.53	2.2	0.18
13.02	72.5	0.26	18.53	25.19	2.19	40.6	4.00
13.03	7.7	0.03	0.26	11.91	3.28	0.8	0.06
13.04	60.2	0.59	35.56	23.00	2.31	82.1	7.68
13.05	108.1	0.46	50.18	35.22	1.77	88.9	10.84
13.06	120.4	0.45	54.35	38.55	1.66	90.4	11.74
14.01	98.4	0.26	25.16	26.86	2.11	53.1	5.44
14.02	169.3	0.26	43.27	36.59	1.73	74.6	9.35
14.03	325.1	0.38	124.97	41.30	1.59	198.2	27.00
15.01	526.2	0.38	198.01	43.81	1.52	301.4	42.78
16.01	193.4	0.26	49.39	43.81	1.52	75.2	10.67
16.02	372.7	0.37	137.13	67.96	1.10	150.6	29.62
17.01	474.3	0.33	154.38	85.19	0.90	139.5	33.35
17.02	56.4	0.17	9.61	22.78	2.32	22.3	2.08
17.03	493.7	0.32	157.70	99.08	0.79	125.0	34.07
18.01	69.4	0.17	11.82	26.67	2.12	25.0	2.55
19.01	10.7	0.17	1.79	18.36	2.63	4.7	0.39
19.02	406.0	0.35	142.74	76.85	0.99	141.0	30.84
19.03	215.6	0.17	36.72	40.90	1.60	58.6	7.93
19.04	21.8	0.17	3.66	19.47	2.54	9.3	0.79
19.05	54.3	0.17	9.27	20.77	2.45	22.7	2.00
19.06	25.3	0.17	4.34	23.22	2.30	10.0	0.94
19.07	33.4	0.17	5.70	18.55	2.61	14.9	1.23
19.08	238.0	0.22	52.12	51.51	1.36	70.9	11.26
19.09	9.9	0.17	1.70	20.65	2.46	4.2	0.37
19.10	14.4	0.17	2.47	16.36	2.81	6.9	0.53
19.11	9.7	0.17	1.62	16.67	2.78	4.5	0.35
19.12	252.6	0.22	54.58	58.73	1.24	67.8	11.79
19.13	94.3	0.22	20.85	42.62	1.55	32.4	4.50

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
19.14	15.4	0.17	2.64	20.16	2.49	6.6	0.57
19.15	53.7	0.69	36.93	33.92	1.82	67.2	7.98
19.16	11.4	0.80	9.14	13.95	3.05	27.9	1.97
19.17	11.4	0.77	8.74	20.46	2.47	21.6	1.89
19.18	3.8	0.85	3.23	15.96	2.85	9.2	0.70
19.20	11.0	0.79	8.65	21.87	2.38	20.6	1.87
19.21	39.3	0.67	26.36	28.92	2.02	53.3	5.69
19.22	448.5	0.34	154.27	67.62	1.10	170.2	33.33
19.23	155.9	0.57	88.21	43.92	1.52	134.1	19.06
19.24	74.2	0.69	51.53	38.36	1.67	86.0	11.13
19.25	75.4	0.46	34.84	40.03	1.62	56.5	7.53
19.26	56.9	0.43	24.38	35.59	1.76	42.9	5.27
19.27	45.1	0.42	18.79	30.59	1.95	36.7	4.06
19.28	28.1	0.43	12.19	25.59	2.17	26.5	2.63
19.29	6.5	0.60	3.90	22.48	2.34	9.1	0.84
19.30	8.6	0.60	5.16	24.46	2.23	11.5	1.11
19.31	48.8	0.43	21.01	32.81	1.86	39.1	4.54
19.32	64.2	0.48	30.58	36.70	1.72	52.7	6.61
19.33	69.6	0.49	33.82	37.81	1.69	57.0	7.31
19.34	55.7	0.49	27.52	32.93	1.86	51.1	5.94
19.35	54.1	0.48	26.16	31.81	1.90	49.7	5.65
19.36	17.3	0.48	8.28	20.15	2.49	20.6	1.79
19.37	374.0	0.46	173.91	64.89	1.14	198.9	37.57
19.38	1.9	0.09	0.17	20.03	2.50	0.4	0.04
19.39	5.6	0.60	3.36	13.72	3.08	10.3	0.73
19.40	13.0	0.63	8.17	20.02	2.50	20.4	1.76
19.41	4.7	0.09	0.43	13.34	3.12	1.3	0.09
19.42	22.7	0.41	9.22	21.81	2.38	21.9	1.99
19.43	34.6	0.45	15.51	26.81	2.11	32.8	3.35
20.01	138.0	0.25	35.12	48.73	1.41	49.7	7.59
20.02	16.7	0.58	9.68	22.13	2.36	22.8	2.09
21.01	10.0	0.65	6.50	18.66	2.61	16.9	1.40
21.02	3.9	0.65	2.54	16.99	2.75	7.0	0.55
21.03	1.9	0.65	1.24	15.33	2.92	3.6	0.27
22.01	22.2	0.45	10.06	33.17	1.85	18.6	2.17
22.02	11.7	0.37	4.36	30.40	1.96	8.5	0.94

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 5 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
23.01	16.1	0.73	11.71	25.20	2.19	25.6	2.53
24.01	13.7	0.75	10.27	23.53	2.28	23.4	2.22
25.01	261.5	0.22	58.14	60.95	1.21	70.2	12.56
25.02	272.8	0.23	62.66	64.28	1.15	72.2	13.54
26.01	5.6	0.40	2.24	15.42	2.91	6.5	0.48
27.01	56.1	0.68	38.37	35.58	1.76	67.5	8.29
28.01	77.2	0.47	35.92	40.59	1.61	57.7	7.76
29.01	447.6	0.42	188.63	69.89	1.07	202.3	40.75
29.02	76.0	0.20	15.20	36.84	1.72	26.1	3.28
30.01	29.8	0.39	11.65	23.35	2.29	26.7	2.52
30.02	3.5	0.17	0.60	16.02	2.84	1.7	0.13
30.03	15.3	0.60	9.18	13.90	3.06	28.1	1.98
30.04	47.2	0.47	22.02	29.04	2.02	44.4	4.76
30.05	27.8	0.36	10.07	23.48	2.28	23.0	2.17
31.01	10.6	0.40	4.26	17.93	2.67	11.4	0.92
31.02	15.4	0.47	7.27	21.70	2.39	17.3	1.57
32.01	1.9	0.85	1.62	15.73	2.88	4.6	0.35
32.02	2.2	0.85	1.87	16.43	2.80	5.2	0.40
32.03	24.8	0.24	5.95	20.60	2.46	14.6	1.29
32.04	278.8	0.50	139.68	60.45	1.22	169.8	30.17
32.05	20.8	0.12	2.55	18.78	2.60	6.6	0.55
32.06	219.1	0.54	117.75	59.89	1.23	144.3	25.44
32.07	15.6	0.85	13.26	50.73	1.38	18.2	2.86
32.08	11.2	0.85	9.52	42.39	1.56	14.8	2.06
32.09	9.6	0.85	8.16	38.78	1.66	13.5	1.76
32.10	6.9	0.85	5.87	33.23	1.84	10.8	1.27
32.11	4.4	0.85	3.74	23.23	2.30	8.6	0.81
32.12	124.0	0.46	56.68	39.10	1.65	93.4	12.24
32.13	43.0	0.31	13.21	25.10	2.20	29.0	2.85
32.14	186.1	0.39	71.92	39.38	1.64	117.9	15.54
32.15	191.8	0.40	76.77	42.16	1.56	120.0	16.58
32.16	2.0	0.85	1.70	14.75	2.98	5.1	0.37
Total Retention Volume Required to Store 100 year, 2 hour Precipitation							319.66

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
1.01	50.5	15.2											35.3	12.9	0.256
2.01	14.7	4.4											10.3	3.7	0.254
2.02	55.0	16.5											38.5	14.0	0.255
3.01	20.2	6.1											14.1	5.2	0.257
3.02	43.6	13.1											30.5	11.1	0.255
3.03	9.5	2.9											6.6	2.5	0.259
3.04	17.8	5.3											12.5	4.5	0.253
3.05	69.3	21.0											48.3	17.9	0.258
3.06	43.6	13.1											30.5	11.1	0.255
4.01	16.1	4.8											11.3	4.1	0.253
5.01	13.0	3.9											9.1	3.3	0.255
5.02	39.6	11.9											27.7	10.1	0.255
6.01	33.1	9.9											23.2	8.4	0.254
7.01	17.2	5.2											12.0	4.4	0.257
7.02	8.9	2.7											6.2	2.3	0.258
8.01	25.4	7.6											17.8	6.5	0.254
8.02	22.8	6.8											16.0	5.8	0.254
9.01	28.2	8.5											19.7	7.2	0.256
9.02	31.1	9.3											21.8	7.9	0.254
10.01	34.3	34.3												29.2	0.850
10.02	9.9	9.9												8.4	0.850
10.03	39.2	39.2												33.3	0.850
10.04	57.0	57.0												48.5	0.850
10.05	9.9	9.9												8.4	0.850
10.06	4.8	4.8												4.1	0.850
10.07	28.0	28.0												23.8	0.850
10.08	22.9	22.9												19.5	0.850
10.09	9.8	9.8												8.3	0.850
10.10	6.6	0.4											6.2	0.3	0.052
10.11	8.3	8.3												7.1	0.850
10.12	23.4	0.7											22.7	0.6	0.025
10.13	6.8	6.8												5.8	0.850
10.14	10.9	0.5											10.4	0.4	0.039
10.15	6.5	6.5												5.5	0.850
10.16	8.6	0.5											8.1	0.4	0.049
10.17	9.6	9.6												8.2	0.850
10.18	9.7	9.7												8.2	0.850
10.19	7.5	0.4											7.1	0.3	0.045
10.20	22.3	22.3												19.0	0.850
10.21	9.4	9.4												8.0	0.850
10.22	5.0	0.2											4.8	0.2	0.034
10.23	11.3	11.3												9.6	0.850

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
10.24	6.1	0.3											5.8	0.3	0.042
10.25	8.7	8.7												7.4	0.850
10.26	12.0	0.7											11.3	0.6	0.050
10.27	17.6	0.7											16.9	0.6	0.034
10.28	10.4	10.4												8.8	0.850
10.29	7.9	0.2											7.7	0.2	0.022
10.30	17.1	1.7											15.4	1.4	0.085
10.31	3.8	0.4											3.4	0.3	0.089
10.32	7.0	0.7											6.3	0.6	0.085
10.33	3.2	3.2												2.7	0.850
10.34	6.6												6.6	0.0	0.000
10.35	11.6	0.4											11.2	0.3	0.029
10.36	3.5												3.5	0.0	0.000
10.37	7.7												7.7	0.0	0.000
10.38	8.8	0.5											8.3	0.4	0.048
10.39	3.5	3.5												3.0	0.850
10.40	4.9	4.9												4.2	0.850
10.41	3.5	3.5												3.0	0.850
11.01	44.9	8.2										36.7		18.0	0.400
11.02	20.2	8.9										11.3		11.0	0.542
11.03	24.0	4.7										19.3		9.8	0.408
11.04	45.8	10.5										35.3		19.5	0.426
11.05	48.3	26.8										21.5		29.2	0.605
11.06	15.6	7.3										8.3		8.7	0.557
11.07	28.3	7.3										21.0		12.5	0.442
11.08	18.8	3.3										15.5		7.5	0.397
11.09	24.4	5.8										18.6		10.5	0.431
11.10	20.0	8.0										12.0		10.4	0.520
11.11	5.8	3.0										2.8		3.4	0.584
11.12	8.0	3.0										5.0		4.1	0.506
11.13	29.6	9.1										20.5		13.9	0.469
11.14	19.5	3.6										15.9		7.8	0.402
11.15	23.0	6.7										16.3		10.6	0.460
11.16	8.1	4.2										3.9		4.7	0.585
11.17	12.0	3.3										8.7		5.4	0.451
11.18	7.2	1.9										5.3		3.2	0.445
11.19	25.6	7.9										17.7		12.0	0.470
11.20	57.4	12.9										44.5		24.3	0.424
11.21	35.9	4.1										31.8		13.0	0.363
11.23	34.3	12.7										21.6		17.3	0.504
11.24	35.0	14.1										20.9		18.3	0.522
11.25	12.9	5.4										7.5		6.8	0.530

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
11.26	15.1	3.1										12.0		6.2	0.413
11.27	15.7	3.8										11.9		6.8	0.433
11.28	21.5	3.5										18.0		8.4	0.390
11.29	22.8	5.6										17.2		9.9	0.435
11.30	22.5	5.6										16.9		9.8	0.437
11.31	32.6	12.8										19.8		16.8	0.516
11.32	31.1	5.4										25.7		12.3	0.395
11.33	29.3	8.8										20.5		13.6	0.465
11.34	19.1	5.4										13.7		8.7	0.455
11.35	22.0	4.6										17.4		9.1	0.415
11.36	22.8	6.1										16.7		10.2	0.447
11.37	21.1	5.8										15.3		9.5	0.451
11.38	23.9	4.6										19.3		9.7	0.406
11.39	23.2	7.7										15.5		11.2	0.483
11.40	13.3	3.7										9.6		6.0	0.453
11.41	89.8	4.0										85.8		29.1	0.324
11.42	14.9	1.3										13.6		5.2	0.348
11.43	43.9	2.7										41.2		14.7	0.334
11.44	8.9	1.6										7.3		3.6	0.399
11.45	26.5	2.0										24.5		9.1	0.342
11.46	4.3	1.6										2.7		2.2	0.505
11.47	122.3	5.4										116.9		39.7	0.324
11.48	42.0	3.2										38.8		14.4	0.342
11.49	30.4	5.7										24.7		12.3	0.403
11.50	36.3	3.1										33.2		12.6	0.347
11.51	15.1	8.3										6.8		9.1	0.602
11.52	22.6	5.5										17.1		9.8	0.434
12.01	13.3			13.3										10.0	0.750
12.02	26.7	0.8											25.9	0.7	0.025
12.03	17.2	0.5											16.7	0.4	0.025
12.04	12.0			12.0										9.0	0.750
13.01	31.7	1.0											30.7	0.9	0.027
13.02	72.5	21.8											50.7	18.5	0.256
13.03	7.7	0.3											7.4	0.3	0.033
13.04	6.0	6.0												5.1	0.850
13.05	16.2	16.2												13.8	0.850
13.06	4.6	4.6												3.9	0.850
14.01	25.9	7.8											18.1	6.6	0.256
14.02	70.9	21.3											49.6	18.1	0.255
14.03	36.4	10.9											25.5	9.3	0.255
15.01	20.6	20.6												17.5	0.850
16.01	24.1	7.2											16.9	6.1	0.254

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
16.02	47.6	14.3											33.3	12.2	0.255
17.01	68.3	13.7											54.6	11.6	0.170
17.02	56.4	11.3											45.1	9.6	0.170
17.03	19.4	3.9											15.5	3.3	0.171
18.01	13.0	2.6											10.4	2.2	0.170
19.01	10.7	2.1											8.6	1.8	0.167
19.02	11.5	2.3											9.2	2.0	0.170
19.03	82.0	16.4											65.6	13.9	0.170
19.04	11.1	2.2											8.9	1.9	0.168
19.05	20.9	4.2											16.7	3.6	0.171
19.06	25.3	5.1											20.2	4.3	0.171
19.07	33.4	6.7											26.7	5.7	0.171
19.08	74.7	14.9											59.8	12.7	0.170
19.09	9.9	2.0											7.9	1.7	0.172
19.10	14.4	2.9											11.5	2.5	0.171
19.11	9.7	1.9											7.8	1.6	0.166
19.12	14.6	2.9											11.7	2.5	0.169
19.13	25.2	5.0											20.2	4.3	0.169
19.14	15.4	3.1											12.3	2.6	0.171
19.15	14.4	3.7				5.0	5.7							10.6	0.734
19.16	11.4	9.2					2.2							9.1	0.802
19.17	7.6	3.8					3.8							5.5	0.725
19.18	3.8	3.8												3.2	0.850
19.20	11.0	8.2					2.8							8.7	0.786
19.21	10.2						3.0		7.2					6.5	0.635
19.22	19.8	4.0											15.8	3.4	0.172
19.23	4.5	0.9											3.6	0.8	0.170
19.24	6.7						6.7							4.0	0.600
19.25	5.8	1.2											4.6	1.0	0.176
19.26	8.1				2.1		2.0			4.0				3.4	0.415
19.27	8.4	1.7											6.7	1.4	0.172
19.28	6.2	1.2											5.0	1.0	0.165
19.29	6.5						6.5							3.9	0.600
19.30	8.6						8.6							5.2	0.600
19.31	3.7						3.7							2.2	0.600
19.32	7.3	7.3												6.2	0.850
19.33	5.4						5.4							3.2	0.600
19.34	1.6	1.6												1.4	0.850
19.35	6.9						6.9							4.1	0.600
19.36	6.7						6.7							4.0	0.600
19.37	39.5	7.9											31.6	6.7	0.170
19.38	1.9	0.2											1.7	0.2	0.089

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
19.39	5.6						5.6							3.4	0.600
19.40	7.4								7.4					4.8	0.650
19.41	4.7	0.5											4.2	0.4	0.090
19.42	5.4	1.1											4.3	0.9	0.173
19.43	6.8					6.8								5.4	0.800
20.01	17.3	3.5											13.8	3.0	0.172
20.02	5.3	1.1											4.2	0.9	0.176
21.01	6.1				6.1									4.0	0.650
21.02	2.0				2.0									1.3	0.650
21.03	1.9				1.9									1.2	0.650
22.01	6.7					6.7								5.4	0.800
22.02	4.7					4.7								3.8	0.800
23.01	2.4						2.4							1.4	0.600
24.01	2.7						2.7							1.6	0.600
25.01	8.9							8.9						3.6	0.400
25.02	5.7							5.7						2.3	0.400
26.01	5.6							5.6						2.2	0.400
27.01	2.4						2.4							1.4	0.600
28.01	1.8						1.8							1.1	0.600
29.01	73.6									73.6				14.7	0.200
29.02	76.0									76.0				15.2	0.200
30.01	14.5	2.9											11.6	2.5	0.170
30.02	3.5	0.7											2.8	0.6	0.170
30.03	15.3						15.3							9.2	0.600
30.04	9.1								9.1					5.9	0.650
30.05	5.1	1.0											4.1	0.9	0.167
31.01	5.9				5.9									3.8	0.650
31.02	3.5	0.7											2.8	0.6	0.170
32.01	1.9	1.9												1.6	0.850
32.02	2.2	2.2												1.9	0.850
32.03	1.8	1.8												1.5	0.850
32.04	1.9	1.9												1.6	0.850
32.05	2.6	2.6												2.2	0.850
32.06	4.4	4.4												3.7	0.850
32.07	4.4	4.4												3.7	0.850
32.08	1.6	1.6												1.4	0.850
32.09	2.7	2.7												2.3	0.850
32.10	2.5	2.5												2.1	0.850
32.11	4.4	4.4												3.7	0.850
32.12	2.3	2.3												2.0	0.850
32.13	3.0	3.0												2.6	0.850
32.14	1.9	1.9												1.6	0.850

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 5 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
32.15	3.7	3.7												3.1	0.850
32.16	2.0	2.0												1.7	0.850

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
1.01	50.5	0.256	1,800	5.00	0.28	14.7	A	-0.00625	0.04	0.0294	2.54	19.45	98.80
2.01	14.7	0.254	1,600	3.00	0.19	9.9	A	-0.00625	0.04	0.0327	2.33	22.66	106.37
2.02	55.0	0.255	1,800	3.00	0.17	8.8	A	-0.00625	0.04	0.0291	2.27	23.70	117.26
3.01	20.2	0.257	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0318	2.42	21.14	101.38
3.02	43.6	0.255	1,500	10.00	0.67	35.2	A	-0.00625	0.04	0.0298	3.21	12.47	67.40
3.03	9.5	0.259	900	5.00	0.56	29.3	A	-0.00625	0.04	0.0339	3.45	10.64	55.21
3.04	17.8	0.253	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0322	2.60	18.70	91.73
3.05	69.3	0.258	3,300	6.00	0.18	9.6	A	-0.00625	0.04	0.0285	1.84	33.48	153.76
3.06	43.6	0.255	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0298	2.94	15.11	79.91
4.01	16.1	0.253	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0325	2.65	18.17	89.58
5.01	13.0	0.255	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0330	2.31	22.99	106.54
5.02	39.6	0.255	3,100	8.00	0.26	13.6	A	-0.00625	0.04	0.0300	2.03	28.79	132.95
6.01	33.1	0.254	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0305	2.32	22.86	110.11
7.01	17.2	0.257	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0323	2.33	22.64	106.29
7.02	8.9	0.258	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0341	2.87	15.78	77.52
8.01	25.4	0.254	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0312	2.08	27.61	126.54
8.02	22.8	0.254	2,100	6.00	0.29	15.1	A	-0.00625	0.04	0.0315	2.35	22.26	106.01
9.01	28.2	0.256	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0309	2.88	15.70	81.12
9.02	31.1	0.254	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0307	3.11	13.38	71.03
10.01	34.3	0.850	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0304	2.41	21.31	30.69
10.02	9.9	0.850	1,000	6.00	0.60	31.7	A	-0.00625	0.04	0.0338	3.40	11.00	16.87
10.03	39.2	0.850	1,800	7.00	0.39	20.5	A	-0.00625	0.04	0.0300	2.72	17.28	26.16
10.04	57.0	0.850	2,500	10.00	0.40	21.1	A	-0.00625	0.04	0.0290	2.46	20.61	30.54
10.05	9.9	0.850	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0338	3.04	14.05	20.91
10.06	4.8	0.850	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0357	3.12	13.33	19.47
10.07	28.0	0.850	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0310	2.64	18.22	27.08
10.08	22.9	0.850	1,600	7.00	0.44	23.1	A	-0.00625	0.04	0.0315	2.87	15.78	23.71
10.09	9.8	0.850	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0338	2.69	17.69	25.14
10.10	6.6	0.052	800	2.20	0.28	14.5	A	-0.00625	0.04	0.0349	3.14	13.13	82.09
10.11	8.3	0.850	1,200	5.50	0.46	24.2	A	-0.00625	0.04	0.0343	3.08	13.70	20.22
10.12	23.4	0.025	1,900	4.00	0.21	11.1	A	-0.00625	0.04	0.0314	2.28	23.53	141.73
10.13	6.8	0.850	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0348	3.30	11.76	17.69
10.14	10.9	0.039	1,100	6.00	0.55	28.8	A	-0.00625	0.04	0.0335	3.27	12.01	77.52
10.15	6.5	0.850	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0349	3.14	13.13	19.47
10.16	8.6	0.049	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0342	3.40	11.00	72.31
10.17	9.6	0.850	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0339	2.68	17.78	25.52
10.18	9.7	0.850	1,200	3.00	0.25	13.2	A	-0.00625	0.04	0.0338	2.73	17.19	24.75
10.19	7.5	0.045	900	1.80	0.20	10.6	A	-0.00625	0.04	0.0345	2.86	15.84	97.39
10.20	22.3	0.850	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0316	2.65	18.07	26.53
10.21	9.4	0.850	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0339	2.77	16.74	24.33
10.22	5.0	0.034	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0356	3.52	10.22	66.69
10.23	11.3	0.850	1,400	1.40	0.10	5.3	A	-0.00625	0.04	0.0334	2.10	27.09	36.28
10.24	6.1	0.042	700	2.60	0.37	19.6	A	-0.00625	0.04	0.0351	3.42	10.87	70.11
10.25	8.7	0.850	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.32	22.74	31.24
10.26	12.0	0.050	1,500	2.10	0.14	7.4	A	-0.00625	0.04	0.0333	2.22	24.69	141.03
10.27	17.6	0.034	1,600	2.00	0.13	6.6	A	-0.00625	0.04	0.0322	2.13	26.35	153.53
10.28	10.4	0.850	1,500	2.20	0.15	7.7	A	-0.00625	0.04	0.0336	2.23	24.42	33.05

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations						
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
10.29	7.9	0.022	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	2.94	15.15	96.15
10.30	17.1	0.085	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0323	2.50	20.04	116.06
10.31	3.8	0.089	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0364	3.24	12.26	73.07
10.32	7.0	0.085	1,200	1.00	0.08	4.4	A	-0.00625	0.04	0.0347	2.10	27.06	144.90
10.33	3.2	0.850	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0368	3.04	14.09	20.20
10.34	6.6	0.000	500	1.60	0.32	16.9	A	-0.00625	0.04	0.0349	3.65	9.36	64.73
10.35	11.6	0.029	1,500	4.20	0.28	14.8	A	-0.00625	0.04	0.0333	2.60	18.78	114.09
10.36	3.5	0.000	600	1.80	0.30	15.8	A	-0.00625	0.04	0.0366	3.40	11.01	72.45
10.37	7.7	0.000	800	2.40	0.30	15.8	A	-0.00625	0.04	0.0345	3.20	12.62	83.66
10.38	8.8	0.048	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.33	22.72	131.40
10.39	3.5	0.850	1,500	2.40	0.16	8.4	A	-0.00625	0.04	0.0366	2.20	24.96	32.10
10.40	4.9	0.850	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0357	3.00	14.55	20.91
10.41	3.5	0.850	1,000	2.20	0.22	11.6	A	-0.00625	0.04	0.0366	2.75	16.96	23.57
11.01	44.9	0.400	2,700	10.00	0.37	19.6	A	-0.00625	0.04	0.0297	2.33	22.66	91.11
11.02	20.2	0.542	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0318	2.65	18.17	59.17
11.03	24.0	0.408	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	2.59	18.82	75.64
11.04	45.8	0.426	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0296	2.44	20.94	82.72
11.05	48.3	0.605	3,600	7.00	0.19	10.3	A	-0.00625	0.04	0.0295	1.77	35.36	92.24
11.06	15.6	0.557	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0325	2.70	17.54	55.49
11.07	28.3	0.442	1,600	8.00	0.50	26.4	A	-0.00625	0.04	0.0309	2.97	14.80	59.70
11.08	18.8	0.397	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0320	2.97	14.79	62.84
11.09	24.4	0.431	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0313	2.89	15.64	63.32
11.10	20.0	0.520	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0319	2.75	17.00	58.32
11.11	5.8	0.584	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	2.67	17.94	52.49
11.12	8.0	0.506	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	2.94	15.14	52.93
11.13	29.6	0.469	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0308	2.48	20.36	75.21
11.14	19.5	0.402	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0319	2.32	22.81	89.99
11.15	23.0	0.460	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0315	2.68	17.81	67.69
11.16	8.1	0.585	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0343	2.76	16.88	50.11
11.17	12.0	0.451	1,300	2.00	0.15	8.1	A	-0.00625	0.04	0.0333	2.39	21.70	78.58
11.18	7.2	0.445	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0346	3.09	13.55	52.92
11.19	25.6	0.470	2,400	12.00	0.50	26.4	A	-0.00625	0.04	0.0312	2.56	19.28	70.02
11.20	57.4	0.424	2,800	9.00	0.32	17.0	A	-0.00625	0.04	0.0290	2.24	24.17	94.05
11.21	35.9	0.363	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0303	2.32	22.75	95.97
11.23	34.3	0.504	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0304	2.32	22.81	77.64
11.24	35.0	0.522	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0303	3.02	14.29	51.67
11.25	12.9	0.530	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0331	2.68	17.72	58.26
11.26	15.1	0.413	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0326	2.96	14.96	61.38
11.27	15.7	0.433	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0325	2.84	16.03	63.10
11.28	21.5	0.390	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0317	2.45	20.74	84.69
11.29	22.8	0.435	1,500	9.00	0.60	31.7	A	-0.00625	0.04	0.0315	3.11	13.45	54.96
11.30	22.5	0.437	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0315	2.85	15.96	64.54
11.31	32.6	0.516	3,200	4.00	0.13	6.6	A	-0.00625	0.04	0.0305	1.61	40.32	118.94
11.32	31.1	0.395	2,500	12.00	0.48	25.3	A	-0.00625	0.04	0.0307	2.51	19.89	80.98
11.33	29.3	0.465	2,600	8.00	0.31	16.2	A	-0.00625	0.04	0.0308	2.23	24.42	86.30
11.34	19.1	0.455	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0320	2.72	17.34	65.90
11.35	22.0	0.415	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0316	2.62	18.48	74.19

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
11.36	22.8	0.447	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0315	2.88	15.70	61.77
11.37	21.1	0.451	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0317	2.87	15.77	61.39
11.38	23.9	0.406	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0314	2.63	18.39	75.18
11.39	23.2	0.483	1,400	3.00	0.21	11.3	A	-0.00625	0.04	0.0315	2.56	19.23	69.49
11.40	13.3	0.453	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0330	3.35	11.37	45.78
11.41	89.8	0.324	4,000	14.00	0.35	18.5	A	-0.00625	0.04	0.0278	2.04	28.54	125.27
11.42	14.9	0.348	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0327	2.40	21.51	90.40
11.43	43.9	0.334	1,400	8.00	0.57	30.2	A	-0.00625	0.04	0.0297	3.19	12.67	62.18
11.44	8.9	0.399	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0341	2.70	17.54	71.39
11.45	26.5	0.342	1,600	1.00	0.06	3.3	A	-0.00625	0.04	0.0311	1.81	34.15	137.61
11.46	4.3	0.505	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0360	3.29	11.85	42.87
11.47	122.3	0.324	3,500	10.00	0.29	15.1	A	-0.00625	0.04	0.0270	2.07	27.82	125.42
11.48	42.0	0.342	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0299	2.58	19.02	86.64
11.49	30.4	0.403	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0307	2.61	18.65	76.75
11.50	36.3	0.347	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0303	2.62	18.46	82.94
11.51	15.1	0.602	1,000	4.00	0.40	21.1	A	-0.00625	0.04	0.0326	3.21	12.53	38.45
11.52	22.6	0.434	1,900	6.00	0.32	16.7	A	-0.00625	0.04	0.0315	2.50	20.07	76.75
12.01	13.3	0.750	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0330	3.23	12.37	26.68
12.02	26.7	0.025	1,800	6.80	0.38	19.9	A	-0.00625	0.04	0.0311	2.67	17.88	113.51
12.03	17.2	0.025	1,200	2.80	0.23	12.3	A	-0.00625	0.04	0.0323	2.74	17.13	108.91
12.04	12.0	0.750	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0333	3.22	12.43	26.68
13.01	31.7	0.027	2,300	10.00	0.43	23.0	A	-0.00625	0.04	0.0306	2.53	19.59	122.29
13.02	72.5	0.256	3,300	12.00	0.36	19.2	A	-0.00625	0.04	0.0284	2.19	25.19	122.33
13.03	7.7	0.033	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0345	3.28	11.91	77.07
13.04	6.0	0.850	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0351	3.26	12.06	18.06
13.05	16.2	0.850	2,200	7.60	0.35	18.2	A	-0.00625	0.04	0.0324	2.39	21.68	30.08
13.06	4.6	0.850	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0359	3.51	10.26	15.64
14.01	25.9	0.256	2,000	4.00	0.20	10.6	A	-0.00625	0.04	0.0312	2.22	24.67	116.18
14.02	70.9	0.255	3,800	7.00	0.18	9.7	A	-0.00625	0.04	0.0284	1.73	36.59	164.71
14.03	36.4	0.255	1,800	10.00	0.56	29.3	A	-0.00625	0.04	0.0302	2.95	15.07	78.54
15.01	20.6	0.850	1,700	5.20	0.31	16.2	A	-0.00625	0.04	0.0318	2.58	19.03	27.54
16.01	24.1	0.254	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	2.59	18.81	92.43
16.02	47.6	0.255	5,200	14.00	0.27	14.2	A	-0.00625	0.04	0.0295	1.63	39.62	169.79
17.01	68.3	0.170	3,000	8.00	0.27	14.1	A	-0.00625	0.04	0.0285	2.11	26.91	142.37
17.02	56.4	0.170	2,400	7.00	0.29	15.4	A	-0.00625	0.04	0.0291	2.32	22.78	123.62
17.03	19.4	0.171	2,400	6.00	0.25	13.2	A	-0.00625	0.04	0.0320	2.16	25.80	130.06
18.01	13.0	0.170	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0330	2.80	16.45	90.52
19.01	10.7	0.167	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0336	2.63	18.36	98.34
19.02	11.5	0.170	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0334	2.57	19.16	100.73
19.03	82.0	0.170	4,000	6.00	0.15	7.9	A	-0.00625	0.04	0.0280	1.60	40.90	199.26
19.04	11.1	0.168	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0335	2.67	17.87	95.26
19.05	20.9	0.171	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0317	3.08	13.68	78.03
19.06	25.3	0.171	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0312	2.30	23.22	120.90
19.07	33.4	0.171	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0305	2.61	18.55	102.38
19.08	74.7	0.170	3,300	10.00	0.30	16.0	A	-0.00625	0.04	0.0283	2.10	27.03	143.24
19.09	9.9	0.172	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0338	2.46	20.65	106.10
19.10	14.4	0.171	1,700	8.00	0.47	24.8	A	-0.00625	0.04	0.0328	2.81	16.36	88.62

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
19.11	9.7	0.166	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0338	2.78	16.67	89.74
19.12	14.6	0.169	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0327	2.66	18.05	98.13
19.13	25.2	0.169	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0312	2.59	18.86	102.58
19.14	15.4	0.171	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0326	2.49	20.16	106.17
19.15	14.4	0.734	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0328	2.30	23.20	47.19
19.16	11.4	0.802	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0334	3.05	13.95	24.95
19.17	7.6	0.725	1,200	2.00	0.17	8.8	A	-0.00625	0.04	0.0345	2.47	20.46	42.49
19.18	3.8	0.850	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0364	2.85	15.96	22.78
19.20	11.0	0.786	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0335	2.38	21.87	38.46
19.21	10.2	0.635	1,700	2.00	0.12	6.2	A	-0.00625	0.04	0.0337	2.02	28.92	70.39
19.22	19.8	0.172	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0319	2.61	18.59	100.54
19.23	4.5	0.170	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0359	3.06	13.87	75.16
19.24	6.7	0.600	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0348	3.12	13.31	40.06
19.25	5.8	0.176	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	2.67	17.94	94.10
19.26	8.1	0.415	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0343	2.35	22.23	83.95
19.27	8.4	0.172	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0342	2.36	22.18	113.80
19.28	6.2	0.165	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0350	2.67	17.88	95.25
19.29	6.5	0.600	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0349	2.34	22.48	61.32
19.30	8.6	0.600	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0342	2.23	24.46	66.38
19.31	3.7	0.600	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0364	3.34	11.45	34.41
19.32	7.3	0.850	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0346	2.35	22.35	30.66
19.33	5.4	0.600	600	2.00	0.33	17.6	A	-0.00625	0.04	0.0354	3.49	10.37	31.79
19.34	1.6	0.850	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0387	3.22	12.40	18.00
19.35	6.9	0.600	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0348	2.21	24.74	66.38
19.36	6.7	0.600	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0348	2.92	15.28	44.58
19.37	39.5	0.170	2,200	8.00	0.36	19.2	A	-0.00625	0.04	0.0300	2.49	20.17	110.00
19.38	1.9	0.089	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0383	2.50	20.03	106.49
19.39	5.6	0.600	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0353	3.08	13.72	40.41
19.40	7.4	0.650	900	1.00	0.11	5.9	A	-0.00625	0.04	0.0346	2.50	20.02	50.55
19.41	4.7	0.090	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0358	3.12	13.34	78.63
19.42	5.4	0.173	800	3.00	0.38	19.8	A	-0.00625	0.04	0.0354	3.29	11.81	65.44
19.43	6.8	0.800	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0348	2.85	16.01	27.62
20.01	17.3	0.172	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0323	2.65	18.10	98.19
20.02	5.3	0.176	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0355	3.26	12.07	66.78
21.01	6.1	0.650	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0351	3.27	11.99	32.54
21.02	2.0	0.650	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0381	3.24	12.28	32.40
21.03	1.9	0.650	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0383	2.92	15.33	39.02
22.01	6.7	0.800	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0348	3.09	13.60	24.25
22.02	4.7	0.800	700	3.00	0.43	22.6	A	-0.00625	0.04	0.0358	3.49	10.43	18.95
23.01	2.4	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0376	3.25	12.18	36.00
24.01	2.7	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0373	3.26	12.11	36.00
25.01	8.9	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0341	2.95	15.05	62.41
25.02	5.7	0.400	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0353	2.58	18.98	73.77
26.01	5.6	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0353	2.91	15.42	62.41
27.01	2.4	0.600	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0376	2.94	15.16	43.36
28.01	1.8	0.600	300	1.00	0.33	17.6	A	-0.00625	0.04	0.0384	4.04	7.24	22.48
29.01	73.6	0.200	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0283	2.16	25.88	134.67

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 5 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
29.02	76.0	0.200	3,100	4.00	0.13	6.8	A	-0.00625	0.04	0.0282	1.72	36.84	178.50
30.01	14.5	0.170	1,600	6.00	0.38	19.8	A	-0.00625	0.04	0.0327	2.73	17.22	92.85
30.02	3.5	0.170	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0366	2.84	16.02	84.72
30.03	15.3	0.600	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0326	3.06	13.90	41.99
30.04	9.1	0.650	1,200	4.00	0.33	17.6	A	-0.00625	0.04	0.0340	2.91	15.39	40.47
30.05	5.1	0.167	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0356	3.10	13.48	74.78
31.01	5.9	0.650	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	2.67	17.93	45.82
31.02	3.5	0.170	600	1.20	0.20	10.6	A	-0.00625	0.04	0.0366	3.17	12.82	70.12
32.01	1.9	0.850	800	1.60	0.20	10.6	A	-0.00625	0.04	0.0383	2.88	15.73	21.76
32.02	2.2	0.850	860	1.70	0.20	10.4	A	-0.00625	0.04	0.0379	2.80	16.43	22.65
32.03	1.8	0.850	730	1.50	0.21	10.8	A	-0.00625	0.04	0.0384	2.98	14.73	20.60
32.04	1.9	0.850	770	1.60	0.21	11.0	A	-0.00625	0.04	0.0383	2.94	15.12	21.08
32.05	2.6	0.850	720	1.80	0.25	13.2	A	-0.00625	0.04	0.0374	3.12	13.35	19.17
32.06	4.4	0.850	1,620	4.10	0.25	13.4	A	-0.00625	0.04	0.0360	2.39	21.60	28.63
32.07	4.4	0.850	1,370	4.10	0.30	15.8	A	-0.00625	0.04	0.0360	2.65	18.16	24.90
32.08	1.6	0.850	630	1.90	0.30	15.9	A	-0.00625	0.04	0.0387	3.30	11.73	16.84
32.09	2.7	0.850	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0373	2.58	18.96	25.52
32.10	2.5	0.850	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0375	2.67	17.91	24.33
32.11	4.4	0.850	1,800	4.50	0.25	13.2	A	-0.00625	0.04	0.0360	2.30	23.23	30.31
32.12	2.3	0.850	930	2.30	0.25	13.1	A	-0.00625	0.04	0.0377	2.87	15.77	21.86
32.13	3.0	0.850	1,730	3.50	0.20	10.7	A	-0.00625	0.04	0.0370	2.20	25.10	31.88
32.14	1.9	0.850	1,120	2.30	0.21	10.8	A	-0.00625	0.04	0.0383	2.55	19.31	25.53
32.15	3.7	0.850	1,440	3.60	0.25	13.2	A	-0.00625	0.04	0.0364	2.48	20.31	27.11
32.16	2.0	0.850	820	2.00	0.24	12.9	A	-0.00625	0.04	0.0381	2.98	14.75	20.62

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	50.5	0.26	12.92	17.78	3.22	41.6
2.01	14.7	0.25	3.74	20.71	2.95	11.0
2.02	55.0	0.26	14.03	21.66	2.88	40.4
3.01	20.2	0.26	5.19	19.33	3.07	15.9
3.02	43.6	0.26	11.14	11.50	3.98	44.3
3.03	9.5	0.26	2.47	10.00	4.22	10.4
3.04	17.8	0.25	4.51	17.10	3.29	14.8
3.05	69.3	0.26	17.85	30.39	2.37	42.3
3.06	43.6	0.26	11.14	13.90	3.67	40.8
4.01	16.1	0.25	4.08	16.62	3.35	13.7
5.01	13.0	0.26	3.32	21.01	2.93	9.7
5.02	39.6	0.26	10.12	26.29	2.58	26.1
6.01	33.1	0.25	8.42	20.89	2.94	24.7
7.01	17.2	0.26	4.42	20.69	2.95	13.1
7.02	8.9	0.26	2.30	14.47	3.60	8.3
8.01	25.4	0.25	6.46	25.21	2.64	17.0
8.02	22.8	0.25	5.78	20.34	2.98	17.2
9.01	28.2	0.26	7.23	14.41	3.61	26.1
9.02	31.1	0.25	7.91	12.33	3.86	30.5
10.01	34.3	0.85	29.16	19.47	3.06	89.1
10.02	9.9	0.85	8.42	10.16	4.19	35.3
10.03	39.2	0.85	33.32	15.81	3.44	114.8
10.04	57.0	0.85	48.45	18.84	3.12	150.9
10.05	9.9	0.85	8.42	12.94	3.78	31.8
10.06	4.8	0.85	4.08	12.28	3.87	15.8
10.07	28.0	0.85	23.80	16.66	3.34	79.5
10.08	22.9	0.85	19.47	14.48	3.60	70.1
10.09	9.8	0.85	8.33	16.17	3.40	28.3
10.10	6.6	0.05	0.34	12.11	3.89	1.3
10.11	8.3	0.85	7.06	12.62	3.82	27.0
10.12	23.4	0.03	0.60	21.50	2.89	1.7
10.13	6.8	0.85	5.78	10.86	4.07	23.6
10.14	10.9	0.04	0.43	11.09	4.04	1.7
10.15	6.5	0.85	5.53	12.11	3.89	21.5
10.16	8.6	0.05	0.43	10.16	4.19	1.8
10.17	9.6	0.85	8.16	16.26	3.39	27.7

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.85	8.25	15.73	3.45	28.5
10.19	7.5	0.05	0.34	14.52	3.60	1.2
10.20	22.3	0.85	18.96	16.52	3.36	63.6
10.21	9.4	0.85	7.99	15.32	3.51	28.0
10.22	5.0	0.03	0.17	10.00	4.22	0.7
10.23	11.3	0.85	9.61	24.74	2.67	25.6
10.24	6.1	0.04	0.26	10.04	4.21	1.1
10.25	8.7	0.85	7.40	20.78	2.95	21.8
10.26	12.0	0.05	0.60	22.56	2.81	1.7
10.27	17.6	0.03	0.60	24.07	2.71	1.6
10.28	10.4	0.85	8.84	22.32	2.83	25.0
10.29	7.9	0.02	0.17	13.93	3.66	0.6
10.30	17.1	0.08	1.45	18.32	3.17	4.6
10.31	3.8	0.09	0.34	11.31	4.00	1.4
10.32	7.0	0.09	0.60	24.72	2.67	1.6
10.33	3.2	0.85	2.72	12.98	3.78	10.3
10.34	6.6	0.00	0.00	10.00	4.22	0.0
10.35	11.6	0.03	0.34	17.17	3.28	1.1
10.36	3.5	0.00	0.00	10.17	4.19	0.0
10.37	7.7	0.00	0.00	11.64	3.96	0.0
10.38	8.8	0.05	0.43	20.77	2.95	1.3
10.39	3.5	0.85	2.98	22.80	2.79	8.3
10.40	4.9	0.85	4.17	13.39	3.72	15.5
10.41	3.5	0.85	2.98	15.51	3.48	10.4
11.01	44.9	0.40	17.98	20.71	2.95	53.1
11.02	20.2	0.54	10.96	16.62	3.35	36.7
11.03	24.0	0.41	9.79	17.21	3.28	32.1
11.04	45.8	0.43	19.52	19.14	3.09	60.3
11.05	48.3	0.61	29.23	32.09	2.28	66.7
11.06	15.6	0.56	8.70	16.04	3.42	29.7
11.07	28.3	0.44	12.51	13.62	3.70	46.2
11.08	18.8	0.40	7.46	13.61	3.70	27.6
11.09	24.4	0.43	10.51	14.35	3.62	38.0
11.10	20.0	0.52	10.40	15.55	3.48	36.1
11.11	5.8	0.58	3.39	16.41	3.37	11.4
11.12	8.0	0.51	4.05	13.92	3.66	14.8

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	29.6	0.47	13.89	18.61	3.14	43.6
11.14	19.5	0.40	7.83	20.84	2.94	23.0
11.15	23.0	0.46	10.59	16.29	3.39	35.8
11.16	8.1	0.59	4.74	15.44	3.49	16.5
11.17	12.0	0.45	5.42	19.83	3.03	16.4
11.18	7.2	0.45	3.21	12.49	3.84	12.3
11.19	25.6	0.47	12.03	17.63	3.24	38.9
11.20	57.4	0.42	24.32	22.08	2.85	69.2
11.21	35.9	0.36	13.03	20.79	2.95	38.4
11.23	34.3	0.50	17.28	20.84	2.94	50.8
11.24	35.0	0.52	18.26	13.16	3.75	68.5
11.25	12.9	0.53	6.84	16.21	3.39	23.2
11.26	15.1	0.41	6.24	13.77	3.68	23.0
11.27	15.7	0.43	6.80	14.69	3.58	24.3
11.28	21.5	0.39	8.38	18.96	3.10	26.0
11.29	22.8	0.44	9.92	12.40	3.85	38.2
11.30	22.5	0.44	9.83	14.62	3.59	35.3
11.31	32.6	0.52	16.82	36.58	2.08	35.1
11.32	31.1	0.40	12.30	18.19	3.18	39.1
11.33	29.3	0.47	13.63	22.31	2.83	38.6
11.34	19.1	0.46	8.70	15.86	3.44	29.9
11.35	22.0	0.42	9.13	16.90	3.32	30.3
11.36	22.8	0.45	10.20	14.40	3.61	36.8
11.37	21.1	0.45	9.52	14.46	3.60	34.3
11.38	23.9	0.41	9.70	16.82	3.32	32.2
11.39	23.2	0.48	11.20	17.58	3.24	36.3
11.40	13.3	0.45	6.03	10.50	4.13	24.9
11.41	89.8	0.32	29.14	26.06	2.59	75.4
11.42	14.9	0.35	5.19	19.66	3.04	15.8
11.43	43.9	0.33	14.66	11.68	3.95	57.9
11.44	8.9	0.40	3.55	16.05	3.41	12.1
11.45	26.5	0.34	9.05	31.00	2.34	21.1
11.46	4.3	0.50	2.17	10.94	4.06	8.8
11.47	122.3	0.32	39.66	25.41	2.63	104.2
11.48	42.0	0.34	14.36	17.39	3.26	46.8
11.49	30.4	0.40	12.26	17.06	3.30	40.4

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	36.3	0.35	12.60	16.88	3.32	41.8
11.51	15.1	0.60	9.10	11.55	3.97	36.1
11.52	22.6	0.43	9.81	18.35	3.16	31.0
12.01	13.3	0.75	9.98	11.41	3.99	39.8
12.02	26.7	0.03	0.68	16.36	3.38	2.3
12.03	17.2	0.02	0.43	15.67	3.46	1.5
12.04	12.0	0.75	9.00	11.47	3.98	35.8
13.01	31.7	0.03	0.85	17.91	3.21	2.7
13.02	72.5	0.26	18.53	23.01	2.78	51.5
13.03	7.7	0.03	0.26	10.99	4.05	1.0
13.04	6.0	0.85	5.10	11.12	4.03	20.6
13.05	16.2	0.85	13.77	19.82	3.03	41.7
13.06	4.6	0.85	3.91	10.00	4.22	16.5
14.01	25.9	0.26	6.63	22.54	2.81	18.6
14.02	70.9	0.26	18.11	33.20	2.23	40.3
14.03	36.4	0.25	9.27	13.86	3.67	34.0
15.01	20.6	0.85	17.51	17.40	3.26	57.1
16.01	24.1	0.25	6.12	17.20	3.28	20.1
16.02	47.6	0.26	12.16	35.94	2.11	25.6
17.01	68.3	0.17	11.65	24.58	2.68	31.2
17.02	56.4	0.17	9.61	20.82	2.94	28.3
17.03	19.4	0.17	3.32	23.57	2.74	9.1
18.01	13.0	0.17	2.21	15.05	3.54	7.8
19.01	10.7	0.17	1.79	16.79	3.33	5.9
19.02	11.5	0.17	1.96	17.52	3.25	6.3
19.03	82.0	0.17	13.94	37.11	2.06	28.8
19.04	11.1	0.17	1.87	16.34	3.38	6.3
19.05	20.9	0.17	3.57	12.60	3.82	13.7
19.06	25.3	0.17	4.34	21.22	2.91	12.6
19.07	33.4	0.17	5.70	16.96	3.31	18.8
19.08	74.7	0.17	12.67	24.69	2.67	33.8
19.09	9.9	0.17	1.70	18.88	3.11	5.3
19.10	14.4	0.17	2.47	14.97	3.55	8.8
19.11	9.7	0.17	1.62	15.25	3.52	5.7
19.12	14.6	0.17	2.47	16.51	3.36	8.3
19.13	25.2	0.17	4.25	17.24	3.28	13.9

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	15.4	0.17	2.64	18.43	3.15	8.3
19.15	14.4	0.73	10.57	21.20	2.91	30.8
19.16	11.4	0.80	9.14	12.85	3.79	34.7
19.17	7.6	0.73	5.51	18.70	3.13	17.2
19.18	3.8	0.85	3.23	14.62	3.59	11.6
19.20	11.0	0.79	8.65	19.99	3.01	26.1
19.21	10.2	0.64	6.48	26.40	2.57	16.6
19.22	19.8	0.17	3.40	17.00	3.30	11.2
19.23	4.5	0.17	0.77	12.77	3.80	2.9
19.24	6.7	0.60	4.02	12.26	3.87	15.5
19.25	5.8	0.18	1.02	16.41	3.37	3.4
19.26	8.1	0.42	3.37	20.31	2.98	10.0
19.27	8.4	0.17	1.45	20.27	2.99	4.3
19.28	6.2	0.16	1.02	16.35	3.38	3.4
19.29	6.5	0.60	3.90	20.55	2.96	11.6
19.30	8.6	0.60	5.16	22.35	2.83	14.6
19.31	3.7	0.60	2.22	10.57	4.12	9.1
19.32	7.3	0.85	6.21	20.42	2.98	18.5
19.33	5.4	0.60	3.24	10.00	4.22	13.7
19.34	1.6	0.85	1.36	11.44	3.99	5.4
19.35	6.9	0.60	4.14	22.61	2.81	11.6
19.36	6.7	0.60	4.02	14.05	3.65	14.7
19.37	39.5	0.17	6.72	18.44	3.15	21.2
19.38	1.9	0.09	0.17	18.31	3.17	0.5
19.39	5.6	0.60	3.36	12.64	3.82	12.8
19.40	7.4	0.65	4.81	18.30	3.17	15.2
19.41	4.7	0.09	0.43	12.29	3.86	1.6
19.42	5.4	0.17	0.94	10.90	4.07	3.8
19.43	6.8	0.80	5.44	14.67	3.58	19.5
20.01	17.3	0.17	2.98	16.55	3.35	10.0
20.02	5.3	0.18	0.94	11.14	4.03	3.8
21.01	6.1	0.65	3.97	11.06	4.04	16.0
21.02	2.0	0.65	1.30	11.32	4.00	5.2
21.03	1.9	0.65	1.24	14.08	3.65	4.5
22.01	6.7	0.80	5.36	12.53	3.83	20.5
22.02	4.7	0.80	3.76	10.00	4.22	15.9

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	2.4	0.60	1.44	11.23	4.02	5.8
24.01	2.7	0.60	1.62	11.17	4.03	6.5
25.01	8.9	0.40	3.56	13.85	3.67	13.1
25.02	5.7	0.40	2.28	17.35	3.27	7.4
26.01	5.6	0.40	2.24	14.17	3.64	8.1
27.01	2.4	0.60	1.44	13.94	3.66	5.3
28.01	1.8	0.60	1.08	10.00	4.22	4.6
29.01	73.6	0.20	14.72	23.64	2.74	40.3
29.02	76.0	0.20	15.20	33.43	2.22	33.7
30.01	14.5	0.17	2.47	15.75	3.45	8.5
30.02	3.5	0.17	0.60	14.68	3.58	2.1
30.03	15.3	0.60	9.18	12.81	3.80	34.9
30.04	9.1	0.65	5.92	14.14	3.64	21.5
30.05	5.1	0.17	0.85	12.43	3.85	3.3
31.01	5.9	0.65	3.84	16.39	3.37	12.9
31.02	3.5	0.17	0.60	11.82	3.93	2.3
32.01	1.9	0.85	1.62	14.43	3.61	5.8
32.02	2.2	0.85	1.87	15.03	3.54	6.6
32.03	1.8	0.85	1.53	13.56	3.71	5.7
32.04	1.9	0.85	1.62	13.90	3.67	5.9
32.05	2.6	0.85	2.21	12.30	3.86	8.5
32.06	4.4	0.85	3.74	19.75	3.03	11.3
32.07	4.4	0.85	3.74	16.60	3.35	12.5
32.08	1.6	0.85	1.36	10.83	4.08	5.5
32.09	2.7	0.85	2.30	17.34	3.27	7.5
32.10	2.5	0.85	2.13	16.38	3.38	7.2
32.11	4.4	0.85	3.74	21.22	2.91	10.9
32.12	2.3	0.85	1.96	14.47	3.60	7.0
32.13	3.0	0.85	2.55	22.93	2.78	7.1
32.14	1.9	0.85	1.62	17.65	3.23	5.2
32.15	3.7	0.85	3.15	18.56	3.14	9.9
32.16	2.0	0.85	1.70	13.57	3.70	6.3

ROUTING
PROPOSED CONDITIONS
Frequency = 10 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
Begin	**Northwest Airfield Area**								
3.04	3.03	1,100	3.00	17.80	4.51	17.10	3.29	14.83	6.11
2.02	3.03	300	3.00	55.00	14.03	21.66	2.88	40.35	1.67
3.03	10.08	950	3.00	82.30	21.00	23.32	2.76	57.91	5.28
3.05	10.09	1,000	3.00	69.30	17.85	30.39	2.37	42.26	5.56
10.09	10.08	300	3.00	79.10	26.18	35.95	2.11	55.22	1.67
11.42	11.31	3,100	3.00	14.90	5.19	19.66	3.04	15.77	17.22
11.31	10.08	300	3.00	47.50	22.01	36.88	2.07	45.60	1.67
10.08	10.07	700	3.00	231.80	88.65	38.55	2.01	178.20	3.89
3.02	10.07	1,000	3.00	43.60	11.14	11.50	3.98	44.27	5.56
10.07	10.06	600	3.00	303.40	123.58	42.44	1.88	232.53	3.33
11.25	10.06	300	3.00	12.90	6.84	16.21	3.39	23.22	1.67
10.05	10.06	300	3.00	9.90	8.42	12.94	3.78	31.81	1.67
10.06	10.04	2,400	3.00	331.00	142.92	45.77	1.79	255.27	13.33
11.19	10.04	300	3.00	25.60	12.03	17.63	3.24	38.91	1.67
10.04	10.03	1,200	3.00	413.60	203.39	59.10	1.50	304.69	6.67
11.12	11.11	500	3.00	8.00	4.05	13.92	3.66	14.84	2.78
11.11	10.03	400	3.00	13.80	7.44	16.70	3.34	24.83	2.22
10.03	10.02	900	3.00	466.60	244.15	65.77	1.37	334.19	5.00
11.06	10.02	350	3.00	15.60	8.70	16.04	3.42	29.70	1.94
10.02	10.01	600	3.00	492.10	261.26	70.77	1.28	335.53	3.33
10.01	9.02	1,100	3.00	526.40	290.42	74.10	1.23	358.33	6.11
End									
Begin									
2.01	1.01	600	3.00	14.70	3.74	20.71	2.95	11.04	3.33
4.01	1.01	700	3.00	16.10	4.08	16.62	3.35	13.65	3.89
1.01	3.01	800	3.00	81.30	20.74	24.04	2.71	56.22	4.44
3.01	5.01	2,500	3.00	101.50	25.93	28.48	2.46	63.79	13.89
5.01	7.02	1,300	3.00	114.50	29.24	42.37	1.88	55.07	7.22
7.02	7.01	300	3.00	123.40	31.54	49.60	1.69	53.30	1.67
3.06	8.02	300	3.00	43.60	11.14	13.90	3.67	40.82	1.67
8.02	8.01	2,600	3.00	66.40	16.92	20.34	2.98	50.44	14.44
8.01	7.01	50	3.00	91.80	23.38	34.79	2.16	50.43	0.28
6.01	5.02	300	3.00	33.10	8.42	20.89	2.94	24.72	1.67
5.02	7.01	1,700	3.00	72.70	18.53	26.29	2.58	47.72	9.44
7.01	9.01	1,300	3.00	305.10	77.86	51.26	1.65	128.64	7.22
9.01	9.02	1,100	3.00	333.30	85.09	58.48	1.51	128.39	6.11
11.45	9.02	0	3.00	26.50	9.05	31.00	2.34	21.14	0.00
9.02	9.02	0	3.00	917.30	392.46	80.21	1.15	451.97	0.00
End	**Northwest Airfield Area**								
Begin	**Runway Areas**								
11.43	11.40	400	3.00	43.90	14.66	11.68	3.95	57.87	2.22

ROUTING
PROPOSED CONDITIONS
Frequency = 10 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
11.40	11.33	2,500	3.00	57.20	20.68	13.91	3.67	75.80	13.89
11.32	11.33	0	3.00	31.10	12.30	18.19	3.18	39.10	0.00
11.26	11.27	0	3.00	15.10	6.24	13.77	3.68	22.95	0.00
11.33	11.27	1,200	3.00	117.60	46.61	27.79	2.50	116.30	6.67
11.27	11.20	2,300	3.00	148.40	59.65	34.46	2.17	129.51	12.78
11.20	11.13	1,200	3.00	205.80	83.96	47.24	1.75	146.74	6.67
11.13	11.07	1,200	3.00	235.40	97.85	53.91	1.60	156.16	6.67
11.07	11.02	900	3.00	263.70	110.35	60.57	1.47	162.26	5.00
11.02	11.01	1,900	3.00	283.90	121.31	65.57	1.37	166.48	10.56
11.52	11.44	400	3.00	22.60	9.81	18.35	3.16	31.01	2.22
11.44	11.46	700	3.00	31.50	13.36	20.57	2.96	39.57	3.89
11.46	11.01	50	3.00	35.80	15.53	24.46	2.68	41.67	0.28
11.01	11.48	1,800	3.00	364.60	154.81	76.13	1.21	186.59	10.00
End									
Begin									
11.23	11.17	400	3.00	34.30	17.28	20.84	2.94	50.80	2.22
11.21	11.17	0	3.00	35.90	13.03	20.79	2.95	38.36	0.00
11.17	11.15	1,200	3.00	82.20	35.72	23.07	2.78	99.13	6.67
11.14	11.15	0	3.00	19.50	7.83	20.84	2.94	23.03	0.00
11.15	11.09	1,300	3.00	124.70	54.13	29.73	2.40	129.97	7.22
11.08	11.09	0	3.00	18.80	7.46	13.61	3.70	27.58	0.00
11.09	11.04	2,000	3.00	167.90	72.10	36.95	2.07	149.20	11.11
11.03	11.04	0	3.00	24.00	9.79	17.21	3.28	32.10	0.00
11.04	11.49	1,000	3.00	237.70	101.40	48.07	1.73	175.11	5.56
11.49	11.48	1,400	3.00	268.10	113.65	53.62	1.60	182.05	7.78
11.50	11.48	600	3.00	36.30	12.60	16.88	3.32	41.78	3.33
11.48	11.47	800	3.00	711.00	295.42	86.13	1.08	319.80	4.44
11.47	11.47	0	3.00	833.30	335.08	90.57	1.04	347.20	0.00
End	**Runway Areas**								
Begin	**South ERT Campus**								
10.32	22.02	600	3.00	7.00	0.60	24.72	2.67	1.59	3.33
22.02	22.01	500	3.00	11.70	4.36	28.05	2.48	10.81	2.78
10.31	22.01	400	3.00	3.80	0.34	11.31	4.00	1.36	2.22
22.01	10.30	200	3.00	22.20	10.06	30.83	2.34	23.57	1.11
10.30	19.13	1,500	3.00	39.30	11.50	31.94	2.29	26.31	8.33
19.14	19.13	500	3.00	15.40	2.64	18.43	3.15	8.31	2.78
19.10	19.13	0	3.00	14.40	2.47	14.97	3.55	8.75	0.00
19.13	20.01	1,100	3.00	94.30	20.85	40.27	1.95	40.67	6.11
19.11	20.01	200	3.00	9.70	1.62	15.25	3.52	5.68	1.11
19.18	19.17	400	3.00	3.80	3.23	14.62	3.59	11.59	2.22
19.17	20.02	300	3.00	11.40	8.74	18.70	3.13	27.34	1.67
20.02	20.01	700	3.00	16.70	9.68	20.37	2.98	28.83	3.89

ROUTING
PROPOSED CONDITIONS
Frequency = 10 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
20.01	19.08	500	3.00	138.00	35.12	46.38	1.77	62.15	2.78
19.06	19.08	900	3.00	25.30	4.34	21.22	2.91	12.62	5.00
19.08	19.12	1,300	3.00	238.00	52.12	49.16	1.70	88.62	7.22
19.12	25.01	400	3.00	252.60	54.58	56.38	1.55	84.46	2.22
25.01	25.02	600	3.00	261.50	58.14	58.61	1.51	87.61	3.33
26.01	25.02	200	3.00	5.60	2.24	14.17	3.64	8.15	1.11
25.02	19.22	600	3.00	272.80	62.66	61.94	1.44	90.37	3.33
End	**South ERT Campus**								
Begin	**North ERT Campus**								
30.03	30.01	1,700	3.00	15.30	9.18	12.81	3.80	34.86	9.44
30.01	32.04	700	3.00	29.80	11.65	22.25	2.83	32.99	3.89
End									
Begin									
30.02	30.04	700	3.00	3.50	0.60	14.68	3.58	2.13	3.89
19.41	31.01	350	3.00	4.70	0.43	12.29	3.86	1.64	1.94
31.01	19.36	400	3.00	10.60	4.26	16.39	3.37	14.37	2.22
19.36	19.42	300	3.00	17.30	8.28	18.62	3.14	25.97	1.67
19.42	30.05	300	3.00	22.70	9.22	20.28	2.99	27.53	1.67
30.05	19.43	600	3.00	27.80	10.07	21.95	2.86	28.74	3.33
19.43	30.04	400	3.00	34.60	15.51	25.28	2.63	40.84	2.22
30.04	19.35	500	3.00	47.20	22.02	27.50	2.51	55.26	2.78
19.35	19.34	200	3.00	54.10	26.16	30.28	2.37	62.08	1.11
19.34	19.37	1,900	3.00	55.70	27.52	31.39	2.32	63.70	10.56
End	**North ERT Campus**								
Begin	**Central ERT Campus**								
21.03	21.02	300	3.00	1.90	1.24	14.08	3.65	4.50	1.67
21.02	21.01	300	3.00	3.90	2.54	15.75	3.45	8.75	1.67
21.01	31.02	300	3.00	10.00	6.50	17.42	3.26	21.18	1.67
19.38	31.02	300	3.00	1.90	0.17	18.31	3.17	0.54	1.67
31.02	19.28	700	3.00	15.40	7.27	19.98	3.01	21.89	3.89
19.29	19.28	0	3.00	6.50	3.90	20.55	2.96	11.56	0.00
19.30	19.27	0	3.00	8.60	5.16	22.35	2.83	14.58	0.00
19.28	19.27	900	3.00	28.10	12.19	23.87	2.72	33.17	5.00
19.27	19.31	400	3.00	45.10	18.79	28.87	2.44	45.88	2.22
19.31	19.26	500	3.00	48.80	21.01	31.09	2.33	48.97	2.78
19.26	19.32	200	3.00	56.90	24.38	33.87	2.20	53.56	1.11
19.32	19.33	200	3.00	64.20	30.58	34.98	2.15	65.72	1.11
19.33	19.25	400	3.00	69.60	33.82	36.09	2.10	71.14	2.22
19.25	28.01	100	3.00	75.40	34.84	38.31	2.02	70.33	0.56
28.01	19.23	600	3.00	77.20	35.92	38.87	2.00	71.80	3.33
End									
Begin									

ROUTING
PROPOSED CONDITIONS
Frequency = 10 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
19.20	24.01	300	3.00	11.00	8.65	19.99	3.01	26.06	1.67
24.01	23.01	300	3.00	13.70	10.27	21.65	2.88	29.55	1.67
23.01	19.21	300	3.00	16.10	11.71	23.32	2.76	32.30	1.67
19.39	19.40	900	3.00	5.60	3.36	12.64	3.82	12.83	5.00
19.40	19.21	300	3.00	13.00	8.17	18.30	3.17	25.88	1.67
19.21	19.15	900	3.00	39.30	26.36	26.40	2.57	67.73	5.00
19.15	27.01	300	3.00	53.70	36.93	31.40	2.31	85.47	1.67
27.01	19.24	500	3.00	56.10	38.37	33.07	2.23	85.70	2.78
19.16	19.24	550	3.00	11.40	9.14	12.85	3.79	34.65	3.06
19.24	19.23	1,000	3.00	74.20	51.53	35.85	2.11	108.88	5.56
19.23	19.22	400	3.00	155.90	88.21	42.20	1.89	166.61	2.22
19.22	19.22	0	3.00	448.50	154.27	65.27	1.38	212.56	0.00
End	**Central ERT Campus**								
Begin	**Routing to North Retention Basin**								
11.51	11.10	1,300	3.00	15.10	9.10	11.55	3.97	36.09	7.22
10.21	11.10	600	3.00	9.40	7.99	15.32	3.51	28.02	3.33
10.17	11.10	300	3.00	9.60	8.16	16.26	3.39	27.65	1.67
11.10	11.05	2,700	3.00	54.10	35.65	18.78	3.12	111.27	15.00
11.05	10.11	300	3.00	102.40	64.88	33.78	2.20	142.83	1.67
10.19	10.18	200	3.00	7.50	0.34	14.52	3.60	1.22	1.11
10.18	10.15	700	3.00	17.20	8.59	15.73	3.45	29.65	3.89
10.16	10.15	0	3.00	8.60	0.43	10.16	4.19	1.78	0.00
10.15	10.13	900	3.00	32.30	14.54	19.62	3.04	44.25	5.00
10.14	10.13	0	3.00	10.90	0.43	11.09	4.04	1.72	0.00
10.13	10.11	1,000	3.00	50.00	20.74	24.62	2.67	55.47	5.56
10.40	10.11	200	3.00	4.90	4.17	13.39	3.72	15.51	1.11
10.11	10.41	800	3.00	165.60	96.84	35.44	2.13	206.24	4.44
10.10	10.41	0	3.00	6.60	0.34	12.11	3.89	1.32	0.00
10.12	10.41	0	3.00	23.40	0.60	21.50	2.89	1.72	0.00
10.41	32.06	600	3.00	199.10	100.75	39.89	1.96	197.82	3.33
End									
Begin									
32.11	32.10	1,800	3.00	4.40	3.74	21.22	2.91	10.89	10.00
32.10	32.09	1,000	3.00	6.90	5.87	31.22	2.32	13.63	5.56
32.09	32.08	650	3.00	9.60	8.16	36.78	2.08	16.94	3.61
32.08	32.07	1,500	3.00	11.20	9.52	40.39	1.95	18.53	8.33
32.07	32.06	1,650	3.00	15.60	13.26	48.72	1.71	22.69	9.17
32.06	10.33	0	3.00	219.10	117.75	57.89	1.52	178.92	0.00
10.33	10.33	0	3.00	222.30	120.47	57.89	1.52	183.06	0.00
End	**Routing to North Retention Basin**								
Begin	**Channel Across Golf Course**								
32.02	32.03	750	3.00	2.20	1.87	15.03	3.54	6.63	4.17

ROUTING
PROPOSED CONDITIONS
Frequency = 10 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.34	32.05	0	3.00	6.60	0.00	10.00	4.22	0.00	0.00
10.35	32.05	0	3.00	11.60	0.34	17.17	3.28	1.12	0.00
32.05	32.03	0	3.00	20.80	2.55	17.17	3.28	8.38	0.00
32.03	32.04	780	3.00	24.80	5.95	19.20	3.08	18.34	4.33
10.33	32.04	100	3.00	222.30	120.47	57.89	1.52	183.06	0.56
32.04	19.37	800	3.00	278.80	139.68	58.45	1.51	210.86	4.44
19.37	29.01	900	3.00	374.00	173.91	62.89	1.42	247.49	5.00
29.01	29.01	0	3.00	447.60	188.63	67.89	1.33	251.16	0.00
End									
End	**Channel Across Golf Course**								
Begin	**Channel at South End of ERT Campus**								
19.07	19.05	400	3.00	33.40	5.70	16.96	3.31	18.84	2.22
19.05	19.03	3,600	3.00	54.30	9.27	19.18	3.08	28.57	20.00
19.09	19.03	400	3.00	9.90	1.70	18.88	3.11	5.29	2.22
17.02	18.01	700	3.00	56.40	9.61	20.82	2.94	28.27	3.89
18.01	19.03	0	3.00	69.40	11.82	24.71	2.67	31.53	0.00
19.03	19.03	0	3.00	215.60	36.72	39.18	1.99	72.99	0.00
End	**Channel at South End of ERT Campus**								
Begin	**Routing to South Retention Basin**								
11.16	10.20	1,400	3.00	8.10	4.74	15.44	3.49	16.55	7.78
10.20	10.22	200	3.00	30.40	23.70	23.22	2.77	65.52	1.11
10.22	10.24	500	3.00	35.40	23.87	24.33	2.69	64.25	2.78
10.23	10.24	50	3.00	11.30	9.61	24.74	2.67	25.61	0.28
10.24	10.27	1,500	3.00	52.80	33.73	27.10	2.53	85.37	8.33
10.39	10.27	0	3.00	3.50	2.98	22.80	2.79	8.31	0.00
10.27	10.29	300	3.00	73.90	37.30	35.44	2.13	79.44	1.67
10.38	10.25	0	3.00	8.80	0.43	20.77	2.95	1.25	0.00
10.25	10.28	1,400	3.00	17.50	7.82	20.78	2.95	23.04	7.78
10.26	10.28	0	3.00	12.00	0.60	22.56	2.81	1.67	0.00
10.28	10.29	500	3.00	39.90	17.26	28.56	2.46	42.39	2.78
10.29	32.12	100	3.00	121.70	54.72	37.10	2.06	112.93	0.56
32.12	32.14	50	3.00	124.00	56.68	37.66	2.04	115.77	0.28
End									
Begin									
12.01	32.13	1,700	3.00	13.30	9.98	11.41	3.99	39.80	9.44
12.02	32.13	0	3.00	26.70	0.68	16.36	3.38	2.30	0.00
32.13	32.14	1,100	3.00	43.00	13.21	22.93	2.78	36.77	6.11
12.03	32.14	0	3.00	17.20	0.43	15.67	3.46	1.47	0.00
32.14	32.15	500	3.00	186.10	71.92	37.94	2.03	146.17	2.78
End									
Begin									
32.16	32.15	800	3.00	2.00	1.70	13.57	3.70	6.30	4.44

ROUTING
PROPOSED CONDITIONS
Frequency = 10 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
32.15	15.01	0	3.00	191.80	76.77	40.72	1.94	148.61	0.00
End									
Begin									
11.18	11.24	900	3.00	7.20	3.21	12.49	3.84	12.30	5.00
11.24	13.04	800	3.00	42.20	21.46	17.49	3.25	69.76	4.44
12.04	13.04	0	3.00	12.00	9.00	11.47	3.98	35.83	0.00
13.04	13.05	2,200	3.00	60.20	35.56	21.93	2.86	101.58	12.22
13.01	13.05	0	3.00	31.70	0.85	17.91	3.21	2.73	0.00
13.05	13.06	600	3.00	108.10	50.18	34.16	2.18	109.63	3.33
13.03	13.06	0	3.00	7.70	0.26	10.99	4.05	1.03	0.00
13.06	15.01	0	3.00	120.40	54.35	37.49	2.05	111.36	0.00
End									
Begin									
13.02	14.01	300	3.00	72.50	18.53	23.01	2.78	51.50	1.67
14.01	14.02	800	3.00	98.40	25.16	24.68	2.67	67.18	4.44
14.02	16.01	1,300	3.00	169.30	43.27	33.20	2.23	96.38	7.22
16.01	15.01	0	3.00	193.40	49.39	40.43	1.95	96.08	0.00
15.01	15.01	0	3.00	526.20	198.01	40.72	1.94	383.33	0.00
End	**Routing to South Retention Basin**								
Begin	**Southern Most Channel**								
11.37	11.38	0	3.00	21.10	9.52	14.46	3.60	34.31	0.00
11.34	11.35	0	3.00	19.10	8.70	15.86	3.44	29.90	0.00
11.38	11.35	1,200	3.00	45.00	19.22	16.82	3.32	63.89	6.67
11.35	11.36	800	3.00	86.10	37.05	23.48	2.75	101.78	4.44
11.28	11.29	700	3.00	21.50	8.38	18.96	3.10	26.00	3.89
11.29	11.30	1,000	3.00	44.30	18.30	22.85	2.79	51.05	5.56
11.30	11.36	400	3.00	66.80	28.13	28.41	2.46	69.31	2.22
11.36	14.03	1,600	3.00	175.70	75.37	30.63	2.35	177.49	8.89
11.39	14.03	1,200	3.00	23.20	11.20	17.58	3.24	36.29	6.67
11.41	14.03	1,500	3.00	89.80	29.14	26.06	2.59	75.44	8.33
14.03	16.02	4,800	3.00	325.10	124.97	39.52	1.98	246.96	26.67
16.02	19.02	1,600	3.00	372.70	137.13	66.18	1.36	186.67	8.89
19.01	19.04	200	3.00	10.70	1.79	16.79	3.33	5.94	1.11
19.04	19.02	800	3.00	21.80	3.66	17.90	3.21	11.73	4.44
19.02	17.01	1,500	3.00	406.00	142.74	75.07	1.22	174.13	8.33
17.01	17.03	2,500	3.00	474.30	154.38	83.41	1.11	171.86	13.89
17.03	17.03	0	3.00	493.70	157.70	97.29	0.97	153.53	0.00
End	**Southern Most Channel**								

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
1.01	81.3	0.26	20.74	24.04	2.71	56.2	4.48
2.01	14.7	0.25	3.74	20.71	2.95	11.0	0.81
2.02	55.0	0.26	14.03	21.66	2.88	40.4	3.03
3.01	101.5	0.26	25.93	28.48	2.46	63.8	5.60
3.02	43.6	0.26	11.14	11.50	3.98	44.3	2.41
3.03	82.3	0.26	21.00	23.32	2.76	57.9	4.54
3.04	17.8	0.25	4.51	17.10	3.29	14.8	0.97
3.05	69.3	0.26	17.85	30.39	2.37	42.3	3.86
3.06	43.6	0.26	11.14	13.90	3.67	40.8	2.41
4.01	16.1	0.25	4.08	16.62	3.35	13.7	0.88
5.01	114.5	0.26	29.24	42.37	1.88	55.1	6.32
5.02	72.7	0.25	18.53	26.29	2.58	47.7	4.00
6.01	33.1	0.25	8.42	20.89	2.94	24.7	1.82
7.01	305.1	0.26	77.86	51.26	1.65	128.6	16.82
7.02	123.4	0.26	31.54	49.60	1.69	53.3	6.81
8.01	91.8	0.25	23.38	34.79	2.16	50.4	5.05
8.02	66.4	0.25	16.92	20.34	2.98	50.4	3.65
9.01	333.3	0.26	85.09	58.48	1.51	128.4	18.38
9.02	917.3	0.43	392.46	80.21	1.15	452.0	84.78
10.01	526.4	0.55	290.42	74.10	1.23	358.3	62.74
10.02	492.1	0.53	261.26	70.77	1.28	335.5	56.44
10.03	466.6	0.52	244.15	65.77	1.37	334.2	52.74
10.04	413.6	0.49	203.39	59.10	1.50	304.7	43.94
10.05	9.9	0.85	8.42	12.94	3.78	31.8	1.82
10.06	331.0	0.43	142.92	45.77	1.79	255.3	30.87
10.07	303.4	0.41	123.58	42.44	1.88	232.5	26.70
10.08	231.8	0.38	88.65	38.55	2.01	178.2	19.15
10.09	79.1	0.33	26.18	35.95	2.11	55.2	5.66
10.10	6.6	0.05	0.34	12.11	3.89	1.3	0.07
10.11	165.6	0.58	96.84	35.44	2.13	206.2	20.92
10.12	23.4	0.03	0.60	21.50	2.89	1.7	0.13
10.13	50.0	0.41	20.74	24.62	2.67	55.5	4.48
10.14	10.9	0.04	0.43	11.09	4.04	1.7	0.09
10.15	32.3	0.45	14.54	19.62	3.04	44.3	3.14
10.16	8.6	0.05	0.43	10.16	4.19	1.8	0.09
10.17	9.6	0.85	8.16	16.26	3.39	27.7	1.76

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
10.18	17.2	0.50	8.59	15.73	3.45	29.7	1.85
10.19	7.5	0.05	0.34	14.52	3.60	1.2	0.07
10.20	30.4	0.78	23.70	23.22	2.77	65.5	5.12
10.21	9.4	0.85	7.99	15.32	3.51	28.0	1.73
10.22	35.4	0.67	23.87	24.33	2.69	64.3	5.16
10.23	11.3	0.85	9.61	24.74	2.67	25.6	2.08
10.24	52.8	0.64	33.73	27.10	2.53	85.4	7.29
10.25	17.5	0.45	7.82	20.78	2.95	23.0	1.69
10.26	12.0	0.05	0.60	22.56	2.81	1.7	0.13
10.27	73.9	0.50	37.30	35.44	2.13	79.4	8.06
10.28	39.9	0.43	17.26	28.56	2.46	42.4	3.73
10.29	121.7	0.45	54.72	37.10	2.06	112.9	11.82
10.30	39.3	0.29	11.50	31.94	2.29	26.3	2.48
10.31	3.8	0.09	0.34	11.31	4.00	1.4	0.07
10.32	7.0	0.09	0.60	24.72	2.67	1.6	0.13
10.33	222.3	0.54	120.47	57.89	1.52	183.1	26.02
10.34	6.6	0.00	0.00	10.00	4.22	0.0	0.00
10.35	11.6	0.03	0.34	17.17	3.28	1.1	0.07
10.36	3.5	0.00	0.00	10.17	4.19	0.0	0.00
10.37	7.7	0.00	0.00	11.64	3.96	0.0	0.00
10.38	8.8	0.05	0.43	20.77	2.95	1.3	0.09
10.39	3.5	0.85	2.98	22.80	2.79	8.3	0.64
10.40	4.9	0.85	4.17	13.39	3.72	15.5	0.90
10.41	199.1	0.51	100.75	39.89	1.96	197.8	21.76
11.01	364.6	0.42	154.81	76.13	1.21	186.6	33.44
11.02	283.9	0.43	121.31	65.57	1.37	166.5	26.21
11.03	24.0	0.41	9.79	17.21	3.28	32.1	2.11
11.04	237.7	0.43	101.40	48.07	1.73	175.1	21.90
11.05	102.4	0.63	64.88	33.78	2.20	142.8	14.02
11.06	15.6	0.56	8.70	16.04	3.42	29.7	1.88
11.07	263.7	0.42	110.35	60.57	1.47	162.3	23.84
11.08	18.8	0.40	7.46	13.61	3.70	27.6	1.61
11.09	167.9	0.43	72.10	36.95	2.07	149.2	15.57
11.10	54.1	0.66	35.65	18.78	3.12	111.3	7.70
11.11	13.8	0.54	7.44	16.70	3.34	24.8	1.61
11.12	8.0	0.51	4.05	13.92	3.66	14.8	0.87

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
11.13	235.4	0.42	97.85	53.91	1.60	156.2	21.14
11.14	19.5	0.40	7.83	20.84	2.94	23.0	1.69
11.15	124.7	0.43	54.13	29.73	2.40	130.0	11.69
11.16	8.1	0.59	4.74	15.44	3.49	16.5	1.02
11.17	82.2	0.43	35.72	23.07	2.78	99.1	7.72
11.18	7.2	0.45	3.21	12.49	3.84	12.3	0.69
11.19	25.6	0.47	12.03	17.63	3.24	38.9	2.60
11.20	205.8	0.41	83.96	47.24	1.75	146.7	18.14
11.21	35.9	0.36	13.03	20.79	2.95	38.4	2.81
11.23	34.3	0.50	17.28	20.84	2.94	50.8	3.73
11.24	42.2	0.51	21.46	17.49	3.25	69.8	4.64
11.25	12.9	0.53	6.84	16.21	3.39	23.2	1.48
11.26	15.1	0.41	6.24	13.77	3.68	23.0	1.35
11.27	148.4	0.40	59.65	34.46	2.17	129.5	12.89
11.28	21.5	0.39	8.38	18.96	3.10	26.0	1.81
11.29	44.3	0.41	18.30	22.85	2.79	51.1	3.95
11.30	66.8	0.42	28.13	28.41	2.46	69.3	6.08
11.31	47.5	0.46	22.01	36.88	2.07	45.6	4.75
11,32	31.1	0.40	12.30	18.19	3.18	39.1	2.66
11.33	117.6	0.40	46.61	27.79	2.50	116.3	10.07
11.34	19.1	0.46	8.70	15.86	3.44	29.9	1.88
11.35	86.1	0.43	37.05	23.48	2.75	101.8	8.00
11.36	175.7	0.43	75.37	30.63	2.35	177.5	16.28
11.37	21.1	0.45	9.52	14.46	3.60	34.3	2.06
11.38	45.0	0.43	19.22	16.82	3.32	63.9	4.15
11.39	23.2	0.48	11.20	17.58	3.24	36.3	2.42
11.40	57.2	0.36	20.68	13.91	3.67	75.8	4.47
11.41	89.8	0.32	29.14	26.06	2.59	75.4	6.30
11.42	14.9	0.35	5.19	19.66	3.04	15.8	1.12
11.43	43.9	0.33	14.66	11.68	3.95	57.9	3.17
11.44	31.5	0.42	13.36	20.57	2.96	39.6	2.89
11.45	26.5	0.34	9.05	31.00	2.34	21.1	1.96
11.46	35.8	0.43	15.53	24.46	2.68	41.7	3.35
11.47	833.3	0.40	335.08	90.57	1.04	347.2	72.39
11.48	711.0	0.42	295.42	86.13	1.08	319.8	63.82
11.49	268.1	0.42	113.65	53.62	1.60	182.0	24.55

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
11.50	36.3	0.35	12.60	16.88	3.32	41.8	2.72
11.51	15.1	0.60	9.10	11.55	3.97	36.1	1.96
11.52	22.6	0.43	9.81	18.35	3.16	31.0	2.12
12.01	13.3	0.75	9.98	11.41	3.99	39.8	2.15
12.02	26.7	0.03	0.68	16.36	3.38	2.3	0.15
12.03	17.2	0.02	0.43	15.67	3.46	1.5	0.09
12.04	12.0	0.75	9.00	11.47	3.98	35.8	1.94
13.01	31.7	0.03	0.85	17.91	3.21	2.7	0.18
13.02	72.5	0.26	18.53	23.01	2.78	51.5	4.00
13.03	7.7	0.03	0.26	10.99	4.05	1.0	0.06
13.04	60.2	0.59	35.56	21.93	2.86	101.6	7.68
13.05	108.1	0.46	50.18	34.16	2.18	109.6	10.84
13.06	120.4	0.45	54.35	37.49	2.05	111.4	11.74
14.01	98.4	0.26	25.16	24.68	2.67	67.2	5.44
14.02	169.3	0.26	43.27	33.20	2.23	96.4	9.35
14.03	325.1	0.38	124.97	39.52	1.98	247.0	27.00
15.01	526.2	0.38	198.01	40.72	1.94	383.3	42.78
16.01	193.4	0.26	49.39	40.43	1.95	96.1	10.67
16.02	372.7	0.37	137.13	66.18	1.36	186.7	29.62
17.01	474.3	0.33	154.38	83.41	1.11	171.9	33.35
17.02	56.4	0.17	9.61	20.82	2.94	28.3	2.08
17.03	493.7	0.32	157.70	97.29	0.97	153.5	34.07
18.01	69.4	0.17	11.82	24.71	2.67	31.5	2.55
19.01	10.7	0.17	1.79	16.79	3.33	5.9	0.39
19.02	406.0	0.35	142.74	75.07	1.22	174.1	30.84
19.03	215.6	0.17	36.72	39.18	1.99	73.0	7.93
19.04	21.8	0.17	3.66	17.90	3.21	11.7	0.79
19.05	54.3	0.17	9.27	19.18	3.08	28.6	2.00
19.06	25.3	0.17	4.34	21.22	2.91	12.6	0.94
19.07	33.4	0.17	5.70	16.96	3.31	18.8	1.23
19.08	238.0	0.22	52.12	49.16	1.70	88.6	11.26
19.09	9.9	0.17	1.70	18.88	3.11	5.3	0.37
19.10	14.4	0.17	2.47	14.97	3.55	8.8	0.53
19.11	9.7	0.17	1.62	15.25	3.52	5.7	0.35
19.12	252.6	0.22	54.58	56.38	1.55	84.5	11.79
19.13	94.3	0.22	20.85	40.27	1.95	40.7	4.50

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
19.14	15.4	0.17	2.64	18.43	3.15	8.3	0.57
19.15	53.7	0.69	36.93	31.40	2.31	85.5	7.98
19.16	11.4	0.80	9.14	12.85	3.79	34.7	1.97
19.17	11.4	0.77	8.74	18.70	3.13	27.3	1.89
19.18	3.8	0.85	3.23	14.62	3.59	11.6	0.70
19.20	11.0	0.79	8.65	19.99	3.01	26.1	1.87
19.21	39.3	0.67	26.36	26.40	2.57	67.7	5.69
19.22	448.5	0.34	154.27	65.27	1.38	212.6	33.33
19.23	155.9	0.57	88.21	42.20	1.89	166.6	19.06
19.24	74.2	0.69	51.53	35.85	2.11	108.9	11.13
19.25	75.4	0.46	34.84	38.31	2.02	70.3	7.53
19.26	56.9	0.43	24.38	33.87	2.20	53.6	5.27
19.27	45.1	0.42	18.79	28.87	2.44	45.9	4.06
19.28	28.1	0.43	12.19	23.87	2.72	33.2	2.63
19.29	6.5	0.60	3.90	20.55	2.96	11.6	0.84
19.30	8.6	0.60	5.16	22.35	2.83	14.6	1.11
19.31	48.8	0.43	21.01	31.09	2.33	49.0	4.54
19.32	64.2	0.48	30.58	34.98	2.15	65.7	6.61
19.33	69.6	0.49	33.82	36.09	2.10	71.1	7.31
19.34	55.7	0.49	27.52	31.39	2.32	63.7	5.94
19.35	54.1	0.48	26.16	30.28	2.37	62.1	5.65
19.36	17.3	0.48	8.28	18.62	3.14	26.0	1.79
19.37	374.0	0.46	173.91	62.89	1.42	247.5	37.57
19.38	1.9	0.09	0.17	18.31	3.17	0.5	0.04
19.39	5.6	0.60	3.36	12.64	3.82	12.8	0.73
19.40	13.0	0.63	8.17	18.30	3.17	25.9	1.76
19.41	4.7	0.09	0.43	12.29	3.86	1.6	0.09
19.42	22.7	0.41	9.22	20.28	2.99	27.5	1.99
19.43	34.6	0.45	15.51	25.28	2.63	40.8	3.35
20.01	138.0	0.25	35.12	46.38	1.77	62.2	7.59
20.02	16.7	0.58	9.68	20.37	2.98	28.8	2.09
21.01	10.0	0.65	6.50	17.42	3.26	21.2	1.40
21.02	3.9	0.65	2.54	15.75	3.45	8.7	0.55
21.03	1.9	0.65	1.24	14.08	3.65	4.5	0.27
22.01	22.2	0.45	10.06	30.83	2.34	23.6	2.17
22.02	11.7	0.37	4.36	28.05	2.48	10.8	0.94

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 10 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
23.01	16.1	0.73	11.71	23.32	2.76	32.3	2.53
24.01	13.7	0.75	10.27	21.65	2.88	29.6	2.22
25.01	261.5	0.22	58.14	58.61	1.51	87.6	12.56
25.02	272.8	0.23	62.66	61.94	1.44	90.4	13.54
26.01	5.6	0.40	2.24	14.17	3.64	8.1	0.48
27.01	56.1	0.68	38.37	33.07	2.23	85.7	8.29
28.01	77.2	0.47	35.92	38.87	2.00	71.8	7.76
29.01	447.6	0.42	188.63	67.89	1.33	251.2	40.75
29.02	76.0	0.20	15.20	33.43	2.22	33.7	3.28
30.01	29.8	0.39	11.65	22.25	2.83	33.0	2.52
30.02	3.5	0.17	0.60	14.68	3.58	2.1	0.13
30.03	15.3	0.60	9.18	12.81	3.80	34.9	1.98
30.04	47.2	0.47	22.02	27.50	2.51	55.3	4.76
30.05	27.8	0.36	10.07	21.95	2.86	28.7	2.17
31.01	10.6	0.40	4.26	16.39	3.37	14.4	0.92
31.02	15.4	0.47	7.27	19.98	3.01	21.9	1.57
32.01	1.9	0.85	1.62	14.43	3.61	5.8	0.35
32.02	2.2	0.85	1.87	15.03	3.54	6.6	0.40
32.03	24.8	0.24	5.95	19.20	3.08	18.3	1.29
32.04	278.8	0.50	139.68	58.45	1.51	210.9	30.17
32.05	20.8	0.12	2.55	17.17	3.28	8.4	0.55
32.06	219.1	0.54	117.75	57.89	1.52	178.9	25.44
32.07	15.6	0.85	13.26	48.72	1.71	22.7	2.86
32.08	11.2	0.85	9.52	40.39	1.95	18.5	2.06
32.09	9.6	0.85	8.16	36.78	2.08	16.9	1.76
32.10	6.9	0.85	5.87	31.22	2.32	13.6	1.27
32.11	4.4	0.85	3.74	21.22	2.91	10.9	0.81
32.12	124.0	0.46	56.68	37.66	2.04	115.8	12.24
32.13	43.0	0.31	13.21	22.93	2.78	36.8	2.85
32.14	186.1	0.39	71.92	37.94	2.03	146.2	15.54
32.15	191.8	0.40	76.77	40.72	1.94	148.6	16.58
32.16	2.0	0.85	1.70	13.57	3.70	6.3	0.37
Total Retention Volume Required to Store 100 year, 2 hour Precipitation							319.66

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
1.01	50.5	15.2											35.3	12.9	0.256
2.01	14.7	4.4											10.3	3.7	0.254
2.02	55.0	16.5											38.5	14.0	0.255
3.01	20.2	6.1											14.1	5.2	0.257
3.02	43.6	13.1											30.5	11.1	0.255
3.03	9.5	2.9											6.6	2.5	0.259
3.04	17.8	5.3											12.5	4.5	0.253
3.05	69.3	21.0											48.3	17.9	0.258
3.06	43.6	13.1											30.5	11.1	0.255
4.01	16.1	4.8											11.3	4.1	0.253
5.01	13.0	3.9											9.1	3.3	0.255
5.02	39.6	11.9											27.7	10.1	0.255
6.01	33.1	9.9											23.2	8.4	0.254
7.01	17.2	5.2											12.0	4.4	0.257
7.02	8.9	2.7											6.2	2.3	0.258
8.01	25.4	7.6											17.8	6.5	0.254
8.02	22.8	6.8											16.0	5.8	0.254
9.01	28.2	8.5											19.7	7.2	0.256
9.02	31.1	9.3											21.8	7.9	0.254
10.01	34.3	34.3												29.2	0.850
10.02	9.9	9.9												8.4	0.850
10.03	39.2	39.2												33.3	0.850
10.04	57.0	57.0												48.5	0.850
10.05	9.9	9.9												8.4	0.850
10.06	4.8	4.8												4.1	0.850
10.07	28.0	28.0												23.8	0.850
10.08	22.9	22.9												19.5	0.850
10.09	9.8	9.8												8.3	0.850
10.10	6.6	0.4											6.2	0.3	0.052
10.11	8.3	8.3												7.1	0.850
10.12	23.4	0.7											22.7	0.6	0.025
10.13	6.8	6.8												5.8	0.850
10.14	10.9	0.5											10.4	0.4	0.039
10.15	6.5	6.5												5.5	0.850
10.16	8.6	0.5											8.1	0.4	0.049
10.17	9.6	9.6												8.2	0.850
10.18	9.7	9.7												8.2	0.850
10.19	7.5	0.4											7.1	0.3	0.045
10.20	22.3	22.3												19.0	0.850
10.21	9.4	9.4												8.0	0.850
10.22	5.0	0.2											4.8	0.2	0.034
10.23	11.3	11.3												9.6	0.850

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
10.24	6.1	0.3											5.8	0.3	0.042
10.25	8.7	8.7												7.4	0.850
10.26	12.0	0.7											11.3	0.6	0.050
10.27	17.6	0.7											16.9	0.6	0.034
10.28	10.4	10.4												8.8	0.850
10.29	7.9	0.2											7.7	0.2	0.022
10.30	17.1	1.7											15.4	1.4	0.085
10.31	3.8	0.4											3.4	0.3	0.089
10.32	7.0	0.7											6.3	0.6	0.085
10.33	3.2	3.2												2.7	0.850
10.34	6.6												6.6	0.0	0.000
10.35	11.6	0.4											11.2	0.3	0.029
10.36	3.5												3.5	0.0	0.000
10.37	7.7												7.7	0.0	0.000
10.38	8.8	0.5											8.3	0.4	0.048
10.39	3.5	3.5												3.0	0.850
10.40	4.9	4.9												4.2	0.850
10.41	3.5	3.5												3.0	0.850
11.01	44.9	8.2										36.7		18.0	0.400
11.02	20.2	8.9										11.3		11.0	0.542
11.03	24.0	4.7										19.3		9.8	0.408
11.04	45.8	10.5										35.3		19.5	0.426
11.05	48.3	26.8										21.5		29.2	0.605
11.06	15.6	7.3										8.3		8.7	0.557
11.07	28.3	7.3										21.0		12.5	0.442
11.08	18.8	3.3										15.5		7.5	0.397
11.09	24.4	5.8										18.6		10.5	0.431
11.10	20.0	8.0										12.0		10.4	0.520
11.11	5.8	3.0										2.8		3.4	0.584
11.12	8.0	3.0										5.0		4.1	0.506
11.13	29.6	9.1										20.5		13.9	0.469
11.14	19.5	3.6										15.9		7.8	0.402
11.15	23.0	6.7										16.3		10.6	0.460
11.16	8.1	4.2										3.9		4.7	0.585
11.17	12.0	3.3										8.7		5.4	0.451
11.18	7.2	1.9										5.3		3.2	0.445
11.19	25.6	7.9										17.7		12.0	0.470
11.20	57.4	12.9										44.5		24.3	0.424
11.21	35.9	4.1										31.8		13.0	0.363
11.23	34.3	12.7										21.6		17.3	0.504
11.24	35.0	14.1										20.9		18.3	0.522
11.25	12.9	5.4										7.5		6.8	0.530

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
11.26	15.1	3.1										12.0		6.2	0.413
11.27	15.7	3.8										11.9		6.8	0.433
11.28	21.5	3.5										18.0		8.4	0.390
11.29	22.8	5.6										17.2		9.9	0.435
11.30	22.5	5.6										16.9		9.8	0.437
11.31	32.6	12.8										19.8		16.8	0.516
11.32	31.1	5.4										25.7		12.3	0.395
11.33	29.3	8.8										20.5		13.6	0.465
11.34	19.1	5.4										13.7		8.7	0.455
11.35	22.0	4.6										17.4		9.1	0.415
11.36	22.8	6.1										16.7		10.2	0.447
11.37	21.1	5.8										15.3		9.5	0.451
11.38	23.9	4.6										19.3		9.7	0.406
11.39	23.2	7.7										15.5		11.2	0.483
11.40	13.3	3.7										9.6		6.0	0.453
11.41	89.8	4.0										85.8		29.1	0.324
11.42	14.9	1.3										13.6		5.2	0.348
11.43	43.9	2.7										41.2		14.7	0.334
11.44	8.9	1.6										7.3		3.6	0.399
11.45	26.5	2.0										24.5		9.1	0.342
11.46	4.3	1.6										2.7		2.2	0.505
11.47	122.3	5.4										116.9		39.7	0.324
11.48	42.0	3.2										38.8		14.4	0.342
11.49	30.4	5.7										24.7		12.3	0.403
11.50	36.3	3.1										33.2		12.6	0.347
11.51	15.1	8.3										6.8		9.1	0.602
11.52	22.6	5.5										17.1		9.8	0.434
12.01	13.3			13.3										10.0	0.750
12.02	26.7	0.8											25.9	0.7	0.025
12.03	17.2	0.5											16.7	0.4	0.025
12.04	12.0			12.0										9.0	0.750
13.01	31.7	1.0											30.7	0.9	0.027
13.02	72.5	21.8											50.7	18.5	0.256
13.03	7.7	0.3											7.4	0.3	0.033
13.04	6.0	6.0												5.1	0.850
13.05	16.2	16.2												13.8	0.850
13.06	4.6	4.6												3.9	0.850
14.01	25.9	7.8											18.1	6.6	0.256
14.02	70.9	21.3											49.6	18.1	0.255
14.03	36.4	10.9											25.5	9.3	0.255
15.01	20.6	20.6												17.5	0.850
16.01	24.1	7.2											16.9	6.1	0.254

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Ad C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
16.02	47.6	14.3											33.3	12.2	0.255
17.01	68.3	13.7											54.6	11.6	0.170
17.02	56.4	11.3											45.1	9.6	0.170
17.03	19.4	3.9											15.5	3.3	0.171
18.01	13.0	2.6											10.4	2.2	0.170
19.01	10.7	2.1											8.6	1.8	0.167
19.02	11.5	2.3											9.2	2.0	0.170
19.03	82.0	16.4											65.6	13.9	0.170
19.04	11.1	2.2											8.9	1.9	0.168
19.05	20.9	4.2											16.7	3.6	0.171
19.06	25.3	5.1											20.2	4.3	0.171
19.07	33.4	6.7											26.7	5.7	0.171
19.08	74.7	14.9											59.8	12.7	0.170
19.09	9.9	2.0											7.9	1.7	0.172
19.10	14.4	2.9											11.5	2.5	0.171
19.11	9.7	1.9											7.8	1.6	0.166
19.12	14.6	2.9											11.7	2.5	0.169
19.13	25.2	5.0											20.2	4.3	0.169
19.14	15.4	3.1											12.3	2.6	0.171
19.15	14.4	3.7				5.0	5.7							10.6	0.734
19.16	11.4	9.2					2.2							9.1	0.802
19.17	7.6	3.8					3.8							5.5	0.725
19.18	3.8	3.8												3.2	0.850
19.20	11.0	8.2					2.8							8.7	0.786
19.21	10.2						3.0		7.2					6.5	0.635
19.22	19.8	4.0											15.8	3.4	0.172
19.23	4.5	0.9											3.6	0.8	0.170
19.24	6.7						6.7							4.0	0.600
19.25	5.8	1.2											4.6	1.0	0.176
19.26	8.1				2.1		2.0			4.0				3.4	0.415
19.27	8.4	1.7											6.7	1.4	0.172
19.28	6.2	1.2											5.0	1.0	0.165
19.29	6.5						6.5							3.9	0.600
19.30	8.6						8.6							5.2	0.600
19.31	3.7						3.7							2.2	0.600
19.32	7.3	7.3												6.2	0.850
19.33	5.4						5.4							3.2	0.600
19.34	1.6	1.6												1.4	0.850
19.35	6.9						6.9							4.1	0.600
19.36	6.7						6.7							4.0	0.600
19.37	39.5	7.9											31.6	6.7	0.170
19.38	1.9	0.2											1.7	0.2	0.089

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
19.39	5.6						5.6							3.4	0.600
19.40	7.4								7.4					4.8	0.650
19.41	4.7	0.5											4.2	0.4	0.090
19.42	5.4	1.1											4.3	0.9	0.173
19.43	6.8					6.8								5.4	0.800
20.01	17.3	3.5											13.8	3.0	0.172
20.02	5.3	1.1											4.2	0.9	0.176
21.01	6.1				6.1									4.0	0.650
21.02	2.0				2.0									1.3	0.650
21.03	1.9				1.9									1.2	0.650
22.01	6.7					6.7								5.4	0.800
22.02	4.7					4.7								3.8	0.800
23.01	2.4						2.4							1.4	0.600
24.01	2.7						2.7							1.6	0.600
25.01	8.9							8.9						3.6	0.400
25.02	5.7							5.7						2.3	0.400
26.01	5.6							5.6						2.2	0.400
27.01	2.4						2.4							1.4	0.600
28.01	1.8						1.8							1.1	0.600
29.01	73.6									73.6				14.7	0.200
29.02	76.0									76.0				15.2	0.200
30.01	14.5	2.9											11.6	2.5	0.170
30.02	3.5	0.7											2.8	0.6	0.170
30.03	15.3						15.3							9.2	0.600
30.04	9.1								9.1					5.9	0.650
30.05	5.1	1.0											4.1	0.9	0.167
31.01	5.9				5.9									3.8	0.650
31.02	3.5	0.7											2.8	0.6	0.170
32.01	1.9	1.9												1.6	0.850
32.02	2.2	2.2												1.9	0.850
32.03	1.8	1.8												1.5	0.850
32.04	1.9	1.9												1.6	0.850
32.05	2.6	2.6												2.2	0.850
32.06	4.4	4.4												3.7	0.850
32.07	4.4	4.4												3.7	0.850
32.08	1.6	1.6												1.4	0.850
32.09	2.7	2.7												2.3	0.850
32.10	2.5	2.5												2.1	0.850
32.11	4.4	4.4												3.7	0.850
32.12	2.3	2.3												2.0	0.850
32.13	3.0	3.0												2.6	0.850
32.14	1.9	1.9												1.6	0.850

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 10 years C Adjustment Factor = 1.00

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
32.15	3.7	3.7												3.1	0.850
32.16	2.0	2.0												1.7	0.850

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
1.01	50.5	0.256	1,800	5.00	0.28	14.7	A	-0.00625	0.04	0.0294	3.22	17.78	98.80
2.01	14.7	0.254	1,600	3.00	0.19	9.9	A	-0.00625	0.04	0.0327	2.95	20.71	106.37
2.02	55.0	0.255	1,800	3.00	0.17	8.8	A	-0.00625	0.04	0.0291	2.88	21.66	117.26
3.01	20.2	0.257	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0318	3.07	19.33	101.38
3.02	43.6	0.255	1,500	10.00	0.67	35.2	A	-0.00625	0.04	0.0298	3.98	11.50	67.40
3.03	9.5	0.259	900	5.00	0.56	29.3	A	-0.00625	0.04	0.0339	4.25	9.84	55.21
3.04	17.8	0.253	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0322	3.29	17.10	91.73
3.05	69.3	0.258	3,300	6.00	0.18	9.6	A	-0.00625	0.04	0.0285	2.37	30.39	153.76
3.06	43.6	0.255	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0298	3.67	13.90	79.91
4.01	16.1	0.253	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0325	3.35	16.62	89.58
5.01	13.0	0.255	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0330	2.93	21.01	106.54
5.02	39.6	0.255	3,100	8.00	0.26	13.6	A	-0.00625	0.04	0.0300	2.58	26.29	132.95
6.01	33.1	0.254	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0305	2.94	20.89	110.11
7.01	17.2	0.257	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0323	2.95	20.69	106.29
7.02	8.9	0.258	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0341	3.60	14.47	77.52
8.01	25.4	0.254	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0312	2.64	25.21	126.54
8.02	22.8	0.254	2,100	6.00	0.29	15.1	A	-0.00625	0.04	0.0315	2.98	20.34	106.01
9.01	28.2	0.256	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0309	3.61	14.41	81.12
9.02	31.1	0.254	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0307	3.86	12.33	71.03
10.01	34.3	0.850	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0304	3.06	19.47	30.69
10.02	9.9	0.850	1,000	6.00	0.60	31.7	A	-0.00625	0.04	0.0338	4.19	10.16	16.87
10.03	39.2	0.850	1,800	7.00	0.39	20.5	A	-0.00625	0.04	0.0300	3.44	15.81	26.16
10.04	57.0	0.850	2,500	10.00	0.40	21.1	A	-0.00625	0.04	0.0290	3.12	18.84	30.54
10.05	9.9	0.850	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0338	3.78	12.94	20.91
10.06	4.8	0.850	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0357	3.87	12.28	19.47
10.07	28.0	0.850	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0310	3.34	16.66	27.08
10.08	22.9	0.850	1,600	7.00	0.44	23.1	A	-0.00625	0.04	0.0315	3.60	14.48	23.71
10.09	9.8	0.850	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0338	3.40	16.17	25.14
10.10	6.6	0.052	800	2.20	0.28	14.5	A	-0.00625	0.04	0.0349	3.89	12.11	82.09
10.11	8.3	0.850	1,200	5.50	0.46	24.2	A	-0.00625	0.04	0.0343	3.82	12.62	20.22
10.12	23.4	0.025	1,900	4.00	0.21	11.1	A	-0.00625	0.04	0.0314	2.89	21.50	141.73
10.13	6.8	0.850	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0348	4.07	10.86	17.69
10.14	10.9	0.039	1,100	6.00	0.55	28.8	A	-0.00625	0.04	0.0335	4.04	11.09	77.52
10.15	6.5	0.850	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0349	3.89	12.11	19.47
10.16	8.6	0.049	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0342	4.19	10.16	72.31
10.17	9.6	0.850	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0339	3.39	16.26	25.52
10.18	9.7	0.850	1,200	3.00	0.25	13.2	A	-0.00625	0.04	0.0338	3.45	15.73	24.75
10.19	7.5	0.045	900	1.80	0.20	10.6	A	-0.00625	0.04	0.0345	3.60	14.52	97.39
10.20	22.3	0.850	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0316	3.36	16.52	26.53
10.21	9.4	0.850	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0339	3.51	15.32	24.33
10.22	5.0	0.034	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0356	4.31	9.46	66.69
10.23	11.3	0.850	1,400	1.40	0.10	5.3	A	-0.00625	0.04	0.0334	2.67	24.74	36.28
10.24	6.1	0.042	700	2.60	0.37	19.6	A	-0.00625	0.04	0.0351	4.21	10.04	70.11
10.25	8.7	0.850	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.95	20.78	31.24
10.26	12.0	0.050	1,500	2.10	0.14	7.4	A	-0.00625	0.04	0.0333	2.81	22.56	141.03
10.27	17.6	0.034	1,600	2.00	0.13	6.6	A	-0.00625	0.04	0.0322	2.71	24.07	153.53
10.28	10.4	0.850	1,500	2.20	0.15	7.7	A	-0.00625	0.04	0.0336	2.83	22.32	33.05

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
10.29	7.9	0.022	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	3.66	13.93	96.15
10.30	17.1	0.085	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0323	3.17	18.32	116.06
10.31	3.8	0.089	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0364	4.00	11.31	73.07
10.32	7.0	0.085	1,200	1.00	0.08	4.4	A	-0.00625	0.04	0.0347	2.67	24.72	144.90
10.33	3.2	0.850	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0368	3.78	12.98	20.20
10.34	6.6	0.000	500	1.60	0.32	16.9	A	-0.00625	0.04	0.0349	4.46	8.67	64.73
10.35	11.6	0.029	1,500	4.20	0.28	14.8	A	-0.00625	0.04	0.0333	3.28	17.17	114.09
10.36	3.5	0.000	600	1.80	0.30	15.8	A	-0.00625	0.04	0.0366	4.19	10.17	72.45
10.37	7.7	0.000	800	2.40	0.30	15.8	A	-0.00625	0.04	0.0345	3.96	11.64	83.66
10.38	8.8	0.048	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	2.95	20.77	131.40
10.39	3.5	0.850	1,500	2.40	0.16	8.4	A	-0.00625	0.04	0.0366	2.79	22.80	32.10
10.40	4.9	0.850	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0357	3.72	13.39	20.91
10.41	3.5	0.850	1,000	2.20	0.22	11.6	A	-0.00625	0.04	0.0366	3.48	15.51	23.57
11.01	44.9	0.400	2,700	10.00	0.37	19.6	A	-0.00625	0.04	0.0297	2.95	20.71	91.11
11.02	20.2	0.542	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0318	3.35	16.62	59.17
11.03	24.0	0.408	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	3.28	17.21	75.64
11.04	45.8	0.426	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0296	3.09	19.14	82.72
11.05	48.3	0.605	3,600	7.00	0.19	10.3	A	-0.00625	0.04	0.0295	2.28	32.09	92.24
11.06	15.6	0.557	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0325	3.42	16.04	55.49
11.07	28.3	0.442	1,600	8.00	0.50	26.4	A	-0.00625	0.04	0.0309	3.70	13.62	59.70
11.08	18.8	0.397	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0320	3.70	13.61	62.84
11.09	24.4	0.431	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0313	3.62	14.35	63.32
11.10	20.0	0.520	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0319	3.48	15.55	58.32
11.11	5.8	0.584	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	3.37	16.41	52.49
11.12	8.0	0.506	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	3.66	13.92	52.93
11.13	29.6	0.469	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0308	3.14	18.61	75.21
11.14	19.5	0.402	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0319	2.94	20.84	89.99
11.15	23.0	0.460	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0315	3.39	16.29	67.69
11.16	8.1	0.585	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0343	3.49	15.44	50.11
11.17	12.0	0.451	1,300	2.00	0.15	8.1	A	-0.00625	0.04	0.0333	3.03	19.83	78.58
11.18	7.2	0.445	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0346	3.84	12.49	52.92
11.19	25.6	0.470	2,400	12.00	0.50	26.4	A	-0.00625	0.04	0.0312	3.24	17.63	70.02
11.20	57.4	0.424	2,800	9.00	0.32	17.0	A	-0.00625	0.04	0.0290	2.85	22.08	94.05
11.21	35.9	0.363	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0303	2.95	20.79	95.97
11.23	34.3	0.504	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0304	2.94	20.84	77.64
11.24	35.0	0.522	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0303	3.75	13.16	51.67
11.25	12.9	0.530	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0331	3.39	16.21	58.26
11.26	15.1	0.413	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0326	3.68	13.77	61.38
11.27	15.7	0.433	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0325	3.58	14.69	63.10
11.28	21.5	0.390	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0317	3.10	18.96	84.69
11.29	22.8	0.435	1,500	9.00	0.60	31.7	A	-0.00625	0.04	0.0315	3.85	12.40	54.96
11.30	22.5	0.437	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0315	3.59	14.62	64.54
11.31	32.6	0.516	3,200	4.00	0.13	6.6	A	-0.00625	0.04	0.0305	2.08	36.58	118.94
11.32	31.1	0.395	2,500	12.00	0.48	25.3	A	-0.00625	0.04	0.0307	3.18	18.19	80.98
11.33	29.3	0.465	2,600	8.00	0.31	16.2	A	-0.00625	0.04	0.0308	2.83	22.31	86.30
11.34	19.1	0.455	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0320	3.44	15.86	65.90
11.35	22.0	0.415	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0316	3.32	16.90	74.19

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
11.36	22.8	0.447	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0315	3.61	14.40	61.77
11.37	21.1	0.451	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0317	3.60	14.46	61.39
11.38	23.9	0.406	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0314	3.32	16.82	75.18
11.39	23.2	0.483	1,400	3.00	0.21	11.3	A	-0.00625	0.04	0.0315	3.24	17.58	69.49
11.40	13.3	0.453	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0330	4.13	10.50	45.78
11.41	89.8	0.324	4,000	14.00	0.35	18.5	A	-0.00625	0.04	0.0278	2.59	26.06	125.27
11.42	14.9	0.348	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0327	3.04	19.66	90.40
11.43	43.9	0.334	1,400	8.00	0.57	30.2	A	-0.00625	0.04	0.0297	3.95	11.68	62.18
11.44	8.9	0.399	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0341	3.41	16.05	71.39
11.45	26.5	0.342	1,600	1.00	0.06	3.3	A	-0.00625	0.04	0.0311	2.34	31.00	137.61
11.46	4.3	0.505	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0360	4.06	10.94	42.87
11.47	122.3	0.324	3,500	10.00	0.29	15.1	A	-0.00625	0.04	0.0270	2.63	25.41	125.42
11.48	42.0	0.342	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0299	3.26	17.39	86.64
11.49	30.4	0.403	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0307	3.30	17.06	76.75
11.50	36.3	0.347	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0303	3.32	16.88	82.94
11.51	15.1	0.602	1,000	4.00	0.40	21.1	A	-0.00625	0.04	0.0326	3.97	11.55	38.45
11.52	22.6	0.434	1,900	6.00	0.32	16.7	A	-0.00625	0.04	0.0315	3.16	18.35	76.75
12.01	13.3	0.750	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0330	3.99	11.41	26.68
12.02	26.7	0.025	1,800	6.80	0.38	19.9	A	-0.00625	0.04	0.0311	3.38	16.36	113.51
12.03	17.2	0.025	1,200	2.80	0.23	12.3	A	-0.00625	0.04	0.0323	3.46	15.67	108.91
12.04	12.0	0.750	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0333	3.98	11.47	26.68
13.01	31.7	0.027	2,300	10.00	0.43	23.0	A	-0.00625	0.04	0.0306	3.21	17.91	122.29
13.02	72.5	0.256	3,300	12.00	0.36	19.2	A	-0.00625	0.04	0.0284	2.78	23.01	122.33
13.03	7.7	0.033	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0345	4.05	10.99	77.07
13.04	6.0	0.850	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0351	4.03	11.12	18.06
13.05	16.2	0.850	2,200	7.60	0.35	18.2	A	-0.00625	0.04	0.0324	3.03	19.82	30.08
13.06	4.6	0.850	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0359	4.31	9.50	15.64
14.01	25.9	0.256	2,000	4.00	0.20	10.6	A	-0.00625	0.04	0.0312	2.81	22.54	116.18
14.02	70.9	0.255	3,800	7.00	0.18	9.7	A	-0.00625	0.04	0.0284	2.23	33.20	164.71
14.03	36.4	0.255	1,800	10.00	0.56	29.3	A	-0.00625	0.04	0.0302	3.67	13.86	78.54
15.01	20.6	0.850	1,700	5.20	0.31	16.2	A	-0.00625	0.04	0.0318	3.26	17.40	27.54
16.01	24.1	0.254	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	3.28	17.20	92.43
16.02	47.6	0.255	5,200	14.00	0.27	14.2	A	-0.00625	0.04	0.0295	2.11	35.94	169.79
17.01	68.3	0.170	3,000	8.00	0.27	14.1	A	-0.00625	0.04	0.0285	2.68	24.58	142.37
17.02	56.4	0.170	2,400	7.00	0.29	15.4	A	-0.00625	0.04	0.0291	2.94	20.82	123.62
17.03	19.4	0.171	2,400	6.00	0.25	13.2	A	-0.00625	0.04	0.0320	2.74	23.57	130.06
18.01	13.0	0.170	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0330	3.54	15.05	90.52
19.01	10.7	0.167	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0336	3.33	16.79	98.34
19.02	11.5	0.170	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0334	3.25	17.52	100.73
19.03	82.0	0.170	4,000	6.00	0.15	7.9	A	-0.00625	0.04	0.0280	2.06	37.11	199.26
19.04	11.1	0.168	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0335	3.38	16.34	95.26
19.05	20.9	0.171	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0317	3.82	12.60	78.03
19.06	25.3	0.171	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0312	2.91	21.22	120.90
19.07	33.4	0.171	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0305	3.31	16.96	102.38
19.08	74.7	0.170	3,300	10.00	0.30	16.0	A	-0.00625	0.04	0.0283	2.67	24.69	143.24
19.09	9.9	0.172	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0338	3.11	18.88	106.10
19.10	14.4	0.171	1,700	8.00	0.47	24.8	A	-0.00625	0.04	0.0328	3.55	14.97	88.62

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
							Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
19.11	9.7	0.166	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0338	3.52	15.25	89.74
19.12	14.6	0.169	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0327	3.36	16.51	98.13
19.13	25.2	0.169	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0312	3.28	17.24	102.58
19.14	15.4	0.171	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0326	3.15	18.43	106.17
19.15	14.4	0.734	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0328	2.91	21.20	47.19
19.16	11.4	0.802	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0334	3.79	12.85	24.95
19.17	7.6	0.725	1,200	2.00	0.17	8.8	A	-0.00625	0.04	0.0345	3.13	18.70	42.49
19.18	3.8	0.850	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0364	3.59	14.62	22.78
19.20	11.0	0.786	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0335	3.01	19.99	38.46
19.21	10.2	0.635	1,700	2.00	0.12	6.2	A	-0.00625	0.04	0.0337	2.57	26.40	70.39
19.22	19.8	0.172	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0319	3.30	17.00	100.54
19.23	4.5	0.170	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0359	3.80	12.77	75.16
19.24	6.7	0.600	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0348	3.87	12.26	40.06
19.25	5.8	0.176	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	3.37	16.41	94.10
19.26	8.1	0.415	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0343	2.98	20.31	83.95
19.27	8.4	0.172	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0342	2.99	20.27	113.80
19.28	6.2	0.165	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0350	3.38	16.35	95.25
19.29	6.5	0.600	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0349	2.96	20.55	61.32
19.30	8.6	0.600	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0342	2.83	22.35	66.38
19.31	3.7	0.600	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0364	4.12	10.57	34.41
19.32	7.3	0.850	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0346	2.98	20.42	30.66
19.33	5.4	0.600	600	2.00	0.33	17.6	A	-0.00625	0.04	0.0354	4.29	9.59	31.79
19.34	1.6	0.850	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0387	3.99	11.44	18.00
19.35	6.9	0.600	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0348	2.81	22.61	66.38
19.36	6.7	0.600	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0348	3.65	14.05	44.58
19.37	39.5	0.170	2,200	8.00	0.36	19.2	A	-0.00625	0.04	0.0300	3.15	18.44	110.00
19.38	1.9	0.089	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0383	3.17	18.31	106.49
19.39	5.6	0.600	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0353	3.82	12.64	40.41
19.40	7.4	0.650	900	1.00	0.11	5.9	A	-0.00625	0.04	0.0346	3.17	18.30	50.55
19.41	4.7	0.090	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0358	3.86	12.29	78.63
19.42	5.4	0.173	800	3.00	0.38	19.8	A	-0.00625	0.04	0.0354	4.07	10.90	65.44
19.43	6.8	0.800	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0348	3.58	14.67	27.62
20.01	17.3	0.172	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0323	3.35	16.55	98.19
20.02	5.3	0.176	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0355	4.03	11.14	66.78
21.01	6.1	0.650	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0351	4.04	11.06	32.54
21.02	2.0	0.650	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0381	4.00	11.32	32.40
21.03	1.9	0.650	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0383	3.65	14.08	39.02
22.01	6.7	0.800	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0348	3.83	12.53	24.25
22.02	4.7	0.800	700	3.00	0.43	22.6	A	-0.00625	0.04	0.0358	4.28	9.65	18.95
23.01	2.4	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0376	4.02	11.23	36.00
24.01	2.7	0.600	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0373	4.03	11.17	36.00
25.01	8.9	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0341	3.67	13.85	62.41
25.02	5.7	0.400	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0353	3.27	17.35	73.77
26.01	5.6	0.400	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0353	3.64	14.17	62.41
27.01	2.4	0.600	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0376	3.66	13.94	43.36
28.01	1.8	0.600	300	1.00	0.33	17.6	A	-0.00625	0.04	0.0384	4.93	6.71	22.48
29.01	73.6	0.200	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0283	2.74	23.64	134.67

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 10 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
29.02	76.0	0.200	3,100	4.00	0.13	6.8	A	-0.00625	0.04	0.0282	2.22	33.43	178.50
30.01	14.5	0.170	1,600	6.00	0.38	19.8	A	-0.00625	0.04	0.0327	3.45	15.75	92.85
30.02	3.5	0.170	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0366	3.58	14.68	84.72
30.03	15.3	0.600	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0326	3.80	12.81	41.99
30.04	9.1	0.650	1,200	4.00	0.33	17.6	A	-0.00625	0.04	0.0340	3.64	14.14	40.47
30.05	5.1	0.167	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0356	3.85	12.43	74.78
31.01	5.9	0.650	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	3.37	16.39	45.82
31.02	3.5	0.170	600	1.20	0.20	10.6	A	-0.00625	0.04	0.0366	3.93	11.82	70.12
32.01	1.9	0.850	800	1.60	0.20	10.6	A	-0.00625	0.04	0.0383	3.61	14.43	21.76
32.02	2.2	0.850	860	1.70	0.20	10.4	A	-0.00625	0.04	0.0379	3.54	15.03	22.65
32.03	1.8	0.850	730	1.50	0.21	10.8	A	-0.00625	0.04	0.0384	3.71	13.56	20.60
32.04	1.9	0.850	770	1.60	0.21	11.0	A	-0.00625	0.04	0.0383	3.67	13.90	21.08
32.05	2.6	0.850	720	1.80	0.25	13.2	A	-0.00625	0.04	0.0374	3.86	12.30	19.17
32.06	4.4	0.850	1,620	4.10	0.25	13.4	A	-0.00625	0.04	0.0360	3.03	19.75	28.63
32.07	4.4	0.850	1,370	4.10	0.30	15.8	A	-0.00625	0.04	0.0360	3.35	16.60	24.90
32.08	1.6	0.850	630	1.90	0.30	15.9	A	-0.00625	0.04	0.0387	4.08	10.83	16.84
32.09	2.7	0.850	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0373	3.27	17.34	25.52
32.10	2.5	0.850	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0375	3.38	16.38	24.33
32.11	4.4	0.850	1,800	4.50	0.25	13.2	A	-0.00625	0.04	0.0360	2.91	21.22	30.31
32.12	2.3	0.850	930	2.30	0.25	13.1	A	-0.00625	0.04	0.0377	3.60	14.47	21.86
32.13	3.0	0.850	1,730	3.50	0.20	10.7	A	-0.00625	0.04	0.0370	2.78	22.93	31.88
32.14	1.9	0.850	1,120	2.30	0.21	10.8	A	-0.00625	0.04	0.0383	3.23	17.65	25.53
32.15	3.7	0.850	1,440	3.60	0.25	13.2	A	-0.00625	0.04	0.0364	3.14	18.56	27.11
32.16	2.0	0.850	820	2.00	0.24	12.9	A	-0.00625	0.04	0.0381	3.70	13.57	20.62

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
1.01	50.5	0.29	14.44	14.29	5.73	82.7
2.01	14.7	0.28	4.18	16.56	5.32	22.2
2.02	55.0	0.29	15.68	17.31	5.19	81.3
3.01	20.2	0.29	5.80	15.46	5.53	32.0
3.02	43.6	0.29	12.45	10.00	6.57	81.8
3.03	9.5	0.29	2.76	10.00	6.57	18.1
3.04	17.8	0.28	5.04	13.78	5.81	29.2
3.05	69.3	0.29	19.95	24.24	4.29	85.7
3.06	43.6	0.29	12.45	11.34	6.26	77.9
4.01	16.1	0.28	4.56	13.43	5.87	26.7
5.01	13.0	0.29	3.71	16.80	5.27	19.5
5.02	39.6	0.29	11.31	21.00	4.65	52.6
6.01	33.1	0.28	9.41	16.70	5.29	49.8
7.01	17.2	0.29	4.94	16.54	5.32	26.3
7.02	8.9	0.29	2.57	11.80	6.17	15.8
8.01	25.4	0.28	7.22	20.14	4.76	34.4
8.02	22.8	0.28	6.46	16.27	5.37	34.7
9.01	28.2	0.29	8.08	11.75	6.18	49.9
9.02	31.1	0.28	8.84	10.08	6.55	57.9
10.01	34.3	0.95	32.59	15.58	5.50	179.3
10.02	9.9	0.95	9.41	10.00	6.57	61.8
10.03	39.2	0.95	37.24	12.82	5.97	222.4
10.04	57.0	0.95	54.15	15.07	5.60	303.5
10.05	9.9	0.95	9.41	10.58	6.43	60.5
10.06	4.8	0.95	4.56	10.04	6.56	29.9
10.07	28.0	0.95	26.60	13.46	5.86	155.9
10.08	22.9	0.95	21.76	11.80	6.17	134.1
10.09	9.8	0.95	9.31	13.10	5.92	55.1
10.10	6.6	0.06	0.38	10.00	6.57	2.5
10.11	8.3	0.95	7.89	10.32	6.49	51.2
10.12	23.4	0.03	0.67	17.19	5.21	3.5
10.13	6.8	0.95	6.46	10.00	6.57	42.5
10.14	10.9	0.04	0.48	10.00	6.57	3.1
10.15	6.5	0.95	6.18	10.00	6.57	40.6
10.16	8.6	0.06	0.48	10.00	6.57	3.1
10.17	9.6	0.95	9.12	13.16	5.91	53.9

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
10.18	9.7	0.95	9.22	12.76	5.98	55.1
10.19	7.5	0.05	0.38	11.84	6.16	2.3
10.20	22.3	0.95	21.19	13.36	5.88	124.5
10.21	9.4	0.95	8.93	12.46	6.04	53.9
10.22	5.0	0.04	0.19	10.00	6.57	1.2
10.23	11.3	0.95	10.74	19.76	4.82	51.7
10.24	6.1	0.05	0.29	10.00	6.57	1.9
10.25	8.7	0.95	8.27	16.61	5.31	43.9
10.26	12.0	0.06	0.67	18.03	5.07	3.4
10.27	17.6	0.04	0.67	19.23	4.89	3.3
10.28	10.4	0.95	9.88	17.84	5.10	50.4
10.29	7.9	0.02	0.19	11.37	6.26	1.2
10.30	17.1	0.09	1.62	14.69	5.67	9.2
10.31	3.8	0.10	0.38	10.00	6.57	2.5
10.32	7.0	0.10	0.67	19.75	4.82	3.2
10.33	3.2	0.95	3.04	10.60	6.43	19.5
10.34	6.6	0.00	0.00	10.00	6.57	0.0
10.35	11.6	0.03	0.38	13.84	5.80	2.2
10.36	3.5	0.00	0.00	10.00	6.57	0.0
10.37	7.7	0.00	0.00	10.00	6.57	0.0
10.38	8.8	0.05	0.48	16.60	5.31	2.5
10.39	3.5	0.95	3.33	18.22	5.04	16.8
10.40	4.9	0.95	4.66	10.94	6.35	29.6
10.41	3.5	0.95	3.33	12.61	6.01	20.0
11.01	44.9	0.48	21.55	16.56	5.32	114.6
11.02	20.2	0.63	12.69	13.43	5.87	74.5
11.03	24.0	0.49	11.70	13.86	5.79	67.8
11.04	45.8	0.51	23.21	15.31	5.56	129.0
11.05	48.3	0.69	33.52	25.51	4.17	139.9
11.06	15.6	0.64	10.05	13.00	5.94	59.7
11.07	28.3	0.52	14.81	11.12	6.31	93.4
11.08	18.8	0.48	8.95	11.11	6.31	56.5
11.09	24.4	0.51	12.49	11.70	6.19	77.2
11.10	20.0	0.61	12.10	12.64	6.01	72.7
11.11	5.8	0.67	3.90	13.27	5.89	23.0
11.12	8.0	0.59	4.73	11.36	6.26	29.6

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.13	29.6	0.55	16.33	14.90	5.63	92.0
11.14	19.5	0.48	9.38	16.67	5.30	49.7
11.15	23.0	0.54	12.48	13.18	5.91	73.7
11.16	8.1	0.67	5.45	12.55	6.02	32.8
11.17	12.0	0.53	6.40	15.86	5.45	34.8
11.18	7.2	0.53	3.79	10.21	6.52	24.7
11.19	25.6	0.55	14.14	14.18	5.74	81.2
11.20	57.4	0.50	28.94	17.65	5.13	148.5
11.21	35.9	0.44	15.82	16.62	5.31	83.9
11.23	34.3	0.59	20.17	16.67	5.30	106.8
11.24	35.0	0.61	21.23	10.75	6.39	135.7
11.25	12.9	0.62	7.94	13.12	5.92	47.0
11.26	15.1	0.49	7.45	11.24	6.28	46.8
11.27	15.7	0.51	8.07	11.97	6.13	49.5
11.28	21.5	0.47	10.08	15.17	5.59	56.3
11.29	22.8	0.52	11.77	10.14	6.54	77.0
11.30	22.5	0.52	11.66	11.92	6.14	71.6
11.31	32.6	0.60	19.59	28.84	3.90	76.3
11.32	31.1	0.47	14.77	14.58	5.68	83.9
11.33	29.3	0.55	16.05	17.84	5.10	81.8
11.34	19.1	0.54	10.27	12.86	5.96	61.2
11.35	22.0	0.50	10.90	13.63	5.83	63.5
11.36	22.8	0.53	12.06	11.74	6.18	74.5
11.37	21.1	0.53	11.25	11.79	6.17	69.4
11.38	23.9	0.49	11.61	13.58	5.84	67.8
11.39	23.2	0.57	13.13	14.14	5.75	75.5
11.40	13.3	0.53	7.12	10.00	6.57	46.8
11.41	89.8	0.40	35.98	20.81	4.68	168.3
11.42	14.9	0.43	6.34	15.72	5.47	34.7
11.43	43.9	0.41	18.02	10.00	6.57	118.4
11.44	8.9	0.48	4.26	13.00	5.94	25.3
11.45	26.5	0.42	11.09	24.69	4.25	47.1
11.46	4.3	0.59	2.53	10.00	6.57	16.6
11.47	122.3	0.40	48.97	20.30	4.74	232.3
11.48	42.0	0.42	17.59	14.00	5.77	101.5
11.49	30.4	0.48	14.68	13.75	5.81	85.3

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
11.50	36.3	0.42	15.40	13.62	5.83	89.8
11.51	15.1	0.69	10.44	10.00	6.57	68.6
11.52	22.6	0.51	11.64	14.71	5.66	65.9
12.01	13.3	0.94	12.47	10.00	6.57	82.0
12.02	26.7	0.03	0.76	13.23	5.90	4.5
12.03	17.2	0.03	0.48	12.72	5.99	2.8
12.04	12.0	0.94	11.25	10.00	6.57	73.9
13.01	31.7	0.03	0.95	14.38	5.71	5.4
13.02	72.5	0.29	20.71	18.39	5.01	103.8
13.03	7.7	0.04	0.29	10.00	6.57	1.9
13.04	6.0	0.95	5.70	10.00	6.57	37.5
13.05	16.2	0.95	15.39	15.85	5.45	83.9
13.06	4.6	0.95	4.37	10.00	6.57	28.7
14.01	25.9	0.29	7.41	18.02	5.07	37.6
14.02	70.9	0.29	20.24	26.33	4.10	82.9
14.03	36.4	0.28	10.36	11.31	6.27	64.9
15.01	20.6	0.95	19.57	14.01	5.77	112.9
16.01	24.1	0.28	6.84	13.86	5.79	39.6
16.02	47.6	0.29	13.59	28.37	3.93	53.4
17.01	68.3	0.19	13.02	19.64	4.83	62.9
17.02	56.4	0.19	10.74	16.65	5.30	56.9
17.03	19.4	0.19	3.71	18.83	4.95	18.3
18.01	13.0	0.19	2.47	12.26	6.08	15.0
19.01	10.7	0.19	2.00	13.55	5.84	11.7
19.02	11.5	0.19	2.19	14.09	5.76	12.6
19.03	82.0	0.19	15.58	29.23	3.87	60.2
19.04	11.1	0.19	2.09	13.22	5.90	12.3
19.05	20.9	0.19	3.99	10.30	6.50	25.9
19.06	25.3	0.19	4.85	16.96	5.25	25.4
19.07	33.4	0.19	6.37	13.68	5.82	37.1
19.08	74.7	0.19	14.16	19.72	4.82	68.2
19.09	9.9	0.19	1.90	15.10	5.60	10.6
19.10	14.4	0.19	2.76	12.20	6.09	16.8
19.11	9.7	0.19	1.81	12.41	6.05	10.9
19.12	14.6	0.19	2.76	13.34	5.88	16.2
19.13	25.2	0.19	4.75	13.89	5.79	27.5

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
19.14	15.4	0.19	2.95	14.76	5.65	16.7
19.15	14.4	0.87	12.54	16.95	5.25	65.8
19.16	11.4	0.91	10.39	10.50	6.45	67.0
19.17	7.6	0.85	6.46	14.97	5.63	36.3
19.18	3.8	0.95	3.61	11.92	6.14	22.2
19.20	11.0	0.90	9.89	15.98	5.42	53.6
19.21	10.2	0.79	8.10	21.09	4.64	37.6
19.22	19.8	0.19	3.80	13.71	5.82	22.1
19.23	4.5	0.19	0.86	10.44	6.46	5.5
19.24	6.7	0.75	5.03	10.03	6.57	33.0
19.25	5.8	0.20	1.14	13.27	5.89	6.7
19.26	8.1	0.52	4.21	16.24	5.37	22.6
19.27	8.4	0.19	1.62	16.21	5.38	8.7
19.28	6.2	0.18	1.14	13.23	5.90	6.7
19.29	6.5	0.75	4.88	16.43	5.34	26.0
19.30	8.6	0.75	6.45	17.86	5.10	32.9
19.31	3.7	0.75	2.78	10.00	6.57	18.2
19.32	7.3	0.95	6.94	16.33	5.36	37.2
19.33	5.4	0.75	4.05	10.00	6.57	26.6
19.34	1.6	0.95	1.52	10.00	6.57	10.0
19.35	6.9	0.75	5.18	18.07	5.06	26.2
19.36	6.7	0.75	5.03	11.46	6.24	31.3
19.37	39.5	0.19	7.51	14.77	5.65	42.4
19.38	1.9	0.10	0.19	14.68	5.67	1.1
19.39	5.6	0.75	4.20	10.33	6.49	27.3
19.40	7.4	0.81	6.01	14.67	5.67	34.1
19.41	4.7	0.10	0.48	10.05	6.56	3.1
19.42	5.4	0.19	1.05	10.00	6.57	6.9
19.43	6.8	0.95	6.46	11.96	6.13	39.6
20.01	17.3	0.19	3.33	13.38	5.87	19.5
20.02	5.3	0.20	1.05	10.00	6.57	6.9
21.01	6.1	0.81	4.96	10.00	6.57	32.6
21.02	2.0	0.81	1.63	10.00	6.57	10.7
21.03	1.9	0.81	1.54	11.49	6.23	9.6
22.01	6.7	0.95	6.37	10.25	6.51	41.4
22.02	4.7	0.95	4.47	10.00	6.57	29.3

SUBAREA RUNOFF
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Area (acres)	Weighted C Factor	CA	Tc (min)	I (in/hr)	Q (cfs)
23.01	2.4	0.75	1.80	10.00	6.57	11.8
24.01	2.7	0.75	2.03	10.00	6.57	13.3
25.01	8.9	0.50	4.45	11.30	6.27	27.9
25.02	5.7	0.50	2.85	13.97	5.78	16.5
26.01	5.6	0.50	2.80	11.56	6.22	17.4
27.01	2.4	0.75	1.80	11.37	6.25	11.3
28.01	1.8	0.75	1.35	10.00	6.57	8.9
29.01	73.6	0.25	18.40	18.89	4.94	90.9
29.02	76.0	0.25	19.00	26.51	4.08	77.6
30.01	14.5	0.19	2.76	12.78	5.98	16.5
30.02	3.5	0.19	0.67	11.97	6.13	4.1
30.03	15.3	0.75	11.48	10.47	6.46	74.1
30.04	9.1	0.81	7.39	11.53	6.22	46.0
30.05	5.1	0.19	0.95	10.16	6.53	6.2
31.01	5.9	0.81	4.79	13.26	5.89	28.3
31.02	3.5	0.19	0.67	10.00	6.57	4.4
32.01	1.9	0.95	1.81	11.76	6.17	11.1
32.02	2.2	0.95	2.09	12.25	6.08	12.7
32.03	1.8	0.95	1.71	11.07	6.32	10.8
32.04	1.9	0.95	1.81	11.35	6.26	11.3
32.05	2.6	0.95	2.47	10.06	6.56	16.2
32.06	4.4	0.95	4.18	15.79	5.46	22.8
32.07	4.4	0.95	4.18	13.42	5.87	24.5
32.08	1.6	0.95	1.52	10.00	6.57	10.0
32.09	2.7	0.95	2.57	13.96	5.78	14.8
32.10	2.5	0.95	2.38	13.25	5.90	14.0
32.11	4.4	0.95	4.18	16.97	5.24	21.9
32.12	2.3	0.95	2.19	11.80	6.17	13.5
32.13	3.0	0.95	2.85	18.33	5.02	14.3
32.14	1.9	0.95	1.81	14.19	5.74	10.4
32.15	3.7	0.95	3.52	14.86	5.64	19.8
32.16	2.0	0.95	1.90	11.08	6.32	12.0

ROUTING
PROPOSED CONDITIONS
Frequency = 100 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
Begin	**Northwest Airfield Area**								
3.04	3.03	1,100	3.00	17.80	5.04	13.78	5.81	29.24	6.11
2.02	3.03	300	3.00	55.00	15.68	17.31	5.19	81.30	1.67
3.03	10.08	950	3.00	82.30	23.47	19.90	4.80	112.56	5.28
3.05	10.09	1,000	3.00	69.30	19.95	24.24	4.29	85.68	5.56
10.09	10.08	300	3.00	79.10	29.26	29.79	3.83	111.93	1.67
11.42	11.31	3,100	3.00	14.90	6.34	15.72	5.47	34.68	17.22
11.31	10.08	300	3.00	47.50	25.92	32.95	3.58	92.69	1.67
10.08	10.07	700	3.00	231.80	100.40	34.61	3.46	347.21	3.89
3.02	10.07	1,000	3.00	43.60	12.45	10.00	6.57	81.80	5.56
10.07	10.06	600	3.00	303.40	139.45	38.50	3.22	448.65	3.33
11.25	10.06	300	3.00	12.90	7.94	13.12	5.92	47.00	1.67
10.05	10.06	300	3.00	9.90	9.41	10.58	6.43	60.50	1.67
10.06	10.04	2,400	3.00	331.00	161.35	41.83	3.04	490.71	13.33
11.19	10.04	300	3.00	25.60	14.14	14.18	5.74	81.24	1.67
10.04	10.03	1,200	3.00	413.60	229.65	55.17	2.52	578.94	6.67
11.12	11.11	500	3.00	8.00	4.73	11.36	6.26	29.56	2.78
11.11	10.03	400	3.00	13.80	8.63	14.14	5.75	49.59	2.22
10.03	10.02	900	3.00	466.60	275.51	61.83	2.32	639.02	5.00
11.06	10.02	350	3.00	15.60	10.05	13.00	5.94	59.68	1.94
10.02	10.01	600	3.00	492.10	294.96	66.83	2.17	639.01	3.33
10.01	9.02	1,100	3.00	526.40	327.55	70.17	2.08	679.93	6.11
End									
Begin									
2.01	1.01	600	3.00	14.70	4.18	16.56	5.32	22.23	3.33
4.01	1.01	700	3.00	16.10	4.56	13.43	5.87	26.75	3.89
1.01	3.01	800	3.00	81.30	23.18	19.89	4.80	111.22	4.44
3.01	5.01	2,500	3.00	101.50	28.98	24.33	4.28	124.15	13.89
5.01	7.02	1,300	3.00	114.50	32.68	38.22	3.23	105.66	7.22
7.02	7.01	300	3.00	123.40	35.25	45.45	2.88	101.34	1.67
3.06	8.02	300	3.00	43.60	12.45	11.34	6.26	77.92	1.67
8.02	8.01	2,600	3.00	66.40	18.91	16.27	5.37	101.53	14.44
8.01	7.01	50	3.00	91.80	26.13	30.71	3.75	97.98	0.28
6.01	5.02	300	3.00	33.10	9.41	16.70	5.29	49.77	1.67
5.02	7.01	1,700	3.00	72.70	20.71	21.00	4.65	96.39	9.44
7.01	9.01	1,300	3.00	305.10	87.02	47.11	2.81	244.16	7.22
9.01	9.02	1,100	3.00	333.30	95.10	54.33	2.55	242.22	6.11
11.45	9.02	0	3.00	26.50	11.09	24.69	4.25	47.12	0.00
9.02	9.02	0	3.00	917.30	442.57	76.28	1.93	853.77	0.00
End	**Northwest Airfield Area**								
Begin	**Runway Areas**								
11.43	11.40	400	3.00	43.90	18.02	10.00	6.57	118.41	2.22

ROUTING
PROPOSED CONDITIONS
Frequency = 100 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
11.40	11.33	2,500	3.00	57.20	25.13	12.22	6.08	152.86	13.89
11.32	11.33	0	3.00	31.10	14.77	14.58	5.68	83.90	0.00
11.26	11.27	0	3.00	15.10	7.45	11.24	6.28	46.78	0.00
11.33	11.27	1,200	3.00	117.60	55.95	26.11	4.12	230.43	6.67
11.27	11.20	2,300	3.00	148.40	71.46	32.78	3.59	256.43	12.78
11.20	11.13	1,200	3.00	205.80	100.41	45.56	2.87	288.21	6.67
11.13	11.07	1,200	3.00	235.40	116.74	52.22	2.62	305.45	6.67
11.07	11.02	900	3.00	263.70	131.55	58.89	2.41	317.28	5.00
11.02	11.01	1,900	3.00	283.90	144.24	63.89	2.25	325.09	10.56
11.52	11.44	400	3.00	22.60	11.64	14.71	5.66	65.91	2.22
11.44	11.46	700	3.00	31.50	15.90	16.93	5.25	83.48	3.89
11.46	11.01	50	3.00	35.80	18.43	20.82	4.68	86.18	0.28
11.01	11.48	1,800	3.00	364.60	184.22	74.44	1.97	363.06	10.00
End									
Begin									
11.23	11.17	400	3.00	34.30	20.17	16.67	5.30	106.84	2.22
11.21	11.17	0	3.00	35.90	15.82	16.62	5.31	83.94	0.00
11.17	11.15	1,200	3.00	82.20	42.38	18.89	4.94	209.33	6.67
11.14	11.15	0	3.00	19.50	9.38	16.67	5.30	49.71	0.00
11.15	11.09	1,300	3.00	124.70	64.24	25.55	4.17	267.82	7.22
11.08	11.09	0	3.00	18.80	8.95	11.11	6.31	56.47	0.00
11.09	11.04	2,000	3.00	167.90	85.68	32.78	3.59	307.44	11.11
11.03	11.04	0	3.00	24.00	11.70	13.86	5.79	67.80	0.00
11.04	11.49	1,000	3.00	237.70	120.59	43.89	2.94	355.02	5.56
11.49	11.48	1,400	3.00	268.10	135.27	49.44	2.72	367.31	7.78
11.50	11.48	600	3.00	36.30	15.40	13.62	5.83	89.81	3.33
11.48	11.47	800	3.00	711.00	352.47	84.44	1.76	621.91	4.44
11.47	11.47	0	3.00	833.30	401.44	88.89	1.69	677.13	0.00
End	**Runway Areas**								
Begin	**South ERT Campus**								
10.32	22.02	600	3.00	7.00	0.67	19.75	4.82	3.20	3.33
22.02	22.01	500	3.00	11.70	5.13	23.08	4.41	22.64	2.78
10.31	22.01	400	3.00	3.80	0.38	10.00	6.57	2.50	2.22
22.01	10.30	200	3.00	22.20	11.88	25.86	4.14	49.18	1.11
10.30	19.13	1,500	3.00	39.30	13.49	26.97	4.04	54.57	8.33
19.14	19.13	500	3.00	15.40	2.95	14.76	5.65	16.65	2.78
19.10	19.13	0	3.00	14.40	2.76	12.20	6.09	16.77	0.00
19.13	20.01	1,100	3.00	94.30	23.94	35.30	3.41	81.69	6.11
19.11	20.01	200	3.00	9.70	1.81	12.41	6.05	10.92	1.11
19.18	19.17	400	3.00	3.80	3.61	11.92	6.14	22.17	2.22
19.17	20.02	300	3.00	11.40	10.07	14.97	5.63	56.65	1.67
20.02	20.01	700	3.00	16.70	11.12	16.63	5.30	58.95	3.89

ROUTING
PROPOSED CONDITIONS
Frequency = 100 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
20.01	19.08	500	3.00	138.00	40.19	41.41	3.06	123.05	2.78
19.06	19.08	900	3.00	25.30	4.85	16.96	5.25	25.42	5.00
19.08	19.12	1,300	3.00	238.00	59.19	44.19	2.93	173.43	7.22
19.12	25.01	400	3.00	252.60	61.94	51.41	2.64	163.80	2.22
25.01	25.02	600	3.00	261.50	66.39	53.63	2.57	170.60	3.33
26.01	25.02	200	3.00	5.60	2.80	11.56	6.22	17.40	1.11
25.02	19.22	600	3.00	272.80	72.04	56.97	2.47	177.70	3.33
End	**South ERT Campus**								
Begin	**North ERT Campus**								
30.03	30.01	1,700	3.00	15.30	11.48	10.47	6.46	74.11	9.44
30.01	32.04	700	3.00	29.80	14.23	19.91	4.80	68.23	3.89
End									
Begin									
30.02	30.04	700	3.00	3.50	0.67	11.97	6.13	4.08	3.89
19.41	31.01	350	3.00	4.70	0.48	10.05	6.56	3.12	1.94
31.01	19.36	400	3.00	10.60	5.27	13.26	5.89	31.06	2.22
19.36	19.42	300	3.00	17.30	10.29	15.48	5.52	56.84	1.67
19.42	30.05	300	3.00	22.70	11.34	17.15	5.21	59.12	1.67
30.05	19.43	600	3.00	27.80	12.29	18.82	4.95	60.82	3.33
19.43	30.04	400	3.00	34.60	18.75	22.15	4.52	84.69	2.22
30.04	19.35	500	3.00	47.20	26.81	24.37	4.28	114.77	2.78
19.35	19.34	200	3.00	54.10	31.98	27.15	4.03	128.88	1.11
19.34	19.37	1,900	3.00	55.70	33.50	28.26	3.94	132.01	10.56
End	**North ERT Campus**								
Begin	**Central ERT Campus**								
21.03	21.02	300	3.00	1.90	1.54	11.49	6.23	9.62	1.67
21.02	21.01	300	3.00	3.90	3.17	13.16	5.91	18.73	1.67
21.01	31.02	300	3.00	10.00	8.13	14.82	5.65	45.87	1.67
19.38	31.02	300	3.00	1.90	0.19	14.68	5.67	1.08	1.67
31.02	19.28	700	3.00	15.40	8.98	16.49	5.33	47.86	3.89
19.29	19.28	0	3.00	6.50	4.88	16.43	5.34	26.04	0.00
19.30	19.27	0	3.00	8.60	6.45	17.86	5.10	32.87	0.00
19.28	19.27	900	3.00	28.10	15.00	20.38	4.73	70.97	5.00
19.27	19.31	400	3.00	45.10	23.06	25.38	4.19	96.51	2.22
19.31	19.26	500	3.00	48.80	25.84	27.60	3.99	103.15	2.78
19.26	19.32	200	3.00	56.90	30.04	30.38	3.78	113.50	1.11
19.32	19.33	200	3.00	64.20	36.98	31.49	3.69	136.34	1.11
19.33	19.25	400	3.00	69.60	41.03	32.60	3.60	147.76	2.22
19.25	28.01	100	3.00	75.40	42.17	34.82	3.44	145.22	0.56
28.01	19.23	600	3.00	77.20	43.52	35.38	3.41	148.27	3.33
End									
Begin									

ROUTING
PROPOSED CONDITIONS
Frequency = 100 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
19.20	24.01	300	3.00	11.00	9.89	15.98	5.42	53.64	1.67
24.01	23.01	300	3.00	13.70	11.92	17.65	5.13	61.13	1.67
23.01	19.21	300	3.00	16.10	13.72	19.32	4.88	66.89	1.67
19.39	19.40	900	3.00	5.60	4.20	10.33	6.49	27.26	5.00
19.40	19.21	300	3.00	13.00	10.21	15.33	5.55	56.69	1.67
19.21	19.15	900	3.00	39.30	32.03	21.09	4.64	148.71	5.00
19.15	27.01	300	3.00	53.70	44.57	26.09	4.12	183.66	1.67
27.01	19.24	500	3.00	56.10	46.37	27.75	3.98	184.56	2.78
19.16	19.24	550	3.00	11.40	10.39	10.50	6.45	67.01	3.06
19.24	19.23	1,000	3.00	74.20	61.78	30.53	3.77	232.63	5.56
19.23	19.22	400	3.00	155.90	106.15	38.71	3.21	340.27	2.22
19.22	19.22	0	3.00	448.50	181.99	60.30	2.37	431.52	0.00
End	**Central ERT Campus**								
Begin	**Routing to North Retention Basin**								
11.51	11.10	1,300	3.00	15.10	10.44	10.00	6.57	68.59	7.22
10.21	11.10	600	3.00	9.40	8.93	12.46	6.04	53.92	3.33
10.17	11.10	300	3.00	9.60	9.12	13.16	5.91	53.91	1.67
11.10	11.05	2,700	3.00	54.10	40.59	17.22	5.20	211.10	15.00
11.05	10.11	300	3.00	102.40	74.11	32.22	3.63	269.02	1.67
10.19	10.18	200	3.00	7.50	0.38	11.84	6.16	2.34	1.11
10.18	10.15	700	3.00	17.20	9.60	12.95	5.95	57.07	3.89
10.16	10.15	0	3.00	8.60	0.48	10.00	6.57	3.12	0.00
10.15	10.13	900	3.00	32.30	16.25	16.84	5.27	85.56	5.00
10.14	10.13	0	3.00	10.90	0.48	10.00	6.57	3.12	0.00
10.13	10.11	1,000	3.00	50.00	23.18	21.84	4.55	105.53	5.56
10.40	10.11	200	3.00	4.90	4.66	10.94	6.35	29.56	1.11
10.11	10.41	800	3.00	165.60	109.83	33.89	3.51	385.29	4.44
10.10	10.41	0	3.00	6.60	0.38	10.00	6.57	2.50	0.00
10.12	10.41	0	3.00	23.40	0.67	17.19	5.21	3.46	0.00
10.41	32.06	600	3.00	199.10	114.20	38.33	3.23	368.50	3.33
End									
Begin									
32.11	32.10	1,800	3.00	4.40	4.18	16.97	5.24	21.92	10.00
32.10	32.09	1,000	3.00	6.90	6.56	26.97	4.04	26.51	5.56
32.09	32.08	650	3.00	9.60	9.12	32.52	3.61	32.90	3.61
32.08	32.07	1,500	3.00	11.20	10.64	36.13	3.36	35.74	8.33
32.07	32.06	1,650	3.00	15.60	14.82	44.47	2.92	43.24	9.17
32.06	10.33	0	3.00	219.10	133.20	53.63	2.57	342.27	0.00
10.33	10.33	0	3.00	222.30	136.24	53.63	2.57	350.08	0.00
End	**Routing to North Retention Basin**								
Begin	**Channel Across Golf Course**								
32.02	32.03	750	3.00	2.20	2.09	12.25	6.08	12.70	4.17

ROUTING
PROPOSED CONDITIONS
Frequency = 100 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
10.34	32.05	0	3.00	6.60	0.00	10.00	6.57	0.00	0.00
10.35	32.05	0	3.00	11.60	0.38	13.84	5.80	2.20	0.00
32.05	32.03	0	3.00	20.80	2.85	13.84	5.80	16.52	0.00
32.03	32.04	780	3.00	24.80	6.65	16.41	5.34	35.53	4.33
10.33	32.04	100	3.00	222.30	136.24	53.63	2.57	350.08	0.56
32.04	19.37	800	3.00	278.80	158.92	54.19	2.55	405.53	4.44
19.37	29.01	900	3.00	374.00	199.93	58.63	2.42	483.62	5.00
29.01	29.01	0	3.00	447.60	218.33	63.63	2.26	493.79	0.00
End									
End	**Channel Across Golf Course**								
Begin	**Channel at South End of ERT Campus**								
19.07	19.05	400	3.00	33.40	6.37	13.68	5.82	37.07	2.22
19.05	19.03	3,600	3.00	54.30	10.36	15.90	5.44	56.32	20.00
19.09	19.03	400	3.00	9.90	1.90	15.10	5.60	10.64	2.22
17.02	18.01	700	3.00	56.40	10.74	16.65	5.30	56.91	3.89
18.01	19.03	0	3.00	69.40	13.21	20.53	4.71	62.23	0.00
19.03	19.03	0	3.00	215.60	41.04	35.90	3.37	138.44	0.00
End	**Channel at South End of ERT Campus**								
Begin	**Routing to South Retention Basin**								
11.16	10.20	1,400	3.00	8.10	5.45	12.55	6.02	32.83	7.78
10.20	10.22	200	3.00	30.40	26.64	20.33	4.74	126.26	1.11
10.22	10.24	500	3.00	35.40	26.83	21.44	4.60	123.42	2.78
10.23	10.24	50	3.00	11.30	10.74	19.76	4.82	51.69	0.28
10.24	10.27	1,500	3.00	52.80	37.85	24.22	4.30	162.62	8.33
10.39	10.27	0	3.00	3.50	3.33	18.22	5.04	16.76	0.00
10.27	10.29	300	3.00	73.90	41.84	32.55	3.61	150.84	1.67
10.38	10.25	0	3.00	8.80	0.48	16.60	5.31	2.52	0.00
10.25	10.28	1,400	3.00	17.50	8.74	16.61	5.31	46.39	7.78
10.26	10.28	0	3.00	12.00	0.67	18.03	5.07	3.37	0.00
10.28	10.29	500	3.00	39.90	19.29	24.39	4.28	82.53	2.78
10.29	32.12	100	3.00	121.70	61.31	34.22	3.49	213.70	0.56
32.12	32.14	50	3.00	124.00	63.50	34.77	3.45	218.91	0.28
End									
Begin									
12.01	32.13	1,700	3.00	13.30	12.47	10.00	6.57	81.96	9.44
12.02	32.13	0	3.00	26.70	0.76	13.23	5.90	4.48	0.00
32.13	32.14	1,100	3.00	43.00	16.08	19.44	4.86	78.13	6.11
12.03	32.14	0	3.00	17.20	0.48	12.72	5.99	2.85	0.00
32.14	32.15	500	3.00	186.10	81.86	35.05	3.43	280.68	2.78
End									
Begin									
32.16	32.15	800	3.00	2.00	1.90	11.08	6.32	12.00	4.44

ROUTING
PROPOSED CONDITIONS
Frequency = 100 years

From Area ID No.	To Area ID No.	Routing Length (feet)	Assumed Velocity (fps)	Cumulative A (acre)	Cumulative CA	Cumulative Tc (min)	i (in/hr)	Q (cfs)	Travel Time (min)
32.15	15.01	0	3.00	191.80	87.27	37.83	3.26	284.17	0.00
End									
Begin									
11.18	11.24	900	3.00	7.20	3.79	10.21	6.52	24.73	5.00
11.24	13.04	800	3.00	42.20	25.03	15.21	5.58	139.55	4.44
12.04	13.04	0	3.00	12.00	11.25	10.00	6.57	73.95	0.00
13.04	13.05	2,200	3.00	60.20	41.98	19.66	4.83	202.73	12.22
13.01	13.05	0	3.00	31.70	0.95	14.38	5.71	5.43	0.00
13.05	13.06	600	3.00	108.10	58.32	31.88	3.66	213.24	3.33
13.03	13.06	0	3.00	7.70	0.29	10.00	6.57	1.87	0.00
13.06	15.01	0	3.00	120.40	62.97	35.21	3.42	215.25	0.00
End									
Begin									
13.02	14.01	300	3.00	72.50	20.71	18.39	5.01	103.82	1.67
14.01	14.02	800	3.00	98.40	28.12	20.06	4.78	134.28	4.44
14.02	16.01	1,300	3.00	169.30	48.36	26.33	4.10	198.22	7.22
16.01	15.01	0	3.00	193.40	55.20	33.56	3.53	194.93	0.00
15.01	15.01	0	3.00	526.20	225.01	37.83	3.26	732.65	0.00
End	**Routing to South Retention Basin**								
Begin	**Southern Most Channel**								
11.37	11.38	0	3.00	21.10	11.25	11.79	6.17	69.37	0.00
11.34	11.35	0	3.00	19.10	10.27	12.86	5.96	61.23	0.00
11.38	11.35	1,200	3.00	45.00	22.86	13.58	5.84	133.50	6.67
11.35	11.36	800	3.00	86.10	44.02	20.24	4.75	209.13	4.44
11.28	11.29	700	3.00	21.50	10.08	15.17	5.59	56.27	3.89
11.29	11.30	1,000	3.00	44.30	21.85	19.06	4.91	107.36	5.56
11.30	11.36	400	3.00	66.80	33.50	24.61	4.26	142.64	2.22
11.36	14.03	1,600	3.00	175.70	89.58	26.83	4.06	363.35	8.89
11.39	14.03	1,200	3.00	23.20	13.13	14.14	5.75	75.49	6.67
11.41	14.03	1,500	3.00	89.80	35.98	20.81	4.68	168.27	8.33
14.03	16.02	4,800	3.00	325.10	149.04	35.72	3.38	504.48	26.67
16.02	19.02	1,600	3.00	372.70	162.62	62.39	2.30	374.23	8.89
19.01	19.04	200	3.00	10.70	2.00	13.55	5.84	11.66	1.11
19.04	19.02	800	3.00	21.80	4.09	14.66	5.67	23.16	4.44
19.02	17.01	1,500	3.00	406.00	168.89	71.28	2.05	345.78	8.33
17.01	17.03	2,500	3.00	474.30	181.91	79.61	1.86	337.99	13.89
17.03	17.03	0	3.00	493.70	185.61	93.50	1.61	299.48	0.00
End	**Southern Most Channel**								

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
1.01	81.3	0.29	23.18	19.89	4.80	111.2	5.01
2.01	14.7	0.28	4.18	16.56	5.32	22.2	0.90
2.02	55.0	0.29	15.68	17.31	5.19	81.3	3.39
3.01	101.5	0.29	28.98	24.33	4.28	124.2	6.26
3.02	43.6	0.29	12.45	10.00	6.57	81.8	2.69
3.03	82.3	0.29	23.47	19.90	4.80	112.6	5.07
3.04	17.8	0.28	5.04	13.78	5.81	29.2	1.09
3.05	69.3	0.29	19.95	24.24	4.29	85.7	4.31
3.06	43.6	0.29	12.45	11.34	6.26	77.9	2.69
4.01	16.1	0.28	4.56	13.43	5.87	26.7	0.99
5.01	114.5	0.29	32.68	38.22	3.23	105.7	7.06
5.02	72.7	0.28	20.71	21.00	4.65	96.4	4.47
6.01	33.1	0.28	9.41	16.70	5.29	49.8	2.03
7.01	305.1	0.29	87.02	47.11	2.81	244.2	18.80
7.02	123.4	0.29	35.25	45.45	2.88	101.3	7.61
8.01	91.8	0.28	26.13	30.71	3.75	98.0	5.64
8.02	66.4	0.28	18.91	16.27	5.37	101.5	4.08
9.01	333.3	0.29	95.10	54.33	2.55	242.2	20.54
9.02	917.3	0.48	442.57	76.28	1.93	853.8	95.61
10.01	526.4	0.62	327.55	70.17	2.08	679.9	70.76
10.02	492.1	0.60	294.96	66.83	2.17	639.0	63.72
10.03	466.6	0.59	275.51	61.83	2.32	639.0	59.52
10.04	413.6	0.56	229.65	55.17	2.52	578.9	49.61
10.05	9.9	0.95	9.41	10.58	6.43	60.5	2.03
10.06	331.0	0.49	161.35	41.83	3.04	490.7	34.86
10.07	303.4	0.46	139.45	38.50	3.22	448.6	30.12
10.08	231.8	0.43	100.40	34.61	3.46	347.2	21.69
10.09	79.1	0.37	29.26	29.79	3.83	111.9	6.32
10.10	6.6	0.06	0.38	10.00	6.57	2.5	0.08
10.11	165.6	0.66	109.83	33.89	3.51	385.3	23.73
10.12	23.4	0.03	0.67	17.19	5.21	3.5	0.14
10.13	50.0	0.46	23.18	21.84	4.55	105.5	5.01
10.14	10.9	0.04	0.48	10.00	6.57	3.1	0.10
10.15	32.3	0.50	16.25	16.84	5.27	85.6	3.51
10.16	8.6	0.06	0.48	10.00	6.57	3.1	0.10
10.17	9.6	0.95	9.12	13.16	5.91	53.9	1.97

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
10.18	17.2	0.56	9.60	12.95	5.95	57.1	2.07
10.19	7.5	0.05	0.38	11.84	6.16	2.3	0.08
10.20	30.4	0.88	26.64	20.33	4.74	126.3	5.75
10.21	9.4	0.95	8.93	12.46	6.04	53.9	1.93
10.22	35.4	0.76	26.83	21.44	4.60	123.4	5.80
10.23	11.3	0.95	10.74	19.76	4.82	51.7	2.32
10.24	52.8	0.72	37.85	24.22	4.30	162.6	8.18
10.25	17.5	0.50	8.74	16.61	5.31	46.4	1.89
10.26	12.0	0.06	0.67	18.03	5.07	3.4	0.14
10.27	73.9	0.57	41.84	32.55	3.61	150.8	9.04
10.28	39.9	0.48	19.29	24.39	4.28	82.5	4.17
10.29	121.7	0.50	61.31	34.22	3.49	213.7	13.25
10.30	39.3	0.34	13.49	26.97	4.04	54.6	2.91
10.31	3.8	0.10	0.38	10.00	6.57	2.5	0.08
10.32	7.0	0.10	0.67	19.75	4.82	3.2	0.14
10.33	222.3	0.61	136.24	53.63	2.57	350.1	29.43
10.34	6.6	0.00	0.00	10.00	6.57	0.0	0.00
10.35	11.6	0.03	0.38	13.84	5.80	2.2	0.08
10.36	3.5	0.00	0.00	10.00	6.57	0.0	0.00
10.37	7.7	0.00	0.00	10.00	6.57	0.0	0.00
10.38	8.8	0.05	0.48	16.60	5.31	2.5	0.10
10.39	3.5	0.95	3.33	18.22	5.04	16.8	0.72
10.40	4.9	0.95	4.66	10.94	6.35	29.6	1.01
10.41	199.1	0.57	114.20	38.33	3.23	368.5	24.67
11.01	364.6	0.51	184.22	74.44	1.97	363.1	39.80
11.02	283.9	0.51	144.24	63.89	2.25	325.1	31.16
11.03	24.0	0.49	11.70	13.86	5.79	67.8	2.53
11.04	237.7	0.51	120.59	43.89	2.94	355.0	26.05
11.05	102.4	0.72	74.11	32.22	3.63	269.0	16.01
11.06	15.6	0.64	10.05	13.00	5.94	59.7	2.17
11.07	263.7	0.50	131.55	58.89	2.41	317.3	28.42
11.08	18.8	0.48	8.95	11.11	6.31	56.5	1.93
11.09	167.9	0.51	85.68	32.78	3.59	307.4	18.51
11.10	54.1	0.75	40.59	17.22	5.20	211.1	8.77
11.11	13.8	0.63	8.63	14.14	5.75	49.6	1.86
11.12	8.0	0.59	4.73	11.36	6.26	29.6	1.02

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
11.13	235.4	0.50	116.74	52.22	2.62	305.5	25.22
11.14	19.5	0.48	9.38	16.67	5.30	49.7	2.03
11.15	124.7	0.52	64.24	25.55	4.17	267.8	13.88
11.16	8.1	0.67	5.45	12.55	6.02	32.8	1.18
11.17	82.2	0.52	42.38	18.89	4.94	209.3	9.16
11.18	7.2	0.53	3.79	10.21	6.52	24.7	0.82
11.19	25.6	0.55	14.14	14.18	5.74	81.2	3.06
11.20	205.8	0.49	100.41	45.56	2.87	288.2	21.69
11.21	35.9	0.44	15.82	16.62	5.31	83.9	3.42
11.23	34.3	0.59	20.17	16.67	5.30	106.8	4.36
11.24	42.2	0.59	25.03	15.21	5.58	139.6	5.41
11.25	12.9	0.62	7.94	13.12	5.92	47.0	1.72
11.26	15.1	0.49	7.45	11.24	6.28	46.8	1.61
11.27	148.4	0.48	71.46	32.78	3.59	256.4	15.44
11.28	21.5	0.47	10.08	15.17	5.59	56.3	2.18
11.29	44.3	0.49	21.85	19.06	4.91	107.4	4.72
11.30	66.8	0.50	33.50	24.61	4.26	142.6	7.24
11.31	47.5	0.55	25.92	32.95	3.58	92.7	5.60
11.32	31.1	0.47	14.77	14.58	5.68	83.9	3.19
11.33	117.6	0.48	55.95	26.11	4.12	230.4	12.09
11.34	19.1	0.54	10.27	12.86	5.96	61.2	2.22
11.35	86.1	0.51	44.02	20.24	4.75	209.1	9.51
11.36	175.7	0.51	89.58	26.83	4.06	363.3	19.35
11.37	21.1	0.53	11.25	11.79	6.17	69.4	2.43
11.38	45.0	0.51	22.86	13.58	5.84	133.5	4.94
11.39	23.2	0.57	13.13	14.14	5.75	75.5	2.84
11.40	57.2	0.44	25.13	12.22	6.08	152.9	5.43
11.41	89.8	0.40	35.98	20.81	4.68	168.3	7.77
11.42	14.9	0.43	6.34	15.72	5.47	34.7	1.37
11.43	43.9	0.41	18.02	10.00	6.57	118.4	3.89
11.44	31.5	0.50	15.90	16.93	5.25	83.5	3.43
11.45	26.5	0.42	11.09	24.69	4.25	47.1	2.40
11.46	35.8	0.51	18.43	20.82	4.68	86.2	3.98
11.47	833.3	0.48	401.44	88.89	1.69	677.1	86.72
11.48	711.0	0.50	352.47	84.44	1.76	621.9	76.15
11.49	268.1	0.50	135.27	49.44	2.72	367.3	29.22

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
11.50	36.3	0.42	15.40	13.62	5.83	89.8	3.33
11.51	15.1	0.69	10.44	10.00	6.57	68.6	2.25
11.52	22.6	0.51	11.64	14.71	5.66	65.9	2.51
12.01	13.3	0.94	12.47	10.00	6.57	82.0	2.69
12.02	26.7	0.03	0.76	13.23	5.90	4.5	0.16
12.03	17.2	0.03	0.48	12.72	5.99	2.8	0.10
12.04	12.0	0.94	11.25	10.00	6.57	73.9	2.43
13.01	31.7	0.03	0.95	14.38	5.71	5.4	0.21
13.02	72.5	0.29	20.71	18.39	5.01	103.8	4.47
13.03	7.7	0.04	0.29	10.00	6.57	1.9	0.06
13.04	60.2	0.70	41.98	19.66	4.83	202.7	9.07
13.05	108.1	0.54	58.32	31.88	3.66	213.2	12.60
13.06	120.4	0.52	62.97	35.21	3.42	215.2	13.60
14.01	98.4	0.29	28.12	20.06	4.78	134.3	6.07
14.02	169.3	0.29	48.36	26.33	4.10	198.2	10.45
14.03	325.1	0.46	149.04	35.72	3.38	504.5	32.20
15.01	526.2	0.43	225.01	37.83	3.26	732.6	48.61
16.01	193.4	0.29	55.20	33.56	3.53	194.9	11.92
16.02	372.7	0.44	162.62	62.39	2.30	374.2	35.13
17.01	474.3	0.38	181.91	79.61	1.86	338.0	39.30
17.02	56.4	0.19	10.74	16.65	5.30	56.9	2.32
17.03	493.7	0.38	185.61	93.50	1.61	299.5	40.10
18.01	69.4	0.19	13.21	20.53	4.71	62.2	2.85
19.01	10.7	0.19	2.00	13.55	5.84	11.7	0.43
19.02	406.0	0.42	168.89	71.28	2.05	345.8	36.49
19.03	215.6	0.19	41.04	35.90	3.37	138.4	8.87
19.04	21.8	0.19	4.09	14.66	5.67	23.2	0.88
19.05	54.3	0.19	10.36	15.90	5.44	56.3	2.24
19.06	25.3	0.19	4.85	16.96	5.25	25.4	1.05
19.07	33.4	0.19	6.37	13.68	5.82	37.1	1.38
19.08	238.0	0.25	59.19	44.19	2.93	173.4	12.79
19.09	9.9	0.19	1.90	15.10	5.60	10.6	0.41
19.10	14.4	0.19	2.76	12.20	6.09	16.8	0.60
19.11	9.7	0.19	1.81	12.41	6.05	10.9	0.39
19.12	252.6	0.25	61.94	51.41	2.64	163.8	13.38
19.13	94.3	0.25	23.94	35.30	3.41	81.7	5.17

SUMMARY TABLE
PROPOSED CONDITIONS

Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
19.14	15.4	0.19	2.95	14.76	5.65	16.7	0.64
19.15	53.7	0.83	44.57	26.09	4.12	183.7	9.63
19.16	11.4	0.91	10.39	10.50	6.45	67.0	2.24
19.17	11.4	0.88	10.07	14.97	5.63	56.6	2.18
19.18	3.8	0.95	3.61	11.92	6.14	22.2	0.78
19.20	11.0	0.90	9.89	15.98	5.42	53.6	2.14
19.21	39.3	0.81	32.03	21.09	4.64	148.7	6.92
19.22	448.5	0.41	181.99	60.30	2.37	431.5	39.32
19.23	155.9	0.68	106.15	38.71	3.21	340.3	22.93
19.24	74.2	0.83	61.78	30.53	3.77	232.6	13.35
19.25	75.4	0.56	42.17	34.82	3.44	145.2	9.11
19.26	56.9	0.53	30.04	30.38	3.78	113.5	6.49
19.27	45.1	0.51	23.06	25.38	4.19	96.5	4.98
19.28	28.1	0.53	15.00	20.38	4.73	71.0	3.24
19.29	6.5	0.75	4.88	16.43	5.34	26.0	1.05
19.30	8.6	0.75	6.45	17.86	5.10	32.9	1.39
19.31	48.8	0.53	25.84	27.60	3.99	103.2	5.58
19.32	64.2	0.58	36.98	31.49	3.69	136.3	7.99
19.33	69.6	0.59	41.03	32.60	3.60	147.8	8.86
19.34	55.7	0.60	33.50	28.26	3.94	132.0	7.24
19.35	54.1	0.59	31.98	27.15	4.03	128.9	6.91
19.36	17.3	0.60	10.29	15.48	5.52	56.8	2.22
19.37	374.0	0.53	199.93	58.63	2.42	483.6	43.19
19.38	1.9	0.10	0.19	14.68	5.67	1.1	0.04
19.39	5.6	0.75	4.20	10.33	6.49	27.3	0.91
19.40	13.0	0.79	10.21	15.33	5.55	56.7	2.21
19.41	4.7	0.10	0.48	10.05	6.56	3.1	0.10
19.42	22.7	0.50	11.34	17.15	5.21	59.1	2.45
19.43	34.6	0.54	18.75	22.15	4.52	84.7	4.05
20.01	138.0	0.29	40.19	41.41	3.06	123.1	8.68
20.02	16.7	0.67	11.12	16.63	5.30	59.0	2.40
21.01	10.0	0.81	8.13	14.82	5.65	45.9	1.76
21.02	3.9	0.81	3.17	13.16	5.91	18.7	0.68
21.03	1.9	0.81	1.54	11.49	6.23	9.6	0.33
22.01	22.2	0.53	11.88	25.86	4.14	49.2	2.57
22.02	11.7	0.44	5.13	23.08	4.41	22.6	1.11

SUMMARY TABLE
PROPOSED CONDITIONS
Frequency = 100 years Minimum Tc = 10 min

Area No.	Cumulative Area (acres)	Weighted C Factor	Cumulative CA	Tc (min)	I (in/hr)	Q (cfs)	Cumulative 100yr,2hr Retention Vol. for Areas Not Retained Onsite (ac-ft)
23.01	16.1	0.85	13.72	19.32	4.88	66.9	2.96
24.01	13.7	0.87	11.92	17.65	5.13	61.1	2.57
25.01	261.5	0.25	66.39	53.63	2.57	170.6	14.34
25.02	272.8	0.26	72.04	56.97	2.47	177.7	15.56
26.01	5.6	0.50	2.80	11.56	6.22	17.4	0.60
27.01	56.1	0.83	46.37	27.75	3.98	184.6	10.02
28.01	77.2	0.56	43.52	35.38	3.41	148.3	9.40
29.01	447.6	0.49	218.33	63.63	2.26	493.8	47.17
29.02	76.0	0.25	19.00	26.51	4.08	77.6	4.10
30.01	29.8	0.48	14.23	19.91	4.80	68.2	3.07
30.02	3.5	0.19	0.67	11.97	6.13	4.1	0.14
30.03	15.3	0.75	11.48	10.47	6.46	74.1	2.48
30.04	47.2	0.57	26.81	24.37	4.28	114.8	5.79
30.05	27.8	0.44	12.29	18.82	4.95	60.8	2.65
31.01	10.6	0.50	5.27	13.26	5.89	31.1	1.14
31.02	15.4	0.58	8.98	16.49	5.33	47.9	1.94
32.01	1.9	0.95	1.81	11.76	6.17	11.1	0.39
32.02	2.2	0.95	2.09	12.25	6.08	12.7	0.45
32.03	24.8	0.27	6.65	16.41	5.34	35.5	1.44
32.04	278.8	0.57	158.92	54.19	2.55	405.5	34.33
32.05	20.8	0.14	2.85	13.84	5.80	16.5	0.62
32.06	219.1	0.61	133.20	53.63	2.57	342.3	28.78
32.07	15.6	0.95	14.82	44.47	2.92	43.2	3.20
32.08	11.2	0.95	10.64	36.13	3.36	35.7	2.30
32.09	9.6	0.95	9.12	32.52	3.61	32.9	1.97
32.10	6.9	0.95	6.56	26.97	4.04	26.5	1.42
32.11	4.4	0.95	4.18	16.97	5.24	21.9	0.90
32.12	124.0	0.51	63.50	34.77	3.45	218.9	13.72
32.13	43.0	0.37	16.08	19.44	4.86	78.1	3.47
32.14	186.1	0.44	81.86	35.05	3.43	280.7	17.68
32.15	191.8	0.46	87.27	37.83	3.26	284.2	18.85
32.16	2.0	0.95	1.90	11.08	6.32	12.0	0.41
Total Retention Volume Required to Store 100 year, 2 hour Precipitation							370.89

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.00		
1.01	50.5	15.2											35.3	14.4	0.286
2.01	14.7	4.4											10.3	4.2	0.284
2.02	55.0	16.5											38.5	15.7	0.285
3.01	20.2	6.1											14.1	5.8	0.287
3.02	43.6	13.1											30.5	12.4	0.285
3.03	9.5	2.9											6.6	2.8	0.290
3.04	17.8	5.3											12.5	5.0	0.283
3.05	69.3	21.0											48.3	20.0	0.288
3.06	43.6	13.1											30.5	12.4	0.285
4.01	16.1	4.8											11.3	4.6	0.283
5.01	13.0	3.9											9.1	3.7	0.285
5.02	39.6	11.9											27.7	11.3	0.285
6.01	33.1	9.9											23.2	9.4	0.284
7.01	17.2	5.2											12.0	4.9	0.287
7.02	8.9	2.7											6.2	2.6	0.288
8.01	25.4	7.6											17.8	7.2	0.284
8.02	22.8	6.8											16.0	6.5	0.283
9.01	28.2	8.5											19.7	8.1	0.286
9.02	31.1	9.3											21.8	8.8	0.284
10.01	34.3	34.3												32.6	0.950
10.02	9.9	9.9												9.4	0.950
10.03	39.2	39.2												37.2	0.950
10.04	57.0	57.0												54.2	0.950
10.05	9.9	9.9												9.4	0.950
10.06	4.8	4.8												4.6	0.950
10.07	28.0	28.0												26.6	0.950
10.08	22.9	22.9												21.8	0.950
10.09	9.8	9.8												9.3	0.950
10.10	6.6	0.4											6.2	0.4	0.058
10.11	8.3	8.3												7.9	0.950
10.12	23.4	0.7											22.7	0.7	0.028
10.13	6.8	6.8												6.5	0.950
10.14	10.9	0.5											10.4	0.5	0.044
10.15	6.5	6.5												6.2	0.950
10.16	8.6	0.5											8.1	0.5	0.055
10.17	9.6	9.6												9.1	0.950
10.18	9.7	9.7												9.2	0.950
10.19	7.5	0.4											7.1	0.4	0.051
10.20	22.3	22.3												21.2	0.950
10.21	9.4	9.4												8.9	0.950
10.22	5.0	0.2											4.8	0.2	0.038
10.23	11.3	11.3												10.7	0.950

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.00		
10.24	6.1	0.3											5.8	0.3	0.047
10.25	8.7	8.7												8.3	0.950
10.26	12.0	0.7											11.3	0.7	0.055
10.27	17.6	0.7											16.9	0.7	0.038
10.28	10.4	10.4												9.9	0.950
10.29	7.9	0.2											7.7	0.2	0.024
10.30	17.1	1.7											15.4	1.6	0.094
10.31	3.8	0.4											3.4	0.4	0.100
10.32	7.0	0.7											6.3	0.7	0.095
10.33	3.2	3.2												3.0	0.950
10.34	6.6												6.6	0.0	0.000
10.35	11.6	0.4											11.2	0.4	0.033
10.36	3.5												3.5	0.0	0.000
10.37	7.7												7.7	0.0	0.000
10.38	8.8	0.5											8.3	0.5	0.054
10.39	3.5	3.5												3.3	0.950
10.40	4.9	4.9												4.7	0.950
10.41	3.5	3.5												3.3	0.950
11.01	44.9	8.2										36.7		21.6	0.480
11.02	20.2	8.9										11.3		12.7	0.628
11.03	24.0	4.7										19.3		11.7	0.488
11.04	45.8	10.5										35.3		23.2	0.507
11.05	48.3	26.8										21.5		33.5	0.694
11.06	15.6	7.3										8.3		10.0	0.644
11.07	28.3	7.3										21.0		14.8	0.523
11.08	18.8	3.3										15.5		8.9	0.476
11.09	24.4	5.8										18.6		12.5	0.512
11.10	20.0	8.0										12.0		12.1	0.605
11.11	5.8	3.0										2.8		3.9	0.672
11.12	8.0	3.0										5.0		4.7	0.591
11.13	29.6	9.1										20.5		16.3	0.552
11.14	19.5	3.6										15.9		9.4	0.481
11.15	23.0	6.7										16.3		12.5	0.543
11.16	8.1	4.2										3.9		5.5	0.673
11.17	12.0	3.3										8.7		6.4	0.533
11.18	7.2	1.9										5.3		3.8	0.527
11.19	25.6	7.9										17.7		14.1	0.552
11.20	57.4	12.9										44.5		28.9	0.504
11.21	35.9	4.1										31.8		15.8	0.441
11.23	34.3	12.7										21.6		20.2	0.588
11.24	35.0	14.1										20.9		21.2	0.607
11.25	12.9	5.4										7.5		7.9	0.616

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.00		
11.26	15.1	3.1										12.0		7.4	0.493
11.27	15.7	3.8										11.9		8.1	0.514
11.28	21.5	3.5										18.0		10.1	0.469
11.29	22.8	5.6										17.2		11.8	0.516
11.30	22.5	5.6										16.9		11.7	0.518
11.31	32.6	12.8										19.8		19.6	0.601
11.32	31.1	5.4										25.7		14.8	0.475
11.33	29.3	8.8										20.5		16.0	0.548
11.34	19.1	5.4										13.7		10.3	0.538
11.35	22.0	4.6										17.4		10.9	0.495
11.36	22.8	6.1										16.7		12.1	0.529
11.37	21.1	5.8										15.3		11.2	0.533
11.38	23.9	4.6										19.3		11.6	0.486
11.39	23.2	7.7										15.5		13.1	0.566
11.40	13.3	3.7										9.6		7.1	0.535
11.41	89.8	4.0										85.8		36.0	0.401
11.42	14.9	1.3										13.6		6.3	0.425
11.43	43.9	2.7										41.2		18.0	0.410
11.44	8.9	1.6										7.3		4.3	0.478
11.45	26.5	2.0										24.5		11.1	0.418
11.46	4.3	1.6										2.7		2.5	0.589
11.47	122.3	5.4										116.9		49.0	0.400
11.48	42.0	3.2										38.8		17.6	0.419
11.49	30.4	5.7										24.7		14.7	0.483
11.50	36.3	3.1										33.2		15.4	0.424
11.51	15.1	8.3										6.8		10.4	0.691
11.52	22.6	5.5										17.1		11.6	0.515
12.01	13.3			13.3										12.5	0.938
12.02	26.7	0.8											25.9	0.8	0.028
12.03	17.2	0.5											16.7	0.5	0.028
12.04	12.0			12.0										11.3	0.938
13.01	31.7	1.0											30.7	1.0	0.030
13.02	72.5	21.8											50.7	20.7	0.286
13.03	7.7	0.3											7.4	0.3	0.037
13.04	6.0	6.0												5.7	0.950
13.05	16.2	16.2												15.4	0.950
13.06	4.6	4.6												4.4	0.950
14.01	25.9	7.8											18.1	7.4	0.286
14.02	70.9	21.3											49.6	20.2	0.285
14.03	36.4	10.9											25.5	10.4	0.284
15.01	20.6	20.6												19.6	0.950
16.01	24.1	7.2											16.9	6.8	0.284

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.00		
16.02	47.6	14.3											33.3	13.6	0.285
17.01	68.3	13.7											54.6	13.0	0.191
17.02	56.4	11.3											45.1	10.7	0.190
17.03	19.4	3.9											15.5	3.7	0.191
18.01	13.0	2.6											10.4	2.5	0.190
19.01	10.7	2.1											8.6	2.0	0.186
19.02	11.5	2.3											9.2	2.2	0.190
19.03	82.0	16.4											65.6	15.6	0.190
19.04	11.1	2.2											8.9	2.1	0.188
19.05	20.9	4.2											16.7	4.0	0.191
19.06	25.3	5.1											20.2	4.8	0.192
19.07	33.4	6.7											26.7	6.4	0.191
19.08	74.7	14.9											59.8	14.2	0.189
19.09	9.9	2.0											7.9	1.9	0.192
19.10	14.4	2.9											11.5	2.8	0.191
19.11	9.7	1.9											7.8	1.8	0.186
19.12	14.6	2.9											11.7	2.8	0.189
19.13	25.2	5.0											20.2	4.8	0.188
19.14	15.4	3.1											12.3	2.9	0.191
19.15	14.4	3.7				5.0	5.7							12.5	0.871
19.16	11.4	9.2					2.2							10.4	0.911
19.17	7.6	3.8					3.8							6.5	0.850
19.18	3.8	3.8												3.6	0.950
19.20	11.0	8.2					2.8							9.9	0.899
19.21	10.2						3.0		7.2					8.1	0.794
19.22	19.8	4.0											15.8	3.8	0.192
19.23	4.5	0.9											3.6	0.9	0.190
19.24	6.7						6.7							5.0	0.750
19.25	5.8	1.2											4.6	1.1	0.197
19.26	8.1				2.1		2.0			4.0				4.2	0.519
19.27	8.4	1.7											6.7	1.6	0.192
19.28	6.2	1.2											5.0	1.1	0.184
19.29	6.5						6.5							4.9	0.750
19.30	8.6						8.6							6.5	0.750
19.31	3.7						3.7							2.8	0.750
19.32	7.3	7.3												6.9	0.950
19.33	5.4						5.4							4.1	0.750
19.34	1.6	1.6												1.5	0.950
19.35	6.9						6.9							5.2	0.750
19.36	6.7						6.7							5.0	0.750
19.37	39.5	7.9											31.6	7.5	0.190
19.38	1.9	0.2											1.7	0.2	0.100

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.00		
19.39	5.6						5.6							4.2	0.750
19.40	7.4								7.4					6.0	0.813
19.41	4.7	0.5											4.2	0.5	0.101
19.42	5.4	1.1											4.3	1.0	0.194
19.43	6.8					6.8								6.5	0.950
20.01	17.3	3.5											13.8	3.3	0.192
20.02	5.3	1.1											4.2	1.0	0.197
21.01	6.1				6.1									5.0	0.813
21.02	2.0				2.0									1.6	0.813
21.03	1.9				1.9									1.5	0.813
22.01	6.7					6.7								6.4	0.950
22.02	4.7					4.7								4.5	0.950
23.01	2.4						2.4							1.8	0.750
24.01	2.7						2.7							2.0	0.750
25.01	8.9							8.9						4.5	0.500
25.02	5.7							5.7						2.9	0.500
26.01	5.6							5.6						2.8	0.500
27.01	2.4						2.4							1.8	0.750
28.01	1.8						1.8							1.4	0.750
29.01	73.6									73.6				18.4	0.250
29.02	76.0									76.0				19.0	0.250
30.01	14.5	2.9											11.6	2.8	0.190
30.02	3.5	0.7											2.8	0.7	0.190
30.03	15.3						15.3							11.5	0.750
30.04	9.1								9.1					7.4	0.813
30.05	5.1	1.0											4.1	1.0	0.186
31.01	5.9				5.9									4.8	0.813
31.02	3.5	0.7											2.8	0.7	0.190
32.01	1.9	1.9												1.8	0.950
32.02	2.2	2.2												2.1	0.950
32.03	1.8	1.8												1.7	0.950
32.04	1.9	1.9												1.8	0.950
32.05	2.6	2.6												2.5	0.950
32.06	4.4	4.4												4.2	0.950
32.07	4.4	4.4												4.2	0.950
32.08	1.6	1.6												1.5	0.950
32.09	2.7	2.7												2.6	0.950
32.10	2.5	2.5												2.4	0.950
32.11	4.4	4.4												4.2	0.950
32.12	2.3	2.3												2.2	0.950
32.13	3.0	3.0												2.9	0.950
32.14	1.9	1.9												1.8	0.950

'C' FACTORS - PROPOSED CONDITIONS

Frequency = 100 years C Adjustment Factor = 1.25

Area No.	Total Area (ac)	Pvmt (ac)	Shldr (ac)	Heavy Indus (ac)	Light Indus (ac)	Heavy Comm (ac)	Light Comm (ac)	Single Family (ac)	Apts (ac)	Parks (ac)	Play Grnd (ac)	Bare Grnd (ac)	Retain (ac)	Summ CA	Comp C Fact
C Factor =		0.85	0.70	0.75	0.65	0.80	0.60	0.40	0.65	0.20	0.45	0.30	0.00		
Adj C Fact =		0.95	0.88	0.94	0.81	0.95	0.75	0.50	0.81	0.25	0.56	0.38	0.00		
32.15	3.7	3.7												3.5	0.950
32.16	2.0	2.0												1.9	0.950

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
1.01	50.5	0.286	1,800	5.00	0.28	14.7	A	-0.00625	0.04	0.0294	5.73	14.29	95.28
2.01	14.7	0.284	1,600	3.00	0.19	9.9	A	-0.00625	0.04	0.0327	5.32	16.56	102.60
2.02	55.0	0.285	1,800	3.00	0.17	8.8	A	-0.00625	0.04	0.0291	5.19	17.31	113.10
3.01	20.2	0.287	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0318	5.53	15.46	97.75
3.02	43.6	0.285	1,500	10.00	0.67	35.2	A	-0.00625	0.04	0.0298	6.73	9.42	65.00
3.03	9.5	0.290	900	5.00	0.56	29.3	A	-0.00625	0.04	0.0339	7.13	8.08	53.21
3.04	17.8	0.283	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0322	5.81	13.78	88.50
3.05	69.3	0.288	3,300	6.00	0.18	9.6	A	-0.00625	0.04	0.0285	4.29	24.24	148.23
3.06	43.6	0.285	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0298	6.26	11.34	77.07
4.01	16.1	0.283	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0325	5.87	13.43	86.42
5.01	13.0	0.285	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0330	5.27	16.80	102.76
5.02	39.6	0.285	3,100	8.00	0.26	13.6	A	-0.00625	0.04	0.0300	4.65	21.00	128.22
6.01	33.1	0.284	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0305	5.29	16.70	106.22
7.01	17.2	0.287	1,800	4.00	0.22	11.7	A	-0.00625	0.04	0.0323	5.32	16.54	102.48
7.02	8.9	0.288	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0341	6.17	11.80	74.73
8.01	25.4	0.284	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0312	4.76	20.14	122.06
8.02	22.8	0.283	2,100	6.00	0.29	15.1	A	-0.00625	0.04	0.0315	5.37	16.27	102.28
9.01	28.2	0.286	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0309	6.18	11.75	78.22
9.02	31.1	0.284	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0307	6.55	10.08	68.52
10.01	34.3	0.950	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0304	5.50	15.58	18.41
10.02	9.9	0.950	1,000	6.00	0.60	31.7	A	-0.00625	0.04	0.0338	7.05	8.34	10.12
10.03	39.2	0.950	1,800	7.00	0.39	20.5	A	-0.00625	0.04	0.0300	5.97	12.82	15.69
10.04	57.0	0.950	2,500	10.00	0.40	21.1	A	-0.00625	0.04	0.0290	5.60	15.07	18.32
10.05	9.9	0.950	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0338	6.43	10.58	12.55
10.06	4.8	0.950	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0357	6.56	10.04	11.68
10.07	28.0	0.950	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0310	5.86	13.46	16.25
10.08	22.9	0.950	1,600	7.00	0.44	23.1	A	-0.00625	0.04	0.0315	6.17	11.80	14.23
10.09	9.8	0.950	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0338	5.92	13.10	15.08
10.10	6.6	0.058	800	2.20	0.28	14.5	A	-0.00625	0.04	0.0349	6.60	9.90	81.61
10.11	8.3	0.950	1,200	5.50	0.46	24.2	A	-0.00625	0.04	0.0343	6.49	10.32	12.13
10.12	23.4	0.028	1,900	4.00	0.21	11.1	A	-0.00625	0.04	0.0314	5.21	17.19	141.33
10.13	6.8	0.950	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0348	6.87	8.90	10.61
10.14	10.9	0.044	1,100	6.00	0.55	28.8	A	-0.00625	0.04	0.0335	6.82	9.09	77.19
10.15	6.5	0.950	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0349	6.60	9.90	11.68
10.16	8.6	0.055	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0342	7.05	8.34	71.91
10.17	9.6	0.950	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0339	5.91	13.16	15.31
10.18	9.7	0.950	1,200	3.00	0.25	13.2	A	-0.00625	0.04	0.0338	5.98	12.76	14.85
10.19	7.5	0.051	900	1.80	0.20	10.6	A	-0.00625	0.04	0.0345	6.16	11.84	96.89
10.20	22.3	0.950	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0316	5.88	13.36	15.92
10.21	9.4	0.950	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0339	6.04	12.46	14.60
10.22	5.0	0.038	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0356	7.24	7.77	66.44
10.23	11.3	0.950	1,400	1.40	0.10	5.3	A	-0.00625	0.04	0.0334	4.82	19.76	21.77
10.24	6.1	0.047	700	2.60	0.37	19.6	A	-0.00625	0.04	0.0351	7.08	8.24	69.78
10.25	8.7	0.950	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	5.31	16.61	18.74
10.26	12.0	0.055	1,500	2.10	0.14	7.4	A	-0.00625	0.04	0.0333	5.07	18.03	140.24
10.27	17.6	0.038	1,600	2.00	0.13	6.6	A	-0.00625	0.04	0.0322	4.89	19.23	152.96
10.28	10.4	0.950	1,500	2.20	0.15	7.7	A	-0.00625	0.04	0.0336	5.10	17.84	19.83

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area No.	Area (acres)	C	L (ft)	dH (ft)	S (%)	S (ft/mi)	Resist. Coeff, Kb, Calculations Type	m	b	Kb	i(trial) (in/hr)	tc (min)	tc (min)
10.29	7.9	0.024	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	6.26	11.37	95.92
10.30	17.1	0.094	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0323	5.67	14.69	114.93
10.31	3.8	0.100	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0364	6.77	9.27	72.31
10.32	7.0	0.095	1,200	1.00	0.08	4.4	A	-0.00625	0.04	0.0347	4.82	19.75	143.47
10.33	3.2	0.950	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0368	6.43	10.60	12.12
10.34	6.6	0.000	500	1.60	0.32	16.9	A	-0.00625	0.04	0.0349	7.49	7.12	64.73
10.35	11.6	0.033	1,500	4.20	0.28	14.8	A	-0.00625	0.04	0.0333	5.80	13.84	113.73
10.36	3.5	0.000	600	1.80	0.30	15.8	A	-0.00625	0.04	0.0366	7.04	8.35	72.45
10.37	7.7	0.000	800	2.40	0.30	15.8	A	-0.00625	0.04	0.0345	6.70	9.53	83.66
10.38	8.8	0.054	1,100	1.20	0.11	5.8	A	-0.00625	0.04	0.0341	5.31	16.60	130.69
10.39	3.5	0.950	1,500	2.40	0.16	8.4	A	-0.00625	0.04	0.0366	5.04	18.22	19.26
10.40	4.9	0.950	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0357	6.35	10.94	12.55
10.41	3.5	0.950	1,000	2.20	0.22	11.6	A	-0.00625	0.04	0.0366	6.01	12.61	14.14
11.01	44.9	0.480	2,700	10.00	0.37	19.6	A	-0.00625	0.04	0.0297	5.32	16.56	80.75
11.02	20.2	0.628	1,600	5.00	0.31	16.5	A	-0.00625	0.04	0.0318	5.87	13.43	50.04
11.03	24.0	0.488	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	5.79	13.86	66.91
11.04	45.8	0.507	2,300	8.00	0.35	18.4	A	-0.00625	0.04	0.0296	5.56	15.31	72.81
11.05	48.3	0.694	3,600	7.00	0.19	10.3	A	-0.00625	0.04	0.0295	4.17	25.51	75.68
11.06	15.6	0.644	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0325	5.94	13.00	46.62
11.07	28.3	0.523	1,600	8.00	0.50	26.4	A	-0.00625	0.04	0.0309	6.31	11.12	52.31
11.08	18.8	0.476	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0320	6.31	11.11	55.75
11.09	24.4	0.512	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0313	6.19	11.70	55.66
11.10	20.0	0.605	1,500	5.00	0.33	17.6	A	-0.00625	0.04	0.0319	6.01	12.64	49.77
11.11	5.8	0.672	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	5.89	13.27	43.54
11.12	8.0	0.591	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0344	6.26	11.36	45.41
11.13	29.6	0.552	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0308	5.63	14.90	65.35
11.14	19.5	0.481	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0319	5.30	16.67	79.73
11.15	23.0	0.543	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0315	5.91	13.18	58.99
11.16	8.1	0.673	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0343	6.02	12.55	41.55
11.17	12.0	0.533	1,300	2.00	0.15	8.1	A	-0.00625	0.04	0.0333	5.45	15.86	68.66
11.18	7.2	0.527	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0346	6.52	10.21	46.33
11.19	25.6	0.552	2,400	12.00	0.50	26.4	A	-0.00625	0.04	0.0312	5.74	14.18	60.83
11.20	57.4	0.504	2,800	9.00	0.32	17.0	A	-0.00625	0.04	0.0290	5.13	17.65	82.84
11.21	35.9	0.441	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0303	5.31	16.62	85.84
11.23	34.3	0.588	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0304	5.30	16.67	66.67
11.24	35.0	0.607	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0303	6.39	10.75	44.07
11.25	12.9	0.616	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0331	5.92	13.12	49.52
11.26	15.1	0.493	1,400	6.00	0.43	22.6	A	-0.00625	0.04	0.0326	6.28	11.24	54.22
11.27	15.7	0.514	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0325	6.13	11.97	55.43
11.28	21.5	0.469	1,500	3.00	0.20	10.6	A	-0.00625	0.04	0.0317	5.59	15.17	75.27
11.29	22.8	0.516	1,500	9.00	0.60	31.7	A	-0.00625	0.04	0.0315	6.54	10.14	48.25
11.30	22.5	0.518	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0315	6.14	11.92	56.64
11.31	32.6	0.601	3,200	4.00	0.13	6.6	A	-0.00625	0.04	0.0305	3.90	28.84	101.67
11.32	31.1	0.475	2,500	12.00	0.48	25.3	A	-0.00625	0.04	0.0307	5.68	14.58	71.86
11.33	29.3	0.548	2,600	8.00	0.31	16.2	A	-0.00625	0.04	0.0308	5.10	17.84	75.09
11.34	19.1	0.538	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0320	5.96	12.86	57.51
11.35	22.0	0.495	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0316	5.83	13.63	65.50

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
11.36	22.8	0.529	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0315	6.18	11.74	54.04
11.37	21.1	0.533	1,500	6.00	0.40	21.1	A	-0.00625	0.04	0.0317	6.17	11.79	53.64
11.38	23.9	0.486	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0314	5.84	13.58	66.54
11.39	23.2	0.566	1,400	3.00	0.21	11.3	A	-0.00625	0.04	0.0315	5.75	14.14	60.12
11.40	13.3	0.535	900	4.00	0.44	23.5	A	-0.00625	0.04	0.0330	6.96	8.62	39.98
11.41	89.8	0.401	4,000	14.00	0.35	18.5	A	-0.00625	0.04	0.0278	4.68	20.81	112.98
11.42	14.9	0.425	1,700	4.00	0.24	12.4	A	-0.00625	0.04	0.0327	5.47	15.72	81.13
11.43	43.9	0.410	1,400	8.00	0.57	30.2	A	-0.00625	0.04	0.0297	6.69	9.56	55.97
11.44	8.9	0.478	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0341	5.94	13.00	63.30
11.45	26.5	0.418	1,600	1.00	0.06	3.3	A	-0.00625	0.04	0.0311	4.25	24.69	123.66
11.46	4.3	0.589	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0360	6.85	8.97	36.80
11.47	122.3	0.400	3,500	10.00	0.29	15.1	A	-0.00625	0.04	0.0270	4.74	20.30	113.11
11.48	42.0	0.419	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0299	5.77	14.00	77.86
11.49	30.4	0.483	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0307	5.81	13.75	67.98
11.50	36.3	0.424	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0303	5.83	13.62	74.44
11.51	15.1	0.691	1,000	4.00	0.40	21.1	A	-0.00625	0.04	0.0326	6.71	9.46	31.59
11.52	22.6	0.515	1,900	6.00	0.32	16.7	A	-0.00625	0.04	0.0315	5.66	14.71	67.41
12.01	13.3	0.938	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0330	6.75	9.34	12.39
12.02	26.7	0.028	1,800	6.80	0.38	19.9	A	-0.00625	0.04	0.0311	5.90	13.23	113.20
12.03	17.2	0.028	1,200	2.80	0.23	12.3	A	-0.00625	0.04	0.0323	5.99	12.72	108.61
12.04	12.0	0.938	900	3.20	0.36	18.8	A	-0.00625	0.04	0.0333	6.73	9.39	12.39
13.01	31.7	0.030	2,300	10.00	0.43	23.0	A	-0.00625	0.04	0.0306	5.71	14.38	121.93
13.02	72.5	0.286	3,300	12.00	0.36	19.2	A	-0.00625	0.04	0.0284	5.01	18.39	117.97
13.03	7.7	0.037	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0345	6.84	9.01	76.79
13.04	6.0	0.950	800	2.80	0.35	18.5	A	-0.00625	0.04	0.0351	6.81	9.12	10.84
13.05	16.2	0.950	2,200	7.60	0.35	18.2	A	-0.00625	0.04	0.0324	5.45	15.85	18.05
13.06	4.6	0.950	600	2.10	0.35	18.5	A	-0.00625	0.04	0.0359	7.23	7.80	9.38
14.01	25.9	0.286	2,000	4.00	0.20	10.6	A	-0.00625	0.04	0.0312	5.07	18.02	112.03
14.02	70.9	0.285	3,800	7.00	0.18	9.7	A	-0.00625	0.04	0.0284	4.10	26.33	158.86
14.03	36.4	0.284	1,800	10.00	0.56	29.3	A	-0.00625	0.04	0.0302	6.27	11.31	75.76
15.01	20.6	0.950	1,700	5.20	0.31	16.2	A	-0.00625	0.04	0.0318	5.77	14.01	16.52
16.01	24.1	0.284	2,000	8.00	0.40	21.1	A	-0.00625	0.04	0.0314	5.79	13.86	89.17
16.02	47.6	0.285	5,200	14.00	0.27	14.2	A	-0.00625	0.04	0.0295	3.93	28.37	163.75
17.01	68.3	0.191	3,000	8.00	0.27	14.1	A	-0.00625	0.04	0.0285	4.83	19.64	139.30
17.02	56.4	0.190	2,400	7.00	0.29	15.4	A	-0.00625	0.04	0.0291	5.30	16.65	120.96
17.03	19.4	0.191	2,400	6.00	0.25	13.2	A	-0.00625	0.04	0.0320	4.95	18.83	127.24
18.01	13.0	0.190	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0330	6.08	12.26	88.57
19.01	10.7	0.186	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0336	5.84	13.55	96.27
19.02	11.5	0.190	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0334	5.76	14.09	98.56
19.03	82.0	0.190	4,000	6.00	0.15	7.9	A	-0.00625	0.04	0.0280	3.87	29.23	194.98
19.04	11.1	0.188	1,400	4.00	0.29	15.1	A	-0.00625	0.04	0.0335	5.90	13.22	93.23
19.05	20.9	0.191	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0317	6.50	10.30	76.35
19.06	25.3	0.192	2,200	6.00	0.27	14.4	A	-0.00625	0.04	0.0312	5.25	16.96	118.28
19.07	33.4	0.191	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0305	5.82	13.68	100.17
19.08	74.7	0.189	3,300	10.00	0.30	16.0	A	-0.00625	0.04	0.0283	4.82	19.72	140.17
19.09	9.9	0.192	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0338	5.60	15.10	103.79
19.10	14.4	0.191	1,700	8.00	0.47	24.8	A	-0.00625	0.04	0.0328	6.09	12.20	86.70

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
19.11	9.7	0.186	1,300	4.00	0.31	16.2	A	-0.00625	0.04	0.0338	6.05	12.41	87.86
19.12	14.6	0.189	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0327	5.88	13.34	96.03
19.13	25.2	0.188	1,800	6.00	0.33	17.6	A	-0.00625	0.04	0.0312	5.79	13.89	100.39
19.14	15.4	0.191	1,600	4.00	0.25	13.2	A	-0.00625	0.04	0.0326	5.65	14.76	103.87
19.15	14.4	0.871	1,400	2.00	0.14	7.5	A	-0.00625	0.04	0.0328	5.25	16.95	29.52
19.16	11.4	0.911	1,100	4.00	0.36	19.2	A	-0.00625	0.04	0.0334	6.45	10.50	15.77
19.17	7.6	0.850	1,200	2.00	0.17	8.8	A	-0.00625	0.04	0.0345	5.63	14.97	28.33
19.18	3.8	0.950	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0364	6.14	11.92	13.67
19.20	11.0	0.899	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0335	5.42	15.98	24.64
19.21	10.2	0.794	1,700	2.00	0.12	6.2	A	-0.00625	0.04	0.0337	4.64	21.09	46.33
19.22	19.8	0.192	1,500	4.00	0.27	14.1	A	-0.00625	0.04	0.0319	5.82	13.71	98.35
19.23	4.5	0.190	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0359	6.46	10.44	73.54
19.24	6.7	0.750	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0348	6.57	10.03	28.04
19.25	5.8	0.197	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	5.89	13.27	91.99
19.26	8.1	0.519	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0343	5.37	16.24	71.21
19.27	8.4	0.192	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0342	5.38	16.21	111.32
19.28	6.2	0.184	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0350	5.90	13.23	93.28
19.29	6.5	0.750	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0349	5.34	16.43	42.92
19.30	8.6	0.750	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0342	5.10	17.86	46.47
19.31	3.7	0.750	500	1.00	0.20	10.6	A	-0.00625	0.04	0.0364	6.94	8.67	24.09
19.32	7.3	0.950	1,000	1.00	0.10	5.3	A	-0.00625	0.04	0.0346	5.36	16.33	18.39
19.33	5.4	0.750	600	2.00	0.33	17.6	A	-0.00625	0.04	0.0354	7.20	7.88	22.26
19.34	1.6	0.950	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0387	6.74	9.37	10.80
19.35	6.9	0.750	1,100	1.00	0.09	4.8	A	-0.00625	0.04	0.0348	5.06	18.07	46.47
19.36	6.7	0.750	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0348	6.24	11.46	31.20
19.37	39.5	0.190	2,200	8.00	0.36	19.2	A	-0.00625	0.04	0.0300	5.65	14.77	107.64
19.38	1.9	0.100	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0383	5.67	14.68	105.38
19.39	5.6	0.750	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0353	6.49	10.33	28.29
19.40	7.4	0.813	900	1.00	0.11	5.9	A	-0.00625	0.04	0.0346	5.67	14.67	32.29
19.41	4.7	0.101	900	3.00	0.33	17.6	A	-0.00625	0.04	0.0358	6.56	10.05	77.80
19.42	5.4	0.194	800	3.00	0.38	19.8	A	-0.00625	0.04	0.0354	6.86	8.93	64.00
19.43	6.8	0.950	1,100	3.00	0.27	14.4	A	-0.00625	0.04	0.0348	6.13	11.96	13.81
20.01	17.3	0.192	1,300	3.00	0.23	12.2	A	-0.00625	0.04	0.0323	5.87	13.38	96.05
20.02	5.3	0.197	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0355	6.81	9.13	65.28
21.01	6.1	0.813	700	2.00	0.29	15.1	A	-0.00625	0.04	0.0351	6.82	9.07	20.79
21.02	2.0	0.813	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0381	6.76	9.28	20.70
21.03	1.9	0.813	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0383	6.23	11.49	24.93
22.01	6.7	0.950	800	2.00	0.25	13.2	A	-0.00625	0.04	0.0348	6.51	10.25	12.12
22.02	4.7	0.950	700	3.00	0.43	22.6	A	-0.00625	0.04	0.0358	7.19	7.92	9.47
23.01	2.4	0.750	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0376	6.79	9.20	25.20
24.01	2.7	0.750	400	0.50	0.13	6.6	A	-0.00625	0.04	0.0373	6.80	9.16	25.20
25.01	8.9	0.500	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0341	6.27	11.30	53.49
25.02	5.7	0.500	1,100	2.00	0.18	9.6	A	-0.00625	0.04	0.0353	5.78	13.97	63.23
26.01	5.6	0.500	900	2.00	0.22	11.7	A	-0.00625	0.04	0.0353	6.22	11.56	53.49
27.01	2.4	0.750	500	0.50	0.10	5.3	A	-0.00625	0.04	0.0376	6.25	11.37	30.35
28.01	1.8	0.750	300	1.00	0.33	17.6	A	-0.00625	0.04	0.0384	8.26	5.52	15.74
29.01	73.6	0.250	2,600	6.00	0.23	12.2	A	-0.00625	0.04	0.0283	4.94	18.89	127.19

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITIONS
Frequency = 100 years

Drainage Area Physical Parameters							FCDMC Kinematic Wave tc Calculations						Airfield
Area	Area	C	L	dH	S	S	Resist. Coeff, Kb, Calculations				i(trial)	tc	tc
No.	(acres)		(ft)	(ft)	(%)	(ft/mi)	Type	m	b	Kb	(in/hr)	(min)	(min)
29.02	76.0	0.250	3,100	4.00	0.13	6.8	A	-0.00625	0.04	0.0282	4.08	26.51	168.58
30.01	14.5	0.190	1,600	6.00	0.38	19.8	A	-0.00625	0.04	0.0327	5.98	12.78	90.86
30.02	3.5	0.190	700	1.00	0.14	7.5	A	-0.00625	0.04	0.0366	6.13	11.97	82.90
30.03	15.3	0.750	1,300	6.00	0.46	24.4	A	-0.00625	0.04	0.0326	6.46	10.47	29.39
30.04	9.1	0.813	1,200	4.00	0.33	17.6	A	-0.00625	0.04	0.0340	6.22	11.53	25.85
30.05	5.1	0.186	600	1.00	0.17	8.8	A	-0.00625	0.04	0.0356	6.53	10.16	73.21
31.01	5.9	0.813	800	1.00	0.13	6.6	A	-0.00625	0.04	0.0352	5.89	13.26	29.27
31.02	3.5	0.190	600	1.20	0.20	10.6	A	-0.00625	0.04	0.0366	6.66	9.67	68.61
32.01	1.9	0.950	800	1.60	0.20	10.6	A	-0.00625	0.04	0.0383	6.17	11.76	13.06
32.02	2.2	0.950	860	1.70	0.20	10.4	A	-0.00625	0.04	0.0379	6.08	12.25	13.59
32.03	1.8	0.950	730	1.50	0.21	10.8	A	-0.00625	0.04	0.0384	6.32	11.07	12.36
32.04	1.9	0.950	770	1.60	0.21	11.0	A	-0.00625	0.04	0.0383	6.26	11.35	12.65
32.05	2.6	0.950	720	1.80	0.25	13.2	A	-0.00625	0.04	0.0374	6.56	10.06	11.50
32.06	4.4	0.950	1,620	4.10	0.25	13.4	A	-0.00625	0.04	0.0360	5.46	15.79	17.18
32.07	4.4	0.950	1,370	4.10	0.30	15.8	A	-0.00625	0.04	0.0360	5.87	13.42	14.94
32.08	1.6	0.950	630	1.90	0.30	15.9	A	-0.00625	0.04	0.0387	6.88	8.88	10.11
32.09	2.7	0.950	1,100	2.20	0.20	10.6	A	-0.00625	0.04	0.0373	5.78	13.96	15.31
32.10	2.5	0.950	1,000	2.00	0.20	10.6	A	-0.00625	0.04	0.0375	5.90	13.25	14.60
32.11	4.4	0.950	1,800	4.50	0.25	13.2	A	-0.00625	0.04	0.0360	5.24	16.97	18.18
32.12	2.3	0.950	930	2.30	0.25	13.1	A	-0.00625	0.04	0.0377	6.17	11.80	13.12
32.13	3.0	0.950	1,730	3.50	0.20	10.7	A	-0.00625	0.04	0.0370	5.02	18.33	19.13
32.14	1.9	0.950	1,120	2.30	0.21	10.8	A	-0.00625	0.04	0.0383	5.74	14.19	15.32
32.15	3.7	0.950	1,440	3.60	0.25	13.2	A	-0.00625	0.04	0.0364	5.64	14.86	16.26
32.16	2.0	0.950	820	2.00	0.24	12.9	A	-0.00625	0.04	0.0381	6.32	11.08	12.37

Appendix B

APPENDIX B. Field Report of Sanitary Sewer Cross-ties

A field investigation of known sanitary sewer cross-ties was made on March 18, 1996. Cross-ties identified in the Rehabilitation Study were located to determine the current status of the cross-ties and an attempt was made to locate cross-ties not previously identified. The following report was prepared to document the findings of the field investigation:

Location No. 1

Identified in the Rehabilitation Study as Inlets #I-112, I-113 and I-114. These are three inlets known to have direct pipe ties to the sanitary sewer system. The field visit has determined the following:

> I-114 - Located in Building #27, a hanger, appears to collect only occasional water in heavy rains. I-114 is a trench drain, 7-inches wide and runs the length of the building behind the rolling door track. A building employee says this is the only drain in the building and it was routed out a year ago and it does drain well. A slight swale in front of the building directs most runoff to the sides and around the building. The gutter of the trench drain drains out a 3-inch pipe at the center of the building. Other outlet pipes may also exist.
>
> I-112 - Located in Building #25 is the same as I-114. Building #25 was closed and unaccessible for further investigation.
>
> I-113 - Is a 2.5' x 2.5' catch basin in the center of an inward sloping slab, approximately 50' x 50', with a steel roof cover, but no walls. This catch basin is silted full and not draining. My later meeting with Art Allen revealed that the oil-water separator within the I-113 line had been removed; causing the line plug, therefore this catch basin is no longer a problem.

Mr. Allen showed me a set of plans from 1941 that shows the pipe connections from Buildings 25 and 27, as well as Buildings 24 and 26, also hangers, into the east-west sanitary sewer line. He also informed me that other floor drains exist within the buildings. Building #26 no longer exists and Art is quite sure the inlet pipes were capped when the hanger came down.

Also, approximately 20-feet east of the Building 25 door pocket I found what appears to be a sanitary sewer clean-out, 8-inch diameter, and slightly recessed in the gravel without an appropriate cover. It does have a small steel plate laying on the gravel but its not sealed. This is a possible source of runoff collection into the sanitary sewer system. Art Allen did say that the treatment plant still reports an

increase in flows during a rain storm. Apparently heavy flow increases were noted back in the 80's but since then the Air Force has done a lot to seal off known inlets into the sanitary sewer system.

Location No. 2

Identified as I-115. This inlet is a 2' x 4' catch basin located in a driveway / parking lot on the east side of Building #300, the Air Base Mess Hall. According to Art Allen's 1941 Base plans, it is within the immediate vicinity of a 6-inch sanitary sewer. But, it may have been sealed off as evident by recently constructed retention basins around the Building and the basin itself is filled with silt and debris to within 1-foot of the top. It would be necessary to open and clean this catch basin to see if it has been sealed off.

Location No. 3

Identified as I-72. This was a catch basin at the end of the south apron storm drain line which had a 6-inch pipe connection to sanitary sewer manhole #76.13. But again, this is not a problem because catch basin inlet #I-72, along with 500±-feet of upstream pipe, was removed in 1993.

Location No. 4

Identified as "B" Street from 6th Street to 12th Street, the Rehabilitation Study reports that this area on the south side of "B" Street ponds water during rain storms - and there is approximately 8 sanitary sewer manholes here that take in water through the cover holes. This problem has also been remedied by the Air Force. All but one manhole (which appears to sit higher than others) has been fitted with a plastic semi-spherical basin that fits under the manhole cover by a lid that rests on the frame. They apparently work as all of them were full of water from last weeks rain.

This concludes the investigation of sites identified in the Rehabilitation Study. The following additional locations were discovered during site surveys.

Location No. 5

Building No. 74, the Fire Station. Located in the valley gutter at the west side of the concrete driveway, which is the north gutter line of "E" Street, is a 2.5' x 2.5' catch basin. Approximately 1.5-feet below the grate is the invert of a 6-inch pipe heading southwest. The basin is full of mud and leaves up to the invert. Across "E" Street I found a sanitary sewer manhole with a 6-inch pipe coming into the upper wall - about 2.5-feet below the rim and 5-feet above the sanitary sewer pipe inverts. I rolled out a garden hose from the Fire Station hose bib and began filling the catch basin. Within a couple of minutes I had the equivalent flow into the manhole. This catch basin not only collects rainwater - but all the runoff from the Fire Station activities. The sanitary sewer manhole is #78.

Location No. 6

Building No. 1351, a training facility along the north apron, at some time after the construction of the building a trench drain was added between the northeast building corner and a short wall along a patio. The alignment of the outlet pipe (4-inch or 6-inch diameter) can be followed by the sawcuts in the concrete patio slab to the northwest corner of the building. This pipe has been tapped into the 18-inch storm drain somewhere below mid-building location, or into the 6-inch sanitary sewer which exits the back of the building, running westerly, further investigation should be completed. There is a hose bib on the building to run water from to see if it arrives in a sanitary sewer manhole or catch basin #I-32.

Location No. 7

The south side of Building No. 785 - the BX Building. There is a loading dock on the back side of the store with a 30±-foot north-south trench drain. Unfortunately it is 75% plugged with dirt and leaves and the drain pipes are not visible. It could drain north, under the building, to the storm drain line as the trench drains at Building 790 do, or it could drain to the sanitary sewer on the south side of "B" Street which is approximately 60-feet south. This south side of the trench drain was silted the most making it appear to be the low end.

This concludes my investigation of known or possible cross connections. It is not intended to imply that the above are the only cross connections that exist. Art Allen seems certain there are others. Art also told me of a smoke test conducted by Franzoy Corey on the sanitary sewer system, possibly between the years of 1984 and 1989, but he did not have a copy of the results of that test.

Appendix C

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3

PROJECT: WILLIAMS GATEWAY AIRPORT - MASTER DRAINAGE PLAN

DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
LINE: SOUTH APRON DRAINAGE AREA <SAPRON>																
						1344.3									1343.3	2.6
I- 24	1339.7	390	12	I 54	1340.9		0	0.4	0.0000	0.5	0.0001	0.05			1343.3	2.6
						1344.3							0.5	0.03	1343.2	1.3
I- 54	1340.9	396	12	I 55	1340.2		2	1.5	0.0018	1.9	0.0017	0.69			1343.2	1.3
						1343.5							0.5	0.02	1342.5	1.3
I- 55	1340.2	640	12	I 56	1339.5		1.2	1.2	0.0012	1.5	0.0011	0.712			1342.5	1.3
						1342.8							0.5	0.03	1341.8	1.3
I- 56	1339.5	133	15	I 56A	1338.2		6.2	2.3	0.0092	1.8	0.0012	0.162			1341.8	1.1
						1342.8							0.5	0.03	1341.6	2.1
I- 56A	1338.2	323	15	I 57	1337.5		3	2.3	0.0021	1.8	0.0012	0.395			1341.6	2.1
						1342.3							0.5	0.03	1341.2	2.4
I- 57	1337.5	298	15	I 57A	1337.7		0	2.3	0	1.8	0.0012	0.364			1341.2	2.4
						1341.8							0.5	0.04	1340.8	1.8
I- 57A	1337.7	300	15	I 58	1337.9		0	2.7	0	2.2	0.0018	0.541			1340.8	1.8
						1341.2							0.5	0.03	1340.2	1.0
I- 58	1337.9	300	18	I 59	1336.7		6.9	3.5	0.0043	2.0	0.0011	0.339			1340.2	0.7
						1340.9							0.5	0.01	1339.8	1.7
I- 59	1336.7	404	18	I 200	1336.5		2	2.2	0.0005	1.2	0.0004	0.18			1339.8	1.7
						1340.9							0.5	0.00	1339.7	1.7
I- 200	1336.5	483	24	I 201	1336.2		5	2.2	0.0005	0.7	9E-05	0.046			1339.7	1.2
						1342.1							0.5	0.00	1339.6	1.4

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
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DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
I - 201	1336.2	384	36	I 202	1336.5		0	2.2	0	0.3	1E-05	0.004			1339.6	0.4
						1342.7							0.5	0.00	1339.6	0.1
I - 202	1336.5	597	36	C 210	1336.6		0	2.2	0	0.3	1E-05	0.006			1339.6	0.1
Starting HGL															1339.6	0.0

LINE: SOUTH APRON LATERAL (Ties in at I-201) <SAPRONLAT>

						1345.5									1344.49	1.9107
I - 62	1342.6	499	15	I 63	1341.3		3	2.8	0.0025	2.2	0.0018	0.91			1344.5	0.7
						1344.6							0.5	0.03	1343.6	1.0
I - 63	1341.3	146	15	I 64	1341.0		3	2.5	0.0020	2.0	0.0015	0.22			1343.5	1.0
						1344.3							0.5	0.02	1343.3	1.0
I - 64	1341.0	355	18	I 65	1340.2		5	3.0	0.0024	1.7	0.0008	0.29			1343.3	0.8
						1344.9							0.5	0.023	1343.01	1.325
I - 65	1340.2	280	18	I 66	1339.6		4.7	3.0	0.002	1.7	0.0008	0.231			1343.0	1.3
						1343.9							0.5	0.02	1342.8	1.6
I - 66	1339.6	436	18	I 67	1339.4		2.5	3.0	0.0006	1.7	0.0008	0.359			1342.7	1.6
						1343.4							0.5	0.027	1342.38	1.5
I - 67	1339.4	430	18	I 68	1339.0		3.2	3.3	0.0009	1.86	0.001	0.423			1342.35	1.473
						1342.9							0.5	0.037	1341.93	1.45
I - 68	1339.0	400	18	I 69	1338.4		4.2	3.9	0.0016	2.19	0.0014	0.543			1341.89	1.4128
						1342.4							0.5	0.04	1341.4	1.5
I - 69	1338.4	480	18	I 69A	1337.8		3.7	3.8	0.0012	2.18	0.0013	0.643			1341.31	1.4632
						1341.7							0.5	0	1340.67	1.4

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
PROJECT: WILLIAMS GATEWAY AIRPORT - MASTER DRAINAGE PLAN
DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
I - 69A	1337.8	183	18	I 201	1336.2		10	8.0	0.0085	4.5	0.0058	1.06			1340.7	1.4
						1342.1									1339.6	1.9
Starting HGL															1339.6	

LINE: SOUTH AIRFIELD AREA <SAIRFIELD>

						1351.5									1350.5	0.4
I 73A	1348.6	764	18	I 73	1345.0		7	7	0.0047	4.0	0.0045	3.41			1350.5	0.4
						1348.1							0.5	0.05	1347.1	0.6
I 73	1345.0	401	24	I 74	1343.4		14	8	0.004	2.7	0.0014	0.545			1347.1	0.0
						1347.5							0.5	0.07	1346.5	1.1
I 74	1343.4	401	24	I 75	1342.3		12	9	0.0028	2.9	0.0017	0.663			1346.5	1.0
						1346.8							0.5	0.20	1345.8	1.5
I 75	1342.3	136	30	I 77	1341.9		22	25	0.0029	5.1	0.0038	0.51			1345.6	0.8
						1347.5							0.5	0.20	1345.1	0.7
I 77	1341.9	105	30	I 78	1341.4		29	25	0.0049	5.1	0.0038	0.394			1344.9	0.5
						1349.3							0.5	0.12	1344.5	0.6
I 78	1341.4	358	2 24	I 79	1339.2		35	25	0.0061	4.0	0.0031	1.104			1344.4	1.0
						1344.3							0.5	0.07	1343.3	2.1
I 79	1339.2	182	39	I 81	1339.7		0	25	0	3.0	0.0009	0.169			1343.2	0.7
						1344.0							0.5	0.06	1343.0	0.1
I 81	1339.7	132	39	MH 47	1339.3		47	23	0.0032	2.7	0.0007	0.099			1343.0	0.0
						1344.1							0.5	0.04	1342.9	0.4
MH 47	1339.3	16	3 24	MH 48	1339.2		45	23	0.0044	2.4	0.0011	0.018			1342.8	1.6

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
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DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
						1344.1							0.5	0.06	1342.8	1.6
MH 48	1339.2	32	39	MH 49	1339.1		39	23	0.0022	2.7	0.0007	0.024			1342.7	0.3
						1344.1							0.5	0.04	1342.7	0.4
MH 49	1339.1	10	3 24	MH 50	1339.1		48	23	0.005	2.4	0.0011	0.011			1342.7	1.6
						1344.1							0.5	0.06	1342.7	1.6
MH 50	1339.1	317	39	I 82	1338.5		34	23	0.0017	2.7	0.0007	0.237			1342.6	0.3
						1343.4							0.5	0.05	1342.4	0.6
I 82	1338.5	414	39	I 83	1338.3		21	21	0.0006	2.6	0.0007	0.278			1342.3	0.5
						1343.0							0.5	0.08	1342.0	0.5
I 83	1338.3	413	39	I 84	1337.9		26	26	0.001	3.1	0.001	0.413			1342.0	0.5
						1342.6							0.5	0.06	1341.6	0.4
I 84	1337.9	200	45	I 85	1337.7		39	32	0.001	2.9	0.0007	0.138			1341.5	-0.1
						1342.5							0.5	0.06	1341.3	-0.1
I 85	1337.7	336	45	I 86	1337.3		39	32	0.001	2.9	0.0007	0.232			1341.3	-0.1
						1343.6							0.5	0.06	1341.1	0.0
I 86	1337.3	746	45	C 96	1336.7		34	32	0.0008	2.9	0.0007	0.516			1341.0	-0.1
Starting HGL															1340.47	

LINE: SOUTH AIRFIELD AREA LATERALS <SAIRLAT>

						1355.5									1354.45	1.8982
I 88	1351.7	925	10	MH 3	1348.7		1.2	1.21	0.0032	2.23	0.0031	2.844			1354.45	1.8982
													0.5	0.019	1351.61	2.0346
MH 3	1348.7	550	12	I 93	1347.3		1.9	1.21	0.0027	1.55	0.0012	0.639			1351.59	1.8494

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
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DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
						1352							0.5	0.05	1350.95	2.7
I 93	1347.3	375	12	MH 4	1346.3		1.8	1.99	0.0027	2.53	0.0031	1.169			1350.9	2.6502
													0.5	0.05	1349.73	2.4813
MH 4	1346.3	625	12	MH 5	1344.6		1.8	1.99	0.0026	2.53	0.0031	1.948			1349.68	2.4315
													0.5	0.05	1347.73	2.1133
MH 5	1344.6	560	12	MH 6	1343.2		1.8	1.99	0.0026	2.53	0.0031	1.746			1347.68	2.0635
													0.5	0.05	1345.94	1.7679
MH 6	1343.2	600	12	MH 7	1342.2		1.5	1.99	0.0017	2.53	0.0031	1.87			1345.89	1.7181
													0.5	0.05	1344.02	0.8678
MH 7	1342.3	580	12	MH 8	1341.1		1.6	1.99	0.002	2.53	0.0031	1.808			1343.97	0.718
													0.5	0.05	1342.16	0.0801
MH 8	1341.1	460	12	45 PIPE	1340.2		1.5	1.99	0.0018	2.53	0.0031	1.434			1342.11	0.0303
Starting HGL															1340.68	

LINE: SE AIRFIELD SYST INTO 12" @ I-93 <SEAI-93>

						1355.0									1354.0	
I 87	1351.9	960	24	I 91	1349.3		12	7.48	0.0027	2.38	0.0011	1.05			1353.96	0.1
						1353.9							0.5	0.12	1352.91	1.62
I 91	1349.3	520	30	I 92	1348.2		19	19.3	0.0022	3.92	0.0022	1.147			1352.79	1.0004
						1351.7							0.5	0.12	1351.6	1.0
I 92	1348.2	260	30	I 93	1347.6		20	19.3	0.0023	3.92	0.0022	0.574			1351.52	0.8636
						1352.0							0.5	0.05	1350.95	
Starting HGL															1350.9	

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
PROJECT: WILLIAMS GATEWAY AIRPORT - MASTER DRAINAGE PLAN
DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
LINE: SE AIRFIELD SYST INTO 30" @ I-91 <SEAI-91>																
						1357.0									1356.0	2.0
I 89	1352.6	533	18	I 90	1350.8		6	4	0.0032	2.5	0.0018	0.95			1356.0	2.0
						1356.1							0.5	0.16	1355.1	2.8
I 90	1350.8	357	18	I 91	1349.7		6	8	0.0033	4.5	0.0057	2.024			1354.9	2.6
						1353.9							0.5	0.12	1352.9	1.8
Starting HGL															1352.8	
LINE: NORTH APRON AREA <NAPRON>																
						1344.1									1343.1	
I 25	1339.1	114	12	I 25A	1339.0		1	1.89	0.0004	2.4	0.0028	0.32			1343.1	3.0
						1343.8							0.5	0.02	1342.7	2.7
I 25A	1339.0	640	15	I 26	1339.1		0	2.02	0	1.7	0.001	0.629			1342.7	2.5
						1343.1							0.5	0.07	1342.1	1.8
I 26	1339.1	262	15	I 27A	1338.1		4	3.8	0.0037	3.1	0.0035	0.91			1342.0	1.7
						1342.1							0.5	0.07	1341.1	1.8
I 27A	1338.12	194	15	I 27	1336.2		6	3.63	0.0097	3.0	0.0032	0.61			1341.1	1.7
						1341.4							0.5	0.059	1340.4	3.0
I 27	1336.24	1050	15	I 30	1334.1		3	3.38	0.0021	2.76	0.0027	2.88			1340.4	2.9
						1338.5							0.5	0.051	1337.5	2.2
I 30	1334.05	183	18	I 31A	1333.7		4.8	4.52	0.0021	2.56	0.0019	0.339			1337.4	1.9

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
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DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
						1338.1							0.5	0.094	1337.1	1.9
I 31A	1333.7	368	18	I 31	1332.7		5	6.14	0.0026	3.5	0.0034	1.26			1337.0	1.8
						1336.8							0.5	0.184	1335.8	1.5
I 31	1332.71	383	21	I 32	1331.5		9	11.7	0.0032	4.9	0.0054	2.09			1335.6	1.1
						1334.5							0.5	0.68	1333.5	0.3
I 32	1331.5	165	18	C 12	1327.2		17	16.5	0.0258	9.3	0.0247	4.081			1332.8	-0.2
															1328.7	0.0
Starting HGL															1328.7	

LINE: NORTH AIRFIELD AREA <NAIRFIELD>

						1345.7									1344.7	1.0
I 14	1342.4	500	15	I 15	1341.6		3	2.24	0.0016	1.8	0.0012	0.60			1344.7	1.0
						1345.1							0.5	0.037	1344.1	1.2
I 15	1341.62	500	15	I 16	1340.6		2.9	2.68	0.002	2.19	0.0017	0.863			1344.1	1.2
						1344.2							0.5	0.038	1343.2	1.3
I 16	1340.62	282	15	I 17	1340		3.1	2.71	0.0024	2.21	0.0018	0.495			1343.2	1.3
						1344.3							0.5	0.038	1342.7	1.5
I 17	1339.95	450	15	I 18	1338.8		3.3	2.71	0.0026	2.21	0.0018	0.79			1342.6	1.4
						1342.9							0.5	0.082	1341.9	1.8
I 18	1338.79	450	18	I 19	1337.7		5.2	5.73	0.0025	3.24	0.003	1.338			1341.8	1.5
						1341.4							0.5	0.074	1340.4	1.2
I 19	1337.68	450	18	I 20	1336.6		5.1	5.46	0.0024	3.09	0.0027	1.216			1340.4	1.2
						1340.1							0.5	0.077	1339.1	1.0

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
PROJECT: WILLIAMS GATEWAY AIRPORT - MASTER DRAINAGE PLAN
DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
I 20	1336.61	450	18	I 21	1335.2		6	5.56	0.0032	3.15	0.0028	1.263			1339.1	1.0
						1338.8							0.5	0.066	1337.8	1.1
I 21	1335.15	450	18	I 22	1334.2		4.7	5.16	0.002	2.92	0.0024	1.084			1337.7	1.1
						1337.7							0.5	0.232	1336.6	0.9
I 22	1334.24	174	21	I 23	1333		13	13.1	0.0071	5.47	0.0069	1.198			1336.4	0.4
						1336.2							0.5	0.533	1335.2	0.5
I 23	1329.04	658	2 54	C 12	1327.2		206	264	0.0028	8.29	0.0045	2.957			1334.7	1.1
Starting HGL															1331.73	

LINE: NORTH AIRFIELD AREA LATERAL <NAIRLAT>

						1348.3									1347.3	2.9
I 10	1344.4	400	24	I 11	1343.3		12	9.73	0.0028	3.1	0.0018	0.74			1347.3	0.9
						1347.5							0.5	0.059	1346.5	1.2
I 11	1343.3	400	24	I 12	1342.2		12	8.69	0.0028	2.8	0.0015	0.59			1346.5	1.2
						1346.9							0.5	0.195	1345.9	1.7
I 12	1342.2	600	30	I 13	1339.9		25	24.6	0.0038	5.0	0.0036	2.16			1345.7	1.0
						1343.9							0.5	0.09	1343.5	1.1
I 13	1340.8	70	18	I 16	1340.6		6	6	0.0029	3.4	0.0033	0.23			1343.4	1.1
						1344.2							0.5	0.038	1343.2	1.1
Starting HGL															1343.17	

LINE: NORTH AIRFIELD AREA LATERAL 2 <NAIRLAT2>

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
PROJECT: WILLIAMS GATEWAY AIRPORT - MASTER DRAINAGE PLAN
DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
						1339.6									1338.4	1.1
I 9	1332.31	994	60	I 23	1329		149	156	0.0033	7.9	0.0036	3.55			1338.4	1.1
						1336.2							0.5	0.14	1334.8	0.8
Starting HGL															1334.69	

LINE: NORTH AIRFIELD AREA LATERAL 3 <NAIRLAT3>

						1340.8									1339.8	1.1
I 3	1336.46	732	27	I 6	1334.1		18	17.6	0.0032	4.43	0.0032	2.37			1339.8	1.1
						1338.4							0.5	0	1337.4	1.1
I 6	1334.11	399	27	I 7	1332.6		19	20.8	0.0039	5.23	0.0045	1.8			1337.4	1.1
						1336.6							0.5	0	1335.6	0.8
I 7	1332.57	534	27	I 8	1330.7		18	20	0.0035	5.03	0.0042	2.23			1335.6	0.8
						1334.4							0.5	0	1333.4	0.4
I 8	1330.7	87	30	C 12	1327.2		82	84.6	0.0402	17.2	0.0425	3.7			1333.4	0.2
															1329.7	0.0
Starting HGL															1329.7	

LINE: CENTRAL BASE AREA <CENBASE>

						1333.6									1332.56	0.85
I 45	1329.2	306	30	I 46	1328.4		21	20.4	0.0027	4.16	0.0025	0.76			1332.56	0.85
						1332.8							0.5	0.09	1331.8	0.9
I 46	1328.4	244	30	I 47	1327.4		26	16.8	0.0039	3.42	0.0017	0.409			1331.71	0.8391

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
PROJECT: WILLIAMS GATEWAY AIRPORT - MASTER DRAINAGE PLAN
DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
						1332.3							0.5	0.084	1331.3	1.38
I 47	1327.4	160	30	I 48	1327.2		15	16.1	0.0014	3.28	0.0015	0.246			1331.22	1.2965
						1332							0.5	0.146	1330.97	1.27
I 48	1327.2	87	30	I 49	1327.0		22	21.3	0.0029	4.33	0.0027	0.234			1330.82	1.1241
						1331.6							0.5	0.146	1330.59	1.14
I 49	1327.0	72	30	I 50	1326.7		24	21.3	0.0035	4.34	0.0027	0.194			1330.44	0.994
						1331.3							0.5	0.201	1330.25	1.05
I 50	1326.7	82	36	I 51	1326.6		24	36	0.0013	5.09	0.0029	0.239			1330.05	0.3487
						1330.8							0.5	0.135	1329.81	0.22
I 51	1326.6	295	36	I 52	1325.6		38	29.5	0.0033	4.17	0.002	0.577			1329.67	0.0847
						1329.7							0.5	0.135	1329.1	0.4875
I 52	1325.6	180	36	I 53	1325.0		40	29.5	0.0037	4.17	0.002	0.352			1328.96	0.3522
						1329.6							0.5	0.271	1328.61	0.66
I 53	1325.0	876	36	C 21	1321.9		39	41.8	0.0035	5.91	0.0039	3.439			1328.34	0.3886
Starting HGL															1324.9	

LINE: CENTRAL BASE AREA SPUR <CENBASPUR>

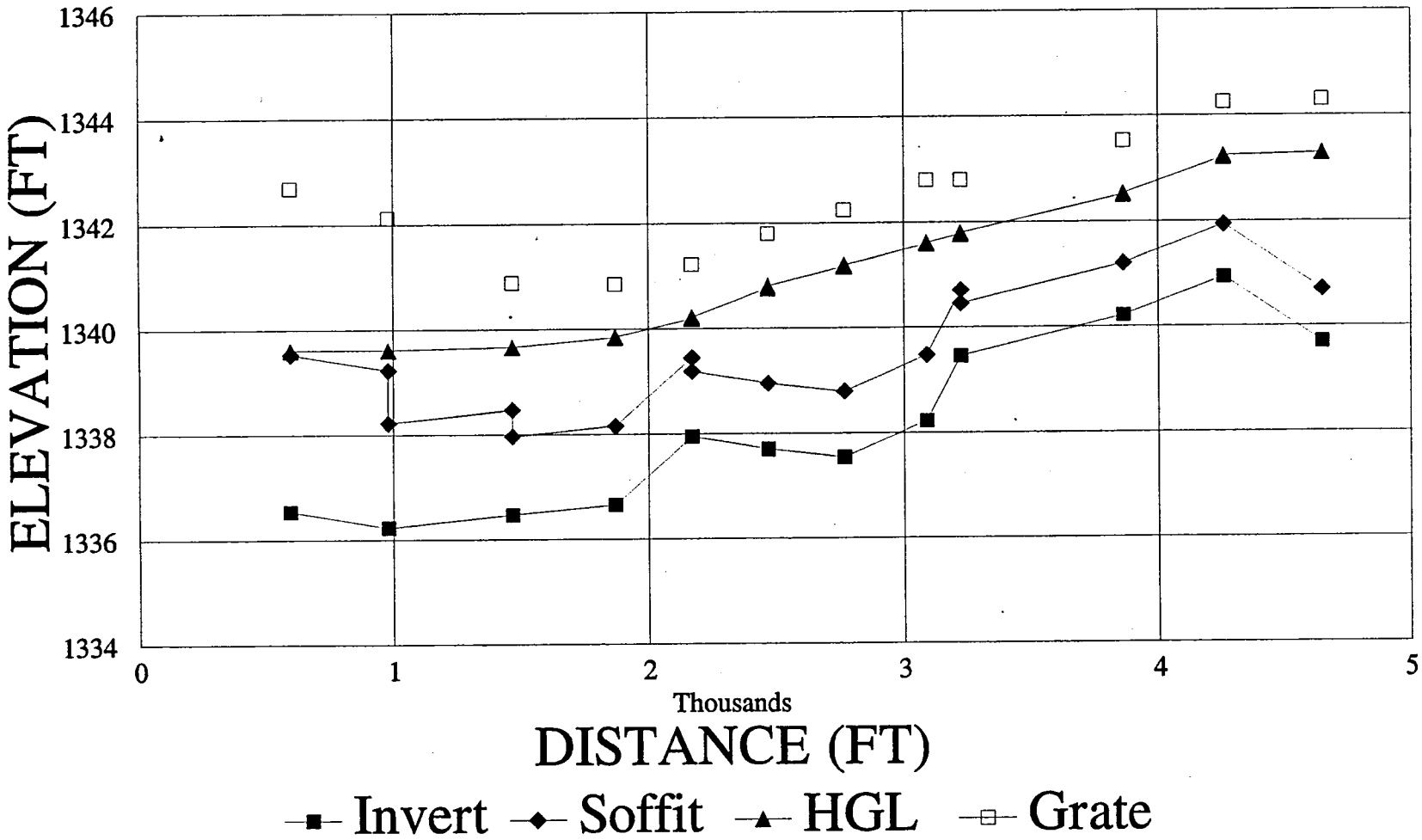
						1331.9									1330.88	0.1867
I 100	1329.9	150	10	I 101	1329.0		1.6	0.67	0.0055	1.23	0.0009	0.14			1330.88	0.1867
						1331.2							0.5	0.012	1330.74	0.8667
I 101	1329.0	325	18	I 49	1327.0		8.4	2.17	0.0064	1.23	0.0004	0.138			1330.73	0.1883
						1331.6							0.5	0.146	1330.59	2.14
Starting HGL															1330.44	

WILLIAMS GATEWAY AIRPORT - STORM DRAIN SIZING WORKSHEET FILE: WGA_SD.WK3
PROJECT: WILLIAMS GATEWAY AIRPORT - MASTER DRAINAGE PLAN
DIBBLE & ASSOCIATES CONSULTING ENGINEERS JOB #: 9541

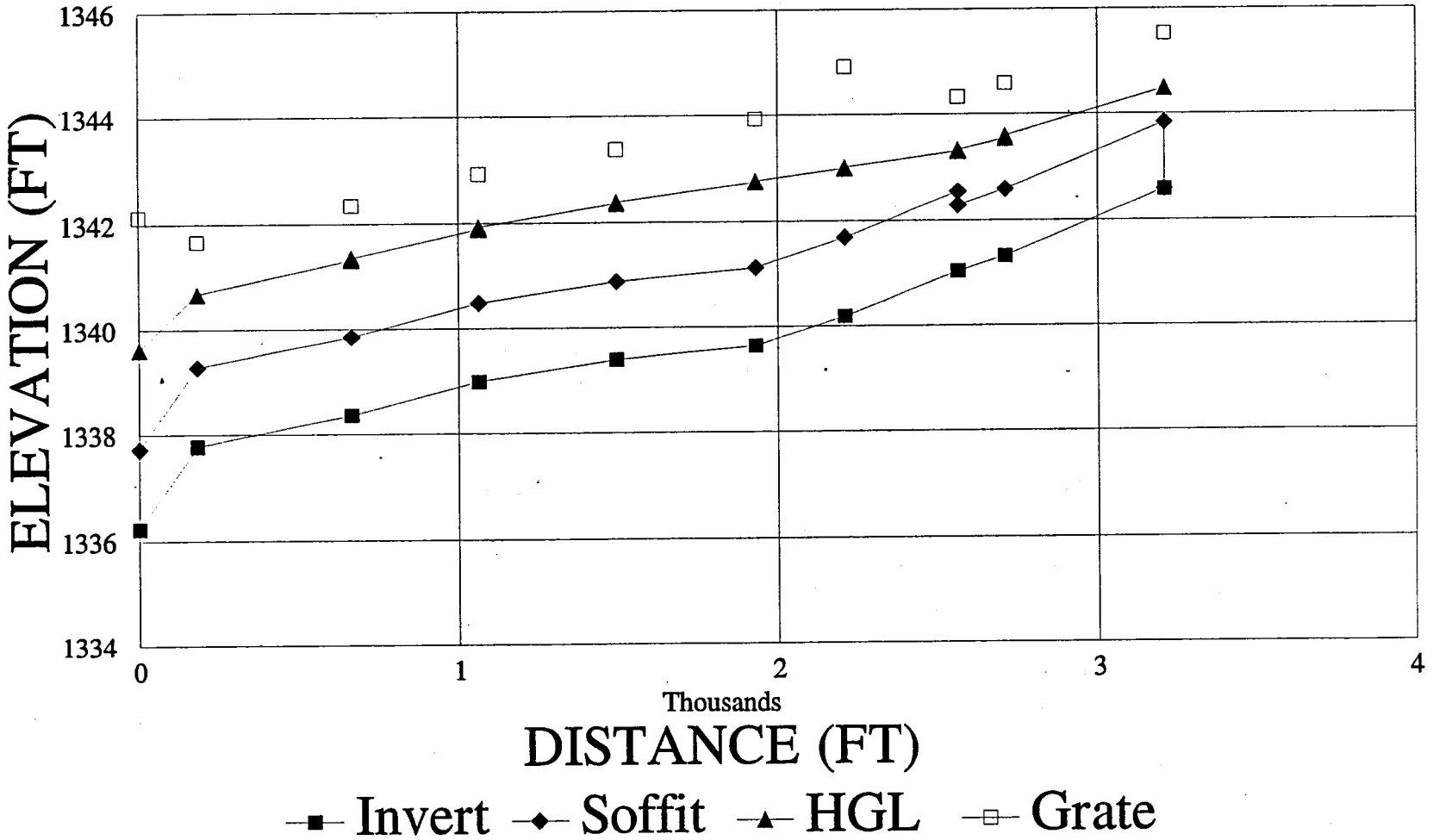
STORM DRAIN CAPACITY/HGL CALCULATIONS: n = 0.013

From Manhole		Pipe		To Manhole		Grate	Discharge		Pipe	Vel.	HGL		Junct. Loss		HGL	Surch.
No.	Invert	Length (ft)	Size (in)	No.	Invert	Elev (ft)	Full (cfs)	Des (cfs)	Slope (ft/ft)	(fps)	Sf (ft/ft)	Hf (ft)	Kg (ft)	Hl (ft)	Elev (ft)	(ft)
LINE: CENTRAL BASE AREA LATERAL 1 <CENBASLAT1>																
						1326.9									1326.62	-0.0399
I 39	1324.7	362	24	I 42	1323.8		11	9	0.0024	2.86	0.0016	0.573			1326.62	-0.0399
						1328.3							0.5	0	1326.05	0.2671
I 42	1323.78	318	2 27	I 43	1323.1		28	32	0.002	4.02	0.0027	0.849			1326.05	0.0171
						1328.3							0.5	0	1325.2	-0.1916
I 43	1323.14	168	2 27	C 20	1322.5		38	32	0.0038	4.02	0.0027	0.448			1325.2	-0.1916
Starting HGL															1324.75	0.0
LINE: CENTRAL BASE AREA LATERAL 2 <CENBASLAT2>																
						1328.5									1327.51	2.46
I 34	1323.05	60	2 24	I 35	1323.0		13	19.2	0.0008	3.06	0.0018	0.108			1327.51	2.46
						1329							0.5	0	1327.4	2.402
I 35	1323	40	2 24	I 37	1322.8		29	19.2	0.004	3.06	0.0018	0.072			1327.4	2.402
						1330.3							0.5	0	1327.33	2.49
I 37	1322.84	208	2 30	I 38	1322.4		38	81.1	0.0021	8.26	0.0098	2.034			1327.33	1.99
						1328.4							0.5	0	1325.3	0.3964
I 38	1322.4	61	2 30	C 20	1322.2		47	81.1	0.0033	8.26	0.0098	0.596			1325.3	0.3964
Starting HGL															1324.7	

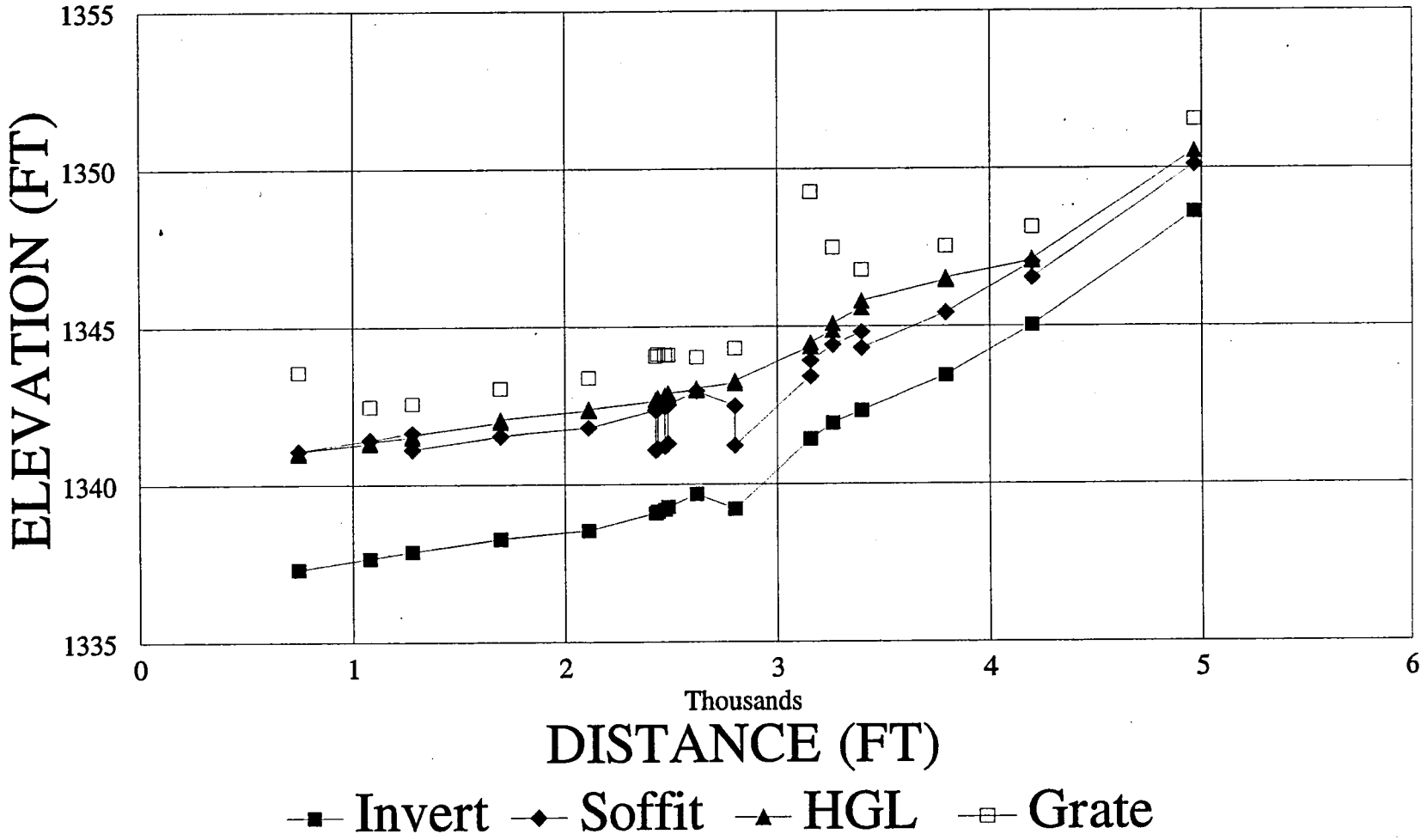
WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



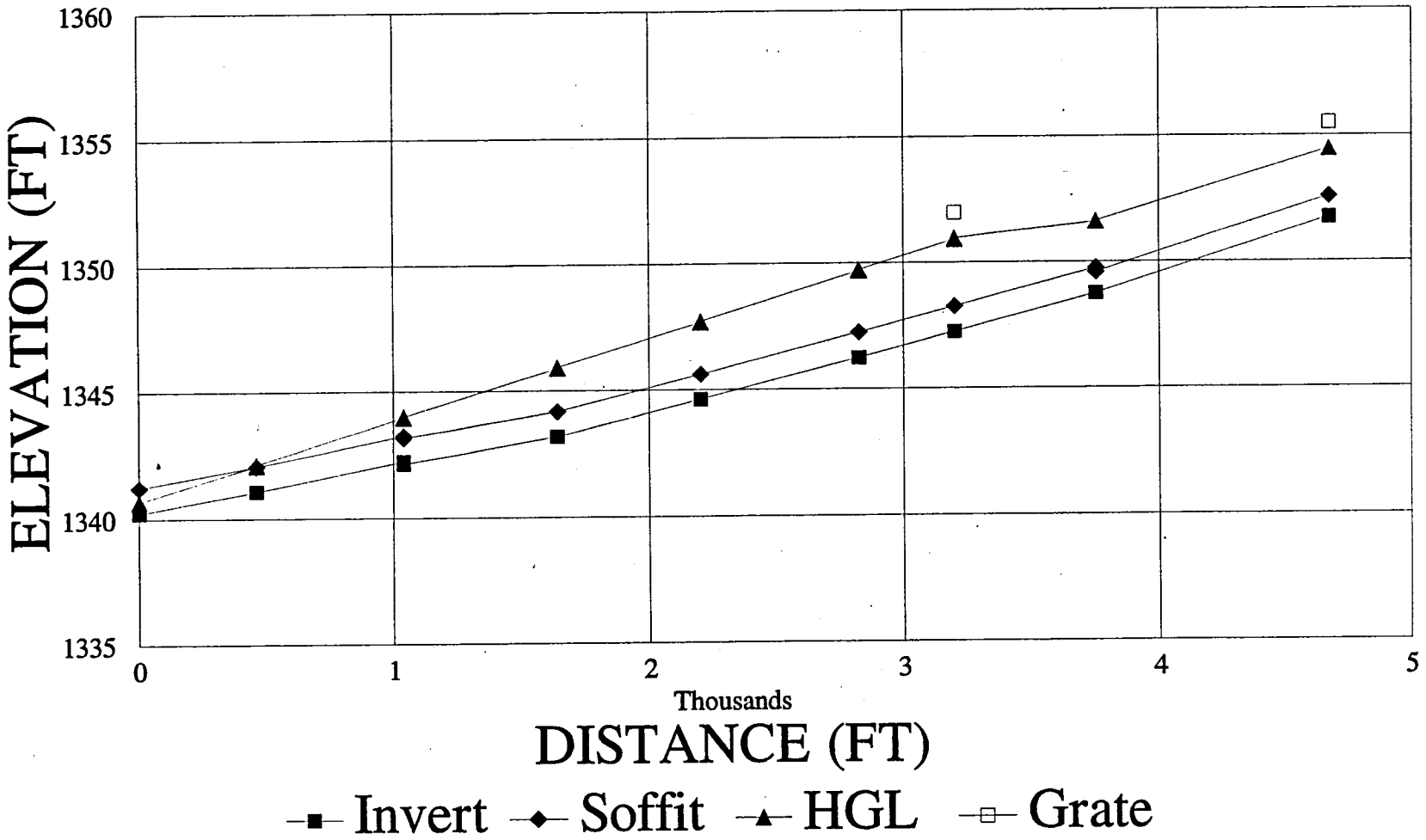
WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



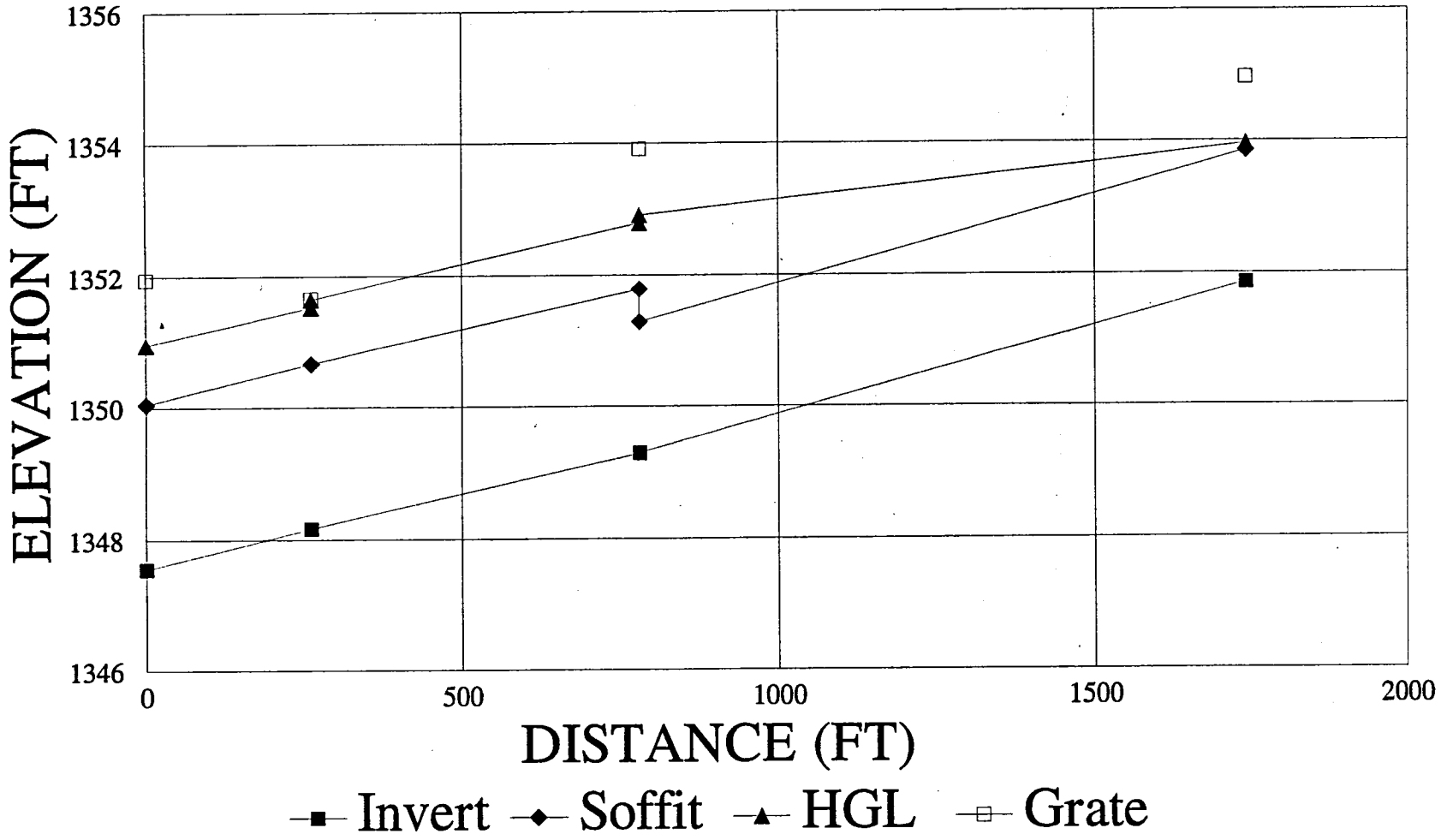
WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



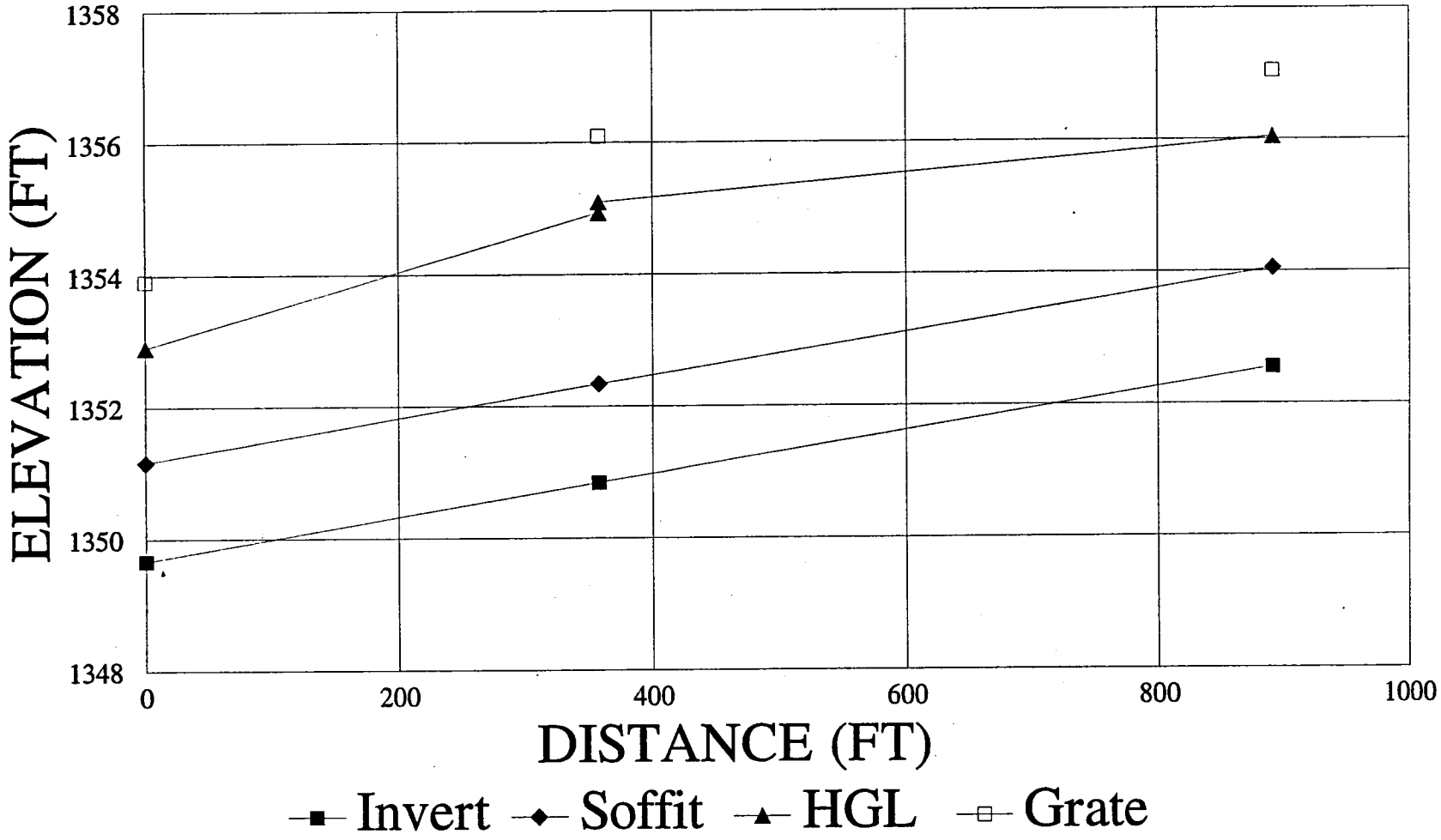
WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



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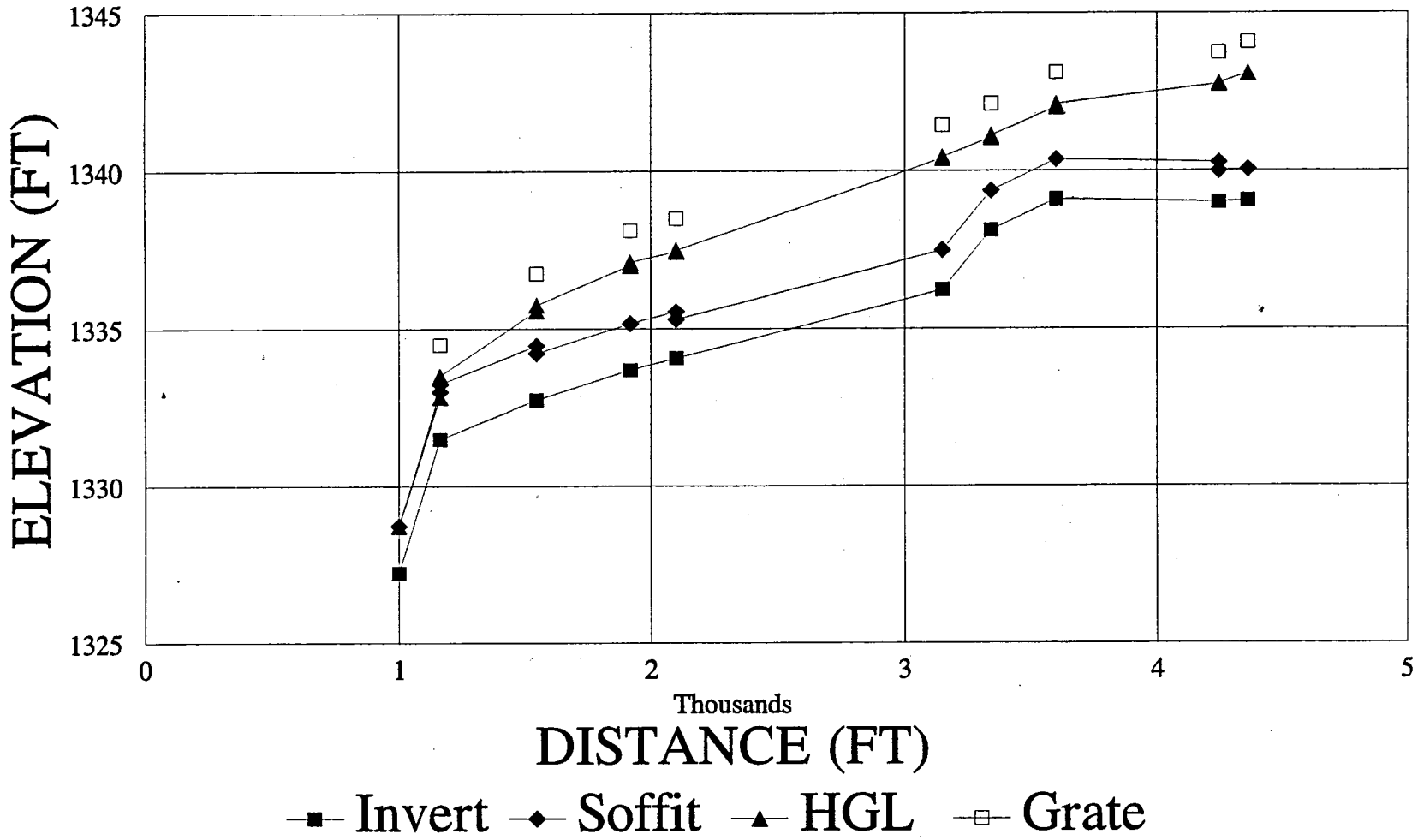
STORMDRAIN CAPACITY ANALYSIS



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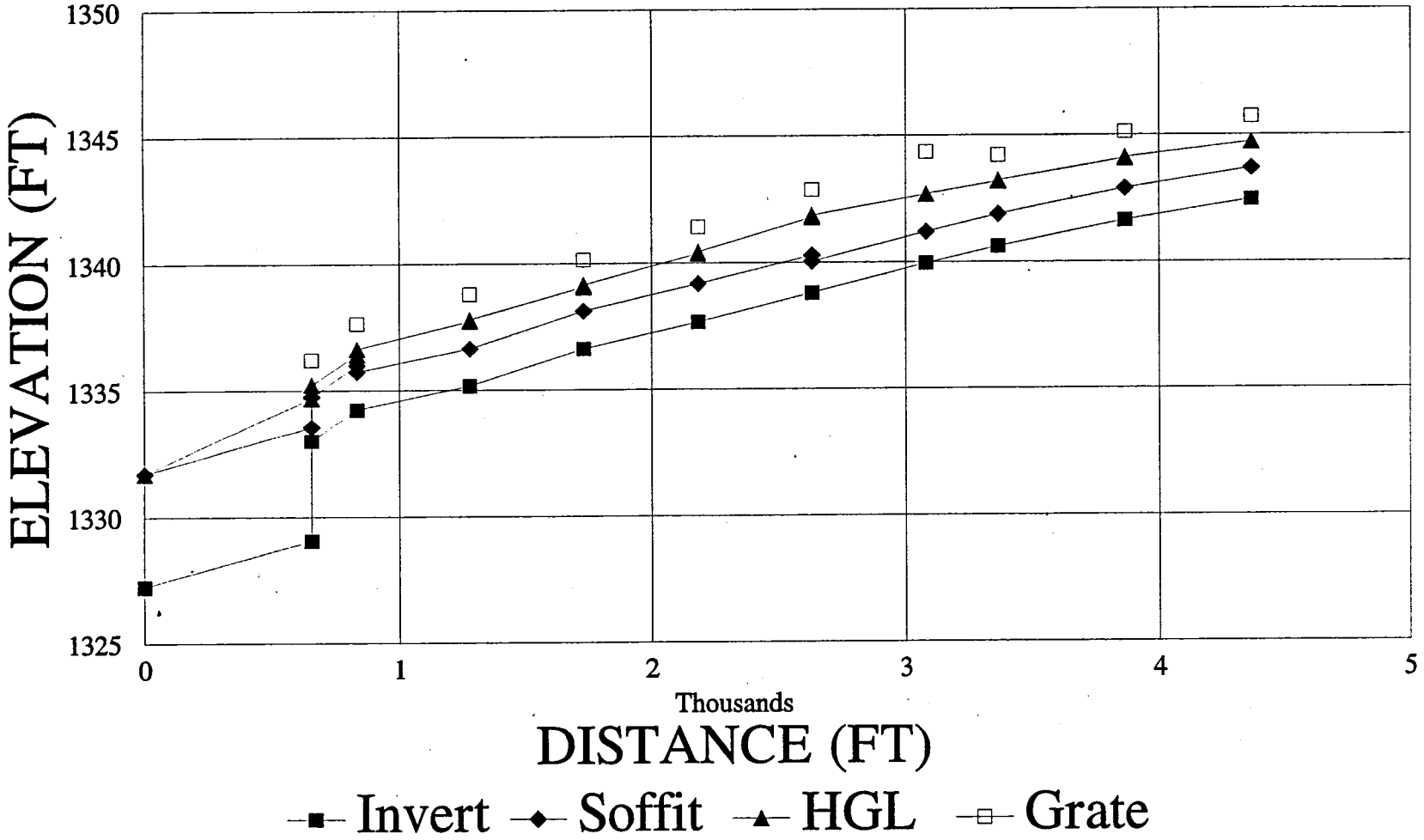
STORMDRAIN CAPACITY ANALYSIS



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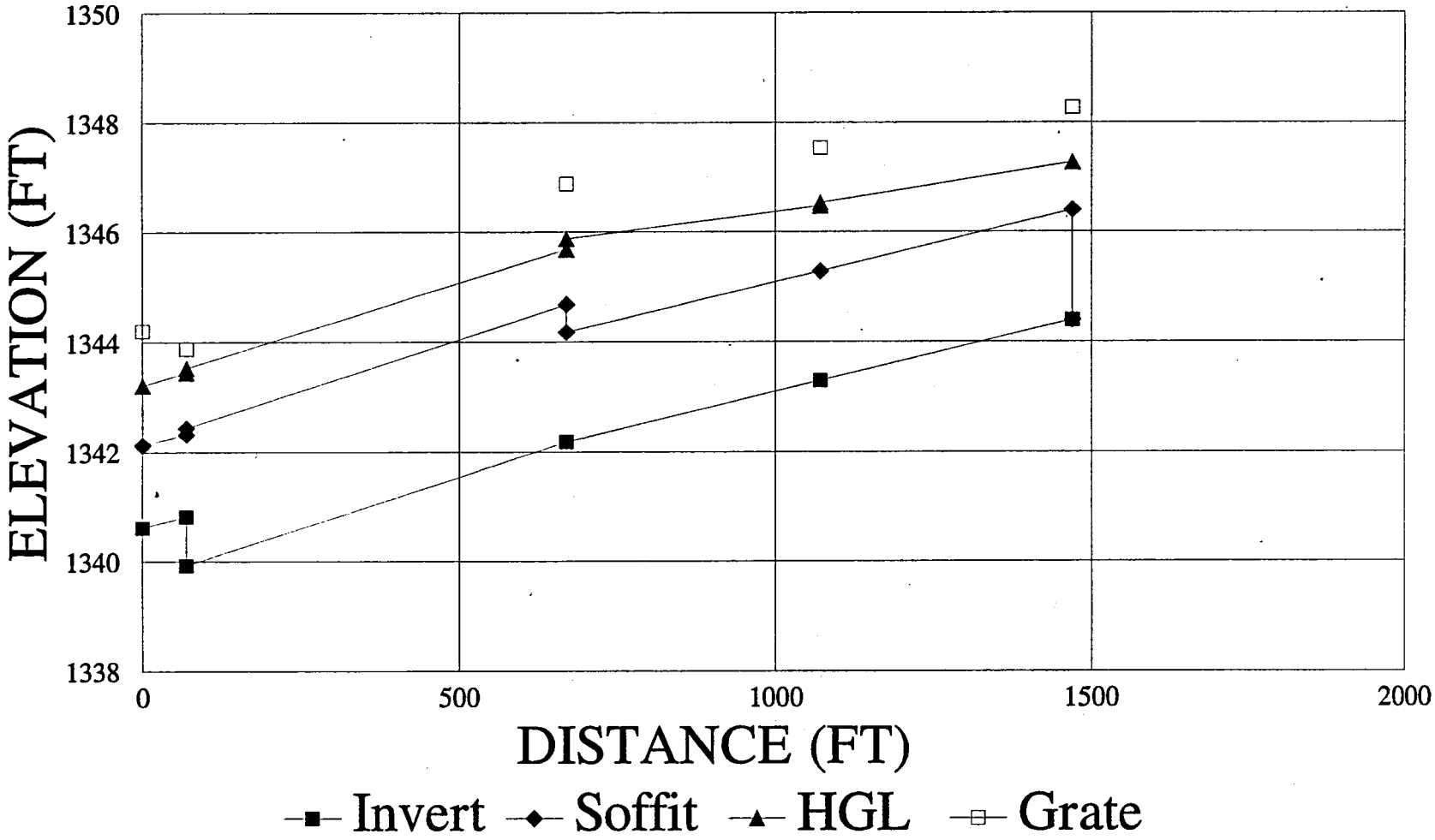
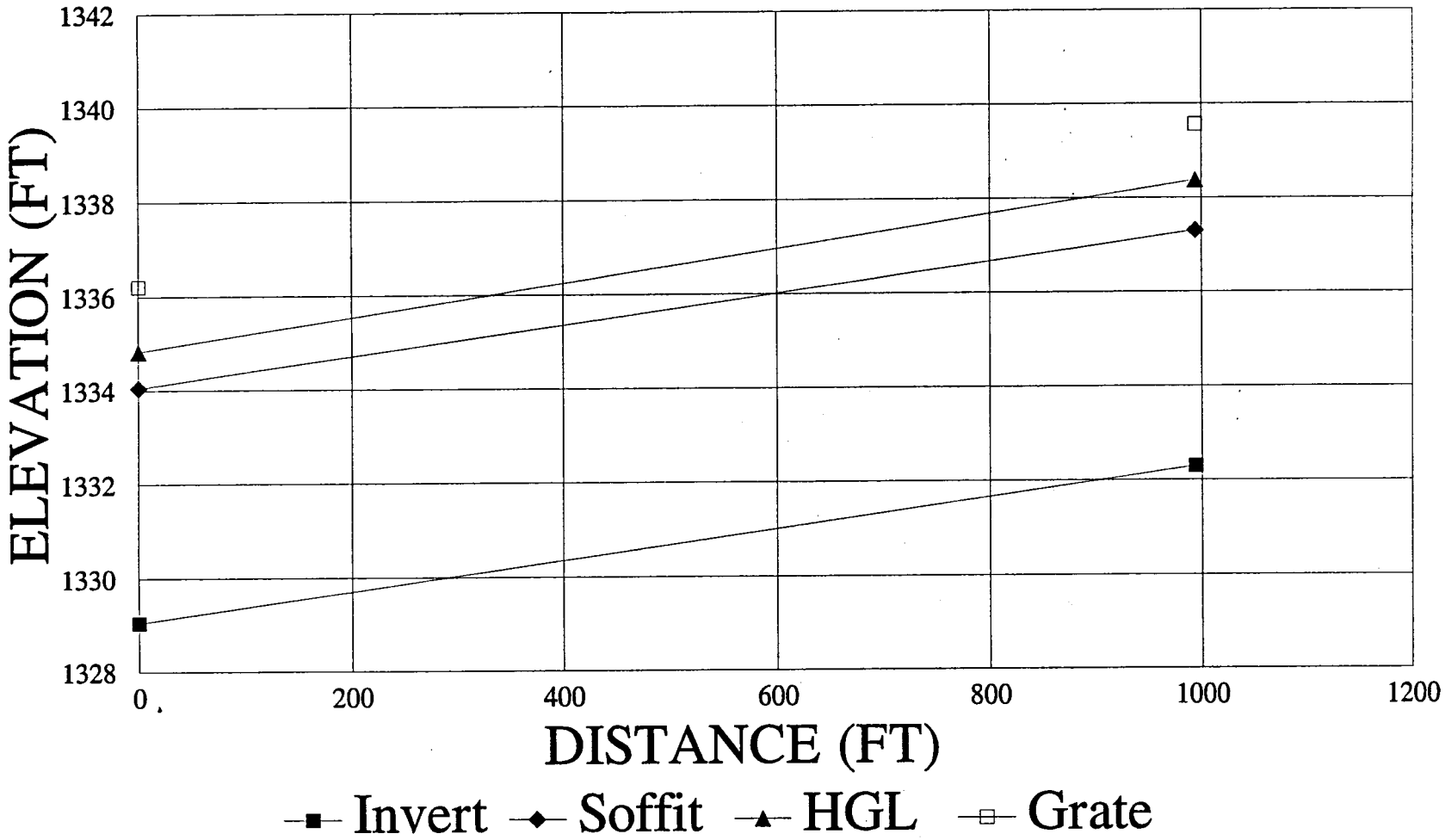
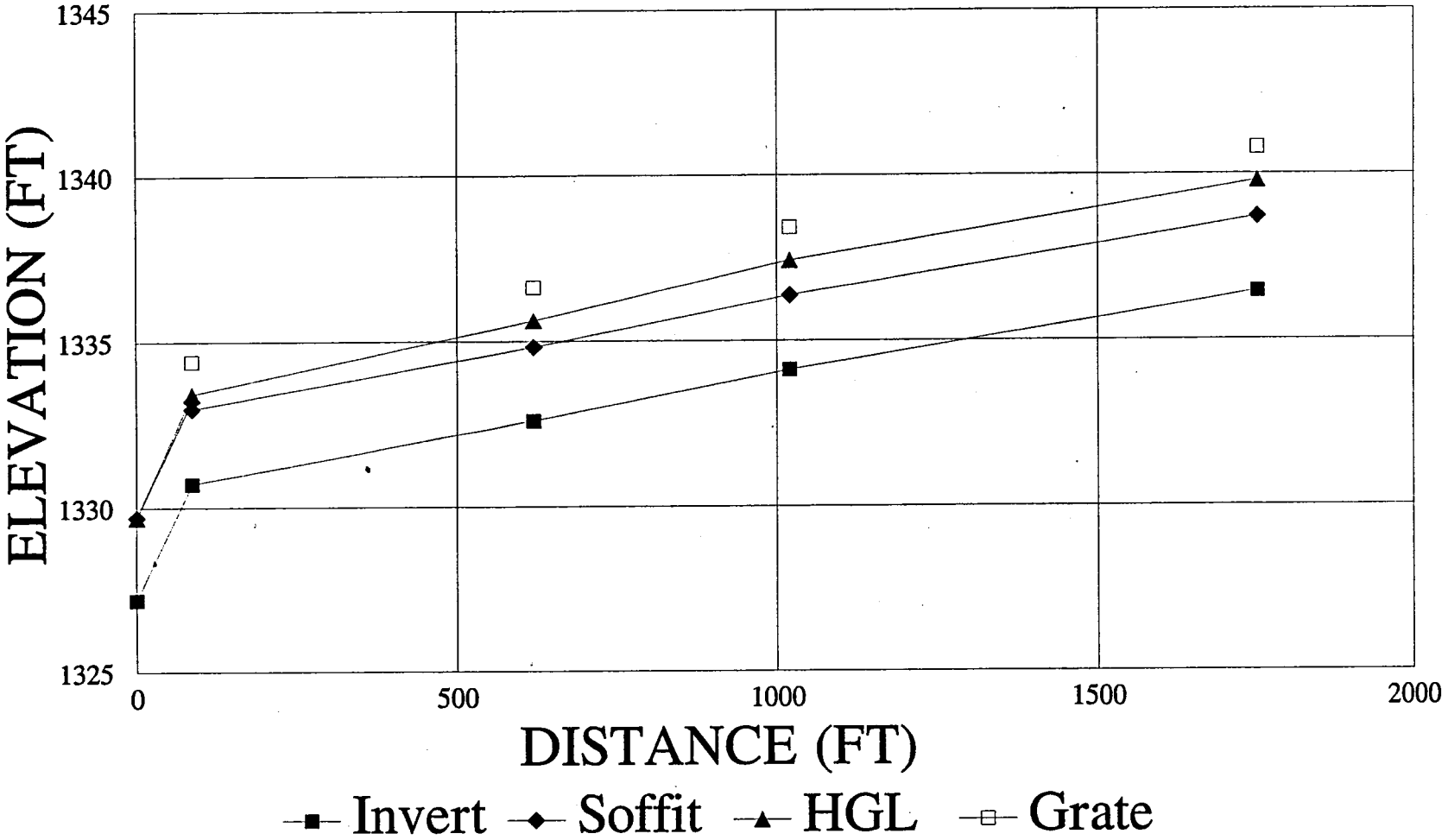
STORMDRAIN CAPACITY ANALYSIS



WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



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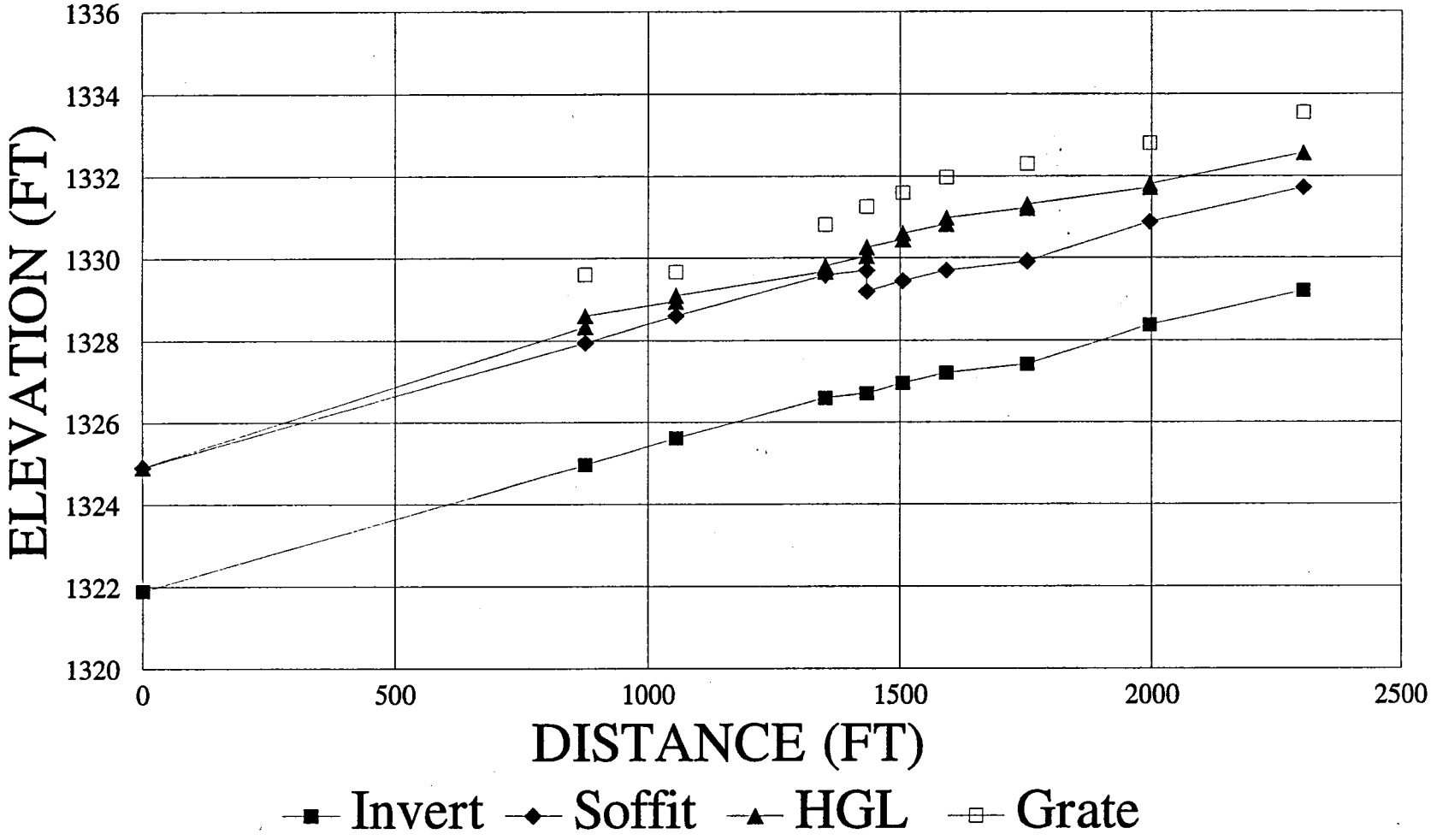
STORMDRAIN CAPACITY ANALYSIS



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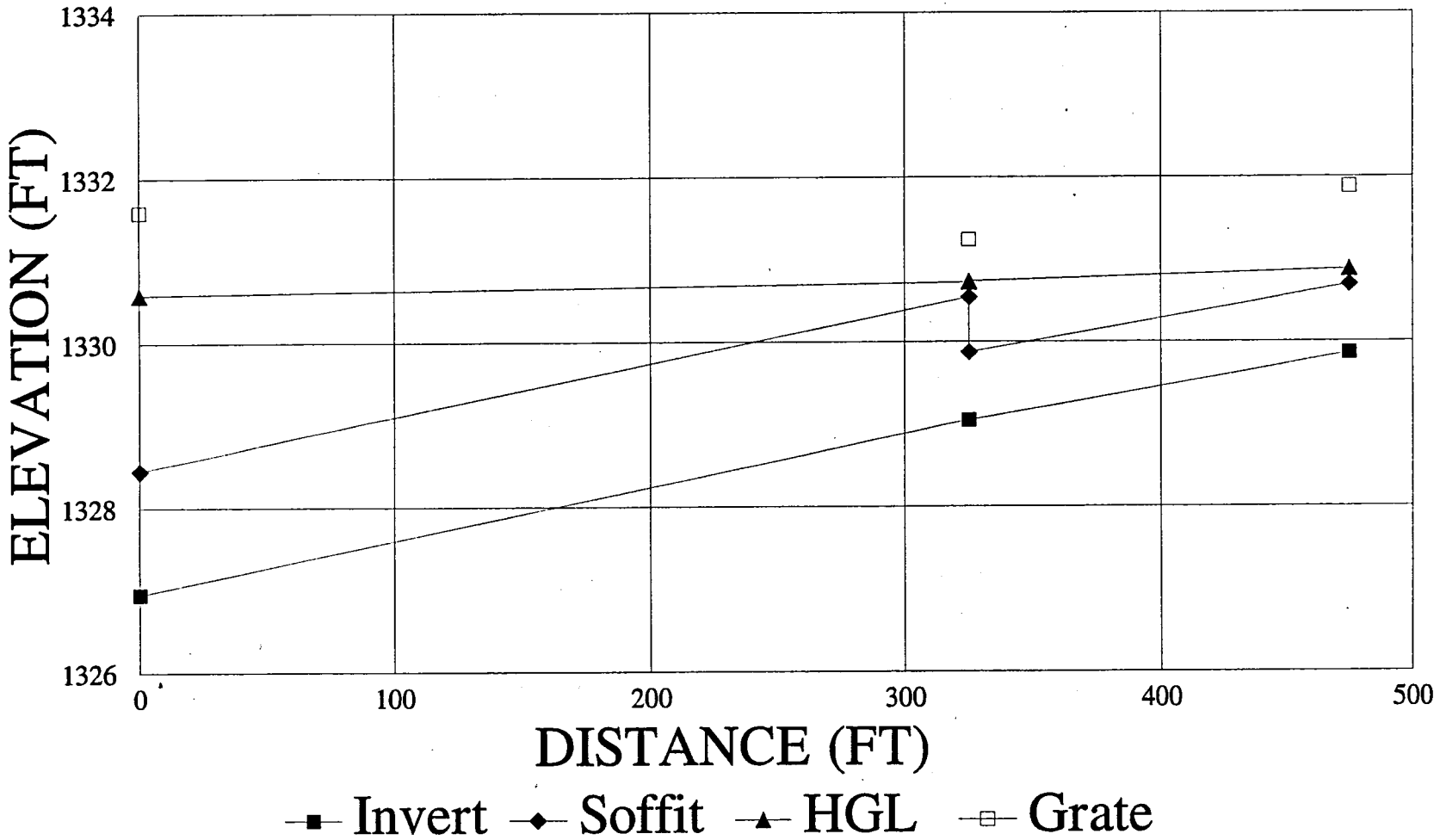
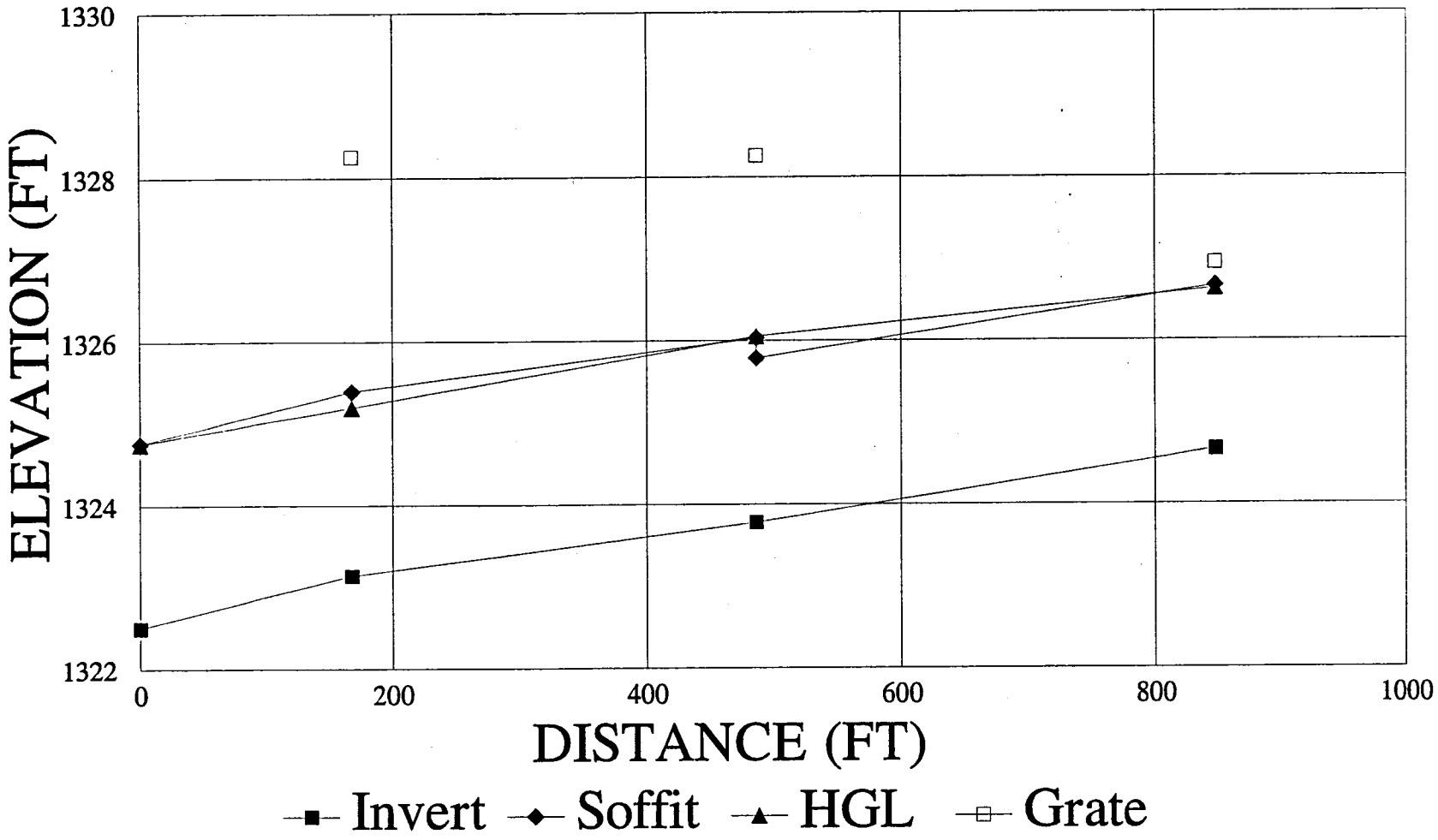
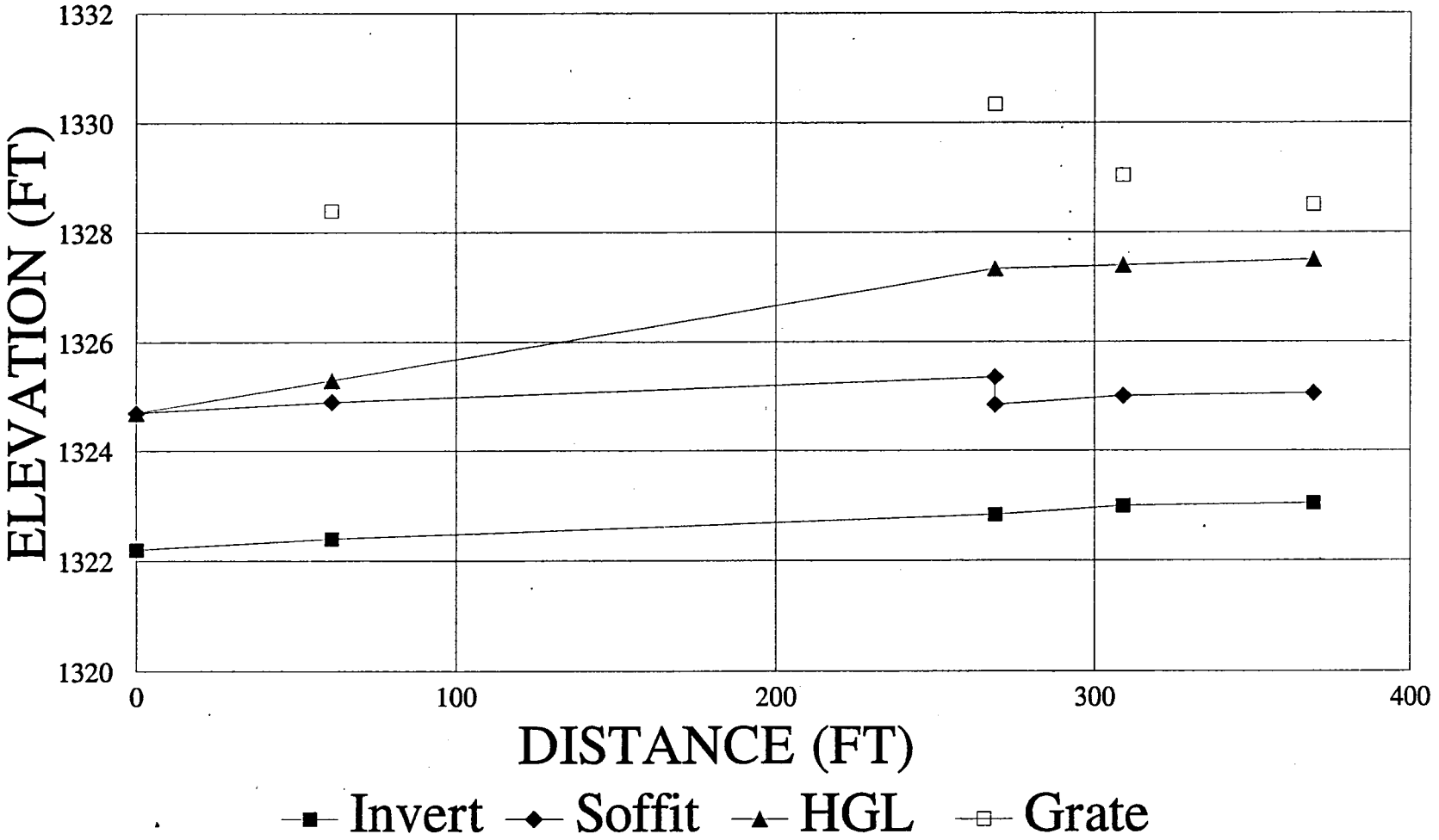
STORMDRAIN CAPACITY ANALYSIS



WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



WILLIAMS GATEWAY AIRPORT MDP
STORMDRAIN CAPACITY ANALYSIS



Appendix D

Williams Gateway Airport

Existing Channel Capacities

Channel Desig.	Location	Slope [ft/ft]	Matl	SS H:V	B [ft]	Depth [ft]	Mann n	Qcap [cfs]
A1-1	Powerline Floodway	0.0025	E	2	88	7.5	0.03	7878
A2	25' W. of HW C-20	0.0120	E	3	6	4.9	0.03	1294
A2	450' W. of HW C-20	0.0059	E	4.5	7	5.1	0.03	1390
A3-5	S. of Mitchell Dr.	0.0036	E	30		0.55	0.03	14
A3-6	Parallel and E. of 15th St	0.0015	E	12		0.89	0.03	13
A3-7	Parallel and E. of 15th St	0.0015	E	6		1.18	0.03	13
A3-8	N. of Washington, E. of 15th St.	0.0003	E	50		0.5	0.03	5
A3-9	N. of Washington	0.0003	E	20	31.5	0.85	0.03	31
A3-10	W. of 15th St	0.0023	E	20		0.55	0.03	7
A3-11	W. of 15th St	0.0023	E	8	16	1.15	0.03	73
A3-12	S. of B Street	0.0001	E	11	14	0.95	0.03	11
A3-13	S. of B Street	0.0012	E	8	16	0.7	0.03	21
A3-14	S. of B Street	0.0017	E	5	6	1.35	0.03	38
A3-15	N. of B St, S. of Chann A-2	0.0014	E	4	7	1.95	0.03	74
A3-16	N. of B St, S. of Chann A-2	0.0036	E	3	9	2.45	0.03	198
A3-17	N. of B St, S. of Chann A-2	0.0036	E	6	8	1.55	0.03	96
A11-1	E. of 9th Street	0.0012	E	8.00	9.00	3.85	0.03	527
A11-2	W. of 9th Street	0.0008	E	7.00	12.00	4.10	0.03	501
A11-3	W. of 12th Street	0.0050	E	5.00	22.00	3.75	0.03	1195
A12-2a	Parallel to 12th Street	0.0010	E	5.00	12.00	1.70	0.03	73
B1-1		0.0019	E	8.00		1.80	0.03	62
B1-2		0.0019	E	5.00	3.00	3.30	0.03	243
B1-3		0.0016	E	10.00	9.00	2.40	0.03	234
B1-4		0.0016	E	9.00	9.00	2.40	0.03	218
B1-5		0.0026	E	8.00	34.00	0.90	0.03	94
B1-6		0.0015	E	12.00	28.00	1.00	0.03	77
B1-7		0.0040	E	5.00	8.00	2.20	0.03	194
B1-8		0.0020	E	5.00	5.00	2.70	0.03	177
B1-9		0.0035	E	8.00	3.00	1.30	0.03	50

Williams Gateway Airport

Existing Channel Capacities

Channel Desig.	Location	Slope [ft/ft]	Matl	SS H:V	B [ft]	Depth [ft]	Mann n	Qcap [cfs]
B1-10		0.0010	E	7.00	3.00	1.60	0.03	39
D1-1	South perimeter channel	0.0031	G	3.00	12.00	4.40	0.04	413
D1-2	South perimeter channel	0.0037	G	3.00	13.00	4.10	0.04	414
D1-3	South perimeter channel	0.0029	G	3.00	17.00	3.00	0.05	218
D1-4	South perimeter channel	0.0029	G	3.00	17.50	4.00	0.04	418
D1-5	South perimeter channel	0.0029	G	3.00	12.00	5.70	0.04	724
D2		0.0031	G	3.00	9.00	9.00	0.04	2014
D3		0.0050	G	4.00	9.00	2.50	0.05	139
D21		0.0033	G	6.00	9.30	2.00	0.06	72

Appendix E

CULVERT DESIGN DATA RECORD

Highway: N/A County: Maricopa

Location: Preliminary Culvert Sizes Project: WGA - Master Drainage Plan

ID: Williams Gateway Airport Master Drainage Plan - Preliminary Design

Subarea -Reach	Peak Q 50yr (cfs)	Peak Q 100yr (cfs)	No. bbl	Culvert Diam./ Height	Unit	Box/ Arch Wid.	Barrel/ Material	Entrance	Length (ft)	Invert Elev. Inlet (ft)	Invert Elev. Outlet (ft)	Barrel Slope (%)	TW Depth (ft)	Allowable HW (ft)	Allowable HW/D	HW/D Q50		HW/D Q100	Controlling HW
EXISTING CULVERT (Qcapacity)																			
C-2		87	1	48	in.		CMP	headwall	150			0.13%		5.0	1.25	0.50		1.60	OC
C-4		193	2	48	in.		CMP	headwall	60			0.42%		5.0	1.25	0.50		1.33	OC
C-5		22	1	30	in.		RCP	headwall	550			0.30%		3.8	1.50	0.50		1.50	OC
C-6		125	2	36	in.		RCP	headwall	150			0.34%		4.5	1.50	0.50		1.50	OC
C-7		9	1	24	in.		RCP	headwall	1300			0.24%		3.0	1.50	0.50		1.77	OC
C-9		153	3	36	in.		RCP	headwall	400	1342.00	1341.12	0.22%		1346.5	1.50	0.21		1.50	OC
C-10		125	2	36	in.		RCP	headwall	150			0.16%		4.5	1.50	0.50		1.50	OC
C-13		255	3	42	in.		RCP	headwall	25	1325.16	1324.96	0.80%		1330.0	1.38	0.44		1.38	OC
C-14		3	1	15	in.		RCP	headwall	600	1361.30	1360.69	0.10%		1363.2	1.52	0.01		1.52	OC
C-15		47	1	36	in.		RCP	headwall	350	1360.85	1360.42	0.12%		1365.4	1.50	0.36		1.50	OC
C-16		88	1	42	in.		RCP	headwall	300	1364.79	1364.15	0.21%		1369.8	1.43	0.32		1.43	OC
C-17		465	4	48	in.		CMP	headwall	40			0.15%		6.0	1.50	0.50		1.50	OC
C-18		232	2	48	in.		CMP	headwall	60			0.06%		6	1.50	0.50		1.50	OC
C-22		15	1	1	ft.	3	RCBC	Wingwall	80			0.34%		2	2.00	ERR	*	1.79	***
C-25		33	2	1	ft.	3	RCBC	Wingwall	74	1327.95	1327.70	0.34%		1330	2.00	ERR	*	2.00	***
C-26		40	1	30	in.		RCP	headwall	50	1324.65	1323.49	2.32%		1328.4	1.50	0.04		1.50	OC
C-88		158	3	36	in.		CMP	headwall	80			0.80%		4.5	1.50	0.50		1.67	OC
C-97		1016	3	4	ft.	10	RCBC	Wingwall	90			0.71%		6.0	1.50	ERR	*	1.50	***
C-98		105	1	48	in.		RCP	headwall	40			1.05%		5.0	1.25	0.50		1.25	OC
C-99		170	3	36	in.		CMP	headwall	40			0.67%		4.5	1.50	0.50		1.50	OC

Appendix F

STORM DRAIN DESIGN CALCULATIONS

Priority	Subarea-Reach	Length [ft]	Slope [ft/ft]	Q10 [cfs]	Mat'l	Diam [in]	Qfull [cfs]	Vel. [fps]		Sf [ft/ft]		Constr. Cost ($)	Engr. Cost ($)	Total Cost ($)
South Aprons														
3	14.01	2000	0.0016	52	RCP	48	57	4.14	*	0.0013	OK	$310,000	$31,000	$341,000
3	14.02	1000	0.0019	67	RCP	48	63	5.33		0.0022	Ups	$155,000	$15,500	$170,500
3	16.01	1200	0.0035	96	RCP	54	116	6.04		0.0024	OK	$204,000	$20,400	$224,400
2	13.04	1100	0.0025	70	RCP	48	72	5.57		0.0024	OK	$170,500	$17,050	$187,550
2	13.05	2200	0.0025	102	RCP	60	130	5.19		0.0015	OK	$407,000	$40,700	$447,700
2	13.06	700	0.0025	110	RCP	60	130	5.60		0.0018	OK	$129,500	$12,950	$142,450
2	12.01	800	0.0027	40	RCP	42	52	4.16	*	0.0016	OK	$112,000	$11,200	$123,200
2	32.13	1700	0.0027	40	RCP	42	52	4.16	*	0.0016	OK	$238,000	$23,800	$261,800
2	32.14	1300	0.0027	40	RCP	42	52	4.16	*	0.0016	OK	$182,000	$18,200	$200,200
2	10.39	2100	0.002	85	RCP	54	88	5.34		0.0019	OK	$357,000	$35,700	$392,700
2	10.24	700	0.0029	66	RCP	48	77	5.25		0.0021	OK	$108,500	$10,850	$119,350
2	10.20	800	0.003	66	RCP	48	79	5.25		0.0021	OK	$124,000	$12,400	$136,400
2	10.23	1300	0.0015	26	RCP	36	26	3.68	*	0.0015	Ups	$162,500	$16,250	$178,750
2	10.28	1900	0.0013	42	RCP	48	52	3.34	*	0.0009	OK	$294,500	$29,450	$323,950
2	10.25	1100	0.0018	22	RCP	36	28	3.11	*	0.0011	OK	$137,500	$13,750	$151,250
SUB-TOTAL												$3,092,000	$309,200	$3,401,200
North Aprons														
2	10.21	1550	0.0032	28	RCP	36	37.73	3.961	*	0.0018	OK	$193,750	$19,375	$213,125
2	10.17	1350	0.0017	28	RCP	36	27.5	3.961	*	0.0018	Ups	$168,750	$16,875	$185,625
2	10.11	3150	0.003	142	RCP	60	142.7	7.232		0.0030	OK	$582,750	$58,275	$641,025
1	10.18	1100	0.0015	30	RCP	42	39	3.12	*	0.0009	OK	$154,000	$15,400	$169,400
1	10.15	1000	0.0026	44	RCP	42	51.3	4.573	*	0.0019	OK	$140,000	$14,000	$154,000
1	10.13	700	0.0026	55	RCP	48	73.24	4.377	*	0.0015	OK	$108,500	$10,850	$119,350
1	10.11	1200	0.0026	55	RCP	48	73.24	4.377	*	0.0015	OK	$186,000	$18,600	$204,600
1	10.40	1000		16	RCP	30	0	3.259	*	0.0015		$110,000	$11,000	$121,000
1	10.12	1700	0.0033	206	RCP	72	243.3	7.286		0.0024	OK	$365,500	$36,550	$402,050
SUB-TOTAL												$2,009,250	$200,925	$2,210,175

STORM DRAIN DESIGN CALCULATIONS

Pri-ority	Subarea-Reach	Length [ft]	Slope [ft/ft]	Q10 [cfs]	Mat'l	Diam [in]	Qfull [cfs]	Vel. [fps]		Sf [ft/ft]			Constr. Cost ($)	Engr. Cost ($)	Total Cost ($)
Sossaman Road South															
2	10.28	550		42	RCP	48	0	3.342	*	0.000855			$85,250	$8,525	$93,775
2	32.12	400		116	RCP	72	0	4.103	*	0.00075			$86,000	$8,600	$94,600
2	15.01	800		146	RCP	78	0	4.4	*	0.000776			$184,000	$18,400	$202,400
Sossaman Road North															
1	32.10	1000		14	RCP	30	0	2.852	*	0.001165			$110,000	$11,000	$121,000
1	32.11	1600		11	RCP	30	0	2.241	*	0.000719			$176,000	$17,600	$193,600
1	32.09	1000		17	RCP	36	0	2.405	*	0.00065			$125,000	$12,500	$137,500
1	32.08	600		19	RCP	36	0	2.688	*	0.000811			$75,000	$7,500	$82,500
1	32.07	1200		23	RCP	42	0	2.391	*	0.000523			$168,000	$16,800	$184,800
1	32.06	1000		23	RCP	42	0	2.391	*	0.000523			$140,000	$14,000	$154,000
1	32.02	650		7	RCP	24	0	2.228	*	0.000957			$61,750	$6,175	$67,925
1	32.03	700		18	RCP	30	0	3.667	*	0.001926			$77,000	$7,700	$84,700
1	32.04	1000		20	RCP	36	0	2.829	*	0.000899			$125,000	$12,500	$137,500
SUB-TOTAL													$1,413,000	$141,300	$1,554,300
Airfield Area															
3	3.03	1350	0.0035	15	RCP	30	24	3.06	*	0.0013	OK		$148,500	$14,850	$163,350
3	2.02	1350	0.0038	40	RCP	36	41	5.66		0.0036	OK		$168,750	$16,875	$185,625
3	10.08	1300	0.0034	58	RCP	42	59	6.03		0.0033	OK		$182,000	$18,200	$200,200
3	10.09	950	0.0033	55	RCP	42	58	5.72		0.0030	OK		$133,000	$13,300	$146,300
3	11.31	300		46	RCP	42	0	4.78	*	0.0021			$42,000	$4,200	$46,200
3	10.07	1450	0.0033	178	RCP	66	193	7.49		0.0028	OK		$290,000	$29,000	$319,000
3	10.05	1000	0.0035	44	RCP	42	59.52	4.573	*	0.001913	OK		$140,000	$14,000	$154,000
3	11.25	300		23	RCP	36	0	3.254	*	0.001189			$37,500	$3,750	$41,250
3	10.04	2300	0.0033	255	RCP	78	301.2	7.685		0.002366	OK		$529,000	$52,900	$581,900
3	11.19(a)	300		20	RCP	30	0	4.074	*	0.002378			$33,000	$3,300	$36,300
3	11.19(b)	300		20	RCP	30	0	4.074	*	0.002378			$33,000	$3,300	$36,300
3	10.03	1250	0.0033	305	RCP	78	301.2	9.191		0.003384	Upsi		$287,500	$28,750	$316,250

STORM DRAIN DESIGN CALCULATIONS

Pri-ority	Subarea-Reach	Length [ft]	Slope [ft/ft]	Q10 [cfs]	Mat'l	Diam [in]	Qfull [cfs]	Vel. [fps]		Sf [ft/ft]		Constr. Cost ($)	Engr. Cost ($)	Total Cost ($)
3	11.11	400		25	RCP	36	0	3.537	*	0.001405		$50,000	$5,000	$55,000
3	10.02	750	0.0018	334	RCP	90	325.8	7.56		0.001892	Ups	$195,000	$19,500	$214,500
3	11.06	350		30	RCP	36	0	4.244	*	0.002023		$43,750	$4,375	$48,125
3	10.01	850	0.0018	336	RCP	96	387	6.685		0.001357	OK	$233,750	$23,375	$257,125
3	9.02	1050	0.0018	358	RCP	96	387	7.122		0.001541	OK	$288,750	$28,875	$317,625
3	2.01	1100	0.0032	32	RCP	36	37.73	4.527	*	0.002302	OK	$137,500	$13,750	$151,250
3	4.01	1700	0.0013	35	RCP	42	36.28	3.638	*	0.00121	OK	$238,000	$23,800	$261,800
3	3.01	1100	0.0011	64	RCP	54	65.22	4.024	*	0.001059	OK	$187,000	$18,700	$205,700
3	5.01	2200	0.0029	64	RCP	54	105.9	4.024	*	0.001059	OK	$374,000	$37,400	$411,400
3	7.02	1250	0.0024	64	RCP	54	96.34	4.024	*	0.001059	OK	$212,500	$21,250	$233,750
3	7.01	500	0.0024	64	RCP	54	96.34	4.024	*	0.001059	OK	$85,000	$8,500	$93,500
3	8.02	600	0.0024	41	RCP	42	49.29	4.261	*	0.001661	OK	$84,000	$8,400	$92,400
3	8.01	2850	0.0024	50	RCP	42	49.29	5.197		0.00247	Ups	$399,000	$39,900	$438,900
3	11.29	800		41	RCP	54	0	2.578	*	0.000435		$136,000	$13,600	$149,600
3	11.30	800		55	RCP	54	0	3.458	*	0.000782		$136,000	$13,600	$149,600
3	11.35	650	0.003	81	RCP	54	107.7	5.093		0.001697	OK	$110,500	$11,050	$121,550
3	11.36	650	0.003	110	RCP	60	142.7	5.602		0.001784	OK	$120,250	$12,025	$132,275
	SUB-TOTAL											$5,055,250	$505,525	$5,560,775
	ERT Area													
3	22.01	750		24	RCP	36	0	3.395	*	0.0013		$93,750	$9,375	$103,125
3	19.13	1500	0.0033	26	RCP	36	38.32	3.678	*	0.0015	OK	$187,500	$18,750	$206,250
3	19.14	800	0.0013	8	RCP	24	8.157	2.546	*	0.0013	OK	$76,000	$7,600	$83,600
3	20.01	1200	0.0022	41	RCP	42	47.19	4.261	*	0.0017	OK	$168,000	$16,800	$184,800
3	20.02	800	0.0017	29	RCP	42	41.48	3.014	*	0.0008	OK	$112,000	$11,200	$123,200
3	19.17	650	0.0017	27	RCP	36	27.5	3.82	*	0.0016	OK	$81,250	$8,125	$89,375

STORM DRAIN DESIGN CALCULATIONS

Pri-ority	Subarea-Reach	Length [ft]	Slope [ft/ft]	Q10 [cfs]	Mat'l	Diam [in]	Qfull [cfs]	Vel. [fps]		Sf [ft/ft]		Constr. Cost ($)	Engr. Cost ($)	Total Cost ($)
3	19.11	500	0.0016	62	RCP	54	78.66	3.898	*	0.0010	OK	$85,000	$8,500	$93,500
1	19.20	700	0.003	26	RCP	36	36.53	3.678	*	0.0015	OK	$87,500	$8,750	$96,250
1	19.21	900	0.003	32	RCP	36	36.53	4.527	*	0.0023	OK	$112,500	$11,250	$123,750
1	19.40	400	0.003	26	RCP	36	36.53	3.678	*	0.0015	OK	$50,000	$5,000	$55,000
1	27.01	1600	0.003	85	RCP	54	107.7	5.344		0.0019	OK	$272,000	$27,200	$299,200
1	19.22	1200	0.003	109	RCP	54	107.7	6.853		0.0031	Upsi	$204,000	$20,400	$224,400
2	31.02	400	0.0036	21	RCP	30	24.61	4.278	*	0.0026	OK	$44,000	$4,400	$48,400
2	19.28	700	0.0036	22	RCP	30	24.61	4.482	*	0.0029	OK	$77,000	$7,700	$84,700
2	19.27	1000	0.0036	34	RCP	36	40.02	4.81	*	0.0026	OK	$125,000	$12,500	$137,500
2	19.26	900	0.0036	50	RCP	42	60.37	5.197		0.0025	OK	$126,000	$12,600	$138,600
2	19.25	1000	0.0036	72	RCP	48	86.19	5.73		0.0025	OK	$155,000	$15,500	$170,500
1	30.05	600	0.004	28	RCP	36	42.18	3.961	*	0.0018	OK	$75,000	$7,500	$82,500
1	30.04	1200	0.004	41	RCP	36	42.18	5.8		0.0038	OK	$150,000	$15,000	$165,000
1	19.34	900	0.004	64	RCP	42	63.63	6.652		0.0040	Upsi	$126,000	$12,600	$138,600
SUB-TOTAL												$2,407,500	$240,750	$2,648,250
GRAND-TOTAL												$13,977,000	$1,397,700	$15,374,700

Appendix G

CHANNEL DESIGN CALCULATIONS

Priority	Subarea-Reach	Length [ft]	Slope [ft/ft]	Qt [cfs]	Matl	SS H:V	B [ft]	Depth [ft]	Qcalc [cfs]	Vel. [fps]	Froude #	Exc Vol. [CY]	Total Cost ($)
AIRFIELD AREA				5 yr									
3	11.33	2150	0.0031	95	E	4	8	1.74	95	3.66	0.49	4129	$41,289
3	11.27	900	0.0031	105	E	4	8	1.82	105	3.76	0.49	1817	$18,173
3	11.20	2050	0.0031	120	E	4	8	1.95	120	3.90	0.49	4432	$44,315
3	11.13	850	0.0031	127	E	4	8	2.00	127	3.96	0.49	1892	$18,922
3	11.07	850	0.0031	132	E	4	8	2.04	132	4.00	0.49	1931	$19,308
3	11.02	450	0.0031	136	E	4	8	2.07	136	4.03	0.49	1038	$10,383
3	11.01	1750	0.0031	152	E	4	8	2.19	152	4.15	0.50	4283	$42,828
3												0	$0
3	11.23	1600	0.0031	50	E	4	8	1.25	50	3.06	0.48	2273	$22,733
3	11.17	500	0.0031	79	E	4	8	1.58	79	3.48	0.49	877	$8,773
3	11.15	875	0.0031	103	E	4	8	1.81	103	3.74	0.49	1750	$17,498
3	11.09	900	0.0031	119	E	4	8	1.94	119	3.89	0.49	1937	$19,372
3	11.04	1750	0.0031	141	E	4	8	2.11	141	4.07	0.49	4115	$41,153
1	11.49	450	0.0031	147	E	4	8	2.15	147	4.12	0.49	1082	$10,819
1	11.48	1450	0.0031	147	E	4	8	2.15	147	4.12	0.49	3486	$34,860
OTHER AREAS				10 yr								0	$0
3	11.29	1250	0.0009	41	E	4	0	2.31	41	1.92	0.22	2027	$20,273
3	14.02	2200	0.0009	141	E	4	12	2.52	141	2.54	0.28	7475	$74,747
3	14.03	1200	0.0036	36	E	4	8	1.02	36	2.94	0.51	1439	$14,388
3	11.35	1100	0.0017	81	E	4	8	1.86	81	2.82	0.36	2268	$22,677
3	11.38	800	0.0027	50	E	4	8	1.30	50	2.91	0.45	1172	$11,720
3	11.41	400	0.0012	75	E	4	8	1.95	75	2.43	0.31	867	$8,667
3	19.02	1400	0.0030	247	E	4	12	2.47	247	4.58	0.51	4650	$46,500
1	19.37	1550	0.0005	64	E	2	8	5.00	247	2.74	0.22	7411	$74,107
3	25.02	2500	0.0010	105	E	2	8	5.00	349	3.88	0.31	12043	$120,425
GRAND-TOTAL												74,393	$743,931

Appendix H

CULVERT DESIGN CALCULATIONS

Pri-ority	Subarea -Reach	Freq. t (yrs)	Peak Discharge Qt (cfs)	100yr (cfs)	No. bbl	Culvert Diam./ Height	Unit	Box/ Arch Wid.	Material	Barrel/ Entrance	Length (ft)	Barrel Slope (%)	Allowable HW (ft)	HW/D	HW/D Qt	Q100	Con tro lling HW	Cost/LF ($)	Cost ($)
3	COS1	100 yr	3140	3140	4	8	ft.	12	RCBC	Wingwall	100	0.10%	9.0	1.13	1.03	1.03	IC	$1,550	$155,000
3	COS2	100 yr	3140	3140	4	8	ft.	12	RCBC	Wingwall	100	0.10%	9.0	1.13	1.03	1.03	IC	$1,550	$155,000
3	C11.43	5 yr	47	118	1	42	in.		RCP	headwall	150	0.10%	5.3	1.50	0.97	1.99	OC	$110	$16,500
3	C11.40	5 yr	61	153	2	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.78	1.27	OC	$110	$77,000
3	C11.33	5 yr	95	230	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.79	1.27	OC	$110	$115,500
3	C11.27	5 yr	105	256	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.84	1.43	OC	$110	$115,500
3	C11.20	5 yr	120	288	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.91	1.70	OC	$110	$115,500
3	C11.13	5 yr	127	305	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.94	1.86	OC	$110	$115,500
3	C11.07	5 yr	132	317	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.97	1.98	OC	$110	$115,500
3	C11.02	5 yr	136	325	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.99	2.06	OC	$110	$115,500
3	C11.01	5 yr	152	363	4	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.88	1.56	OC	$110	$154,000
3	C11.17	5 yr	79	209	2	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.90	1.94	OC	$110	$77,000
3	C11.15	5 yr	103	268	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.83	1.53	OC	$110	$115,500
3	C11.09	5 yr	119	307	3	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.90	1.88	OC	$110	$115,500
1	C11.04	5 yr	141	355	4	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.84	1.51	OC	$110	$154,000
1	C11.49	5 yr	147	367	4	42	in.		RCP	headwall	350	0.10%	5.3	1.50	0.86	1.59	OC	$110	$154,000
3	C11.38	5 yr	50	134	2	36	in.		RCP	headwall	350	0.10%	4.5	1.50	0.87	1.94	OC	$100	$70,000
3	C11.41	10 yr	75		1	42	in.		RCP	headwall	75	0.10%	5.3	1.50	1.25		IC	$110	$8,250
3	C16.02	10 yr	247		2	48	in.		RCP	headwall	100	0.10%	6.0	1.50	1.44		IC	$125	$25,000
3	C19.03	10 yr	73		1	42	in.		RCP	headwall	100	0.10%	5.3	1.50	1.22		IC	$110	$11,000
3	C19.06	10 yr	13		1	24	in.		RCP	headwall	75	0.10%	3.0	1.50	1.05		OC	$90	$6,750
3	C19.08	10 yr	46		1	36	in.		RCP	headwall	75	0.10%	4.5	1.50	1.21		OC	$100	$7,500
3	C19.12	10 yr	89		1	42	in.		RCP	headwall	75	0.10%	5.3	1.50	1.45		IC	$110	$8,250
3	C19.37	10 yr	64		1	42	in.		RCP	headwall	50	0.10%	5.3	1.50	1.15		IC	$110	$5,500
																		TOTAL	$2,008,750