



# Bound Reports

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PROOFED"

DECLARATION OF RESTRICTIONS AND COVENANTS  
FOR  
SOMERSET ESTATES

RECEIVED

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DECLARATION OF RESTRICTIONS AND COVENANTS  
FOR  
SOMERSET ESTATES

THIS DECLARATION OF RESTRICTIONS AND COVENANTS FOR SOMERSET ESTATES (this "Declaration") is made this \_\_\_\_\_ day of \_\_\_\_\_, 1999 by Lennar Homes, Inc., a Florida corporation ("Lennar") and joined in by Somerset Estates Community Association, Inc., a Florida not-for-profit corporation.

R E C I T A L S

- A. Lennar is the owner of the real property in Lake County, Florida, more particularly described in Exhibit 1 attached hereto and made a part hereof ("Somerset Estates").
- B. Lennar desires to subject Somerset Estates to the covenants, conditions and restrictions contained in this Declaration.
- C. This Declaration is a covenant running with all of the land comprising Somerset Estates, and each present and future owner of interests therein and their heirs, successors and assigns are hereby subject to this Declaration;

NOW THEREFORE, in consideration of the premises and mutual covenants contained in this Declaration, Lennar hereby declares that every portion of Somerset Estates is to be held, transferred, sold, conveyed, used and occupied subject to the covenants, conditions, restrictions, easements, reservations, regulations, charges and liens hereinafter set forth.

1. Recitals. The foregoing Recitals are true and correct and are incorporated into and form a part of this Declaration.
2. Definitions.

In addition to the terms defined elsewhere in this Declaration, all initially capitalized terms herein shall have the following meanings:

"ACC" shall mean the Architectural Control Committee established pursuant to Section 19 hereof.

"Apartment Building" shall mean any multifamily structure with individual residential apartments which are leased (and not sold) on an individual basis. An Apartment Building does not include a building submitted to condominium ownership.

"Articles" shall mean the Articles of Incorporation of Association filed with the Florida Secretary of State in the form attached hereto as Exhibit 2 and made a part hereof, as amended from time to time.

"Assessments" shall mean any assessments made in accordance with this Declaration and as further defined in Section 17.1 hereof.

"Association" shall mean Somerset Estates Community Association, Inc., its successors and assigns.

"Association Documents" shall mean this Declaration, the Articles, the By-Laws, the Rules and Regulations, and the Community Standards.

"Basic Service" shall mean "basic service tier" as described in Section 62.(b)(7)(A) of the Cable Television Consumer Protection Act of 1992.

"Board" shall mean the Board of Directors of Association.



"Builder" shall mean any person or entity that purchases a Parcel from Developer for the purpose of constructing one or more Homes.

"By-Laws" shall mean the By-Laws of Association in the form attached hereto as Exhibit 3 and made a part hereof, as amended from time to time.

"Common Areas" shall mean all real property interests and personalty within Somerset Estates designated as Common Areas from time to time by Plat or recorded amendment to this Declaration and provided for, owned, leased by, or dedicated to, the common use and enjoyment of the Owners within Somerset Estates. The Common Areas may include, without limitation, Surface Water Management System, open space areas, internal buffers, neighborhood entrance features, perimeter buffers, improvements, easement areas owned by others, additions, lakes, fountains, irrigation pumps, irrigation lines, parks, sidewalks, streets, (excluding those streets owned or to be owned by a Neighborhood Association), street lights, service roads, walls, commonly used utility facilities, project signage, parking areas, other lighting, entranceways, features, entrance gates, gatehouses and a community Monitoring System. The Common Areas do not include any portion of a Home. NOTWITHSTANDING ANYTHING HEREIN CONTAINED TO THE CONTRARY, THE DEFINITION OF "COMMON AREAS" AS SET FORTH IN THIS DECLARATION IS FOR DESCRIPTIVE PURPOSES ONLY AND SHALL IN NO WAY BIND OR OBLIGATE DEVELOPER TO CONSTRUCT OR SUPPLY ANY SUCH ITEM AS SET FORTH IN SUCH DESCRIPTION, THE CONSTRUCTION OR SUPPLYING OF ANY SUCH ITEM BEING IN DEVELOPER'S SOLE DISCRETION FURTHER, NO PARTY SHALL BE ENTITLED TO RELY UPON SUCH DESCRIPTION AS A REPRESENTATION OR WARRANTY AS TO THE EXTENT OF THE COMMON AREAS TO BE OWNED, LEASED BY OR DEDICATED TO ASSOCIATION, EXCEPT AFTER CONSTRUCTION AND DEDICATION OR CONVEYANCE OF ANY SUCH ITEM.

"Community Completion Date" shall mean the date upon which all Homes in Somerset Estates, as ultimately planned and as fully developed, have been conveyed by Developer and/or Builder to Owners.

"Community Standards" shall mean such standards of conduct, maintenance or other activity, if any, established by the ACC pursuant to Section 19 hereof.

"Condominium" shall mean any condominium created pursuant to the Florida Condominium Act within Somerset Estates.

"Condominium Association" shall mean any condominium association responsible for maintaining the common elements to Homes forming a condominium.

"Condominium Unit" shall mean each Home which is part of a Condominium.

"Contractors" shall have the meaning set forth in Section 19.12.2 hereof.

"Data Transmission Services" shall mean enhanced services as defined in Section 64.702 of Title 47 of the Code of Federal Regulations, as amended from time to time, and without regard to whether the transmission facilities are used in interstate commerce.

"Declaration" shall mean this Declaration, together with all amendments and modifications thereof.

"Developer" shall mean Lennar and any of its designees (including its affiliated or related entities which conduct land development, homebuilding and sales activities), successors and assigns who receive a written assignment of all or some of the rights of Developer hereunder. Such assignment need not be recorded in the Public Records in order to be effective. In the event of such a partial assignment, the assignee shall not be deemed Developer, but may exercise such rights of Developer specifically assigned to it. Any such assignment may be made on a non-exclusive basis.

"Expanded Basic Service" shall mean video programming services offered in addition to Basic Service, excluding Premium Channels.

"Home" shall mean a residential home and appurtenances thereto constructed on a Parcel within Somerset Estates. A Home shall include, without limitation, a condominium unit, coach home, villa, townhouse unit, single family home, zero lot line home, and each residential apartment within an Apartment Building. The term Home may not reflect the same division of property as reflected on a Plat. A Home shall be deemed created and have perpetual existence upon the issuance of a final or temporary Certificate of Completion for such residence; provided, however, the subsequent loss of such Certificate of Completion (e.g., by casualty or remodeling) shall not affect the status of a Home, or the obligation of Owner to pay Assessments with respect to such Home. The term "Home" includes any interest in land, improvements, or other property appurtenant to the Home.

"Individual Assessments" shall have the meaning set forth in Section 17.2.5 hereof.

"Lake Slope Maintenance Standards" shall have the meaning set forth in Section 15.11 hereof.

"Lawn Maintenance Standards" shall have the meaning set forth in Section 12.6.

"Lender" shall mean (i) the institutional and licensed holder of a first mortgage encumbering a Parcel or Home or (ii) Developer and its affiliates, to the extent Developer or its affiliates finances the purchase of a Home or Lot initially or by assignment of an existing mortgage.

"Lot" shall mean any platted lot shown on a Plat.

"Master Plan" shall mean collectively any full or partial concept plan for the development of Somerset Estates, as it exists as of the date of recording this Declaration, regardless of whether such plan is currently on file with one or more governmental agencies. The Master Plan is subject to change as set forth herein. The Master Plan is not a representation by Developer as to the development of Somerset Estates or its amenities, as Developer reserves the right to amend all or part of the Master Plan from time to time. The Master Plan is presently an exhibit to the Title Documents.

"Mitigation Monitoring System" shall mean the periodic evaluation of mitigation areas after restoration/creation efforts are completed. Mitigation monitoring is required by the terms and conditions of the Permit. Please refer to the terms and conditions of the approved Permit for monitoring methodology and schedule.

"Monitoring System" shall mean any electronic surveillance and/or monitoring system intended to control access, provide alarm service, and/or enhance the welfare of Somerset Estates. By way of example, and not of limitation, the term Monitoring System may include a central alarm system, electronic entrance gates, gatehouses, roving attendants, wireless communication to Homes, or any combination thereof. THE PROVISION OF A MONITORING SYSTEM SHALL IN NO MANNER CONSTITUTE A WARRANTY OR REPRESENTATION AS TO THE PROVISION OF OR LEVEL OF SECURITY WITHIN SOMERSET ESTATES. DEVELOPER, BUILDERS, ANY CONDOMINIUM ASSOCIATION, NEIGHBORHOOD ASSOCIATIONS, AND THE ASSOCIATION DO NOT GUARANTEE OR WARRANT, EXPRESSLY OR BY IMPLICATION, THE MERCHANTABILITY OF FITNESS FOR USE OF ANY MONITORING SYSTEM, OR THAT ANY SUCH SYSTEM (OR ANY OF ITS COMPONENTS OR RELATED SERVICES) WILL PREVENT INTRUSIONS, FIRES, OR OTHER OCCURRENCES, REGARDLESS OF WHETHER OR NOT THE MONITORING SERVICE IS DESIGNED TO MONITOR THE SAME. EACH AND EVERY OWNER AND THE OCCUPANT OF EACH HOME ACKNOWLEDGES THAT DEVELOPER, BUILDERS, ANY CONDOMINIUM ASSOCIATION, NEIGHBORHOOD ASSOCIATIONS AND THE ASSOCIATION, THEIR EMPLOYEES, AGENTS, MANAGERS, DIRECTORS, AND OFFICERS, ARE NOT INSURERS OF OWNERS OR HOMES, OR THE PERSONAL PROPERTY LOCATED WITHIN HOMES. DEVELOPER, BUILDERS, ANY CONDOMINIUM ASSOCIATION,

NEIGHBORHOOD ASSOCIATIONS, AND THE ASSOCIATION WILL NOT BE RESPONSIBLE OR LIABLE FOR LOSSES, INJURIES, OR DEATHS RESULTING FROM ANY SUCH EVENTS.

"Monthly Assessments" shall have the meaning set forth in Section 17.2.1 hereof.

"Multichannel Video Programming Service" shall mean any method of delivering video programming to Homes including, without limitation, interactive video programming. By way of example, and not of limitation, the term Multichannel Video Programming Service may include cable television, satellite master antenna television, multipoint distribution systems, video dialtone, open video system or any combination thereof.

"Neighborhood" shall mean any subdivision of Somerset Estates which is subject to the jurisdiction of a Neighborhood Association. Each Home shall be part of a Neighborhood, if any.

"Neighborhood Association" shall mean any homeowners or condominium association which governs a portion of Somerset Estates, if any.

"Neighborhood Common Areas" shall mean all property owned and/or maintained by a Neighborhood Association, if any.

"Neighborhood Declaration" shall mean any declaration recorded in the Public Records governing a Neighborhood including, without limitation, any condominium declaration. No Neighborhood Declaration shall be effective unless and until approved by Developer, which approval shall be evidenced by Developer's execution of, or joinder in, such Neighborhood Declaration, if any.

"Operating Costs" shall mean all costs and expenses of Association and the Common Areas including, without limitation, all costs of ownership; operation; administration; all amounts payable by Association; all amounts required to maintain the surface water management system; all community lighting including up-lighting and Neighborhood entrance lighting (if not the obligation of a Neighborhood Association), all amounts payable in connection with any private street lighting agreement between Association and FPL; all costs associated with the Surface Water Management System; amounts payable to a Telecommunications Provider for Telecommunications Services furnished to all Owners; utilities; taxes; insurance; bonds; Monitoring System costs; salaries; management fees; professional fees; service costs; supplies; maintenance; repairs; replacements; refurbishments; common area landscape maintenance; and any and all costs relating to the discharge of the obligations hereunder, or as determined to be part of the Operating Costs by Association. By way of example, and not of limitation, Operating Costs shall include all of Association's legal expenses and costs relating to or arising from the enforcement and/or interpretation of this Declaration.

"Owner" shall mean the record owner (whether one or more persons or entities) of fee simple title to any Home. The term "Owner" shall not include Developer or a Lender. A purchaser of a Parcel who thereafter builds one or more Homes upon such Parcel shall be deemed an Owner with respect to each such Home. For example, an Owner of an Apartment Building is an Owner with respect to each Home within such Apartment Building.

"Parcel" shall mean a platted or unplatted lot, tract, unit or other subdivision of real property upon which a Home has been, or will be, constructed. Once improved, the term Parcel shall include all improvements thereon and appurtenances thereto. The term Parcel, as used herein, may include more than one Home.

"Party Roof" shall mean any roof built as part of the construction of two or more Homes, which Homes are connected by one or more Party Walls.

"Party Wall" shall mean any fence or wall built as part of the original construction of two or more Homes which is placed on the dividing line or platted lot line between such Homes.

"Permit" shall mean Permit No. \_\_\_\_\_ issued by SJRWMD, a copy of which is attached hereto as Exhibit 4.

"Plat" shall mean any plat of any portion of Somerset Estates filed in the Public Records, as the same may be amended by Developer, from time to time.

"Premium Channel" shall mean any channel recognized in the industry as premium including, without limitation, HBO, Showtime, Disney, Cinemax and the Movie Channel.

"Public Records" shall mean the Public Records of Lake County, Florida.

"Reserves" shall have the meaning set forth in Section 17.2.4 hereof.

"Rules and Regulations" shall mean the Rules and Regulations governing Somerset Estates as adopted by the Board from time to time.

"SJRWMD" shall mean the St. Johns River Water Management District.

"Somerset Estates" shall have the meaning set forth in the Recitals hereof subject to additions and deletions thereto as permitted pursuant to the terms of this Declaration. Developer may, when amending or modifying the description of real property which is subject to the operation of this Declaration, also amend or modify the definition of Somerset Estates. Somerset Estates includes the property encompassed by the Permit.

"Special Assessments" shall mean those Assessments more particularly described as Special Assessments in Section 17.2.2 hereof.

"Surface Water Management System" shall mean a system which is designed and constructed or implemented to control discharges which are necessitated by rainfall events, incorporating methods to collect, convey, store, absorb, inhibit, treat, use or reuse water to prevent or reduce flooding, over drainage, environmental degradation, and water pollution or otherwise affect the quantity and quality of discharges. The Somerset Estates surface water or stormwater management system includes those works authorized by SJRWMD pursuant to the Permit.

"Telecommunications Provider" shall mean any party contracting with Association to (i) provide Owners with one or more Telecommunications Services or (ii) to own, maintain and repair Telecommunications Systems allowing Telecommunications Services to be provided to Somerset Estates. Developer may be a Telecommunications Provider. With respect to any particular Telecommunications Services, there may be one or more Telecommunications Providers. By way of example, with respect to Multichannel Video Programming Service, one Telecommunications Provider may provide Association such service while another may own, maintain and service the Telecommunication Systems which allow delivery of such Multichannel Video Programming Service.

"Telecommunications Services" shall mean local exchange services provided by a certified local exchange carrier or alternative local exchange company, intraLATA, and interLATA voice telephony and data transmission service, Multichannel Video Programming Service, and Monitoring System. Without limiting the foregoing, such Telecommunications Services may include the provision of the following services: Toll Calls, Data Transmission Services, Basic Service and Premium Channels.

"Telecommunications Systems" shall mean all facilities, items and methods required and/or used in order to provide Telecommunications Services to Somerset Estates. Without limiting the foregoing, Telecommunications Systems may include wires (fiber optic or other material), conduits, passive and active electronic equipment, pipes, wireless cell sites, computers, modems, satellite antennae site(s), transmission facilities, amplifiers, junction boxes, trunk distribution, drop cables, related apparatus, converters, connections, head-end antennae, earth station(s), appurtenant devices, network facilities necessary and appropriate to support provision of local exchange services

and/or any other item appropriate or necessary to support provision of Telecommunications Services. Ownership and/or control of all of a portion of any part of the Telecommunications Services may be bifurcated among network distribution architecture, system head-end equipment, and appurtenant devices (e.g., individual adjustable digital units).

"Title Documents" shall have the meaning set forth in Section 25.7 hereof.

"Toll Calls" shall have meaning given to such term by the Florida Public Service Commission and/or the Federal Communications Commission.

"Townhome Building" shall have the meaning set forth in Section 15.5 herein.

"Turnover Date" shall mean the date upon which ninety percent (90%) of the Homes which will ultimately be built within Somerset Estates have been conveyed by Developer and/or Builders to Owners.

"Use Fees" shall have the meaning set forth in Section 17.2.3 hereof.

"Working Capital Fund" shall have the meaning set forth in Section 17.12 hereof.

"Zero Lot Line Wall" shall mean a wall built directly on a lot line which forms part of a Home commonly known as a zero lot line. If there is any question about whether a Home is a zero lot line residence, or which portion of a residence is a Zero Lot Line Wall, the Association's determination shall be final.

3. Plan of Development. The planning process for Somerset Estates is an ever-evolving one and must remain flexible in order to be responsible to and accommodate the needs of Developer's buyers. Subject to the Title Documents, Developer may wish and has the right to develop Somerset Estates and adjacent property owned by Developer into residences, comprised of homes, villas, coach homes, townhomes, zero lot line homes, patio homes, multi-family homes, condominiums, rental apartments, and other forms of residential dwellings, as well as commercial development, which may include shopping centers, stores, office buildings, showrooms, industrial facilities, technological facilities, and professional offices. The existence at any point in time of walls, landscape screens, or berms is not a guaranty or promise that such items will remain or form part of Somerset Estates as finally developed.

4. Amendment.

4.1. General Restrictions on Amendments. Notwithstanding any other provision herein to the contrary, no amendment to this Declaration shall affect the rights of Developer unless such amendment receives the prior written consent of Developer, which may be withheld for any reason whatsoever. No amendment shall alter the provisions of this Declaration benefitting Lenders without the prior approval of the Lender(s) enjoying the benefit of such provisions. If the prior written approval of any governmental entity or agency having jurisdiction is required by applicable law or governmental regulation for any amendment to this Declaration, then the prior written consent of such entity or agency must also be obtained. All amendments must comply with Section 10.2.3 which benefits the SJRWMD. No amendment shall be effective until it is recorded in the Public Records.

4.2. Amendments Prior to the Turnover Date. Prior to the Turnover Date, Developer shall have the right to amend this Declaration as it deems appropriate, without the joinder or consent of any person or entity whatsoever. Such amendments may include, without limitation, the creation of easements for Telecommunications Systems, utility drainage, ingress and egress and roof overhangs over any portion of Somerset Estates; additions or deletions from the properties comprising the Common Areas; changes in the Rules and Regulations, and modifications of restrictions on the Homes, and maintenance standards for landscaping. Developer's right to amend under this provision is to be construed as broadly as possible. By way of example, and not as a limitation, Developer may create easements over Homes conveyed to Owners provided that such easements do not prohibit the use of such Homes as a residential homes. In the event that Association shall desire to amend this Declaration prior to the Turnover Date, Association

must first obtain Developer's prior written consent to any proposed amendment. Thereafter, an amendment identical to that approved by Developer may be adopted by Association pursuant to the requirements for amendments from and after the Turnover Date. Thereafter, Developer shall join in such identical amendment so that its consent to the same will be reflected in the Public Records.

4.3. Amendments From and After the Turnover Date. After the Turnover Date, but subject to the general restrictions on amendments set forth above, this Declaration may be amended with the approval of (i) sixty six and 2/3 percent (66 $\frac{2}{3}$ %) of the Board; and (ii) seventy-five percent (75%) of all of the votes in Association.

5. Annexation and Withdrawal.

5.1. Annexation by Developer. Prior to the Community Completion Date, additional lands may be made part of Somerset Estates by Developer. Except for applicable governmental approvals (if any), no consent to such annexation shall be required from any other party (including, but not limited to, Association, Owners or any Lenders of any Parcel or Home). Such annexed lands shall be brought within the provisions and applicability of this Declaration by the recording an amendment to this Declaration in the Public Records. The amendment shall subject the annexed lands to the covenants, conditions, and restrictions contained in this Declaration as fully as though the annexed lands were described herein as a portion of Somerset Estates. Such amendment may contain additions to, or modifications of, the covenants, conditions, and restrictions contained in this Declaration as deemed appropriate by Developer and as may be necessary to reflect the different character, if any, of the annexed lands. Prior to the Community Completion Date, only Developer may add additional lands to Somerset Estates.

5.2. Annexation by Association. After the Community Completion Date, and subject to applicable governmental approvals (if any), additional lands may be annexed with the approval of (i) sixty-six and 2/3 percent (66 $\frac{2}{3}$ %) of the Board; and (ii) seventy-five percent (75%) of all of the votes in Association.

5.3. Withdrawal. Prior to the Community Completion Date, any portions of Somerset Estates (or any additions thereto) may be withdrawn by Developer from the provisions and applicability of this Declaration by the recording of an amendment to this Declaration in the Public Records. The right of Developer to withdraw portions of Somerset Estates shall not apply to any Home which has been conveyed to an Owner unless that right is specifically reserved in the instrument of conveyance or the prior written consent of the Owner is obtained. The withdrawal of any portion of Somerset Estates shall not require the consent or joinder of any other party (including, but not limited to, Association, Owners, or any Lenders of any Parcel or Home). Association shall have no right to withdraw land from Somerset Estates.

6. Dissolution.

6.1. Generally. In the event of the dissolution of Association without reinstatement within thirty (30) days, other than incident to a merger or consolidation, any Owner may petition the Circuit Court of the appropriate Judicial Circuit of the State of Florida for the appointment of a receiver to manage the affairs of the dissolved Association and to manage the Common Areas in the place and stead of Association, and to make of such provisions as may be necessary for the continued management of the affairs of the dissolved Association.

6.2. Applicability of Declaration after Dissolution. In the event of dissolution of Association, Somerset Estates and each Home therein shall continue to be subject to the provisions of this Declaration, including, without limitation, the provisions respecting Assessments specified in this Declaration. Each Owner shall continue to be personally obligated to the successors or assigns of the Association for Assessments to the extent that Assessments are required to enable the successors or assigns of the Association to properly maintain, operate and preserve the Common Areas. The provisions of this Section shall only apply with regard to the maintenance, operation, and preservation of those portions of Somerset Estates which had been Common Areas and continue to be used for the common use and enjoyment of the Owners. In addition, if the Association is terminated, dissolved, or liquidated, the responsibility

for the operation and maintenance of the Surface Water Management System must be transferred and accepted by an entity which would comply with Section 40C-42.027, F.A.C., and be approved by SJRWMD prior to such termination, dissolution or liquidation.

7. Binding Effect and Membership.

7.1. Term. The term of this Declaration shall be perpetual. Each Owner, by acceptance of title to a Home or Parcel, and any person claiming by, through or under such Owner, agrees to be subject to this Declaration and the provisions hereof. The provisions of this Declaration are equitable servitudes and run with the land.

7.2. Transfer. The transfer of the fee simple title to a Home, whether voluntary or by operation of law, terminating the Owner's title to that Home shall terminate the Owner's rights to the use of and enjoyment of the Common Areas as it pertains to that Home. An Owner's rights and privileges under this Declaration are not assignable separately from a Home. The Owner of each Home is entitled to the benefits of, and is burdened with the duties and responsibilities set forth in, the provisions of this Declaration. All parties acquiring any right, title and interest in and to any Home shall be fully bound by the provisions of this Declaration. In no event shall any Owner acquire any rights that are greater than the rights granted to, and limitations placed upon its predecessor in title pursuant to the provisions of this Declaration. In the event that any Owner desires to sell or otherwise transfer title of his or her Home, such Owner shall give the Board at least fourteen (14) days prior written notice of the name and address of the purchaser or transferee, the date on which such transfer of title is to take place, and such other information as the Board may reasonably require. The transferor shall remain jointly and severally liable with the transferee for all obligations of the Owner and the Home pursuant to this Declaration including, without limitation, payment of all Assessments accruing prior to the date of transfer. Until written notice is received as provided in this Section, the transferor and transferee shall be jointly and severally liable for Assessment accruing subsequent to the date of transfer. In the event that upon the conveyance of a Home an Owner fails in the deed of conveyance to reference the imposition of this Declaration on the Home, the transferring Owner shall remain liable for Assessments accruing on the Home from and after the date of conveyance.

7.3. Membership. Upon acceptance of title to a Home, and as more fully provided in the Articles and By-Laws, each Owner shall be a member of Association. Membership rights are governed by the provisions of the Articles and By-Laws. Membership shall be an appurtenance to and may not be separated from, the ownership of a Home. Developer rights with respect to Association are set forth in the Articles and By-Laws.

7.4. Ownership by Entity. In the event that an Owner is other than a natural person, that Owner shall, prior to occupancy of the Home, designate one or more persons who are to be the occupants of the Home and register such persons with Association. All provisions of this Declaration and Rules and Regulations promulgated pursuant thereto shall apply to both such Owner and the designated occupants.

7.5. Voting Interests. Voting interests in Association are governed by the provisions of the Articles and By-Laws.

7.6. Document Recordation by Owners Prohibited. Neither Association nor any Owner, nor group of Owners, may record any documents which, in any way, affect or restrict the rights of Developer, or conflict with the provisions of this Declaration.

7.7. Conflicts. In the event of any conflict among this Declaration, a Neighborhood Declaration, the Articles, By-Laws or any of the Association Documents, this Declaration shall control. In the event that a Neighborhood Declaration is more restrictive than this Declaration, the Neighborhood Declaration shall control.

8. Paramount Right of Developer. Notwithstanding anything to the contrary herein, prior to the Community Completion Date Developer shall have the paramount right to dedicate, transfer, and/or convey (by absolute

conveyance, easement, or otherwise) portions of Somerset Estates for various public purposes or for the provision of Telecommunications Systems, or to make any portions of Somerset Estates part of the Common Areas, or to create and implement a special taxing district which may include all or any portion of Somerset Estates. In addition, the Common Areas of Somerset Estates may include decorative improvements, berms, waterfalls, and waterbodies. **SALES BROCHURES, SITE PLANS, AND MARKETING MATERIALS ARE CURRENT CONCEPTUAL REPRESENTATIONS AS TO WHAT FACILITIES, IF ANY, WILL BE INCLUDED WITHIN THE COMMON AREAS. DEVELOPER SPECIFICALLY RESERVES THE RIGHT TO CHANGE THE LAYOUT, COMPOSITION, AND DESIGN OF ANY AND ALL COMMON AREAS AT ANY TIME WITHOUT NOTICE AT ITS DISCRETION.**

9. Operation of Common Areas.

9.1. Prior to Conveyance. Prior to the conveyance, identification and/or dedication of the Common Areas to Association, any portion of the Common Areas owned by Developer shall be operated, maintained, and administered at the sole cost of Association for all purposes and uses reasonably intended, as Developer in its sole discretion deems appropriate. During such period, Developer shall own, operate, and administer the Common Areas without interference from any Owner or Lender of a Parcel or Home or any other person or entity whatsoever. Owners shall have no right in or to any Common Areas referred to in this Declaration unless and until same are actually constructed, completed, and conveyed to, leased by, dedicated to, and/or maintained by Association. The current conceptual plans and/or representations, if any, regarding the composition of the Common Areas are not a guarantee of the final composition of the Common Areas. No party should rely upon any statement contained herein as a representation or warranty as to the extent of the Common Areas to be owned, leased by, or dedicated to Association. Developer, so long as it controls Association, further specifically retains the right to add to, delete from, or modify any of the Common Areas referred to herein at its discretion without notice.

9.2. Construction of Common Areas Facilities. Developer has constructed or will construct, at its sole cost and expense, certain facilities and improvements as part of the Common Areas, together with equipment and personalty contained therein, and such other improvements and personalty as Developer determines in its sole discretion. Developer shall be the sole judge of the composition of such facilities and improvements. Prior to the Community Completion Date Developer reserves the absolute right to construct additional Common Areas facilities and improvements within Somerset Estates, from time to time, in its sole discretion, and to remove, add to modify and change the boundaries, facilities and improvements now or then part of the Common Areas. Developer is not obligated to, nor has it represented that it will, modify or add to the facilities, improvements, or Common Areas as they are contemplated as of the date hereof. Developer is the sole judge of the foregoing, including the plans, specifications, design, location, completion schedule, materials, size, and contents of the facilities, improvements, appurtenances, personalty (e.g., furniture), color, textures, finishes, or Common Areas, or changes or modifications to any of them.

9.3. Use of Common Areas by Developer. Until the Community Completion Date Developer shall have the right to use any portion of the Common Areas, without charge, for any purpose deemed appropriate by Developer

9.3.1. Conveyance. Within sixty (60) days after the Community Completion Date, or earlier as determined by Developer in its sole discretion, all or portions of the Common Areas may be dedicated by Plats, created in the form of easements, or conveyed by written instrument recorded in the Public Records, or by Quitclaim Deed from Developer to Association. The dedication, creation by easement, or conveyance shall be subject to easements, restrictions, reservations, conditions, limitations, and declarations of record, real estate taxes for the year of conveyance, zoning, land use regulations and survey matters. Association shall be deemed to have assumed and agreed to pay all continuing obligations and service and similar contracts relating to the ownership operation, maintenance, and administration of the conveyed portions of Common Areas and other obligations relating to the Common Areas imposed herein. Association shall, and does hereby, indemnify and hold Developer harmless on account thereof. Association, by its joinder in this Declaration, hereby accepts such dedication(s) or conveyance(s) without setoff, condition, or qualification of any nature. The Common Areas, personal property and equipment



thereon and appurtenances thereto shall be dedicated or conveyed in "as is, where is" condition WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, IN FACT OR BY LAW, AS TO THE CONDITION, FITNESS OR MERCHANTABILITY OF THE COMMON AREAS BEING CONVEYED.

9.4. Operation After Conveyance. After the conveyance or dedication of any portion of the Common Areas to Association, the portion of the Common Areas so dedicated shall be owned, operated and administered by Association for the use and benefit of the owners of all property interests in Somerset Estates including, but not limited to, Association, Developer, Owners and any Lenders. Subject to Association's right to grant easements, and other interests as provided herein, Association may not convey, abandon, alienate, encumber, or transfer all or a portion of the Common Areas to a third party without (i) if prior to the Community Completion Date, the approval of (a) a majority of the Board; and (b) the consent of Developer or (ii) from and after the Community Completion Date, approval of (a) sixty-six and two-thirds percent (66 2/3%) of the Board; (b) seventy-five percent (75%) of all of the votes in Association.

9.5. Paved Common Areas. Without limiting any other provision of this Declaration, Association is responsible for the maintenance and/or re-surfacing all paved surfaces, including but not limited to cart paths, roads, pathways, bicycle paths, and sidewalks forming a part of the Common Areas. Although pavement appears to be a durable material, it requires maintenance. Association shall have the right, but not the obligation, to arrange for an annual inspection of all paved surfaces forming a part of the Common Areas by a licensed paving contractor and/or engineer with a Florida Department of Transportation Asphalt Pavement Certification. The cost of such inspection shall be a part of the Operating Costs of Association. Association shall determine annually the parameters of the inspection to be performed, if any. By way of example, and not of limitation, the inspector may be required to inspect the roads and sidewalks forming part of the Common Areas regularly for deterioration and to advise Association of the overall pavement conditions including any upcoming maintenance needs. Any patching, grading, or other maintenance work should be performed by a Company licensed to perform the work. From and after the Community Completion Date, Association should monitor the roads and sidewalks forming the Common Areas regularly to ensure that vegetation does not grow into the asphalt and that there are no eroded or damaged areas that need immediate maintenance.

9.6. Delegation. Once conveyed or dedicated to Association, the Common Areas and facilities and improvements located thereon shall, subject to the provisions of this Declaration and the document of conveyance or dedication, at all times be under the complete supervision, operation, control, and management of Association. Notwithstanding the foregoing Association may delegate all or a portion of its obligations hereunder to a licensed manager or professional management company. Association specifically shall have the right to pay for management services on any basis approved by the Board (including bonuses or special fee arrangements for meeting financial or other goals). Developer, its affiliates and/or subsidiaries shall have the right to manage the Association. Owners and Association acknowledge that it is fair and reasonable to have Developer, its affiliates and/or subsidiaries manage the Association. Further, in the event that Common Area is created by easement, Association's obligations and rights with respect to such Common Area may be limited by the terms of the document creating such easement.

9.7. Use.

9.7.1. Nonexclusive Use. The Common Areas shall be used and enjoyed by the Owners on a non-exclusive basis in common with other persons, entities and corporations (who may, but are not required to be, members of Association) entitled to use those portions of the Common Areas. Prior to the Community Completion Date, Developer, and thereafter, Association, has the right, at any and all times, and from time to time, to further additionally provide and make the Common Areas available to other individuals, persons, firms, or corporations, as it deems appropriate. The granting of such rights shall not invalidate this Declaration, reduce or abate any Owner's obligations pursuant to this Declaration, or give any Owner the right to avoid any of the covenants, agreements or obligations to be performed hereunder.

9.7.2. Right to Allow Use. Developer and/or Association may enter into easement agreements or other use or possession agreements whereby the Owners, Service Providers, and/or Association and/or others may obtain the use, possession of, or other rights regarding certain property, on an exclusive or non-exclusive basis, for certain specified purposes. Association may agree to maintain and pay the taxes, insurance, administration, upkeep, repair, and replacement of such property, the expenses of which shall be Operating Costs. Any such agreement by Association prior to the Community Completion Date shall require the consent of Developer. Thereafter, any such agreement shall require the approval of the majority of the Board of Directors, which consent shall not be unreasonably withheld or delayed.

9.7.3. Waterbodies. BY ACCEPTANCE OF A DEED TO A HOME OR LOT, EACH OWNER ACKNOWLEDGES THAT THE WATER LEVELS OF ALL WATERBODIES MAY VARY. THERE IS NO GUARANTEE BY DEVELOPER OR ASSOCIATION THAT WATER LEVELS WILL BE CONSTANT OR AESTHETICALLY PLEASING AT ANY PARTICULAR TIME. Developer and Association shall not be obligated to erect fences, gates, or walls around or adjacent to any waterbody or waterfall within Somerset Estates. Notwithstanding the foregoing, an Owner may erect a fence adjacent to the boundary of a waterbody but within the boundary of a Home with the prior approval of the ACC. No fence or other structure may be placed within any lake maintenance easement. Petroleum powered motorized watercraft are expressly prohibited from operation on lakes within Somerset Estates pursuant to the Title Documents. Swimming will not be permitted in any waterbody. No docks may be erected within any waterbody forming part of the Common Areas.

9.7.4. Obstruction of Common Areas. No portion of the Common Areas may be obstructed, encumbered, or used by Owners for any purpose other than as permitted by Association.

9.7.5. Assumption of Risk. Without limiting any other provision herein, each person within any portion of the Common Areas accepts and assumes all risk and responsibility for noise, liability, injury, or damage connected with use or occupation of any portion of such Common Areas, including, without limitation, (a) noise from maintenance equipment, (b) use of pesticides, herbicides and fertilizers, (c) view restrictions caused by maturation of trees and shrubbery, (d) reduction in privacy caused by the removal or pruning of shrubbery or trees within Somerset Estates, and (e) design of any portion of Somerset Estates. Each such person also expressly indemnifies and agrees to hold harmless Developer, Association, Neighborhood Associations, Builders and all employees, directors, representatives, officers, agents, and partners of the foregoing, from any and all damages, whether direct or consequential, arising from or related to the person's use of the Common Areas, including for attorneys' fees, paraprofessional fees and costs at trial and upon appeal. Without limiting the foregoing, all persons using the Common Areas, including without limitation, all waterbodies, lakes, pools or areas adjacent to a lake, do so at their own risk. BY ACCEPTANCE OF A DEED, EACH OWNER ACKNOWLEDGES THAT THE COMMON AREAS MAY CONTAIN WILDLIFE SUCH AS ALLIGATORS, RACCOONS, DEER, SWINE, TURKEYS, AND FOXES. DEVELOPER, BUILDERS, ASSOCIATION, AND NEIGHBORHOOD ASSOCIATIONS SHALL HAVE NO RESPONSIBILITY FOR MONITORING SUCH WILDLIFE OR NOTIFYING OWNERS OR OTHER PERSONS OF THE PRESENCE OF SUCH WILDLIFE. EACH OWNER AND HIS OR HER GUESTS AND INVITEES ARE RESPONSIBLE FOR THEIR OWN SAFETY.

9.7.6. Owner's Obligation to Indemnify. Each Owner agrees to indemnify and hold harmless Developer, and Association, their officers, partners, agents, employees, affiliates, directors and attorneys (collectively, "Indemnified Parties") against all actions, injury, claims, loss, liability, damages, costs and expenses of any kind or nature whatsoever ("Losses") incurred by or asserted against any of the Indemnified Parties from and after the date hereof, whether direct, indirect, or consequential, as a result of or in any way related to the Common Areas, including, without limitation, use of the lakes and other waterbodies within Somerset Estates by Owners, and their guests, family members, invitees, or agents, or the interpretation of this Declaration and/or exhibits attached hereto and/or from any act or omission of Developer, or Association or of any of the Indemnified Parties. Should any Owner bring suit against Developer, Association, or any of the Indemnified Parties for any claim or matter and fail to obtain judgment therein against such Indemnified Parties, such Owner shall be liable to such parties for all

Losses, costs and expenses incurred by the Indemnified Parties in the defense of such suit, including attorney's fees and paraprofessional fees at trial and upon appeal.

9.8. Rules and Regulations.

9.8.1. Generally. Prior to Community Completion Date, the Developer, and thereafter Association, shall have the right to adopt Rules and Regulations governing the use of the Common Areas. The Rules and Regulations need not be recorded in the Public Records. The Common Areas shall be used in accordance with this Declaration and Rules and Regulations promulgated relating thereto.

9.8.2. Developer Not Subject to Rules and Regulations. The Rules and Regulations shall not apply to the Developer or to any property owned by Developer, and shall not be applied in a manner which would adversely affect the interests of the Developer. Without limiting the foregoing, Developer, and/or its designees or assigns, shall have the right to: (i) develop and construct commercial and industrial uses, Homes, Common Area and related improvements within Somerset Estates, and make any additions, alterations, improvements, or changes thereto; (ii) maintain sales offices (for the sale and re-sale of (a) Homes and (b) residences and properties located outside of Somerset Estates), general office and construction operations within Somerset Estates; (iii) place, erect or construct portable, temporary or accessory buildings or structure within Somerset Estates for sales, construction storage or other purposes; (iv) temporarily deposit, dump or accumulate materials, trash and rubbish in connection with the development or construction of any portion of Somerset Estates; (v) post, display, inscribe or affix to the exterior of any portion of the Common Areas or portions of Somerset Estates owned by Developer, signs and other materials used in developing, constructing, selling or promoting the sale of any portion Somerset Estates including, without limitation, Parcels and Homes; (vi) excavate fill from any lakes or waterways within and/or contiguous to Somerset Estates by dredge or dragline, store fill within Somerset Estates and remove and/or sell excess fill; and grow or store plants and trees within, or contiguous to, Somerset Estates and use and/or sell excess plants and trees; and (vii) undertake all activities which, in the sole opinion of Developer, are necessary for the development and sale of any lands and improvements comprising Somerset Estates.

9.9. Public Facilities. Somerset Estates may include one or more facilities which may be open and available for the use of the general public. By way of example, there may be a public park, fire station, police station, or other facility within the boundaries of Somerset Estates.

9.10. Default by Another Owner. No default by any Owner in the performance of the covenants and promises contained in this Declaration or by any person using the Common Areas or any other act of omission by any of them shall be construed or considered (a) a breach by Developer or Association or a non-defaulting Owner or other person or entity of any of their promises or covenants in this Declaration; or (b) an actual, implied or constructive dispossession of another Owner from the Common Areas; or (c) an excuse, justification, waiver or indulgence of the covenants and promises contained in this Declaration.

9.11. Special Taxing Districts. For as long as Developer controls Association, Developer shall have the right, but not the obligation, to dedicate or transfer or cause the dedication or transfer of all or portions of the Common Areas of Association to a public agency or authority under such terms as Developer deems appropriate in order to create or contract with special taxing districts (or others) for lighting, roads, landscaping, irrigation areas, lakes, waterways, ponds, surface water management systems, wetlands mitigation areas, parks, recreational or other services, security or communications, or other similar purposes deemed appropriate by Developer, including without limitation, the maintenance and/or operation of any of the foregoing. As hereinafter provided, Developer may sign any taxing district petition as attorney-in-fact for each Owner. Each Owner's obligation to pay taxes associated with such district shall be in addition to such Owner's obligation to pay Assessments. Any special taxing district shall be created pursuant to all applicable ordinances of Lake County and all other applicable governing entities having jurisdiction with respect to the same.

9.12. Water Mains. In the event Lake County or any of its subdivisions, agencies, and/or divisions must remove any portion of a Home driveway which is constructed of pavers within any portion of the Common Areas, then Association will be responsible to replace or repair the driveway at Association's expense.

9.13. Association's Obligation to Indemnify. Association and Owners each covenant and agree jointly and severally to indemnify, defend and hold harmless Developer, its officers, directors, shareholders, and any related persons or corporations and its employees from and against any and all claims, suits, actions, causes of action or damages arising from any personal injury, loss of life, or damage to property, sustained on or about the Common Areas, or other property serving Association, and improvements thereon, or resulting from or arising out of activities or operations of Association or Owners, and from and against all costs, expenses, court costs, attorneys' fees and paraprofessional fees (including, but not limited to, all trial and appellate levels and whether or not suit be instituted), expenses and liabilities incurred or arising from any such claim, the investigation thereof, or the defense of any action or proceedings brought thereon, and from and against any orders judgments or decrees which may be entered relating thereto. The costs and expense of fulfilling this covenant of indemnification shall be Operating Costs to the extent such matters are not covered by insurance maintained by Association.

9.14. Site Plans and Plats. Somerset Estates may be subject to one or more plats (each individually, a "Plat"). The Plat may identify some of the Common Areas within Somerset Estates. The description of the Common Areas on a Plat is subject to change and the notes on a Plat are not a guarantee of what facilities will be constructed on such Common Areas. Site plans used by Developer in its marketing efforts illustrate the types of facilities which may be constructed on the Common Areas, but such site plans are not a guarantee of what facilities will actually be constructed. Each Owner should not rely on a Plat or any site plans used for illustration purposes as the Declaration governs the rights and obligations of Developer and Owners with respect to the Common Areas.

#### 10. Maintenance by Association.

10.1. Common Areas. Except as otherwise specifically provided in this Declaration to the contrary, Association shall at all times maintain, repair, replace and insure the Common Areas, including all improvements placed thereon.

#### 10.2. Surface Water Management System.

10.2.1. Duty to Maintain. Association acknowledges that the Surface Water Management System is owned by Association as part of the Common Areas. The duty of maintenance of the Common Areas expressly includes the duty to operate, maintain, and repair the Surface Water Management System. The maintenance of the Surface Water Management System shall mean the exercise of practices which allow the systems to provide drainage, water storage, conveyance or other surface water management or stormwater management capabilities as permitted by the SJRWMD. Any repair or reconstruction of the Surface Water Management System shall be as permitted or, if modified, as approved by the SJRWMD. The costs of the operation and maintenance of the Surface Water Management System, including but not limited to, work within retention area, drainage structures and drainage easements, shall be part of the Operating Costs of Association and each Owner shall pay Assessments which shall include a pro rata share of such costs. The Association will take any action against Owners as necessary to enforce the conditions of the conservation easement and the Permit, including, without limitation, any monitoring required by the Permit.

10.2.2. Easement for Access and Drainage. The Association shall have a perpetual non-exclusive easement over all areas of the Surface Water Management System for access to operate, maintain or repair the system. By this easement, the Association shall have the right to enter upon any portion of any Lot which is a part of the Surface Water Management System, at a reasonable time and in a reasonable manner, as required by the Permit. Additionally, Association shall have a perpetual non-exclusive easement for drainage over the entire Surface Water Management System. No person shall alter the drainage flow or the Surface Water Management System, including buffer areas or swales, without the prior written approval of SJRWMD.

10.2.3. Amendments to Association Documents. Any amendment to this Declaration which alters any provision relating to the Surface Water Management System, beyond maintenance in its original condition, including the water management portion of the Common Areas, must have the prior approval of SJRWMD. Association shall submit to SJRWMD any proposed amendment to the Association Documents which will affect the Surface Water Management System. SJRWMD shall then inform Association as to whether the amendment requires a modification of the Permit. If a modification of the Permit is necessary, SJRWMD shall so advise Association. Once Association receives the modification to the Permit and any conditions to the Permit, both shall be attached as an exhibit to an amendment to this Declaration, which amendment shall not require the approval of the Owners. Association shall maintain copies of all water management permits and correspondence respecting such permits for the benefit of the Association.

10.2.4. Enforcement. SJRWMD shall have the right to enforce, by a proceeding at law or in equity, the provision contained in this Declaration which related to the maintenance, operation and repair of the Surface Water Management System.

10.3. Lawn Maintenance. The applicable Neighborhood Association shall (i) cut, edge and fertilize the lawn and trim the hedges in the yard of each Home and (ii) weed and mulch the plant bed(s) in the yard of each Home, in accordance with standards adopted by such Neighborhood Association, provided that the Owner of such Home has not modified the plant bed(s) from the original plant bed(s) installed by Developer. In the event an Owner modifies the plant bed(s) as initially installed by Developer, then such Owner shall be solely responsible for maintenance of such plant bed(s). The applicable Neighborhood Association shall be responsible for the irrigation and sprinkler systems in the yard of each Home; provided, however, any modifications by an Owner are the responsibility of such Owner. The applicable Neighborhood Association is responsible for replacing dead or damaged grass and/or landscaping initially installed by Developer. Owners shall be responsible for the replacement of soil underlying grass or landscaping which is lost to erosion. However, if an Owner upgrades or changes landscaping in a yard with ACC approval, such Owner shall be responsible for maintaining such upgraded or changed landscaping at such Owner's sole expense. Each Owner is specifically responsible for maintaining all landscaping within any portion of a Home that is fenced and inaccessible to the applicable Neighborhood Association. A Home with a fence or wall that has a gate or opening of less than five (5) feet shall be deemed inaccessible to the applicable Neighborhood Association. Moreover, the applicable Neighborhood Association will not be responsible for damage to fences, walls, and/or gates resulting from lawn and landscape maintenance. Further, the Neighborhood Association shall not maintain a yard that is covered or blocked in any fashion by patio furniture or other objects, nor will it maintain yards containing pets. Each Neighborhood Association is granted a three (3) foot maintenance easement from the rear property line of each Home for the purpose of maintaining the yards of Homes. No structure, vegetation or other obstruction shall be placed within this maintenance easement. Any inaccessible portion of a yard will not be maintained by the Neighborhood Association. Notwithstanding the foregoing, the Board may decide by Board action if some or all of the Neighborhood Association maintenance responsibilities will be implemented.

10.4. Adjoining Areas. Association shall also maintain those drainage areas, swales, lakes maintenance easements, and landscape areas that are within the Common Areas, provided that such areas are readily accessible to Association. Under no circumstances shall Association be responsible for maintaining any areas within fences or walls that form a part of a Home.

10.5. Negligence. The expense of any maintenance, repair or construction of any portion of the Common Areas necessitated by the negligent or willful acts of an Owner, Neighborhood Associations, or persons utilizing the Common Areas, through or under an Owner or Neighborhood Association, shall be borne solely by such Owner or Neighborhood Associations and the Home and/or Parcel owned by that Owner shall be subject to an Individual Assessment for that expense. By way of example, and not of limitation, an Owner shall be responsible for the removal of all landscaping and structures placed within easements or Common Areas without the prior written approval of Association.

10.6. Right of Entry. Developer and Association are granted a perpetual and irrevocable easement over, under and across Somerset Estates for the purposes herein expressed, including, without limitation, for inspections to ascertain compliance with the provisions of this Declaration, and for the performance of any maintenance, alteration or repair which it is entitled to perform. Without limiting the foregoing, Developer specifically reserves easements for all purposes necessary to comply with any governmental requirement or to satisfy any condition that is a prerequisite for a governmental approval. By way of example, and not of limitation, Developer may construct, maintain, repair, alter, replace and/or remove improvements; install landscaping; install utilities; and/or remove structures on any portion of Somerset Estates if Developer is required to do so in order to obtain the release of any bond posted with any governmental agency).

10.7. Maintenance of Property Owned by Others. Association shall, if designated by Developer (or by Association after the Community Completion Date) by amendment to this Declaration or any document of record, including without limitation declaration(s) of condominium, maintain vegetation, landscaping, sprinkler system, community identification/features and/or other areas or elements designated by Developer (or by Association after the Community Completion Date) upon areas which are within or outside of Somerset Estates. Such areas may abut, or be proximate to, Somerset Estates, and may be owned by, or be dedicated to, others including, but not limited to, a utility, governmental or quasi-governmental entity or a Condominium Association. These areas may include (for example and not limitation) swale areas, landscape buffer areas, berm areas or median areas within the right-of-way of public streets, roads, drainage areas, community identification or entrance features, community signage or other identification and/or areas within canal rights-of-ways or other abutting waterways.

11. Use Restrictions.

11.1. Alterations and Additions. No material alteration, addition or modification to a Parcel or Home, or material change in the appearance thereof, shall be made without the prior written approval thereof being first had and obtained from the ACC as required by this Declaration.

11.2. Animals. No animals of any kind shall be raised, bred or kept within Somerset Estates for commercial purposes. Otherwise, Owners may keep domestic pets as permitted by Lake County ordinances up to a limit of two (2) such pets and otherwise in accordance with the Rules and Regulations established by the Board from time to time. Notwithstanding the foregoing, pets may be kept or harbored in a Home only so long as such pets or animals do not constitute a nuisance. A determination by the Board that an animal or pet kept or harbored in a Home is a nuisance shall be conclusive and binding on all parties. All pets shall be walked on a leash. No pet shall be permitted outside a Home unless such pet is kept on a leash or within a fenced yard of a Home. No pet or animal shall be "tied out" on the exterior of the Home or in the Common Areas, or left unattended in a yard or on balcony, porch, or patio. No dog runs or enclosures shall be permitted on any Home. When notice of removal of any pet is given by the Board, the pet shall be removed within forty-eight (48) hours of the giving of the notice. All pets shall defecate only in the "pet walking" areas within Somerset Estates designated for such purpose, if any, or on that Owner's Home. The person walking the pet or the Owner shall clean up all matter created by the pet. Each Owner shall be responsible for the activities of its pet. Notwithstanding anything to the contrary, seeing eye dogs shall not be governed by the restrictions contained in this Section.

11.3. Artificial Vegetation. No artificial grass, plants or other artificial vegetation, or rocks or other landscape devices, shall be placed or maintained upon the exterior portion of any Home or Parcel, unless approved by the ACC.

11.4. Boundaries of Maintenance. All lawn maintenance shall be the responsibility of the Neighborhood Association or the individual Owners as and to the extent provided in the Neighborhood Declaration and as determined by the applicable Neighborhood Association respecting each Neighborhood.

11.5. Casualty Destruction to Improvements. In the event that a Home or other improvement is damaged or destroyed by casualty loss or other loss, then within a reasonable period of time after such incident, the

Owner thereof shall either commence to rebuild or repair the damaged Home or improvement and diligently continue such rebuilding or repairing until completion, or properly clear the damaged Home or improvement and restore or repair the Home as approved by the ACC. As to any such reconstruction of a destroyed Home or improvements, the same shall only be replaced as approved by the ACC.

11.6. Commercial Activity. Except for normal construction activity, sale, and re-sale of a Home, sale or re-sale of other property owned by Developer, administrative offices of Developer or Builders, no commercial or business activity shall be conducted in any Home within Somerset Estates. Notwithstanding the foregoing, and subject to applicable statutes and ordinances, an Owner may maintain a home business office within a Home for such Owner's personal use; provided, however, business invitees customers, and clients shall not be permitted to meet with Owners in Homes unless the Board provides otherwise in the Rules and Regulations. No Owner may actively engage in any solicitations for commercial purposes within Somerset Estates. No solicitors of a commercial nature shall be allowed within Somerset Estates, without the prior written consent of Association. No garage sales are permitted, except as permitted by the Association. No day care center or facility may be operated out of a Home. Prior to the Community Completion Date, Association shall not permit any garage sales without the prior written consent of Developer.

11.7. Completion and Sale of Units. No person or entity shall interfere with the completion and sale of Homes within Somerset Estates.

11.8. Control of Contractors. Except for direct services which may be offered to Owners (and then only according to the Rules and Regulations relating thereto as adopted from time to time), no person other than an Association officer shall direct, supervise, or in any manner attempt to assert any control over any contractor of Association.

11.9. Cooking. No cooking shall be permitted nor shall any goods or beverages be consumed on the Common Areas except in areas designated for those purposes by Association. The ACC shall have the right to prohibit or restrict the use of grills or barbeque facilities throughout Somerset Estates.

11.10. Decorations. No decorative objects including, but not limited to, birdbaths, light fixtures, sculptures, statues, weather vanes, or flagpoles shall be installed or placed within or upon any portion of Somerset Estates without the prior written approval of the ACC.

11.11. Disputes as to Use. If there is any dispute as to whether the use of any portion of Somerset Estates complies with this Declaration, such dispute shall, prior to the Community Completion Date, be decided by Developer, and thereafter by Association. A determination rendered by such party with respect to such dispute shall be final and binding on all persons concerned.

11.12. Drainage System. Once a drainage system or drainage facilities are installed by Developer, the maintenance of such system and/or facilities thereafter shall be the responsibility of the Owner of the Home which includes such system and/or facilities. In the event that such system or facilities (whether comprised of swales, pipes, pumps, waterbody slopes, or other improvements) is adversely affected by landscaping, fences, structures, or additions, the cost to correct, repair, or maintain such drainage system and/or facilities shall be the responsibility of the Owner of each Home containing all or a part of such drainage system and/or facilities. By way of example, and not of limitation, if the Owner of one Home plants a tree (pursuant to ACC approval) and the roots of such tree subsequently affect pipes or other drainage facilities within another Home, the Owner that plants the tree shall be solely responsible for the removal of the roots which adversely affects the adjacent Home. Likewise, if the roots of a tree located within the Common Areas adversely affect an adjacent Home, Association shall be responsible for the removal of the roots and the costs thereof shall be Operating Costs. Notwithstanding the foregoing, Association and Developer shall have no responsibility or liability for drainage problems of any type whatsoever.

11.13. Driveway Easement. Each Owner shall be responsible to repair, maintain and/or replace the driveway comprising part of a Home, including, but not limited to, any damage caused by Association or by the holder

of any easement over which such driveway is constructed. Each Owner, by acceptance of a deed to a Home, shall be deemed to have agreed to indemnify and hold harmless Association and the holder of any such easement, including without limitation, all applicable utility companies and governmental agencies, their agents, servants, employees and elected officials, from and against any and all actions or claims whatsoever arising out of the use of the Common Areas and any easement or the construction and/or maintenance of any driveway in that portion of the Common Areas easement area, or in a public right-of-way between the boundary of such Owner's Home and the edge of the adjacent paved roadway. Further, each Owner agrees to reimburse the Association any expense incurred in repairing any damage to such driveway in the event that such Owner fails to make the required repairs.

11.14. Extended Vacation and Absences. In the event a Home will be unoccupied for an extended period, the Home must be prepared prior to departure by: (i) notifying Association; (ii) removing all removable furniture, plants and other objects from outside the Home; and (iii) designating a responsible firm or individual to care for the Home, should the Home suffer damage or require attention, and providing a key to that firm or individual. The name of the designee shall be furnished to Association. Association shall have no responsibility of any nature relating to any unoccupied Home.

11.15. Fencing. No walls or fences shall be erected or installed without prior written consent of the ACC. No chain link fencing of any kind shall be allowed.

11.16. Garbage Cans. Trash collection and disposal procedures established by Association shall be observed. No outside burning of trash or garbage is permitted. No garbage cans, supplies or other similar articles shall be maintained on any Home so as to be visible from outside the Home or Parcel.

11.17. Holiday Lights and Other Lighting. Except for seasonal holiday lights, all exterior lighting shall require the approval of the ACC as set forth in this Declaration. The ACC may establish standards for holiday lights. The ACC may require the removal of any lighting that creates a nuisance (e.g., unacceptable spillover to adjacent Home).

11.18. Hurricane Shutters. Any hurricane shutters or other protective devices visible from outside a Home shall be of a type as approved by the ACC. Panel, accordion and roll-up style hurricane shutters may not be left closed during hurricane season. Any such approved hurricane shutters may be installed up to forty-eight (48) hours prior to the expected arrival of a hurricane and must be removed within seventy-two (72) hours after the end of a hurricane watch or warning or as the Board may determine otherwise.

11.19. Irrigation. Due to water quality, irrigation systems may cause staining on Homes, other structures or paved areas. It is each owner's responsibility to treat and remove any such staining. Association may require from time to time, that Owners adopt systems to prevent stains (e.g., automatic deionization systems). No Owner whose Home adjoins a waterway or lake may utilize the waterway or lake to irrigate unless so provided by Developer as part of original construction, subject to applicable permitting. Association may use waterways and lakes to irrigate Common Areas, subject to applicable permitting. **BY ACCEPTANCE OF A DEED TO A HOME OR PARCEL, EACH OWNER ACKNOWLEDGES THAT THE WATER LEVELS OF ALL LAKES AND WATERBODIES MAY VARY. THERE IS NO GUARANTEE BY DEVELOPER OR ASSOCIATION THAT WATER LEVELS WILL BE CONSTANT OR AESTHETICALLY PLEASING AT ANY PARTICULAR TIME.** Developer and Association shall have the right to use one or more pumps to remove water from lakes and waterbodies for irrigation purposes at all times, subject to applicable permitting. Developer may utilize a computerized loop system to irrigate the Common Areas and/or Homes. Any computerized loop irrigation system that is not specifically the maintenance obligation of a Neighborhood Association, shall be the maintenance obligation of Association and shall be deemed part of the Common Areas.

11.20. Laundry. Subject to the provisions of Section 163.04 of the Florida Statutes, to the extent applicable, no rugs, mops, or laundry of any kind, or any other similar type article, shall be shaken, hung or exposed so as to be visible outside the Home or Parcel.



11.21. Lawful Use. No unlawful or obnoxious use shall be made of any portion of Somerset Estates. All laws, zoning ordinances and regulations of all governmental entities having jurisdiction thereof shall be observed. The responsibility of meeting the requirements of governmental entities for maintenance, modification or repair of a portion of Somerset Estates shall be the same as the responsibility for maintenance and repair of the property concerned.

11.22. Leases. Homes may be leased, licensed or occupied only in their entirety and no fraction or portion may be rented. No bed and breakfast facility may be operated out of a Home. Individual rooms of a Home may not be leased on any basis. No transient tenants may be accommodated in a Home. All leases or occupancy agreements shall be in writing and a copy of all leases of Homes not comprising part of an Apartment Building shall be provided to Association if so requested by Association. Leases of Homes forming part of an Apartment Building shall not be submitted to the Association unless Association reasonably requests a copy of the same from the Owner of an Apartment Building in connection with the enforcement of this Declaration or the Rules and Regulations. No Home, other than Homes within Apartment Buildings, may be subject to more than two (2) leases in any twelve (12) month period, regardless of the lease term. No time-share or other similar arrangement is permitted. The Owner must make available to the lessee or occupants copies of the Association Documents. No lease term shall be less than thirty (30) days.

11.23. Maintenance by Owners. All lawns, landscaping and sprinkler systems and any property, structures, improvements and appurtenances not maintained by Association shall be well maintained and kept in first class, good, safe, clean, neat and attractive condition consistent with the general appearance of Somerset Estates by the Owner of each Home. Each Owner is specifically responsible for maintaining all grass, landscaping and improvements within any portion of a Home that is fenced.

11.23.1. Common Area Enclosed by a Private Fence. If an Owner has installed a fence or wall, subject to ACC approval, around a Home, or any portion thereof, then such Owner must maintain any portion of the Common Areas that is no longer readily accessible to Association.

11.23.2. Weeds and Refuse. No weeds, underbrush, or other unsightly growth shall be permitted to be grown or remain upon any Home. No refuse or unsightly objects shall be allowed to be placed or suffered to remain upon any Home.

11.23.3. Drainage Swale Maintenance. Developer has constructed or will construct a drainage swale upon each Lot for the purpose of managing and containing the flow of excess surface water, if any, found upon such Lot from time to time ("Drainage Swale"). Each Owner and Builder, shall be responsible for the maintenance, operation and repair of the Drainage Swales on such Owner's Home or Builder's Lot. Maintenance, operation and repair shall mean the exercise of practices, such as mowing and erosion repair, which allow the Drainage Swales to provide drainage, water storage, conveyance or other stormwater management capabilities as permitted by SJRWMD. Filling, excavation, construction of fences or otherwise obstructing the surface water flow in the Drainage Swales is prohibited. No alteration of the Drainage Swale shall be authorized and any damage to any Drainage Swale, whether caused by natural or human-induced phenomena, shall be repaired and the Drainage Swale returned to its former condition as soon as possible by the Builder who owns the Lot or the Owner of the Home upon which the Drainage Swale is located.

11.23.4. Driveway Easement. Each Owner shall be responsible to repair any damage to a driveway which comprises part of a Home, including, but not limited to, any damage caused by Association or by the holder of any easement over which such driveway is constructed. Each Owner, by acceptance of a deed to a Home, shall be deemed to have agreed to indemnify and hold harmless Association and the holder of any such easement, including without limitation, all applicable utility companies and governmental agencies, their agents, servants, employees and elected officials, from and against any and all actions or claims whatsoever arising out of the use of the Common Areas and any easement or the construction and/or maintenance of any driveway in that portion of the Common Areas, easement area, or in a public right-of-way between the boundary of such Owner's

Home and the edge of the adjacent paved roadway. Further, each Owner agrees to reimburse Association any expense incurred in repairing any damage to such driveway in the event that such Owner fails to make the required repairs, together with interest at the highest rate allowed by law.

11.24. Minor's Use of Facilities. Parents shall be responsible for all actions of their minor children at all times in and about Somerset Estates. Developer and Association shall not be responsible for any use of the facilities by anyone, including minors.

11.25. Nuisances. No nuisance or any use or practice that is the source of unreasonable annoyance to others or which interferes with the peaceful possession and proper use of Somerset Estates is permitted. No firearms shall be discharged within Somerset Estates. Nothing shall be done or kept within the Common Areas, or any other portion of Somerset Estates, including a Home or Parcel which will increase the rate of insurance to be paid by Association.

11.26. Paint. Homes shall be repainted within forty-five (45) days of notice by the ACC.

11.27. Parking. Owners' automobiles shall be parked in the garage or driveway. No vehicle which cannot operate on its own power shall remain on Somerset Estates for more than twelve hours, except in the garage of a Home. No repair, except emergency repair, of vehicles shall be made within Somerset Estates, except in the garage of a Home. No commercial vehicle, recreational vehicle, boat, trailer, including but not limited to boat trailers, house trailers, and trailers of every other type, kind or description, or camper, may be kept with Somerset Estates except in the garage of a Home. The term commercial vehicle shall not be deemed to include recreational or utility vehicles (i.e. Broncos, Blazers, Explorers, etc.) up to 21'5" in length or clean "non-working" vehicles such as pick-up trucks, vans, or cars if they are used by the Owner on a daily basis for normal transportation. Notwithstanding any other provision in this Declaration to the contrary, the foregoing provisions shall not apply to construction vehicles in connection with the construction, improvement, installation, or repair by Developer or Builders of Homes, Common Areas, or any other Somerset Estates facility.

11.28. Personal Property. All personal property of Owners or other occupants of Homes shall be stored within the Homes. No personal property, except usual patio furniture, may be stored on, nor any use made of, the Common Areas, any Parcel or Home, or any other portion of Somerset Estates, which is unsightly or which interferes with the comfort and convenience of others.

11.29. Pools. No above-ground pools shall be permitted. All in-ground pools, hot tubs, spas and appurtenances installed shall require the approval of the ACC as set forth in this Declaration. All pools shall be adequately maintained and chlorinated. Unless installed by Developer, no diving boards, slides, or platforms shall be permitted without ACC approval.

11.30. Removal of Soil and Additional Landscaping. Without the prior consent of the ACC, no Owner shall remove soil from any portion of Somerset Estates, change the level of the land within Somerset Estates, or plant landscaping which results in any permanent change in the flow and drainage of surface water within Somerset Estates. Owners may place additional plants, shrubs, or trees within any portion of Somerset Estates with the prior approval of the ACC.

11.31. Roofs and Pressure Treatment. Roofs and/or exterior surfaces and/or pavement, including, but not limited to, walks and drives, shall be pressure treated within thirty (30) days of notice by the ACC.

11.32. Satellite Dishes and Antennae. No exterior visible antennae, radio masts, towers, poles, aerials, satellite dishes, or other similar equipment shall be placed on any Home or Parcel without the prior written approval thereof being first had and obtained from the ACC as required by this Declaration. The ACC may require, among other things, that all such improvements be screened so that they are not visible from adjacent Homes, or from the

Common Areas. No Owner shall operate any equipment or device which will interfere with the radio or television reception of others.

11.33. Servants. Servants and domestic help of any Owner may not gather or lounge in or about the Common Areas.

11.34. Signs. No sign (including brokerage or for sale/lease signs), flag, banner, sculpture, fountain, outdoor play equipment, solar equipment, artificial vegetation, sports equipment, advertisement, notice or other lettering shall be exhibited, displayed, inscribed, painted or affixed in, or upon any part of a Parcel or Home that is visible from the outside without the prior written approval thereof being first had and obtained from the ACC as required by this Declaration.

11.35. Sports Equipment. No recreational, playground or sports equipment shall be installed or placed within or about any portion of Somerset Estates without prior written consent of the ACC.

11.36. Storage. No temporary or permanent utility or storage shed, storage building, tent, or other structure or improvement shall be permitted and no other structure or improvement shall be constructed, erected, altered, modified or maintained without the prior approval of the ACC, which approval shall conform to the requirements of this Declaration.

11.37. Subdivision and Regulation of Land. No portion of any Home or Parcel shall be divided or subdivided or its boundaries changed without the prior written approval of Association. No Owner shall inaugurate or implement any variation from, modification to, or amendment of governmental regulations, land use plans, land development regulations, zoning, or any other development orders or development permits applicable to Somerset Estates, without the prior written approval of Developer, which may be granted or deemed in its sole discretion.

11.38. Substances. No inflammable, combustible or explosive fuel, fluid, chemical, hazardous waste, or substance shall be kept on any portion of Somerset Estates or within any Home or Parcel, except those which are required for normal household use.

11.39. Use of Homes. Each Home is restricted to residential use as a residence by the Owner or permitted occupant thereof, its immediate family, guests, tenants and invitees.

11.40. Visibility on Corners. Notwithstanding anything to the contrary in these restrictions, no obstruction to visibility at street intersections shall be permitted and such visibility clearances shall be maintained as required by the ACC and governmental agencies.

11.41. Wetlands and Mitigation Areas. It is anticipated that the Common Areas shall include one or more preserves, wetlands, and/or mitigation areas. No Owner or other person shall take any action or enter onto such areas so as to adversely affect the same. Such areas are to be maintained by Association in their natural state.

11.42. Windows or Wall Units. No window or wall air conditioning unit may be installed in any window or wall of a Home.

11.43. Window Treatments. Window treatments shall consist of drapery, blinds, decorative panels, or other tasteful window covering, and no newspaper, aluminum foil, sheets or other temporary window treatments are permitted.

## 12. Zero Lot Line Homes.

12.1. Easement for Zero Lot Line Wall Maintenance. Maintenance of a Zero Lot Line Wall shall be the obligation of the Owner of the Zero Lot Line Wall. Developer hereby grants to each Owner of a Zero Lot Line

Wall a maintenance easement over the Home adjacent to the Zero Lot Line Wall for the maintenance of the Zero Lot Line Wall and any wing wall attached thereto and for ingress and egress to the Zero Lot Line Wall and wing wall. The easement shall be four (4) feet in width, shall be immediately contiguous to the Zero Lot Line Wall, and shall run the length of the Home on which the easement exists. No improvements of any kind shall be constructed in the easement area which would block access to the Zero Lot Line Wall and wing wall, if any, or which would in any way interfere with the ability of an Owner of a Zero Lot Line Wall to maintain the Zero Lot Line Wall and wing wall. Notwithstanding the foregoing, Developer may construct a connecting wall across the easement area; provided, however, that the Owner of a Zero Lot Line Wall shall have access at all reasonable times to the easement area. In the event that there is any question about when access under the easement created by this Section is reasonable, the Association's determination shall be final. In the event that the Owner of a Zero Lot Line Wall damages the adjacent Home subject to the foregoing maintenance easement, the Owner of the Zero Lot Line Wall shall be responsible for repairing such damage in a timely manner and in accordance with the standards established by the ACC. In the absence of specific standards, the repair shall be accomplished as soon as reasonably possible, and at the sole expense of the Owner causing the damage. In the event that an Owner shall fail to make the repairs as required herein, or if Association has the reasonable belief that such repairs will not be made in a timely manner, then Association shall have the right at reasonable times to enter the damaged Home to effect such repair, and the cost thereof shall be charged to the Owner of the Zero Lot Line Wall as an Individual Assessment.

12.2. Adjacent Owner Paint Obligation. Notwithstanding the foregoing, the owner of any Home immediately adjacent to a Zero Lot Line Wall shall have the responsibility for painting the exterior surface of the wall facing such Home. This maintenance obligation does not extend to the top of the wall which faces skyward.

12.3. No Structural Change. No Owner shall cut a window or any opening in a Zero Lot Line Wall nor shall any Owner make any structural changes in a Zero Lot Line Wall, including, but not limited to, change of paint color, without the express written approval of the ACC.

12.4. Damage by Owner of Adjacent Home. In the event that a Zero Lot Line wall is damaged by the Owner of an adjacent Home, the Owner of the adjacent Home shall be responsible for repairing such damage in a timely manner and in accordance with the standards established by the ACC. In the absence of specific standards, the repair shall be accomplished as soon as reasonably possible, and at the sole expense of the Owner causing the damage. In the event that an Owner shall fail to make the repairs as required herein, or if Association has the reasonable belief that such repairs will not be made in a timely manner, then Association shall have the right at reasonable times to enter the adjacent Home to effect such repair, and the cost thereof shall be charged to the adjacent Owner as an Individual Assessment.

12.5. Construction Easement. Developer reserves for itself and for any applicable Builder an easement over all zero lot line Homes for all construction purposes. By way of example, Developer's or Builder's construction crews may be required to enter onto a completed zero lot line Home in order to complete construction of an adjacent Home. This easement shall permit all ingress and egress necessary to complete Homes adjacent to zero lot line Homes, and shall be construed as broadly as possible.

### 13. Party Walls.

13.1. General Rules of Law to Apply. To the extent not inconsistent with the provisions of this Section, the general rule of law regarding party walls and party roofs and liability for personal damage due to negligence of willful acts or omissions shall apply to all Party Walls within Somerset Estates which are built by Developer or a Builder as part of the original construction of the Homes and any replacement thereof. In the event any portion of any structure or facility, as originally constructed by Developer or a Builder, including, without limitation, any Party Wall, shall protrude over an adjoining Home, it shall be deemed that such Owners have granted perpetual easements to the adjoining Owner or Owners for continuing maintenance and use of the projection or Party Wall. The foregoing shall also apply to any replacements of any Party Walls. The foregoing conditions shall be perpetual in duration and shall not be subject to amendment of this Declaration.

13.2. Sharing of Repair, Replacement and Maintenance for Party Walls.

13.2.1. Generally. The cost of reasonable repair and maintenance of Party Walls shall be shared equally by the Owners of the Homes sharing such improvements without prejudice, however, to the right of any Owner to call for a larger contribution from the other under any rule of law regarding liability for negligent or willful acts or omissions.

13.2.2. Failure to Contribute. In the event that an Owner shall fail or refuse to pay his pro rata share of costs of repair, maintenance, or replacement of a Party Wall (whether or not through his own fault or the failure of his insurance company to pay any claim), then and in that event, the Owner advancing monies therefor shall have a right to file a claim of lien for such monies advanced in the Public Records and shall have the right to foreclose said lien in accordance with the same procedural requirements as are provided for in Florida Statutes for foreclosure of a construction lien; provided, however, such claim of lien shall be filed within ninety (90) days from date repairs or replacements are made to the Party Wall and suit thereon shall be commenced one (1) year from date such lien is filed.

13.3. Alterations. The Owner of a Home sharing a Party Wall with an adjoining Home shall not cut windows or other openings in the Party Wall, nor make any alterations, additions or structural changes in the Party Wall without prior ACC approval and the joint agreement of all of the Owners sharing the Party Wall.

13.4. Weatherproofing. Notwithstanding any other provisions of this Declaration, an Owner who by his negligent or willful act causes a Party Wall to be exposed to the elements shall bear the whole cost of furnishing the necessary protection against such elements.

13.5. Easements. Each Owner sharing a Party Wall shall have all easement rights reasonably necessary to perform the obligations contained herein over the Homes sharing the Party Wall.

14. Easement for Unintentional and Non-Negligent Encroachments. If any other building or improvement on a Home shall encroach upon another Home by reason of original construction by Developer, then an easement for such encroachment shall exist so long as the encroachment exists. It is contemplated that each Home shall contain an improvement with exterior walls, footings, and other protrusions which may pass over or underneath an adjacent Home. In addition, the footers and other supporting features for Party Walls will protrude underneath adjacent Homes. A perpetual nonexclusive easement is herein granted to allow the footers for such walls and other protrusions and to permit any natural water run off from roof overhangs, eaves and other protrusions onto an adjacent Home.

15. Requirement to Maintain Insurance. Association shall maintain the following insurance coverages:

15.1. Flood Insurance. If the Common Areas are located within an area which has special flood hazards and for which flood insurance has been made available under the National Flood Insurance Program (NFIP), coverage in appropriate amounts, available under NFIP for all buildings and other insurable property within any portion of the Common Areas located within a designated flood hazard area.

15.2. Liability Insurance. Commercial general liability insurance coverage providing coverage and limits deemed appropriate such policies must provide that they may not be canceled or substantially modified by any party, without at least thirty (30) days' prior written notice to Developer (until the Community Completion Date) and Association.

15.3. Directors and Officers Liability Insurance. Each member of the Board shall be covered by directors and officers liability insurance in such amounts and with such provisions as approved by the Board.

15.4. Other Insurance. Such other insurance coverages as appropriate from time to time. All coverages obtained by Association shall cover all activities of Association and all properties maintained by Association, whether or not Association owns title thereto.

15.5. Homes.

15.5.1. Requirement to Maintain Insurance. Each Owner shall be required to obtain and maintain adequate insurance of his or her Home. Such insurance shall be sufficient for necessary repair or reconstruction work, and/or shall cover the costs to demolish a damaged Home as applicable, remove the debris, and to resod and landscape land comprising the Home. Upon the request of Association, each Owner shall be required to supply the Board with evidence of insurance coverage on his Home which complies with the provisions of this Section. Without limiting any other provision of this Declaration or the powers of Association, Association shall specifically have the right to bring an action to require an Owner to comply with his or her obligations hereunder.

15.5.2. Requirement to Reconstruct or Demolish. In the event that any Home is destroyed by fire or other casualty, the Owner of such Home shall do one of the following: the Owner shall commence reconstruction and/or repair of the Home ("Required Repair"), or Owner shall tear the Home down, remove all the debris, and resod and landscape the property comprising the Home as required by the ACC ("Required Demolition"). If an Owner elects to perform the Required Repair, such work must be commenced within thirty (30) days of the Owner's receipt of the insurance proceeds respecting such Home. If an Owner elects to perform the Required Demolition, the Required Demolition must be completed within six (6) months from the date of the casualty or such longer period of time established by the Board in its sole and absolute discretion. If an Owner elects to perform the Required Repair, such reconstruction and/or repair must be continued in a continuous, diligent, and timely manner. Association shall have the right to inspect the progress of all reconstruction and/or repair work. Certain Homes are separated by Party Walls but form part of a Townhome Building. Notwithstanding anything to the contrary herein, Required Demolition shall not be undertaken by any Owner of a Home within a Townhome Building and all Owners of damaged or destroyed Homes within such Townhome Building shall perform Required Repair with respect to such Homes. Without limiting any other provision of this Declaration or the powers of Association, Association shall have a right to bring an action against an Owner who fails to comply with the foregoing requirements. By way of example, Association may bring an action against an Owner who fails to either perform the Required Repair or Required Demolition on his or her Home within the time periods and in the manner provided herein. Each Owner acknowledges that the issuance of a building permit or a demolition permit in no way shall be deemed to satisfy the requirements set forth herein, which are independent of, and in addition to, any requirements for completion of work or progress requirements set forth in applicable statutes, zoning codes, and/or building codes.

15.5.3. Standard of Work. The standard for all demolition, reconstruction, and other work performed as required by this Section shall be in accordance with the Community Standards and any other standards established by Association with respect to any casualty that affects all or a portion of Somerset Estates.

15.5.4. Additional Rights of Association. If an Owner refuses or fails, for any reason, to perform the Required Repair or Required Demolition as herein provided, then Association, in its sole and absolute discretion, by and through its Board is hereby irrevocably authorized by such Owner to perform the Required Repair or Required Demolition. All Required Repair performed by Association pursuant to this Section shall be in conformance with the original plans and specifications for the Home. Association shall have the absolute right to perform the Required Demolition to a Home pursuant to this Section if any contractor certifies in writing to Association that such Home cannot be rebuilt or repaired. The Board may levy an Individual Assessment against the Owner in whatever amount sufficient to adequately pay for Required Repair or Required Demolition performed by Association.

15.5.5. Association Has No Liability. Notwithstanding anything to the contrary in this Section, Association, its directors and officers, shall not be liable to any Owner should an Owner fail for any reason

whatsoever to obtain insurance coverage on a Home. Moreover, Association, its directors and officers, shall not be liable to any person if Association does not enforce the rights given to Association's this Section.

15.6. Fidelity Bonds. If available, a blanket fidelity bond for all officers, directors, trustees and employees of Association, and all other persons handling or responsible for funds of, or administered by, Association. In the event Association delegates some or all of the responsibility for the handling of the funds to a professional management company or licensed manager, such bonds shall be required for its officers, employees and agents, handling or responsible for funds of, or administered on behalf of Association. The amount of the fidelity bond shall be based upon reasonable business judgment. The fidelity bonds required herein must meet the following requirements (to the extent available at a reasonable premium):

15.6.1. The bonds shall name Association as an obligee.

15.6.2. The bonds shall contain waivers, by the issuers of the bonds, of all defenses based upon the exclusion of persons serving without compensation from the definition of "employee" or similar terms or expressions.

15.6.3. The premiums on the bonds (except for premiums on fidelity bonds maintained by a professional management company, or its officers, employees and agents), shall be paid by Association.

15.6.4. The bonds shall provide that they may not be canceled or substantially modified (including cancellation for non-payment of premium) without at least thirty (30) days' prior written notice to Developer (until the Community Completion Date) and Association.

15.7. Association as Agent. Association is irrevocably appointed agent for each Owner of any interest relating to the Common Areas to adjust all claims arising under insurance policies purchased by Association and to execute and deliver releases upon the payment of claims.

15.8. Casualty to Common Areas. In the event of damage to the Common Areas, or any portion thereof, Association shall be responsible for reconstruction after casualty. In the event of damage to a Parcel or Home, or any portion thereof, the Owner shall be responsible for reconstruction after casualty.

15.9. Nature of Reconstruction. Any reconstruction of improvements hereunder shall be substantially in accordance with the plans and specifications of the original improvement, or as the improvement was last constructed, subject to modification to conform with the then current governmental regulation(s).

15.10. Additional Insured. Developer and its respective Lender(s) shall be named as additional insured on all policies obtained by Association, as their interests may appear.

15.11. Cost of Payment of Premiums. The costs of all insurance maintained by Association hereunder and any other fees or expenses incurred which may be necessary or incidental to carry out the provisions hereof are Operating Costs.

## 16. Property Rights.

16.1. Owners' Easement of Enjoyment. Every Owner, and its immediate family, tenants, guests and invitees, and every owner of an interest in Somerset Estates shall have a non-exclusive right and easement of enjoyment in and to those portions of the Common Areas which it is entitled to use for their intended purpose, subject to the following provisions:

16.1.1. Easements, restrictions, reservations, conditions, limitations and declarations of record, now or hereafter existing, and the provisions of this Declaration, as amended.

16.1.2. The right of Association to suspend an Owner's rights hereunder or to impose fines in accordance with Section 617.305, Florida Statutes, as amended from time to time.

16.1.3. The right of Developer and/or Association to dedicate or transfer all or any part of the Common Areas. No such dedication or transfer shall be effective prior to the Community Completion Date without prior written consent of Developer.

16.1.4. The right of Developer and/or Association to modify the Common Areas as set forth in this Declaration.

16.1.5. The perpetual right of Developer to access and enter the Common Areas at any time, even after the Community Completion Date, for the purposes of inspection and testing of the Common Areas. Association and each Owner shall give Developer unfettered access, ingress and egress to the Common Areas so that Developer and/or its agents can perform all tests and inspections deemed necessary by Developer. Developer shall have the right to make all repairs and replacements deemed necessary by Developer. At no time shall Association and/or an Owner prevent, prohibit and/or interfere with any testing, repair or replacement deemed necessary by Developer relative to any portion of the Common Areas.

16.1.6. The rights of Developer and/or Association regarding Somerset Estates as reserved in this Declaration, including the right to utilize the same and to grant use rights, etc. to others.

16.1.7. Rules and Regulations adopted governing use and enjoyment of the Common Areas.

16.1.8. An Owner relinquishes use of the Common Areas at any time that a Home is leased to a Tenant.

16.2. Ingress and Egress. An easement for ingress and egress is hereby created for pedestrian traffic over, and through and across sidewalks, paths, walks, driveways, passageways, and lanes as the same, from time to time, may exist upon, or be designed as part of, the Common Areas, and for vehicular traffic over, through and across such portions of the Common Areas as, from time to time, may be paved and intended for such purposes.

16.3. Development Easement. In addition to the rights reserved elsewhere herein, Developer reserves an easement for itself or its nominees over, upon, across, and under Somerset Estates as may be required in connection with the development of Somerset Estates and other lands designated by Developer and to promote or otherwise facilitate the development, construction and sale and/or leasing of Parcels and Homes and other lands designated by Developer. Without limiting the foregoing, Developer specifically reserves the right to use all paved roads and rights of way within Somerset Estates for vehicular and pedestrian ingress and egress to and from construction sites and for the construction and maintenance of any Telecommunications System provided by Developer. Specifically, each Owner acknowledges that construction vehicles and trucks may use portions of the Common Areas. Developer shall have no liability or obligation to repave, restore, or repair any portion of the Common Areas as a result of the use of the same by construction traffic, and all maintenance and repair of such Common Areas shall be deemed ordinary maintenance of the Association payable by all Owners as part of Operating Costs. Without limiting the foregoing, at no time shall Developer be obligated to pay any amount to Association on account of Developer's use of the Common Areas for construction purposes. Developer intends to use the Common Areas for sales of new and used Homes and for the leasing of Homes within Apartment Buildings. Further, Developer may market other residences and commercial properties located outside of Somerset Estates from Developer's sales facilities located within Somerset Estates. Developer has the right to use all portions of the Common Areas in connection with its marketing activities, including, without limitation, allowing members of the general public to



inspect model Homes, installing signs and displays, holding promotional parties and picnics, and using the Common Areas for every other type of promotional or sales activity that may be employed in the marketing of new and used residential Homes or the leasing of residential apartments. The easements created by this Section, and the rights reserved herein in favor of Developer, shall be construed as broadly as possible and supplement the rights of Developer set forth in Section 21 of this Declaration. At no time shall Developer incur any expense whatsoever in connection with its use and enjoyment of such rights and easements. Developer may non-exclusively assign its rights hereunder to each Builder.

16.4. Public Easements. Fire, police, school transportation, health, sanitation and other public service and utility company personnel and vehicles shall have a permanent and perpetual easement for ingress and egress over and across the Common Areas. In addition, Telecommunications Providers shall also have the right to use all paved roadways for ingress and egress to and from Telecommunications Systems within Somerset Estates.

16.5. Delegation of Use. Every Owner shall be deemed to have delegated its right of enjoyment to the Common Areas to occupants or lessees of that Owner's Home subject to the provisions of this Declaration and the Rules and Regulations, as may be promulgated, from time to time. Any such delegation or lease shall not relieve any Owner from its responsibilities and obligations provided herein.

16.6. Easement for Encroachments. In the event that any improvement upon Common Areas, as originally constructed, shall encroach upon any other property or improvements thereon, or for any reason, then an easement appurtenant to the encroachment shall exist for so long as the encroachment shall naturally exist.

16.7. Permits, Licenses and Easements. Prior to the Community Completion Date, Developer, and thereafter Association, shall, in addition to the specific rights reserved to Developer herein, have the right to grant, modify, amend and terminate permits, licenses and easements over, upon, across, under and through Somerset Estates (including Parcels and/or Homes) for Telecommunication Systems, utilities, roads and other purposes reasonably necessary or useful as it determines, in its sole discretion. To the extent legally required, each Owner shall be deemed to have granted to Developer and, thereafter, Association an irrevocable power of attorney, coupled with an interest, for the purposes herein expressed.

16.8. Support Easement and Maintenance Easement. An easement is hereby created for the existence and maintenance of supporting structures (and the replacement thereof) in favor of the entity required to maintain the same. An easement is hereby created for maintenance purposes (including access to perform such maintenance) over and across Somerset Estates (including Parcels and Homes) for the reasonable and necessary maintenance of Common Areas, utilities, cables, wires and other similar facilities.

16.9. Drainage. A non-exclusive easement shall exist in favor of Developer, Association, and their designees, and any applicable water management district, state agency, county agency and/or federal agency having jurisdiction over Somerset Estates over, across and upon Somerset Estates for drainage, irrigation and water management purposes. An easement or ingress, egress and access shall exist for such parties to enter upon and over any portion of Somerset Estates (including Parcels and Homes) in order to construct, maintain, inspect, record data on, monitor, test, or repair, as necessary, any water management areas, conservation areas, mitigation areas, irrigation systems and facilities thereon and appurtenances thereto. No structure, landscaping, or other material shall be placed or be permitted to remain which may damage or interfere with the drainage or irrigation of Somerset Estates and/or installation or maintenance of utilities or which may obstruct or retard these flow of water through Somerset Estates and/or water management areas and facilities or otherwise interfere with any drainage, irrigation and/or easement provided for in this Section or the use rights set forth elsewhere in this Declaration.

16.10. Lake and Canal Common Areas. The rear yard of some Homes may border on the lakes and canals forming part of the Common Areas. The Association shall maintain any portion of the Common Areas contiguous to the rear lot line of such Home which comprise part of the lake slopes and banks and/or canal slopes and banks to prevent or restore erosion of slopes and banks due to drainage or roof culvert outfalls. The Owner of each

Home bordering on the lakes and canals shall ensure that lake and canal banks and slopes remain free of any structural or landscape encroachments so as to permit vehicular access for maintenance when needed. Each Owner hereby grants Association an easement of ingress and egress across his Home to all adjacent lake and canal areas for the purpose of insuring compliance with the requirements of this provision.

16.11. Duration. All easements created herein or pursuant to the provisions hereof shall be perpetual unless stated to the contrary.

17. Assessments.

17.1. Types of Assessments. Each Owner and Builder, by acceptance of a deed or instrument of conveyance for the acquisition of title in any manner (whether or not so expressed in the deed), including any purchaser at a judicial sale, shall hereafter be deemed to have covenanted and agreed to pay to Association at the time and in the manner required by the Board, assessments or charges and any special assessments as are fixed, established and collected from time to time by Association (collectively, the "Assessments"). All Owners shall pay Assessments. Each Builder shall pay such portion of Operating Costs which benefits any Parcel owned by such Builder, as determined by Developer, in Developer's sole discretion. By way of example, and not of limitation, Developer may require that each Builder pay some portion of Assessments on a Parcel owned by a Builder which does not contain a Home. As vacant Parcels owned by Builders may not receive certain services (e.g., Telecommunications Services), Builders shall not be required to pay for the same.

17.2. Purpose of Assessments. The Assessments levied by Association shall be used for, among other things, the purpose of promoting the recreation, health, safety and welfare of the residents of Somerset Estates, and in particular for the improvement and maintenance of the Common Areas and any easement in favor of the Association, including but not limited to the following categories of Assessments as and when levied and deemed payable by the Board:

17.2.1. Any monthly assessment or charge for the purpose of operating the Association and accomplishing any and all of its purposes, as determined in accordance herewith, including, without limitation, payment of Operating Costs and collection of amounts necessary to pay any deficits from prior years' operation (hereinafter "Monthly Assessments");

17.2.2. Any special assessments for capital improvements, major repairs, emergencies the repair or replacement of the Surface Water Management System, or nonrecurring expenses (hereinafter "Special Assessments");

17.2.3. Any specific fees, dues or charges to be paid by Owners for any special services provided to or for the benefit of an Owner or Home, for any special or personal use of the Common Areas, or to reimburse Association for the expenses incurred in connection with that service or use (hereinafter "Use Fees"); and

17.2.4. Assessments of any kind for the creation of reasonable reserves for any of the aforesaid purposes. At such time as there are improvements in any Common Areas for which Association has a responsibility to maintain, repair, and replace, the Board may, but shall have no obligation to, include a "Reserve for Replacement" in the Monthly Assessments in order to establish and maintain an adequate reserve fund for the periodic maintenance, repair and replacement of improvements comprising a portion of the Common Area (hereinafter "Reserves"). Assessments pursuant to this Section shall be payable in such manner and at such times as determined by Association, and may be payable in installments extending beyond the fiscal year in which the Reserves are disapproved. Until the Community Completion Date, Reserves shall be subject to the prior written approval of Developer, which may be withheld for any reason.

17.2.5. Assessments for which one or more Owners (but less than all Owners) within Somerset Estates is subject ("Individual Assessments") such as costs of special services provided to a Home or Owner or cost

relating to enforcement of the provisions of this Declaration or the architectural provisions hereof as it relates to a particular Owner or Home. By way of example, and not of limitation, all of the Owners within a Plat may be subject to Individual Assessments for maintenance, repair and/or replacement of facilities serving only the residents of such Plat (e.g., a gatehouse attendant and private gatehouse). Further, in the event an Owner fails to maintain the exterior of his Home (other than those portions of a Home maintained by Association) or a lake or canal slope or bank in a manner satisfactory to Association, Association shall have the right, through its agents and employees, to enter upon the Home and to repair, restore, and maintain the Home as required by this Declaration. The cost thereof, plus the reasonable administrative expenses of Association, shall be an Individual Assessment. As a further example, if one or more Owners receive optional Telecommunications Services such as Toll Calls, Basic Service, and/or Data Transmission Services, and Association pays a Telecommunications Provider for such services, then the cost of such services shall be an Individual Assessment as to each Owner receiving such services. The lien for an Individual Assessment may be foreclosed in the same manner as any other Assessment.

17.3. Designation. The designation of Assessment type shall be made by Association. Prior to the Community Completion Date, any such designation must be approved by Developer. Such designation may be made on the budget prepared by Association. The designation shall be binding upon all Owners.

17.4. Allocation of Operating Costs.

17.4.1. For the period until the adoption of the first annual budget, the allocation of Operating Costs shall be as set forth in the initial budget prepared by Developer.

17.4.2. Commencing on the first day of the period covered by the annual budget, and until the adoption of the next annual budget, the Monthly Assessments shall be allocated so that each Owner shall pay his pro rata portion of Monthly Assessments, Special Assessments, and Reserves based upon a fraction, the numerator of which is one (1) and the denominator of which is the total number of Homes in Somerset Estates conveyed to Owners or any greater number determined by Developer from time to time. Developer, in its sole and absolute discretion may change such denominator from time to time. Under no circumstances will the denominator be less than the number of Homes owned by Owners other than Developer.

17.4.3. In the event the Operating Costs as estimated in the budget for a particular fiscal year are, after the actual Operating Costs for that period is known, less than the actual costs, then the difference shall, at the election of Association: (i) be added to the calculation of Monthly Assessments for the next ensuing fiscal year; or (ii) be immediately collected from the Owners as a Special Assessment. Association shall have the unequivocal right to specially assess Owners retroactively on January 1st of any year for any shortfall in Monthly Assessments, which Special Assessment shall relate back to the date that the Monthly Assessments could have been made. No vote of the Owners shall be required for such Special Assessment (or for any other Assessment) except to the extent specifically provided herein.

17.4.4. Each Owner agrees that so long as it does not pay more than the required amount it shall have no grounds upon which to object to either the method of payment or non-payment by other Owners of any sums due.

17.5. General Assessments Allocation. Except as hereinafter specified to the contrary, Monthly Assessments, Special Assessments and Reserves shall be allocated equally to each Owner.

17.6. Use Fees and Individual Assessment. Except as hereinafter specified to the contrary, Use Fees and Individual Assessments shall be made against the Owners benefitting from, or subject to the special service or cost as specified by Association.

17.7. Commencement of First Assessment. Assessments shall commence as to each Owner on the day of the conveyance of title of a Home to an Owner. Notwithstanding the foregoing, each Home in an Apartment

Building is subject to Assessments upon the issuance of a final or temporary Certificate of Completion for such Apartment Building.

17.8. Shortfalls and Surpluses. Each Owner acknowledges that because Monthly Assessments, Special Assessments, and Reserves are allocated based on the formula provided herein, or upon the number of Homes conveyed to Owners on or prior to September 30 of the prior fiscal year, it is possible that Association may collect more or less than the amount budgeted for Operating Costs. Prior to the Community Completion Date, Developer shall have the option to (i) fund all or any portion of the shortfall in Monthly Assessments not raised by virtue of income received by Association or (ii) to pay Monthly Assessments on Homes or Lots owned by Developer. Developer shall never be required to fund shortfalls in Monthly Assessments or pay Special Assessments or Reserves. Any surplus Assessments collected by Association may be allocated towards the next year's Operating Costs or, in Association's sole and absolute discretion, to the creation of Reserves, whether or not budgeted. Under no circumstances shall Association be required to pay surplus Assessments to Owners.

17.9. Budgets. The initial budget prepared by Developer is adopted as the budget for the period of operation until adoption of the first annual Association Budget. Thereafter, annual budgets shall be prepared and adopted by Association. THE INITIAL BUDGET OF ASSOCIATION IS PROJECTED (NOT BASED ON HISTORICAL OPERATING FIGURES). THEREFORE, IT IS POSSIBLE THAT ACTUAL ASSESSMENTS MAY BE LESSER OR GREATER THAN PROJECTED.

17.10. Establishment of Assessments. Assessments shall be established in accordance with the following procedures:

17.10.1. Monthly Assessments shall be established by the adoption of a twelve (12) month operating budget by the Board. The budget shall be in the form required by Section 617.303(6) of the Florida Statutes, as amended from time to time. Written notice of the amount and date of commencement thereof shall be given to each Owner not less than ten (10) days in advance of the due date of the first installment thereof. Notwithstanding the foregoing, the budget may cover a period of less than twelve (12) months if the first budget is adopted mid-year or in order to change the fiscal year of the Association.

17.10.2. Special Assessments and Individual Assessments against the Owners may be established by Association, from time to time, and shall be payable at such time or time(s) as determined. Until the Community Completion Date, no Special Assessment shall be imposed without the consent of Developer.

17.10.3. Association may establish, from time to time, by resolution, rule or regulation, or by delegation to an officer or agent, including, a professional management company, Use Fees. The sums established shall be payable by the Owner utilizing the service or facility as determined by Association.

17.11. Working Capital Fund. Association has established a working capital fund for the operation of Association (the "Working Capital Fund"). There shall be collected from each Owner that purchases a Home from Developer at the time of conveyance of each Home an amount equal to two months' Assessments. Owners of Apartment Buildings shall not be required to contribute to the Working Capital Fund. There shall be collected from each Builder that purchases a Parcel from Developer at the time of conveyance of each Parcel an amount equal to two months' assessments (or such greater amount determined by Developer from time to time) for each Home which Developer determines can be built on such Parcel. At the time that such Builder conveys a Home to an Owner, such Owner shall pay such Builder an amount equal to the amount paid by such Builder for such Home in order to compensate Builder for the amount advanced. Each Owner's share of the Working Capital Fund shall be transferred to Association immediately after the closing of the Home. The Working Capital Fund shall be used to reduce the deficit that might otherwise be funded by Developer or for any other purposes deemed appropriate by Developer and/or Association. Without limiting the foregoing, no portion of the Working Capital Fund shall be used for the payment of legal fees or litigation expenses. To the extent of any deficiencies in the Common Areas, Association shall

use the Working Capital Fund to remedy such deficiencies before making any claim against Developer. Moreover, the total amount of such funds and interest accrued thereon, if any, shall be a set-off against any amounts payable by Developer to Association. Amounts paid into the Working Capital Fund are not to be considered as advance payment of Assessments and may be used by Association for any purpose whatsoever, including without limitation, reducing funding obligations, if any, of Developer relative to Association. Notwithstanding anything herein to the contrary, Developer shall have the option to waive contributions to the Working Capital Fund. Developer shall determine when, if ever, the Owner of an Apartment Building shall contribute to the Working Capital Fund and the amount of any contribution due from the Owner of an Apartment Building, if any (which may be significantly less than that required of other Owners).

17.12. Assessment Estoppel Certificates. No Owner shall sell or convey its interest in a Home unless all sums due the Association have been paid in full and an estoppel certificate in recordable form shall have been received by such Owner. Association shall prepare and maintain a ledger noting Assessments due from each Owner. The ledger shall be kept in the office of Association, or its designees, and shall be open to inspection by any Owner. Within ten (10) days of a written request therefor, there shall be furnished to an Owner an estoppel certificate in writing setting forth whether the assessments have been paid and/or the amount which is due as of any date. As to parties other than Owners who, without knowledge of error, rely on the certificate, the certificate shall be conclusive evidence of the amount of any Assessment therein stated. The Owner requesting the estoppel certificate shall be required to pay Association a reasonable sum to cover the costs of examining records and preparing such estoppel certificate. Each Owner waives its rights (if any) to an accounting related to Operating Costs or Assessments.

17.13. Payment of Home Real Estate Taxes. Each Owner shall pay all taxes and obligations relating to its Home which, if not paid, could become a lien against the Home which is superior to the lien for Assessments created by this Declaration.

17.14. Creation of the Lien and Personal Obligation. Each Owner, by acceptance of a deed or instrument of conveyance for the acquisition of title to a Home, shall be deemed to have covenanted and agreed that the Assessments, and/or other charges and fees set forth herein, together with interest, late fees, costs and reasonable attorneys' fees and paraprofessional fees at all levels of proceedings including appeals, collections and bankruptcy, shall be a charge and continuing lien in favor of Association encumbering the Home and all personal property located thereon owned by the Owner against whom each such Assessment is made. The lien is effective from and after recording a Claim of Lien in the Public Records stating the legal description of the Home, name of the Owner, and the amounts due as of that date, but shall relate back to the date that this Declaration is recorded. Without limiting the foregoing, any Claim of Lien filed by the Association shall have priority and be superior to any lien of a Neighborhood Association. The Claim of Lien shall also cover any additional amounts which accrue thereafter until satisfied. Each Assessment, together with interest, late fees, costs and reasonable attorneys' fees and paraprofessional fees at all levels including appeals, collections and bankruptcy, and other costs and expenses provided for herein, shall be the personal obligation of the person who was the Owner of the Home at the time when the Assessment became due, as well as the Owner's heirs, devisees, personal representatives, successors or assigns.

17.15. Subordination of the Lien to Mortgages. The lien for Assessments shall be subordinate to a bona fide first mortgage held by a Lender on any Home if the mortgage is recorded in the Public Records prior to the Claim of Lien. The lien for Assessments shall not be affected by any sale or transfer of a Home, except in the event of a sale or transfer of a Home pursuant to a foreclosure (or by deed in lieu of foreclosure or otherwise) of a bona fide first mortgage held by a Lender, in which event, the acquirer of title, its successors and assigns, shall not be liable for such sums secured by a lien for Assessments encumbering the Home or chargeable to the former Owner of the Home, which became due prior to such sale or transfer. However, any such unpaid Assessments for which such acquirer of title is not liable may be reallocated and assessed to all Owners (including such acquirer of title) as a part of Operating Costs included within Monthly Assessments. Any sale or transfer pursuant to a foreclosure (or by deed in lieu of foreclosure or otherwise) shall not relieve the Owner from liability for, nor the Home from the lien of any Assessments made thereafter. Nothing herein contained shall be construed as releasing the party liable for any delinquent Assessments from the payment thereof, or the enforcement of collection by means other than foreclosure.

A Lender shall give written notice to Association if the mortgage held by such Lender is in default. Association shall have the right, but not the obligation, to cure such default within the time periods applicable to Owner. In the event Association makes such payment on behalf of an Owner, Association shall, in addition to all other rights reserved herein, be subrogated to all of the rights of the Lender. All amounts advances on behalf of an Owner pursuant to this Section shall be added to Association payable by such Owner with appropriate interest.

17.16. Acceleration. In the event of a default in the payment of any Assessment, Association may accelerate the Assessments then due for up to the next ensuing twelve (12) month period.

17.17. Non-Payment of Assessments. If any Assessment is not paid within fifteen (15) days (or such other period of time established by the Board) after the due date, a late fee of \$25.00 per month (or such greater amount established by the Board), together with interest in an amount equal to the maximum rate allowable by law (or such lesser rate established by the Board), per annum, beginning from the due date until paid in full, may be levied. The late fee shall compensate Association for administrative costs, loss of use of money, and accounting expenses. Association may, at any time thereafter, bring an action at law against the Owner personally obligated to pay the same, and/or foreclose the lien against the Home, or both. Association shall not be required to bring such an action if it believes that the best interests of Association would not be served by doing so. There shall be added to the Assessment all costs expended in preserving the priority of the lien and all costs and expenses of collection, including attorneys' fees and paraprofessional fees, at all levels of proceedings, including appeals, collection and bankruptcy. No Owner may waive or otherwise escape liability for Assessments provided for herein by non-use of, or the waiver of the right to use the Common Areas or by abandonment of a Home.

17.18. Exemption. Notwithstanding anything to the contrary herein, neither Developer nor any Home or property owned by Developer shall (unless specified to the contrary by Developer in a separate written instrument) be responsible for any Assessments of any nature or any portion of the Operating Costs. Developer, at Developer's sole option, may pay Assessments on Homes owned by it. In addition, the Board shall have the right to exempt any portion of Somerset Estates subject to this Declaration from the Assessments, provided that such part of Somerset Estates exempted is used (and as long as it is used) for any of the following purposes:

17.18.1. Any easement or other interest therein dedicated and accepted by the local public authority and devoted to public use;

17.18.2. Any real property interest held by a Telecommunications Provider;

17.18.3. Common Areas or property (other than a Home) owned by a Neighborhood Association;

17.18.4. Any of Somerset Estates exempted from ad valorem taxation by the laws of the State of Florida or exempted from Assessments by other provisions of this Declaration;

17.18.5. Any easement or other interest dedicated or conveyed to not for profit corporations for the use and benefit of residents in the Development of Regional Impact of which Somerset Estates is a part.

17.19. Collection by Developer. If for any reason Association shall fail or be unable to levy or collect Assessments, then in that event, Developer shall at all times have the right, but not the obligation: (i) to advance such sums as a loan to Association to bear interest and to be repaid as hereinafter set forth; and/or (ii) to levy and collect such Assessments by using the remedies available as set forth above, which remedies; including, but not limited to, recovery of attorneys' fees and paraprofessional fees at all levels including appeals, collections and bankruptcy, shall be deemed assigned to Developer for such purposes. If Developer advances sums, it shall be entitled to immediate reimbursement, on demand, from Association for such amounts so paid, plus interest thereon at the Wall Street Journal Prime Rate plus two percent (2%), plus any costs of collection including, but not limited to, reasonable attorneys' fees and paraprofessional fees at all levels including appeals, collections and bankruptcy.

17.20. Rights to Pay Assessments and Receive Reimbursement. Association, Developer, and any Lender of a Home shall have the right, but not the obligation, jointly and severally, and at their sole option, to pay any Assessments or other charges which are in default and which may or have become a lien or charge against any Home. If so paid, the party paying the same shall be subrogated to the enforcement rights of Association with regard to the amounts due.

17.21. Mortgagee Right. Each Lender may request in writing that Association notify such Lender of any default of the Owner of the Home subject to the Lender's Mortgage under the Association Documents which default is not cured within thirty (30) days after Association learns of such default. A failure by Association to furnish notice to any Lender shall not result in liability of Association because such notice is given as a courtesy to a Lender and the furnishing of such notice is not an obligation of Association to Lender.

18. Information to Lenders and Owners.

18.1. Availability. There shall be available for inspections upon request, during normal business hours or under other reasonable circumstances, to Owners and Lenders current copies of the Association Documents.

18.2. Copying. Any Owner and/or Lender shall be entitled, upon written request, and at its cost, to a copy of the documents referred to above.

18.3. Notice. Upon written request by a Lender (identifying the name and address of the Lender and the name and address of the applicable Owner), the Lender will be entitled to timely written notice of:

18.3.1. Any condemnation loss or casualty loss which affects a material portion of a Home to the extent Association is notified of the same;

18.3.2. Any delinquency in the payment of Assessments owed by an Owner of a Home subject to a first mortgage held by the Lender, which remains uncured for a period of sixty (60) days;

18.3.3. Any lapse, cancellation, or material modification of any insurance policy or fidelity bond maintained hereunder;

18.3.4. Any proposed action (if any) which would require the consent of a specific mortgage holder.

19. Architectural Control.

19.1. Architectural Control Committee. The ACC shall be a permanent committee of Association and shall administer and perform the architectural and landscape review and control functions relating to Somerset Estates. The ACC shall consist of a minimum of three (3) members who shall initially be named by Developer and who shall hold office at the pleasure of Developer. Until the Community Completion Date, Developer shall have the right to change the number of members on the ACC, and to appoint, remove, and replace all members of the ACC. Developer shall determine which members of the ACC shall serve as its chairman and co-chairman. In the event of the failure, refusal, or inability to act of any of the members appointed by Developer, Developer shall have the right to replace any member within thirty (30) days of such occurrence. If Developer fails to replace that member, the remaining members of the ACC shall fill the vacancy by appointment. From and after the Community Completion Date, the Board shall have the same rights as Developer with respect to the ACC.

19.2. Membership. There is no requirement that any member of the ACC be an Owner or a member of the Association.

19.3. General Plan. It is the intent of this Declaration to create a general plan and scheme of development of Somerset Estates. Accordingly, the ACC shall have the right to approve or disapprove all architectural, landscaping, and improvements within Somerset Estates by Owners other than Developer. The ACC shall have the right to evaluate all plans and specifications as to harmony of exterior design, landscaping, location of any proposed improvements, relationship to surrounding structures, topography and conformity with such other reasonable requirements as shall be adopted by ACC. The ACC may impose standards for construction and development which may be greater or more stringent than standards prescribed in applicable building, zoning, or other local governmental codes. Prior to the Community Completion Date, any additional standards or modification of existing standards shall require the consent of Developer, which may be granted or denied in its sole discretion.

19.4. Master Plan. Developer has established an overall Master Plan. However, notwithstanding the above, or any other document, brochures or plans, Developer reserves the right to modify the Master Plan or any site plan at any time as it deems desirable in its sole discretion and in accordance with applicable laws and ordinances. WITHOUT LIMITING THE FOREGOING, DEVELOPER AND/OR BUILDERS MAY PRESENT TO THE PUBLIC OR TO OWNERS RENDERINGS, PLANS, MODELS, GRAPHICS, TOPOGRAPHICAL TABLES, SALES BROCHURES, OR OTHER PAPERS RESPECTING SOMERSET ESTATES. SUCH RENDERINGS, PLANS, MODELS, GRAPHICS, TOPOGRAPHICAL TABLES, SALES BROCHURES, OR OTHER PAPERS ARE NOT A GUARANTEE OF HOW SOMERSET ESTATES WILL APPEAR UPON COMPLETION AND DEVELOPER RESERVES THE RIGHT TO CHANGE ANY AND ALL OF THE FOREGOING AT ANY TIME AS DEVELOPER DEEMS NECESSARY IN ITS SOLE AND ABSOLUTE DISCRETION.

19.5. Community Standards. Each Owner and its contractors and employees shall observe, and comply with, the Community Standards which now or may hereafter be promulgated by the ACC and approved by the Board from time to time. The Community Standards shall be effective from the date of adoption; shall be specifically enforceable by injunction or otherwise; and shall have the effect of covenants as if set forth herein verbatim. The Community Standards shall not require any Owner to alter the improvements previously constructed. Until the Community Completion Date, Developer shall have the right to approve the Community Standards, which approval, may be granted in its sole discretion.

19.6. Quorum. A majority of the ACC shall constitute a quorum to transact business at any meeting. The action of a majority present at a meeting at which a quorum is present shall constitute the action of the ACC. In lieu of a meeting, the ACC may act in writing.

19.7. Power and Duties of the ACC. No improvements shall be constructed on a Parcel, no exterior of a Home shall be repainted, no landscaping, sign, or improvements erected, removed, planted, or maintained on a Parcel, nor shall any material addition to or any change, replacement, or alteration of the improvements as originally constructed by Developer (visible from the exterior of the Home) be made until the plans and specifications showing the nature, kind, shape, height, materials, floor plans, color scheme, and the location of same shall have been submitted to and approved in writing by the ACC.

19.8. Procedure. In order to obtain the approval of the ACC, each Owner shall observe the following:

19.8.1. Each applicant shall submit an application to the ACC with respect to any proposed improvement or material change in an improvement, together with the required application(s) and other fee(s) as established by the ACC. The applications shall include such information as may be required by the application form adopted by the ACC. The ACC may also require submission of samples of building materials and colors proposed to be used. At the time of such submissions, the applicant shall, if requested, submit to the ACC, such site plans, plans and specifications for the proposed improvement, prepared and stamped by a registered Florida architect or residential designer, and landscaping and irrigation plans, prepared by a registered landscape architect or designer showing all existing trees and major vegetation stands and surface water drainage plan showing existing and proposed design grades, contours relating to the predetermined ground floor finish elevation, pool plans and specifications and the times scheduled for completion, all as reasonably specified by the ACC.



19.8.2. In the event the information submitted to the ACC is, in the ACC's opinion, incomplete or insufficient in any manner, the ACC may request and require the submission of additional or supplemental information. The Owner shall, within fifteen (15) days thereafter, comply with the request.

19.8.3. No later than thirty (30) days after receipt of all information required by the ACC for final review, the ACC shall approve or deny the application in writing. The ACC shall have the right to refuse to approve any plans and specifications which are not suitable or desirable, in the ACC's sole discretion, for aesthetic or any other reasons or to impose qualifications and conditions thereon. In approving or disapproving such plans and specifications, the ACC shall consider the suitability of the proposed improvements, the materials of which the improvements are to be built, the site upon which the improvements are proposed to be erected, the harmony thereof with the surrounding area and the effect thereof on adjacent or neighboring property. In the event the ACC fails to respond within said thirty (30) day period, the plans and specifications shall be deemed disapproved by the ACC.

19.8.4. Construction of all improvements shall be completed within the time period set forth in the application and approved by the ACC.

19.8.5. In the event that the ACC disapproves any plans and specifications, the applicant may request a rehearing by the ACC for additional review of the disapproved plans and specifications. The meeting shall take place no later than thirty (30) days after written request for such meeting is received by the ACC, unless applicant waives this time requirement in writing. The ACC shall make a final written decision no later than thirty (30) days after such meeting. In the event the ACC fails to provide such written decision within said thirty (30) days, the plans and specifications shall be deemed disapproved.

19.8.6. Upon final disapproval (even if the members of the Board and ACC are the same), the applicant may appeal the decision of the ACC to the Board within thirty (30) days of the ACC's written review and disapproval. Review by the Board shall take place no later than thirty (30) days subsequent to the receipt by the Board of the Owner's request therefor. If the Board fails to hold such a meeting within thirty (30) days after receipt of request for such meeting, then the plans and specifications shall be deemed approved. The Board shall make a final decision no later than sixty (60) days after such meeting. In the event the Board fails to provide such written decision within said sixty (60) days after such meeting, such plans and specifications shall be deemed approved. The decision of the ACC, or if appealed, the Board, shall be final and binding upon the applicant, its heirs, legal representatives, successors and assigns.

19.9. Alterations. Any and all alterations, deletions, additions and changes of any type or nature whatsoever to then existing improvements or the plans or specifications previously approved by the ACC shall be subject to the approval of the ACC in the same manner as required for approval of original plans and specifications.

19.10. Variances. Association or ACC shall have the power to grant variances from any requirements set forth in this Declaration or from the Community Standards, on a case by case basis, provided that the variance sought is reasonable and results from a hardship upon the applicant. The granting of a variance shall not nullify or otherwise affect the right to require strict compliance with the requirements set forth herein or in the Community Standards on any other occasion.

19.11. Permits. The Owner is solely responsible to obtain all required building and other permits from all governmental authorities having jurisdiction.

19.12. Construction by Owners. The following provisions govern construction activities by Owners after consent of the ACC has been obtained:

19.12.1. Each Owner shall deliver to the ACC, if requested, copies of all construction and building permits as and when received by the Owner. Each construction site in Somerset Estates shall be maintained in a neat and orderly condition throughout construction. Construction activities shall be performed on a diligent, workmanlike

and continuous basis. Roadways, easements, swales, Common Areas and other such areas in Somerset Estates shall be kept clear of construction vehicles, construction materials and debris at all times. No construction office or trailer shall be kept in Somerset Estates and no construction materials shall be stored in Somerset Estates subject, however, to such conditions and requirements as may be promulgated by the ACC. All refuse and debris shall be removed or deposited in a dumpster on a daily basis. No materials shall be deposited or permitted to be deposited in any canal or waterway or Common Areas or other Homes in Somerset Estates or be placed anywhere outside of the Home upon which the construction is taking place. No hazardous waste or toxic materials shall be stored, handled and used, including, without limitation, gasoline and petroleum products, except in compliance with all applicable federal, state and local statutes, regulations and ordinances, and shall not be deposited in any manner on, in or within the construction or adjacent property or waterways. All construction activities shall comply with the Community Standards. If a contractor or Owner shall fail in any regard to comply with the requirement of this Section, the ACC may require that such Owner of contractor post security with Association in such form and amount deemed appropriate by the ACC in its sole discretion.

19.12.2. There shall be provided to the ACC, if requested, a list (name, address, telephone number and identity of contact person), of all contractors, subcontractors, materialmen and suppliers (collectively, "Contractors") and changes to the list as they occur relating to construction. Each builder and all of its employees and Contractors and their employees shall utilize those roadways and entrances into Somerset Estates as are designated by the ACC for construction activities. The ACC shall have the right to require that each builder's and Contractor's employees check in at the designated construction entrances and to refuse entrance to persons and parties whose names are not registered with the ACC.

19.12.3. Each Owner is responsible for insuring compliance with all terms and conditions of these provisions and of the Community Standards by all of its employees and Contractors. In the event of any violation of any such terms or conditions by any employee or contractor, or, in the opinion of the ACC, the continued refusal of any employee or contractor to comply with such terms and conditions, after five (5) days' notice and right to cure, the ACC shall have, in addition to the other rights hereunder, the right to prohibit the violating employee or contractor from performing any further services in Somerset Estates.

19.12.4. The ACC may, from time to time, adopt standards governing the performance or conduct of Owners, Contractors and their respective employees within Somerset Estates. Each Owner and contractor shall comply with such standards and cause its respective employees to also comply with same. The ACC may also promulgate requirements to be inserted in all contracts relating to construction within Somerset Estates and each Owner shall include the same therein.

19.13. Inspection. There is specifically reserved to Association and ACC and to any agent or member of either of them, the right of entry and inspection upon any portion of Somerset Estates at any time within reasonable daytime hours, for the purpose of determination whether there exists any violation of the terms of any approval or the terms of this Declaration or the Community Standards.

19.14. Violation. If any improvement shall be constructed or altered without prior written approval, or in a manner which fails to conform with the approval granted, the Owner shall, upon demand of Association or the ACC, cause such improvement to be removed, or restored until approval is obtained or in order to comply with the plans and specifications originally approved. The Owner shall be liable for the payment of all costs of removal or restoration, including all costs and attorneys' fees and paraprofessional fees at all levels including appeals, collections and bankruptcy, incurred by Association or ACC. The costs shall be deemed an Individual Assessment and enforceable pursuant to the provisions of this Declaration. The ACC and/or Association is specifically empowered to enforce the architectural and landscaping provisions of this Declaration and the Community Standards, by any legal or equitable remedy.

19.15. Court Costs. In the event that it becomes necessary to resort to litigation to determine the propriety of any constructed improvement or to cause the removal of any unapproved improvement, Association

and/or ACC shall be entitled to recover court costs, expenses and attorneys' fees and paraprofessional fees at all levels, including appeals, collections and bankruptcy, in connection therewith.

19.16. Certificate. In the event that any Owner fails to comply with the provisions contained herein, the Community Standards, or other rules and regulations promulgated by the ACC, Association and/or ACC may, in addition to all other remedies contained herein, record a Certificate of Non-Compliance against the Home stating that the improvements on the Home fail to meet the requirements of this Declaration and that the Home is subject to further enforcement remedies.

19.17. Certificate of Compliance. If requested by an Owner, prior to the occupancy of any improvement constructed or erected on any Home by other than Developer, or its designees, the Owner thereof shall obtain a Certificate of Compliance from the ACC, certifying that the Owner has complied with the requirements set forth herein. The ACC may, from time to time, delegate to a member or members of the ACC, the responsibility for issuing the Certificate of Compliance. The issuance of a Certificate of Compliance does not abrogate the ACC's rights set forth in Section 18.13 herein.

19.18. Exemption. Notwithstanding anything to the contrary contained herein, or in the Community Standards, any improvements of any nature made or to be made by Developer, or its nominees, including, without limitation, improvements made or to be made to the Common Areas or any Home, shall not be subject to the review of the ACC, Association, or the provisions of the Community Standards.

19.19. Exculpation. Developer, Association, the directors or officers of Association, the ACC, the members of the ACC, or any person acting on behalf of any of them, shall not be liable for any cost or damages incurred by any Owner or any other party whatsoever, due to any mistakes in judgment, negligence, or any action of Developer, Association, ACC or their members, officers, or directors, in connection with the approval or disapproval of plans and specifications. Each Owner agrees, individually and on behalf of its heirs, successors and assigns by acquiring title to a Home, that it shall not bring any action or suit against Developer, Association or their respective directors or officers, the ACC or the members of the ACC, or their respective agents, in order to recover any damages caused by the actions of Developer, Association, or ACC or their respective members, officers, or directors in connection with the provisions of this Section. Association does hereby indemnify, defend and hold Developer and the ACC, and each of their members, officers, and directors harmless from all costs, expenses, and liabilities, including attorneys' fees and paraprofessional fees at all levels, including appeals, of all nature resulting by virtue of the acts of the Owners, Association, ACC or their members, officers and directors. Developer, Association, its directors or officers, the ACC or its members, or any person acting on behalf of any of them, shall not be responsible for any defects in any plans or specifications or the failure of same to comply with applicable laws or code nor for any defects in any improvements constructed pursuant thereto. Each party submitting plans and specifications for approval shall be solely responsible for the sufficiency thereof and for the quality of construction performed pursuant thereto.

20. Owners Liability.

20.1. Right to Cure. Should any Owner do any of the following:

20.1.1. Fail to perform its responsibilities as set forth herein or otherwise breach the provisions of the Declaration; or

20.1.2. Cause any damage to any improvement or Common Areas; or

20.1.3. Impede Developer or Association from exercising its rights or performing its responsibilities hereunder; or

20.1.4. Undertake unauthorized improvements or modifications to a Home, the Common Areas  
or

20.1.5. Impede Developer from proceeding with or completing the development of Somerset  
Estates.

Then Developer and/or Association, where applicable, after reasonable prior written notice, shall have the right, through its agents and employees, to cure the breach, including, but not limited to, the entering upon the Home causing the default to be remedied and/or the required repairs or maintenance to be performed, or as the case may be, remove unauthorized improvements or modifications. The cost thereof, plus reasonable overhead costs and attorneys' fees and paraprofessional fees at all levels including appeals, collections and bankruptcy, incurred shall be assessed against the Owner as an Individual Assessment.

20.2. Non-Monetary Defaults. In the event of a violation by any Owner, other than the nonpayment of any Assessment or other monies, of any of the provisions of this Declaration, Developer or Association shall notify the Owner of the violation, by written notice. If such violation is not cured as soon as practicable and in any event within seven (7) days after such written notice, the party entitled to enforce same may, at its option:

20.2.1. Commence an action to enforce the performance on the part of the Owner or to enjoin the violation or breach or for equitable relief as may be necessary under the circumstances, including injunctive relief and/or

20.2.2. Commence an action to recover damages; and/or

20.2.3. Take any and all action reasonably necessary to correct the violation or breach.

All expenses incurred in connection with the violation or breach, or the commencement of any action against any Owner, including reasonable attorneys' fees and paraprofessional fees at all levels including appeals, collections and bankruptcy, shall be assessed against the Owner, as an Individual Assessment, and shall be immediately due and payable without further notice.

20.3. No Waiver. The failure to enforce any right, provision, covenant or condition in this Declaration, shall not constitute a waiver of the right to enforce such right, provision, covenant or condition in the future.

20.4. Rights Cumulative. All rights, remedies, and privileges granted to Developer, Association and/or the ACC pursuant to any terms, provisions, covenants or conditions of this Declaration, or Community Standards, shall be deemed to be cumulative, and the exercise of any one or more shall neither be deemed to constitute an election of remedies, nor shall it preclude any of them from pursuing such additional remedies, rights or privileges as may be granted or as it might have by law.

20.5. Enforcement By or Against Other Persons. In addition to the foregoing, this Declaration or Community Standards may be enforced by Developer and/or Association by any procedure at law or in equity against any person violating or attempting to violate any provision herein, to restrain such violation, to require compliance with the provisions contained herein, to recover damages, or to enforce any lien created herein. The expense of any litigation to enforce this Declaration or Community Standards shall be borne by the person against whom enforcement is sought, provided such proceeding results in a finding that such person was in violation of this Declaration or the Community Standards.

20.6. Fines. Except to the extent prohibited by law, in the event of a violation of the provisions contained herein by an Owner or a person acting by, through, or under an Owner, the Rules and Regulations, the Community Standards, or other rules and regulations promulgated by the ACC, Association shall also have the right

to levy reasonable fines or suspend the privileges of the Owner or any person acting by, through, or under an Owner. Each fine shall be an Individual Assessment and enforceable pursuant to the provisions of this Declaration and the By-Laws. Each day of an Owner's failure to comply with this Declaration, the Rules and Regulations, the Community Standards, or other rules and regulations promulgated by the ACC shall be treated as a separate violation and, be subject to a separate fine. The decisions of Association shall be final. Fines shall be in such reasonable and uniform amounts as Association shall determine. Suspensions and fines shall be imposed in the manner provided in Section 617.305 of the Florida Statutes, as amended from time to time. The Board shall have the authority to promulgate additional procedures from time to time.

21. Additional Rights of Developer.

21.1. Sales and Administrative Offices. Developer shall have the perpetual right to take such action reasonably necessary to transact any business necessary to consummate the development of Somerset Estates and sales and re-sales of Homes and/or other properties owned by Developer or others outside of Somerset Estates. This right shall include, but not be limited to, the right to maintain models, sales offices and parking associated therewith, have signs on any portion of Somerset Estates, including Common Areas, employees in the models and offices without the payment of rent or any other fee, maintain offices in models and use of the Common Areas to show Homes. The sales office and signs and all items pertaining to development and sales remain the property of Developer. Developer shall have all of the foregoing rights without charge or expense. Without limiting any other provision of this Declaration, Developer may assign its rights hereunder to each Builder. The rights reserved hereunder shall extend beyond the Community Completion Date.

21.2. Modification. The development and marketing of Somerset Estates will continue as deemed appropriate in Developer's sole discretion, and nothing in this Declaration or Community Standards, or otherwise, shall be construed to limit or restrict such development and marketing. It may be necessary or convenient for the development of Somerset Estates to, as an example and not a limitation, amend a Plat and/or the Master Plan, modify the boundary lines of the Common Areas, grant easements, dedications, agreements, licenses, restrictions, reservations, covenants, rights-of-way, and to take such other actions which Developer, or its agents, affiliates, or assignees may deem necessary or appropriate. Association and Owners shall, at the request of Developer, execute and deliver any and all documents and instruments which Developer deems necessary or convenient, in its sole and absolute discretion, to accomplish the same.

21.3. Promotional Events. Prior to the Community Completion Date, Developer shall have the right, at any time, to hold marketing, special and/or promotional events within Somerset Estates and/or on the Common Areas, without any charge for use. Developer, its agents, affiliates, or assignees shall have the right to market Somerset Estates and Homes in advertisements and other media by making reference to Somerset Estates, including, but not limited to, pictures or drawings of Somerset Estates, Common Areas, Parcels and Homes constructed in Somerset Estates. All logos, trademarks, and designs used in connection with Somerset Estates are the property of Developer, and the Association shall have no right to use the same after the Community Completion Date except with the express written permission of Developer. Without limiting any other provision of this Declaration, Developer may assign its rights hereunder to each Builder.

21.4. Use by Prospective Purchasers. Prior to the Community Completion Date, Developer shall have the right, without charge, to use the Common Areas for the purpose of entertaining prospective purchasers of Homes, or other properties owned by Developer outside of Somerset Estates.

21.5. Franchises. Developer may grant franchises or concessions to commercial concerns on all or part of the Common Areas and shall be entitled to all income derived therefrom.

21.6. Management. Developer may manage the Common Areas by contract with Association.

21.7. Easements. Until the Community Completion Date, Developer reserves the exclusive right to grant, in its sole discretion, easements, permits and/or licenses for ingress and egress, drainage, utilities service, maintenance, Telecommunication Services; and other purposes over, under, upon and across Somerset Estates so long as any said easements do not materially and adversely interfere with the intended use of Homes previously conveyed to Owners. By way of example, and not of limitation, Developer may be required to take certain action, or make additions or modifications to the Common Areas in connection with an environmental program. All easements necessary for such purposes are reserved in favor of Developer, in perpetuity, for such purposes. Without limiting the foregoing, Developer may relocate any easement affecting a Home, or grant new easements over a Home, after conveyance to an Owner, without the joinder or consent of such Owner, so long as the grant of easement or relocation of easement does not materially and adversely affect the Owner's use of the Home as a residence. As an illustration, Developer may grant an easement for Telecommunication Systems, irrigation, drainage lines or electrical lines over any portion of a Parcel so long as such easement is outside the footprint of the foundation of any residential improvement constructed on such Parcel. Developer shall have the sole right to any fees of any nature associated therewith, including, but not limited to, license or similar fees on account thereof. Association and Owners will, without charge, if requested by Developer: (a) join in the creation of such easements, etc. and cooperate in the operation thereof; and (b) collect and remit fees associated therewith, if any, to the appropriate party. Association will not grant any easements, permits or licenses to any other entity providing the same services as those granted by Developer, nor will it grant any such easement, permit or license prior to the Community Completion Date without the prior written consent of Developer which may be granted or denied in its sole discretion.

21.8. Right to Enforce. Developer has the right, but not the obligation, to enforce the provisions of this Declaration and the Community Standards and to recover all costs relating thereto, including attorneys' fees and paraprofessional fees at all levels of proceeding, including appeals, collections and bankruptcy. Such right shall include the right to perform the obligations of Association and to recover all costs incurred in doing so.

21.9. Additional Development. If Developer withdraws portions of Somerset Estates from the operation of this Declaration, Developer may, but is not required to, subject to governmental approvals, create other forms of residential property ownership or other improvements of any nature on the property not subjected to or withdrawn from the operation of this Declaration. Developer shall not be liable or responsible to any person or entity on account of its decision to do so or to provide, or fail to provide, the amenities and/or facilities which were originally planned to be included in such areas. If so designated by Developer, owners or tenants of such other forms of housing or improvements upon their creation, may share in the use of all or some of the Common Areas and/or other facilities and/or roadways which remain subject to this Declaration. The expense of the operation of such facilities shall be allocated to the various users thereof, if at all, as determined by Developer.

21.10. Representations. Developer makes no representations concerning development both within and outside the boundaries of Somerset Estates including, but not limited to, the number, design, boundaries, configuration and arrangements, prices of all Parcels or Homes and buildings in all other proposed forms of ownership and/or other improvements on Somerset Estates or in Somerset Estates or adjacent to or near Somerset Estates, including, but not limited to, the size, location, configuration, elevations, design, building materials, height, view, airspace, number of homes, number of buildings, location of easements, parking and landscaped areas, services and amenities offered.

21.11. Telecommunication Services.

21.11.1. Right to Contract for Telecommunications Services. Association shall have the right, but not the obligation, to enter into one or more contracts for the provision of one or more Telecommunications Services for all or any part of Somerset Estates. Prior to the Community Completion Date, all contracts between a Telecommunications Provider and Association shall be subject to the prior written approval of Developer. Developer and/or its nominees, successors, assigns, affiliates, and licensees may contract with Association and act as a Telecommunications Provider for one or more Telecommunications Services, subject only to the requirements of all applicable laws, statutes, and regulations. If Developer is not the Telecommunications Provider for any particular Telecommunications Service, Developer shall have the right to receive, on a perpetual basis, all or a portion of access

fees and/or the revenues derived from such Telecommunications Service within Somerset Estates as agreed, from time to time, between the Telecommunications Provider and Developer, provided, however, that no such fees may be imposed on a Telecommunications Provider except as provided in any written agreement between such Telecommunications Provider and Developer and/or Association.

21.11.2. Easements. Developer (i) reserves unto itself and its nominees, successors, assigns, affiliates, and licensees, and (ii) grants to each Telecommunications Provider that has entered into an agreement with Association respecting Telecommunications Services and/or Telecommunications Systems a perpetual right, privilege, easement and right-of-way across, over, under and upon Somerset Estates for the installation, construction and maintenance of Telecommunications Systems together with a perpetual right, privilege and easement of ingress and egress, access, over and upon Somerset Estates for installing, constructing, inspecting, maintaining, altering, moving, improving and replacing facilities and equipment constituting such Telecommunications Systems. If, and to the extent, Telecommunications Services provided by such Telecommunications Providers are to serve all of Somerset Estates, then the amounts payable to such Telecommunications Providers under their written agreements with Association shall be part of Operating Costs of Association and shall be assessed as a part of the Assessments.

21.11.3. Restoration. Upon the completion of any installation, upgrade, maintenance, repair, or removal of the Telecommunications Systems or any part thereof, each Telecommunications Provider shall restore the relevant portion of the Common Areas and/or any Home to as good a condition as that which existed prior to such installation, maintenance, repair or removal. Failure by Telecommunications Provider to commence such restoration within twenty (20) days after receiving written notice from Association of such failure or the Telecommunications Provider's failure to complete such restoration within ninety (90) days of commencement shall vest in Association the right (but not the obligation) to restore or cause to be restored such portion of the Common Areas and/or Home disturbed by such work, all at such Telecommunications Provider's sole cost and expense, except for in emergency situations whereby Association may restore or cause to be restored such disturbed portion of the Common Areas and/or Home immediately. In the event that Association exercises the right of self-help, each Telecommunications Provider agrees in advance that Association shall have the sole right to (i) select the contractors to perform such work and (ii) determine the extent of required restoration. This remedy of self-help is in addition to all other remedies of Association hereunder. All reasonable expenses incurred by Association in connection with such restoration shall be paid by Telecommunications Provider within twenty (20) days of completion of restoration and delivery to Telecommunications Provider of Association's invoice therefor. Any expenses not so paid when due shall bear interest from the due date at the lesser of (i) the publicly announced prime rate (or similar successor reference rate) of First Union National Bank on the date of such invoice, or (ii) the maximum rate of interest allowed by the law of the State of Florida for such obligations, or as provided in an agreement between Association and a Telecommunications Provider.

21.12. Non-Liability. NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THE ASSOCIATION DOCUMENTS, ASSOCIATION SHALL NOT BE LIABLE OR RESPONSIBLE FOR, OR IN ANY MANNER A GUARANTOR OR INSURER OF, THE HEALTH, SAFETY OR WELFARE OF ANY OWNER, OCCUPANT OR USER OF ANY PORTION OF SOMERSET ESTATES INCLUDING, WITHOUT LIMITATION, RESIDENTS AND THEIR FAMILIES, GUESTS, LESSEES, LICENSEES, INVITEES, AGENTS, SERVANTS, CONTRACTORS, AND/OR SUBCONTRACTORS OR FOR ANY PROPERTY OF ANY SUCH PERSONS. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING:

21.12.1. IT IS THE EXPRESS INTENT OF THE ASSOCIATION DOCUMENTS THAT THE VARIOUS PROVISIONS THEREOF WHICH ARE ENFORCEABLE BY ASSOCIATION AND WHICH GOVERN OR REGULATE THE USES OF SOMERSET ESTATES HAVE BEEN WRITTEN, AND ARE TO BE INTERPRETED AND ENFORCED, FOR THE SOLE PURPOSE OF ENHANCING AND MAINTAINING THE ENJOYMENT OF SOMERSET ESTATES AND THE VALUE THEREOF; AND

- 21.12.2. ASSOCIATION IS NOT EMPOWERED, AND HAS NOT BEEN CREATED, TO ACT AS AN AGENCY WHICH ENFORCES OR ENSURES THE COMPLIANCE WITH THE LAWS OF THE STATE OF FLORIDA AND/OR LAKE COUNTY OR PREVENTS TORTIOUS ACTIVITIES; AND
- 21.12.3. THE PROVISIONS OF THE ASSOCIATION DOCUMENTS SETTING FORTH THE USES OF ASSESSMENTS WHICH RELATE TO HEALTH, SAFETY, AND WELFARE SHALL BE INTERPRETED AND APPLIED ONLY AS LIMITATIONS ON THE USES OF ASSESSMENT FUNDS AND NOT AS CREATING A DUTY OF THE ASSOCIATION TO PROTECT OR FURTHER THE HEALTH, SAFETY, OR WELFARE OF ANY PERSON(S), EVEN IF ASSESSMENT FUNDS ARE CHOSEN TO BE USED FOR ANY SUCH REASON.

EACH OWNER (BY VIRTUE OF HIS ACCEPTANCE OF TITLE TO A HOME) AND EACH OTHER PERSON HAVING AN INTEREST IN OR LIEN UPON, OR MAKING A USE OF, ANY PORTION OF SOMERSET ESTATES (BY VIRTUE OF ACCEPTING SUCH INTEREST OR LIEN OR MAKING SUCH USE) SHALL BE BOUND BY THIS SECTION AND SHALL BE DEEMED TO HAVE AUTOMATICALLY WAIVED ANY AND ALL RIGHTS, CLAIMS, DEMANDS AND CAUSES OF ACTION AGAINST ASSOCIATION ARISING FROM OR CONNECTED WITH ANY MATTER FOR WHICH THE LIABILITY OF THE ASSOCIATION HAS BEEN DISCLAIMED IN THIS SECTION OR OTHERWISE. AS USED IN THIS SECTION, "ASSOCIATION" SHALL INCLUDE WITHIN ITS MEANING ALL OF ASSOCIATION'S DIRECTORS, OFFICERS, COMMITTEE AND BOARD MEMBERS, EMPLOYEES, AGENTS, CONTRACTORS (INCLUDING MANAGEMENT COMPANIES, SUBCONTRACTORS, SUCCESSORS AND ASSIGNS).

21.13. Resolution of Disputes. BY ACCEPTANCE OF A DEED, EACH OWNER AGREES THAT THE ASSOCIATION DOCUMENTS ARE VERY COMPLEX; THEREFORE, ANY CLAIM, DEMAND, ACTION, OR CAUSE OF ACTION, WITH RESPECT TO ANY ACTION, PROCEEDING, CLAIM, COUNTERCLAIM, OR CROSS CLAIM, WHETHER IN CONTRACT AND/OR IN TORT (REGARDLESS IF THE TORT ACTION IS PRESENTLY RECOGNIZED OR NOT), BASED ON, ARISING OUT OF, IN CONNECTION WITH OR IN ANY WAY RELATED TO ASSOCIATION DOCUMENTS, INCLUDING ANY COURSE OF CONDUCT, COURSE OF DEALING, VERBAL OR WRITTEN STATEMENT, VALIDATION, PROTECTION, ENFORCEMENT ACTION OR OMISSION OF ANY PARTY SHOULD BE HEARD IN A COURT PROCEEDING BY A JUDGE AND NOT A JURY IN ORDER TO BEST SERVE JUSTICE. DEVELOPER HEREBY SUGGESTS THAT EACH OWNER UNDERSTAND THE LEGAL CONSEQUENCES OF ACCEPTING A DEED TO A HOME.

21.14. Venue. EACH OWNER ACKNOWLEDGES REGARDLESS OF WHERE SUCH OWNER (i) EXECUTED A PURCHASE AND SALE AGREEMENT, (ii) RESIDES, (iii) OBTAINS FINANCING OR (iv) CLOSED ON A HOME, THIS DECLARATION LEGALLY AND FACTUALLY WAS EXECUTED IN LAKE COUNTY, FLORIDA. DEVELOPER HAS AN OFFICE IN LAKE COUNTY, FLORIDA AND EACH HOME IS LOCATED IN LAKE COUNTY, FLORIDA. ACCORDINGLY, AN IRREBUTTABLE PRESUMPTION EXISTS THAT THE ONLY APPROPRIATE VENUE FOR THE RESOLUTION OF ANY DISPUTE LIES IN LAKE COUNTY, FLORIDA. IN ADDITION TO THE FOREGOING, EACH OWNER AND DEVELOPER AGREE THAT THE VENUE FOR RESOLUTION OF ANY DISPUTE LIES IN LAKE COUNTY, FLORIDA.

21.15. Reliance. BEFORE ACCEPTING A DEED TO A HOME, EACH OWNER HAS AN OBLIGATION TO RETAIN AN ATTORNEY IN ORDER TO CONFIRM THE VALIDITY OF THIS DECLARATION. BY ACCEPTANCE OF A DEED TO A HOME, EACH OWNER ACKNOWLEDGES THAT HE HAS SOUGHT AND RECEIVED SUCH AN OPINION OR HAS MADE AN AFFIRMATIVE DECISION NOT TO SEEK SUCH AN OPINION. DEVELOPER IS RELYING ON EACH OWNER



CONFIRMING IN ADVANCE OF ACQUIRING A HOME THAT THIS DECLARATION IS VALID, FAIR AND ENFORCEABLE. SUCH RELIANCE IS DETRIMENTAL TO DEVELOPER. ACCORDINGLY, AN ESTOPPEL AND WAIVER EXISTS PROHIBITING EACH OWNER FROM TAKING THE POSITION THAT ANY PROVISION OF THIS DECLARATION IS INVALID IN ANY RESPECT. AS A FURTHER MATERIAL INDUCEMENT FOR DEVELOPER TO SUBJECT SOMERSET ESTATES TO THIS DECLARATION, EACH OWNER DOES HEREBY RELEASE, WAIVE, DISCHARGE, COVENANT NOT TO SUE, ACQUIT, SATISFY AND FOREVER DISCHARGE DEVELOPER, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS AND ITS AFFILIATES AND ASSIGNS FROM ANY AND ALL LIABILITY, CLAIMS, COUNTERCLAIMS, DEFENSES, ACTIONS, CAUSES OF ACTION, SUITS, CONTROVERSIES, AGREEMENTS, PROMISES AND DEMANDS WHATSOEVER IN LAW OR IN EQUITY WHICH AN OWNER MAY HAVE IN THE FUTURE, OR WHICH ANY PERSONAL REPRESENTATIVE, SUCCESSOR, HEIR OR ASSIGN OF OWNER HEREAFTER CAN, SHALL OR MAY HAVE AGAINST DEVELOPER, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS, AND ITS AFFILIATES AND ASSIGNS, FOR, UPON OR BY REASON OF ANY MATTER, CAUSE OR THING WHATSOEVER RESPECTING THIS DECLARATION, OR THE EXHIBITS HERETO. THIS RELEASE AND WAIVER IS INTENDED TO BE AS BROAD AND INCLUSIVE AS PERMITTED BY THE LAWS OF THE STATE OF FLORIDA.

21.16. Duration of Rights. The rights of Developer set forth in this Declaration shall, unless specifically provided to the contrary herein, extend for a period of time ending upon the earlier of: (i) when neither Developer nor any affiliate of Developer has any further interest of any kind in Somerset Estates; or (ii) a relinquishment by Developer in an amendment to the Declaration placed in the Public Records.

21.17. Monitoring System.

21.17.1. Right to Install. Association shall have the right, but not the obligation, to contract for the installation of a Monitoring System for each Home within Somerset Estates. Prior to the Community Completion Date, all contracts for Monitoring Systems shall be subject to the prior written approval of Developer. Developer or its nominees, successors, assigns, affiliates, and licensees may install such a Monitoring System. Developer reserves the right, at any time and in its sole discretion, to discontinue or terminate any Monitoring System prior to the Community Completion Date. In addition, all Owners specifically acknowledge that Somerset Estates may have a perimeter access control system, such as fences, walls, hedges, or the like on certain perimeter areas. ASSOCIATION, NEIGHBORHOOD ASSOCIATIONS, BUILDERS AND DEVELOPER SHALL NOT BE HELD LIABLE FOR ANY LOSS OR DAMAGE BY REASON OF FAILURE TO PROVIDE ADEQUATE ACCESS CONTROL OR INEFFECTIVENESS OF ACCESS CONTROL MEASURES UNDERTAKEN.

21.17.2. Components. The Monitoring System, if installed, may include one or more manned gatehouses, one or more electronic gates, and roving attendants using vehicles. Association and Developer do not warrant or guaranty in any manner that the system will include these items, but reserve the right to install or provide the foregoing items, or any other items they deem appropriate in their sole and absolute discretion. After the Community Completion Date, Association may expand the Monitoring System by a vote of the majority of the Board without the joinder or consent of the Owners or any third parties. Without limiting the foregoing, Developer and Association reserve the right to, at any time, increase, decrease, eliminate, or added manned or unmanned gates houses, information booths, sensors, gates and other access monitoring measures as they deem appropriate in their sole and absolute discretion; provided, however, no changes shall be made prior to the Community Completion Date without the prior written consent of Developer.

21.17.3. Part of Operating Costs. If furnished and installed within any Home, the cost of operating and monitoring any Monitoring System may be included in Operating Costs of Association and may be payable as a portion of the Assessments against Owners. The purpose of the Monitoring System will be to control access to Somerset Estates.

21.17.4. Owners' Responsibility. All Owners and occupants of any Home, and the tenants, guests and invitees of any Owner, as applicable, acknowledge that Association, its Board and officers, Developer or its nominees or assigns, or any successor Developer, and the ACC and its members, do not represent or warrant that (a) any Monitoring System, designated by or installed according to guidelines established, will not be compromised or circumvented, (b) any Monitoring System will prevent loss by fire, smoke, burglary, theft, hold-up, or otherwise, and/or (c) the Monitoring System will in all cases provide the detection for which the system is designed or intended. In the event that Developer elects to provide a Monitoring System, Developer shall not be liable to the Owners or Association with respect to such Monitoring System, and the Owners and Association shall not make any claim against Developer for any loss that an Owner or Association may incur by reason of break-ins, burglaries, acts of vandalism, personal injury or death, which are not detected or prevented by the Monitoring System. Each Owner and Association are responsible for protecting and insuring themselves in connection with such acts or incidents. The provision of a Monitoring System (including any type of gatehouse) shall in no manner constitute a warranty or representation as to the provision of or level of security within Somerset Estates or any residential subdivision contained therein. Developer, Builder, the Neighborhood Associations and Association do not guaranty or warrant, expressly or by implication, the merchantability of fitness for use of any Community Monitoring System, or that any such system (or any of its components or related services) will prevent intrusions, fires, or other occurrences, regardless of whether or not the Monitoring Service is designed to monitor the same. Each and every Owner and the occupant of each Home acknowledges that Developer, Builders, the Neighborhood Associations and Association, their employees, agents, managers, directors, and officers, are not insurers of Owners or Homes, or the personal property located within Homes. Developer, Builders, the Neighborhood Associations and Association will not be responsible or liable for losses, injuries, or deaths resulting from any such events.

22. Refund of Taxes and Other Charges. Unless otherwise provided herein, Association agrees that any taxes, fees or other charges paid by Developer to any governmental authority, utility company or any other entity which at a late date are refunded in whole or in part, shall be returned to Developer in the event such refund is received by Association.

23. Assignment of Powers. All or any part of the rights, exemptions and powers and reservations of Developer herein contained may be conveyed or assigned in whole or part to other persons or entities by an instrument in writing duly executed, acknowledged, and, at Developer's option, recorded in the Public Records.

24. General Provisions.

24.1. Authority of Board. Except when a vote of the membership of Association is specifically required, all decisions, duties, and obligations of Association hereunder may be made by the Board. Association and Owners shall be bound thereby.

24.2. Severability. Invalidation of any of the provisions of this Declaration by judgment or court order shall in no way affect any other provision, and the remainder of this Declaration shall remain in full force and effect.

24.3. Execution of Documents. Developer's plan of development for the Property (including, without limitation, the creation of one (1) or more special taxing districts) may necessitate from time to time the execution of certain documents as required by governmental agencies. To the extent that said documents require the joinder of Owners other than Developer, Developer, by its duly authorized officers, may, as the agent or the attorney-in-fact for the Owners, execute, acknowledge and deliver such documents (including, without limitation, any consents or other documents required by any governmental agencies in connection with the creation of any special taxing district); and the Owners, by virtue of their acceptance of deeds, irrevocably nominate, constitute and appoint Developer, through its duly authorized officers, as their proper and legal attorneys-in-fact, for such purpose. Said appointment is coupled with an interest and is therefore irrevocable. Any such documents executed pursuant to this Section may recite that it is made pursuant to this Section. Notwithstanding the foregoing, each Owner agrees, by its acceptance of a deed to a Home or any other portion of Somerset Estates, to execute or otherwise join in any petition and/or other

documents required in connection with the creation of a special taxing district relating to Somerset Estates or any portion(s) thereof.

24.4. Affirmative Obligation of Association. In the event that Association believes that Developer has failed in any respect to meet Developer's obligations under this Declaration or has failed to comply with any of Developer's obligations under law or the Common Areas are defective in any respect, Association shall give written notice to Developer detailing the alleged failure or defect. Association agrees that once Association has given written notice to Developer pursuant to this Section, Association shall be obligated to permit Developer and its agents to perform inspections of the Common Areas and to perform all tests and make all repairs/replacements deemed necessary by Developer to respond to such notice at all reasonable times. Association agrees that any inspection, test and/or repair/replacement scheduled on a business day between 9 a.m. and 5 p.m. shall be deemed scheduled at a reasonable time. The rights reserved in this Section include the right of Developer to repair or address, in Developer's sole option and expense, any aspect of the Common Areas deemed defective by Developer during its inspections of the Common Areas. Association's failure to give the notice and/or otherwise comply with the provisions of this Section will damage Developer. At this time, it is impossible to determine the actual damages Developer might suffer. Accordingly, if Association fails to comply with its obligations under this Section in any respect, Association shall pay to Developer liquidated damages in the amount of \$250,000.00 which Association and Developer agree are a fair and reasonable remedy.

24.5. Notices. Any notice required to be sent to any person, firm, or entity under the provisions of this Declaration shall be deemed to have been properly sent when mailed, postpaid, to the last known address at the time of such mailing.

24.6. Florida Statutes. Whenever this Declaration refers to the Florida Statutes, it shall be deemed to refer to the Florida Statutes as they exist on the date this Declaration is recorded except to the extent provided otherwise as to any particular provision of the Florida Statutes.

24.7. Title Documents. Each Owner by acceptance of a deed to a Home acknowledges that such home is subject to certain land use and title documents and all amendments thereto, which may include among other items, the following documents (collectively, the "Title Documents"):

Developer's plan of development for Somerset Estates may necessitate from time to time the further amendment, modification and/or termination of the Title Documents. DEVELOPER RESERVES THE UNCONDITIONAL RIGHT TO SEEK AMENDMENTS AND MODIFICATIONS OF THE TITLE DOCUMENTS. It is possible that a governmental subdivision or agency may require the execution of one or more documents in connection with an amendment, modification, and/or termination of the Title Documents. To the extent that such documents require the joinder of Owners other than Developer, Developer, by any one of its duly authorized officers, may, as the agent and/or the attorney-in-fact for the Owners, execute, acknowledge and deliver any documents required by applicable governmental subdivision or agency; and the Owners, by virtue of their acceptance of deeds, irrevocably nominate, constitute and appoint Developer, through any one of its duly authorized officers, as their proper and legal attorney-in-fact for such purpose. This appointment is coupled with an interest and is therefore irrevocable. Any such documents executed pursuant to this Section may recite that it is made pursuant to this Section. Notwithstanding the foregoing, each Owner agrees, by its acceptance of a deed to a Home:

a. to execute or otherwise join in any documents required in connection with the amendment, modification, or termination of the Title Documents; and

b. that such Owner has waived its right to object to or comment the form or substance of any amendment, modification, or termination of the Title Documents.

Without limiting the foregoing, upon the Community Completion Date Association shall assume all of the obligations of Developer under the Title Documents unless otherwise provided by Developer by amendment to this Declaration recorded by Developer in the Public Records, from time to time, and in the sole and absolute discretion of Developer

24.8. Construction Activities. ALL OWNERS, OCCUPANTS AND USERS OF SOMERSET ESTATES ARE HEREBY PLACED ON NOTICE THAT DEVELOPER AND/OR ITS AGENTS, CONTRACTORS, SUBCONTRACTORS, LICENSEES AND OTHER DESIGNEES WILL BE, FROM TIME TO TIME, CONDUCTING BLASTING, EXCAVATION, CONSTRUCTION AND OTHER ACTIVITIES WITHIN OR IN PROXIMITY TO SOMERSET ESTATES. BY THE ACCEPTANCE OF THEIR DEED OR OTHER CONVEYANCE OR MORTGAGE, LEASEHOLD, LICENSE OR OTHER INTEREST, AND BY USING ANY PORTION OF SOMERSET ESTATES, EACH SUCH OWNER, OCCUPANT AND USER AUTOMATICALLY ACKNOWLEDGES, STIPULATES AND AGREES (i) THAT NONE OF THE AFORESAID ACTIVITIES SHALL BE DEEMED NUISANCES OR NOXIOUS OR OFFENSIVE ACTIVITIES, HEREUNDER OR AT LAW GENERALLY, (ii) NOT TO ENTER UPON, OR ALLOW THEIR CHILDREN OR OTHER PERSONS UNDER THEIR CONTROL OR DIRECTION TO ENTER UPON (REGARDLESS OF WHETHER SUCH ENTRY IS A TRESPASS OR OTHERWISE) ANY PROPERTY WITHIN OR IN PROXIMITY TO SOMERSET ESTATES WHERE SUCH ACTIVITY IS BEING CONDUCTED (EVEN IF NOT BEING ACTIVELY CONDUCTED AT THE TIME OF ENTRY, SUCH AS AT NIGHT OR OTHERWISE DURING NON-WORKING HOURS), (iii) DEVELOPER AND THE OTHER AFORESAID RELATED PARTIES SHALL NOT BE LIABLE FOR ANY AND ALL LOSSES, DAMAGES (COMPENSATORY, CONSEQUENTIAL, PUNITIVE OR OTHERWISE), INJURIES OR DEATHS ARISING FROM OR RELATING TO THE AFORESAID ACTIVITIES, EXCEPT RESULTING DIRECTLY FROM DEVELOPER'S GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, AND (iv) ANY PURCHASE OR USE OF ANY PORTION OF SOMERSET ESTATES HAS BEEN AND WILL BE MADE WITH FULL KNOWLEDGE OF THE FOREGOING.

IN WITNESS WHEREOF, the undersigned, being Developer hereunder, has hereunto set its hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 199\_\_.

WITNESSES:

LENNAR HOMES, INC., a Florida corporation

\_\_\_\_\_  
Print Name: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

\_\_\_\_\_  
Title: \_\_\_\_\_

Print Name: \_\_\_\_\_

STATE OF FLORIDA                    )  
                                                  ) SS.:  
COUNTY OF \_\_\_\_\_ )

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 1999 by \_\_\_\_\_, as Vice President of Lennar Homes, Inc., a Florida corporation, a joint venture partner of Melrose Park Joint Venture, a Florida joint venture, who is personally known to me or who has produced \_\_\_\_\_ as identification.

My commission expires: \_\_\_\_\_

NOTARY PUBLIC, State of Florida  
at Large

Print name: \_\_\_\_\_



**EXHIBIT 1**

**LEGAL DESCRIPTION**

EXHIBIT 2

ARTICLES OF INCORPORATION



**EXHIBIT 3**

**BY-LAWS**

**EXHIBIT 4**

**PERMIT**

RECEIVED

APR 29 1999  
40-069-0351 A-ERP  
PDS  
ORLANDO  
SJR WMD

ARTICLES OF INCORPORATION  
SOMERSET ESTATES COMMUNITY ASSOCIATION, INC.  
(A CORPORATION NOT FOR PROFIT)

"DRAFT NOT  
PROOFED"

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ARTICLES OF INCORPORATION  
OF  
SOMERSET ESTATES COMMUNITY ASSOCIATION, INC.  
(A CORPORATION NOT FOR PROFIT)

In compliance with the requirements on the Laws of the State of Florida, and for the purpose of forming a corporation not for profit, the undersigned does hereby acknowledge:

1. Name of Corporation. The name of the corporation is SOMERSET ESTATES COMMUNITY ASSOCIATION, INC. ("Association").

2. Principal Office. The principal office of the Association is \_\_\_\_\_.

3. Registered Office - Registered Agent. The street address of the Registered Office of the Association is 100 S.E. 2nd Street, Suite 2800, Miami, Florida 33131. The name of the Registered Agent of the Association is:

KTG&S Registered Agent Corporation

4. Definitions. A declaration entitled Declaration of Restrictions and Covenants for Somerset Estates (the "Declaration") will be recorded in the Public Records of Lake County, Florida, and shall govern all of the operations of a community to be known as Somerset Estates. All initially capitalized terms not defined herein shall have the meanings set forth in the Declaration.

5. Purpose of the Association. The Association is formed to: (a) provide for ownership, operation, maintenance and preservation of the Common Areas, and improvements thereon; (b) perform the duties delegated to it in the Declaration; (c) administer the interests of the Association and the Owners; (d) promote the health, safety and welfare of the Owners.

6. Not for Profit. The Association is a not for profit Florida corporation and does not contemplate pecuniary gain to, or profit for, its members.

7. Powers of the Association. The Association shall, subject to the limitations and reservations set forth in the Declaration, have all the powers, privileges and duties reasonably necessary to discharge its obligations, including, but not limited to, the following:

7.1. To perform all the duties and obligations of the Association set forth in the Declaration and By-Laws, as herein provided.

7.2. To enforce, by legal action or otherwise, the provisions of the Declaration and By-Laws and of all rules, regulations, covenants, restrictions and agreements governing or binding the Association and Somerset Estates.

7.3. To operate, maintain and manage the Surface Water Management System in a manner consistent with the Permit, applicable SJRWMD rules, and Association shall assist in the enforcement of the provisions of the Declaration which relate to the Surface Water Management System.

7.4. To fix, levy, collect and enforce payment, by any lawful means, of all Assessments, including adequate amount for the costs of maintenance of the Surface Water Management System, pursuant to the terms of the Declaration, these Articles and By-Laws.

7.5. To pay all Operating Costs, including, but not limited to, all licenses, taxes or governmental charges levied or imposed against the property of the Association.

7.6. To acquire (by gift, purchase or otherwise), annex, own, hold, improve, build upon, operate, maintain, convey, grant rights and easements, sell, dedicate, lease, transfer or otherwise dispose of real or personal property (including the Common Areas) in connection with the functions of the Association except as limited by the Declaration.

7.7. To borrow money, and to mortgage, pledge or hypothecate any or all of its real or personal property as security for money or debts incurred.

7.8. To dedicate, grant, license, lease, concession, create easements upon, sell or transfer all or any part of, Somerset Estates to any public agency, entity, authority, utility or other person or entity for such purposes and subject to such conditions as it determines and as provided in the Declaration.

7.9. To participate in mergers and consolidations with other non-profit corporations organized for the same purposes.

7.10. To adopt, publish, promulgate or enforce rules, regulations, covenants, restrictions or agreements governing the Association, Somerset Estates, the Common Areas, Parcels and Homes as provided in the Declaration and to effectuate all of the purposes for which the Association is organized.

7.11. To have and to exercise any and all powers, rights and privileges which a not-for-profit corporation organized under the Laws of the State of Florida may now, or hereafter, have or exercise.

7.12. To employ personnel and retain independent contractors to contract for management of the Association, Somerset Estates and the Common Areas as provided in the Declaration and to delegate in such contract all or any part of the powers and duties of the Association.

7.13. To contract for services to be provided to, or for the benefit of, the Association, Owners, the Common Areas and Somerset Estates as provided in the Declaration such as, but not limited to, Telecommunication Services, maintenance, garbage pick-up, and utility services.

7.14. To establish committees and delegate certain of its functions to those committees.

8. Voting Rights. Owners and Developer shall have the voting rights set forth in the By-Laws.

9. Board of Directors. The affairs of the Association shall be managed by a Board of odd number with not less than three (3) nor more than nine (9) members. The initial number of directors shall be three (3). Board members shall be appointed and/or elected as stated in the By-Laws. The election of Directors shall be held at the annual meeting. Directors shall be elected for a term expiring on the date of the next annual meeting. The names and addresses of the members of the first Board who shall hold office until their successors are appointed or elected, or until removed, are as follows:

NAME

ADDRESS

10. Dissolution. In the event of the dissolution of the Association other than incident to a merger or consolidation, any member may petition the Circuit Court having jurisdiction of the Judicial Circuit of the State of Florida for the appointment of a receiver to manage its affairs of the dissolved Association and to manage the Common Areas, in the place and stead of the Association, and to make such provisions as may be necessary for the continued management of the affairs of the dissolved Association and its properties. In addition, if Association is terminated, dissolved, or

liquidated, the responsibility for the operation and maintenance of the Surface Water Management System must be transferred to and accepted by an entity which would comply with Section 40C-42.027, F.A.C., and be approved by SJRWMD prior to such termination, dissolution or liquidation.

11. Duration. The existence of Association shall commence with the filing of these Articles with the Secretary of State, Tallahassee, Florida. Association shall have perpetual existence.

12. Amendments.

12.1. General Restrictions on Amendments. Notwithstanding any other provision herein to the contrary, no amendment to these Articles shall affect the rights of Developer unless such amendment receives the prior written consent of Developer, which may be withheld for any reason whatsoever. If the prior written approval of any governmental entity or agency having jurisdiction is required by applicable law or governmental regulation for any amendment to these Articles, then the prior written consent of such entity or agency must also be obtained. No amendment shall be effective until it is recorded in the Public Records.

12.2. Amendments Prior to the Turnover Date. Prior to the Turnover Date, Developer shall have the right to amend these Articles as it deems appropriate, without the joinder or consent of any person or entity whatsoever. Developer's right to amend under this Section is to be construed as broadly as possible. In the event that Association shall desire to amend these Articles prior to the Turnover Date, Association must first obtain Developer's prior written consent to any proposed amendment. Thereafter, an amendment identical to that approved by Developer may be adopted by Association pursuant to the requirements for amendments from and after the Turnover Date. Thereafter, Developer shall join in such identical amendment so that its consent to the same will be reflected in the Public Records.

12.3. Amendments From and After the Turnover Date. After the Turnover Date, but subject to the general restrictions on amendments set forth above, these Articles may be amended with the approval of (i) two-thirds (66 2/3%) of the Board.

13. Limitations.

13.1. Declaration is Paramount. No amendment may be made to these Articles which shall in any manner reduce, amend, affect or modify the terms, conditions, provisions, rights and obligations set forth in the Declaration.

13.2. Rights of Developer. There shall be no amendment to these Articles which shall abridge, reduce, amend, effect or modify the rights of Developer.

13.3. By-Laws. These Articles shall not be amended in a manner that conflicts with the By-Laws.

14. Incorporator.

The name and address of the Incorporator of this corporation is:

PATRICIA KIMBALL FLETCHER  
100 S.E. 2nd Street  
Suite 2800  
Miami, Florida 33131

15. Officers.

The Board shall elect a President, Secretary, Treasurer, and as many Vice Presidents, Assistant Secretaries and Assistant Treasurers as the Board shall from time to time determine.

The names and addresses of the Officers who shall serve until their successors are elected by the Board are as follows:



President:

Vice President:

Secretary:

Treasurer:

16. Indemnification of Officers and Directors. The Association shall and does hereby indemnify and hold harmless every Director and every Officer, their heirs, executors and administrators, against all loss, cost and expenses reasonably incurred in connection with any action, suit or proceeding to which such Director or Officer may be made a party by reason of being or having been a Director or Officer of the Association, including reasonable counsel fees and paraprofessional fees at all levels of proceeding. This indemnification shall not apply to matters wherein the Director or Officer shall be finally adjudged in such action, suit or proceeding to be liable for or guilty of gross negligence or willful misconduct. The foregoing rights shall be in addition to, and not exclusive of, all other rights to which such Director or Officers may be entitled.

17. Transactions in Which Directors or Officers are Interested. No contract or transaction between the Association and one (1) or more of its Directors or Officers or Developer, or between the Association and any other corporation, partnership, association, or other organization in which one (1) or more of its Officers or Directors are officers, directors or employees or otherwise interested shall be invalid, void or voidable solely for this reason, or solely because the Officer or Director is present at, or participates in, meetings of the Board thereof which authorized the contract or transaction, or solely because said Officers' or Directors' votes are counted for such purpose. No Director or Officer of the Association shall incur liability by reason of the fact that such Director or Officer may be interested in any such contract or transaction. Interested Directors shall disclose the general nature of their interest and may be counted in determining the presence of a quorum at a meeting of the Board which authorized the contract or transaction.

IN WITNESS WHEREOF, for the purpose of forming this corporation under the Laws of the State of Florida, the undersigned, being the Incorporator of this Association, has executed these Articles of Incorporation as of this \_\_\_\_\_ day of \_\_\_\_\_, 1999.

**WITNESSES:**

\_\_\_\_\_  
Print name: \_\_\_\_\_

\_\_\_\_\_  
Print name: \_\_\_\_\_

\_\_\_\_\_  
PATRICIA KIMBALL FLETCHER, Incorporator

STATE OF FLORIDA                    )  
                                                  ) SS.:  
COUNTY OF MIAMI-DADE            )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_  
by PATRICIA KIMBALL FLETCHER who is personally known to me or presented \_\_\_\_\_ as identification.

My commission expires:

\_\_\_\_\_  
NOTARY PUBLIC, State of Florida  
at Large

Print name: \_\_\_\_\_

ACCEPTANCE BY REGISTERED AGENT

The undersigned, having been named to accept service of process for the above-stated corporation at the place designated in this certificate, hereby agrees to act in this capacity, and is familiar with, and accepts, the obligations of this position and further agrees to comply with the provisions of all statutes relative to the proper and complete performance of its duties.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

KTG&S Registered Agent  
Corporation

By: \_\_\_\_\_  
, as President

BY-LAWS  
OF  
SOMERSET ESTATES COMMUNITY ASSOCIATION, INC.

RECEIVED

APR 29 1999

40-069-0351A-ERP

C. J. JO  
S. W. MD

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PROOFED"

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BY-LAWS  
OF  
SOMERSET ESTATES COMMUNITY ASSOCIATION, INC.

1. Name and Location.

The name of the corporation is SOMERSET ESTATES COMMUNITY ASSOCIATION, INC. ("Association"). The principal office of the corporation shall be located at \_\_\_\_\_ or at such other location determined by the Board of Directors (the "Board") from time to time.

2. Definitions.

The definitions contained in the Declaration of Restrictions and Covenants for the Somerset Estates (the "Declaration") relating to the residential community known as Somerset Estates, recorded, or to be recorded, in the Public Records of Lake County, Florida, are incorporated herein by reference and made a part hereof. In addition to the terms defined in the Declaration, the following terms shall have the meanings set forth below:

"Annual Members Meeting" shall have the meaning assigned to such term in Section 3.2 of these By-Laws.

"Articles" shall mean the Articles of Incorporation for Association, as amended from time to time.

"Declaration" shall mean the Declaration as modified from time to time.

"Developer" shall mean Lennar Homes, Inc. and any of its designees, successors and assigns who receive a written assignment of all or some of the rights of Developer hereunder. Such assignment need not be recorded in the Public Records in order to be effective. In the event of such a partial assignment, the assignee shall not be deemed Developer, but may exercise such rights of Developer specifically assigned to it. Any such assignment may be made on a non-exclusive basis.

"By-Laws" shall mean these By-Laws as amended from time to time.

"Member" shall mean each Owner and Developer.

"Minutes" shall mean the minutes of all Member and Board meetings, which shall be in the form required by the Florida Statutes. In the absence of governing Florida Statutes, the Board shall determine the form of the minutes.

"Official Records" shall mean all records required to be maintained by Association pursuant to Section 617.303(4) of the Florida Statutes, as amended from time to time.

"Special Members Meeting" shall have the meaning assigned to such term in Section 3 of these By-Laws.

"Turnover Date" shall have the meaning set forth in Section 4.6 of these By-Laws.

"Voting Interests" shall mean the voting rights held by the Members.

3. Members.

3.1. Voting Interests. Each Owner and Developer shall be a Member of Association. No person who holds an interest in a Home only as security for the performance of an obligation shall be a Member of Association. Membership shall be appurtenant to, and may not be separated from, ownership of any Home. There shall be one vote appurtenant to each Home. For the purposes of determining who may exercise the Voting Interest associated with each Home, the following rules shall govern:

3.1.1. Home Owned By Husband and Wife. Either the husband or wife (but not both) may exercise the Voting Interest with respect to a Home. In the event the husband and wife cannot agree, neither may exercise the Voting Interest.

3.1.2. Trusts. In the event that any trust owns a home, Association shall have no obligation to review the trust agreement with respect to such trust. If the Home is owned by Robert Smith, as Trustee, Robert Smith shall be deemed the Owner of the Home for all Association purposes. If the Home is owned by Robert Smith as Trustee for the Laura Jones Trust, then Robert Smith shall be deemed the Member with respect to the Home for all Association purposes. If the Home is owned by the Laura Jones Trust, and the deed does not reference a trustee, then Laura Jones shall be deemed the Member with respect to the Home for all Association purposes. If the Home is owned by the Jones Family Trust, the Jones Family Trust may not exercise its Voting Interest unless it presents to Association, in the form of an attorney opinion letter or affidavit reasonably acceptable to Association, the identification of the person who should be treated as the Member with respect to the Home for all Association purposes. If Robert Smith and Laura Jones, as Trustees, hold title to a Home, either trustee may exercise the Voting Interest associated with such Home. In the event of a conflict between trustees, the Voting Interest for the Home in question cannot be exercised. In the event that any other form of trust ownership is presented to Association, the decision of the Board as to who may exercise the Voting Interest with respect to any Home shall be final. Association shall have no obligation to obtain an attorney opinion letter in making its decision, which may be made on any reasonable basis whatsoever.

3.1.3. Corporations. If a Home is owned by a corporation, the corporation shall designate a person, an officer, employee, or agent who shall be treated as the Member who can exercise the Voting Interest associated with such Home.

3.1.4. Partnerships. If a Home is owned by a limited partnership, any one of the general partners may exercise the Voting Interest associated with such Home. By way of example, if the general partner of a limited partnership is a corporation, then the provisions hereof governing corporations shall govern which person can act on behalf of the corporation as general partner of such limited partnership. If a Home is owned by a general partnership, any one of the general partners may exercise the Voting Interest associated with such Home. In the event of a conflict among general partners entitled to exercise a Voting Interest, the Voting Interest for such Home cannot be exercised.

3.1.5. Multiple Individuals. If a Home is owned by more than one individual, any one of such individuals may exercise the Voting Interest with respect to such Home. In the event that there is a conflict among such individuals, the Voting Interest for such Home cannot be exercised.

3.1.6. Liability of Association. Association may act in reliance upon any writing or instrument or signature, whether original or facsimile, which Association, in good faith, believes to be genuine, may assume the validity and accuracy of any statement or assertion contained in such a writing or instrument, and may assume that any person purporting to give any writing, notice, advice or instruction in connection with the provisions hereof has been duly authorized to do so. So long as Association acts in good faith, Association shall have no liability or obligation with respect to the exercise of Voting Interests, and no election shall be invalidated (in the absence of fraud) on the basis that Association permitted or denied any person the right to exercise a Voting Interest. In addition, the Board may impose additional requirements respecting the exercise of Voting Interests (e.g., the execution of a Voting Certificate).

3.2. Annual Meetings. The annual meeting of the Members (the "Annual Members Meeting") shall be held at least once each calendar year on a date, at a time, and at a place to be determined by the Board.

3.3. Special Meetings of the Members. Special meetings of the Members (a "Special Members Meeting") may be called by the President, a majority of the Board, or upon written request of ten percent (10%) of the Voting Interests of the Members. The business to be conducted at a Special Members Meeting shall be limited to the extent required by Florida Statutes.

3.4. Notice of Members Meetings. Written notice of each Members meeting shall be given by, or at the direction of, any officer of the Board or any management company retained by Association. A copy of the notice shall be mailed to each Member entitled to vote, postage prepaid, not less than ten (10) days before the meeting (provided,

however, in the case of an emergency, two (2) days' notice will be deemed sufficient). The notice shall be addressed to the member's address last appearing on the books of Association. The notice shall specify the place, day, and hour of the meeting and, in the case of a Special Members Meeting, the purpose of the meeting. Alternatively, and to the extent not prohibited by the Florida Statutes, the Board may adopt from time to time, other procedures for giving notice to the Members of the Annual Members Meeting or a Special Members Meeting.

3.5. Quorum of Members. Until the Community Completion Date, a quorum shall be established by Developer's presence at any meeting. From and after the Community Completion Date, a quorum shall be established by the presence, in person or by proxy, of the Members entitled to cast twenty percent (20%) of the Voting Interests, except as otherwise provided in the Articles, the Declaration, or these By-Laws. Notwithstanding any provision herein to the contrary, in the event that technology permits Members to participate in Members Meetings and vote on matters electronically, then the Board shall have authority, without the joinder of any other party, to revise this provision to establish appropriate quorum requirements.

3.6. Adjournment of Members Meetings. If, however, a quorum shall not be present at any Members meeting, the meeting may be adjourned as provided in the Florida Statutes. In the absence of a provision in the Florida Statutes, the Members present shall have power to adjourn the meeting and reschedule it on another date.

3.7. Action of Members. Decisions that require a vote of the Members must be made by a concurrence of a majority of the Voting Interests present in person or by proxy, represented at a meeting at which a quorum has been obtained unless provided otherwise in the Declaration, the Articles, or these By-Laws.

3.8. Proxies. At all meetings, Members may vote their Voting Interests in person or by proxy. All proxies shall comply with the provisions of Section 617.306(6) of the Florida Statutes, as amended from time to time, be in writing, and be filed with the Secretary at, or prior to, the meeting. Every proxy shall be revocable prior to the meeting for which it is given.

#### 4. Board of Directors.

4.1. Number. The affairs of Association shall be managed by a Board consisting of three (3) persons. Board members appointed by Developer need not be Members of Association. Board members elected by the other Members must be Members of Association.

4.2. Term of Office. The election of Directors shall take place after Developer no longer has the authority to appoint the Board and shall take place at the Annual Members Meeting or on the Turnover Date. Directors shall be elected for a term ending upon the election of new Directors at the following Annual Members Meeting (except that the term of the Board appointed by the Developer shall extend until the date designated by Developer, or until the Turnover Date).

4.3. Removal. Any vacancy created by the resignation or removal of a Board member appointed by Developer may be replaced by Developer. Developer may replace or remove any Board member appointed by Developer in Developer's sole and absolute discretion. In the event of death or resignation of a Director elected by the Members, the remaining Directors may fill such vacancy. Directors may be removed with or without cause by the vote or agreement in writing of Members holding a majority of the Voting Interests.

4.4. Compensation. No Director shall receive compensation for any service rendered as a Director to Association; provided, however, any Director may be reimbursed for actual expenses incurred as a Director.

4.5. Action Taken Without a Meeting. Except to the extent prohibited by law, the Board shall have the right to take any action without a meeting by obtaining the written approval of the required number of Directors. Any action so approved shall have the same effect as though taken at a meeting of Directors.

4.6. Appointment and Election of Directors. Until the Community Completion Date, the Developer shall have the unrestricted power to appoint all Directors of Association. From and after the Community Completion Date,



or such earlier date determined by Developer in its sole and absolute discretion (the "Turnover Date"), the Members shall elect all Directors of Association at or in conjunction with the Annual Members Meeting of the Members.

4.7. Election. Election to the Board shall be by secret written ballot, unless unanimously waived by all Members present. The persons receiving the largest numbers of votes shall be elected. Cumulative voting is not permitted.

5. Meeting of Directors.

5.1. Regular Meetings. Regular meetings of the Board shall be held on a schedule adopted by the Board from time to time. Meetings shall be held at such place and hour as may be fixed, from time to time, by resolution of the Board.

5.2. Special Meetings. Special meetings of the Board shall be held when called by the President, or by any two (2) Directors. Each Director shall be given not less than two (2) days' notice except in the event of an emergency. Notice may be waived. Attendance shall be a waiver of notice. Telephone conference meetings are permitted.

5.3. Emergencies. In the event of an emergency involving immediate danger of injury or death to any person or damage to property, if a meeting of the Board cannot be immediately convened to determine a course of action, the President or, in his absence, any other officer or director, shall be authorized to take such action on behalf of Association as shall be reasonably required to appropriately respond to the emergency situation, including the expenditure of Association funds in the minimum amount as may be reasonably required under the circumstances. The authority of officers to act in accordance herewith shall remain in effect until the first to occur of the resolution of the emergency situation or a meeting of the Board convened to act in response thereto.

5.4. Quorum. A majority of the number of Directors shall constitute a quorum for the transaction of business. Every act or decision done or made by a majority of the Directors present at a duly held meeting, at which a quorum is present, or in writing in lieu thereof, shall be action of the Board.

5.5. Open Meetings. Meetings of the Board shall be open to all Members.

5.6. Voting. Board Members shall cast votes in the manner provided in the Florida Statutes. In the absence of a statutory provision, the Board shall establish the manner in which votes shall be cast.

5.7. Notice of Board Meetings. Notices of meetings of the Board shall be posted in a conspicuous place on the Common Areas at least 48 hours in advance, except in an event of an emergency. Alternatively, notice may be given to Members in any other manner provided by Florida Statute. By way of example, and not of limitation, notice may be given in any newsletter distributed to the Members. Notices of any meetings of the Board at which Assessments against Homes are to be established shall specifically contain a statement that Assessments shall be considered and a statement of the nature of such Assessments.

6. Powers and Duties of the Board.

6.1. Powers. The Board shall, subject to the limitations and reservations set forth in the Declaration and Articles, have the powers reasonably necessary to manage, operate, maintain and discharge the duties of Association, including, but not limited to, the power to cause Association to do the following:

6.1.1. General. Exercise all powers, duties and authority vested in or delegated to Association by law and in these By-Laws, the Articles, the Declaration, including, without limitation, adopt budgets, levy Assessments, and enter into contracts with Service Providers for Telecommunication Services.

6.1.2. Rules and Regulations. Adopt, publish, promulgate and enforce rules and regulations governing the use of Somerset Estates by the Members, tenants and their guests and invitees, and to establish penalties and/or fines for the infraction thereof subject only to the requirements of the Florida Statutes, if any.

6.1.3. Enforcement. Suspend the right of use of the Common Areas (other than for vehicular and pedestrian ingress and egress and for utilities) of a Member during any period in which such Member shall be in default in the payment of any Assessment or charge levied, or collected, by Association.

6.1.4. Declare Vacancies. Declare the office of a member of the Board to be vacant in the event such Member shall be absent from three (3) consecutive regular Board meetings.

6.1.5. Hire Employees. Employ, on behalf of Association, managers, independent contractors, or such other employees as it deems necessary, to prescribe their duties and delegate to such manager, contractor, etc., any or all of the duties and functions of Association and/or its officers.

6.1.6. Common Areas. Acquire, sell, operate, lease, manage and otherwise trade and deal with property, real and personal, including the Common Areas, as provided in the Declaration, and with any other matters involving Association or its Members, on behalf of Association or the discharge of its duties, as may be necessary or convenient for the operation and management of Association and in accomplishing the purposes set forth in the Declaration.

6.1.7. Granting of Interest. Grant licenses, easements, permits, leases, or privileges to any individual or entity, which affect Common Areas and to alter, add to, relocate or improve the Common Areas as provided in the Declaration.

6.1.8. Financial Reports. Prepare all financial reports required by the Florida Statutes.

6.2. Vote. The Board shall exercise all powers so granted except where the Declaration, Articles or these By-Laws specifically require a vote of the Members.

6.3. Limitations. Until the Turnover Date, Developer shall have and is hereby granted a right to disapprove or veto any such action, policy, or program proposed or authorized by Association, the Board, the ACC, any committee of Association, or the vote of the Members. This right may be exercised by Developer at any time within ten (10) days following a meeting held pursuant to the terms and provisions hereof. This right to disapprove may be used to veto proposed actions but shall not extend to the requiring of any action or counteraction on behalf of Association, the Board, the ACC or any committee of the Association.

7. Obligations of Association. Association, subject to the provisions of the Declaration, Articles, and these By-Laws, shall discharge such duties as necessary to operate Association pursuant to the Declaration, including, but not limited to, the following:

7.1. Official Records. Maintain and make available all Official Records.

7.2. Supervision. Supervise all officers, agents and employees of Association, and to see that their duties are properly performed.

7.3. Assessments and Fines. Fix and collect the amount of the Assessments and fines; take all necessary legal action; and pay, or cause to be paid, all obligations of Association or where Association has agreed to do so, of the Members.

7.4. Enforcement. Enforce the provisions of the Declaration, Articles, these By-Laws, and Rules and Regulations.

8. Officers and Their Duties.

8.1. Officers. The officers of this Association shall be a President, a Vice President, a Secretary, and a Treasurer.

8.2. Election of Officers. Except as set forth below, the election of officers shall be by the Board and shall take place at the first meeting of the Board following each Annual Members Meeting.

8.3. Term. The officers named in the Articles shall serve until their replacement by the Board. The officers of Association shall hold office until their successors are appointed or elected unless such officer shall sooner resign, be removed, or otherwise disqualified to serve.

8.4. Special Appointment. The Board may elect such other officers as the affairs of Association may require, each of whom shall hold office for such period, have such authority, and perform such duties as the Board may, from time to time, determine.

8.5. Resignation and Removal. Any officer may be removed from office, with or without cause, by the Board. Any officer may resign at any time by giving written notice to the Board. Such resignation shall take effect on the date of receipt of such notice or at any later time specified therein. Acceptance of such resignation shall not be necessary to make it effective.

8.6. Vacancies. A vacancy in any office shall be filled by appointment by the Board. The officer appointed to such vacancy shall serve for the remainder of the term of the replaced officer. Section 7.

8.7. Multiple Offices. The office of President and Vice-President shall not be held by the same person. All other offices may be held by the same person.

8.8. Duties. The duties of the officers are as follows:

8.8.1. President. The President shall preside at all meetings of Association and Board, sign all leases, mortgages, deeds and other written instruments and perform such other duties as may be required by the Board. The President shall be a member of the Board.

8.8.2. Vice President. The Vice President shall act in the place and stead of the President in the event of the absence, inability or refusal to act of the President, and perform such other duties as may be required by the Board.

8.8.3. Secretary. The Secretary shall record the votes and keep the Minutes of all meetings and proceedings of Association and the Board; keep the corporate seal of Association and affix it on all papers required to be sealed; serve notice of meetings of the Board and of Association; keep appropriate current records showing the names of the Members of Association together with their addresses; and perform such other duties as required by the Board.

8.8.4. Treasurer. The Treasurer shall cause to be received and deposited in appropriate bank accounts all monies of Association and shall disburse such funds as directed by the Board; sign, or cause to be signed, all checks, and promissory notes of Association; cause to be kept proper books of account and accounting records required pursuant to the provisions of Section 617.303 of the Florida Statutes cause to be prepared in accordance with generally accepted accounting principles all financial reports required by the Florida Statutes; and perform such other duties as required by the Board.

9. Committees.

9.1. General. The Board may appoint such committees as deemed appropriate. The Board may fill any vacancies on all committees.

9.2. ACC. Developer shall have the sole right to appoint the members of the ACC until the Turnover Date. Upon expiration of the right of Developer to appoint members of the ACC, the Board shall appoint the members of the ACC. As provided under the Declaration, Association shall have the authority and standing to seek enforcement in courts of competent jurisdiction any decisions of the ACC.

10. Records. The official records of Association shall be available for inspection by any Member at the principal office of Association. Copies may be purchased, by a Member, at a reasonable cost.

11. Corporate Seal. Association shall have an impression seal in circular form.

12. Amendments.

12.1. General Restrictions on Amendments. Notwithstanding any other provision herein to the contrary, no amendment to these By-Laws shall affect the rights of Developer unless such amendment receives the prior written consent of Developer, which may be withheld for any reason whatsoever. If the prior written approval of any governmental entity or agency having jurisdiction is required by applicable law or governmental regulation for any amendment to these By-Laws, then the prior written consent of such entity or agency must also be obtained. No amendment shall be effective until it is recorded in the Public Records.

12.2. Amendments Prior to the Turnover Date. Prior to the Turnover Date, Developer shall have the right to amend these By-Laws as it deems appropriate, without the joinder or consent of any person or entity whatsoever. Developer's right to amend under this provision is to be construed as broadly as possible. In the event that Association shall desire to amend these By-Laws prior to the Turnover Date, Association must first obtain Developer's prior written consent to any proposed amendment. Thereafter, an amendment identical to that approved by Developer may be adopted by Association pursuant to the requirements for amendments from and after the Turnover Date. Thereafter, Developer shall join in such identical amendment so that its consent to the same will be reflected in the Public Records.

12.3. Amendments From and After the Turnover Date. After the Turnover Date, but subject to the general restrictions on amendments set forth above, these By-Laws may be amended with the approval of (i) two-thirds (66 2/3%) of the Board; and (ii) seventy-five percent (75%) of all of the votes in Association. Notwithstanding the foregoing, these By-Laws may be amended after the Turnover Date by two-thirds percent (66 2/3%) of the Board acting alone to change the number of directors on the Board. Such change shall not require the approval of the Members. Any change in the number of directors shall not take effect until the next Annual Members Meeting.

13. Conflict. In the case of any conflict between the Articles and these By-Laws, the Articles shall control. In the case of any conflict between the Declaration and these By-Laws, the Declaration shall control.

14. Fiscal Year. The first fiscal year shall begin on the date of incorporation and end on December 31 of that year. Thereafter, the fiscal year of Association shall begin on the first day of January and end on the 31st day of December of every year.

15. Miscellaneous.

15.1. Florida Statutes. Whenever these By-Laws refers to the Florida Statutes, it shall be deemed to refer to the Florida Statutes as they exist on the date these By-Laws are recorded except to the extent provided otherwise as to any particular provision of the Florida Statutes.

15.2. Severability. Invalidation of any of the provisions of these By-Laws by judgment or court order shall in no way affect any other provision, and the remainder of these By-Laws shall remain in full force and effect.

SOMERSET ESTATES @ KINGS RIDGE  
STORMWATER CALCULATIONS  
FBA NO. 941216.061

RECEIVED  
MAR 16 1999  
40-069-0351A-ELP  
PDS  
ORLANDO  
SJR WMD

FARNER, BARLEY & ASSOCIATES, INC.  
350 NORTH SINCLAIR AVENUE  
TAVARES, FLORIDA 32778

BY:   
DUANE K. BOOTH, P.E.  
FLORIDA REG. NO. 44631

DATE: MAR 12 1999

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January 4, 1999

## SOMERSET ESTATES @ KINGS RIDGE

### STORMWATER DESIGN SUMMARY

Somerset Estates is located in Sections 3 and 4 of Township 23S, Range 26E on U.S. Highway 27 South of Clermont consisting of approximately 40.43 acres. The property as existing today is mostly open field.

Since the subject property does not have a positive outfall, the stormwater management system is designed to retain the total runoff from the 25 year-96 hour storm event. Therefore, the pre-developed site conditions were not modeled for pre vs. post comparison.

The Stormwater Calculations meet or exceed the requirements of St. Johns River Water Management District, the City of Clermont, and Florida Department of Transportation.

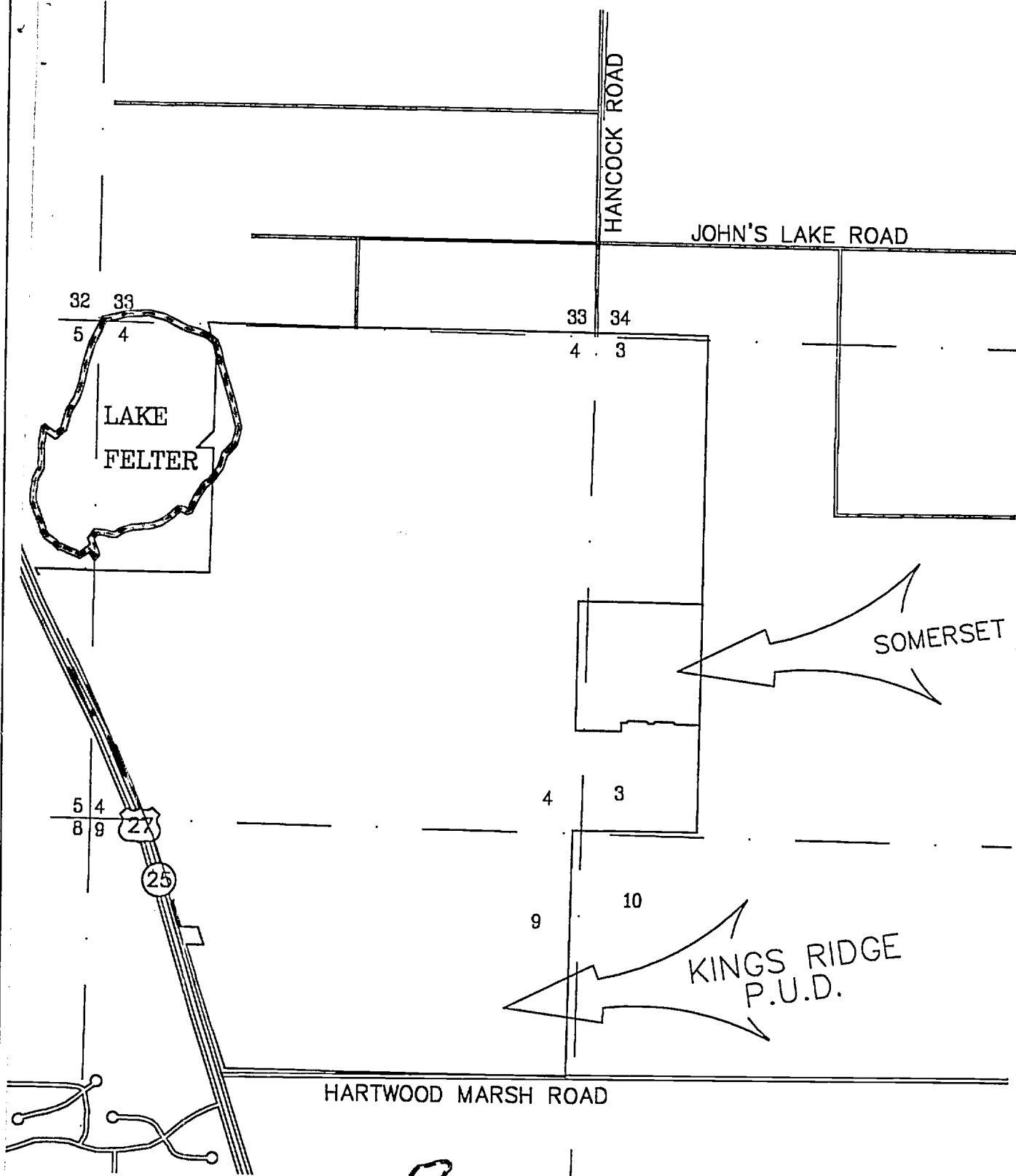
See ICPR Max Node conditions for comparison of peak stage versus pond max elevation and ponds Recovery analysis for stormwater treatment volume calculation and recovery analysis.

<i>POND</i>	<i>TOP OF POND ELEVATION</i>	<i>PEAK STAGE</i>	<i>TREATMENT VOLUME Cu. Ft.</i>	<i>TREATMENT RECOVERY TIME (Hrs.)</i>
1	227.0	225.17	90,292	0.39
2	244.0	*241.25	37,607	10.37
3	238.0	*237.35	28,931	0.34

\*Peak Stage of 2nd storm due to recovery of 1st storm not within 14 days.

MAPS





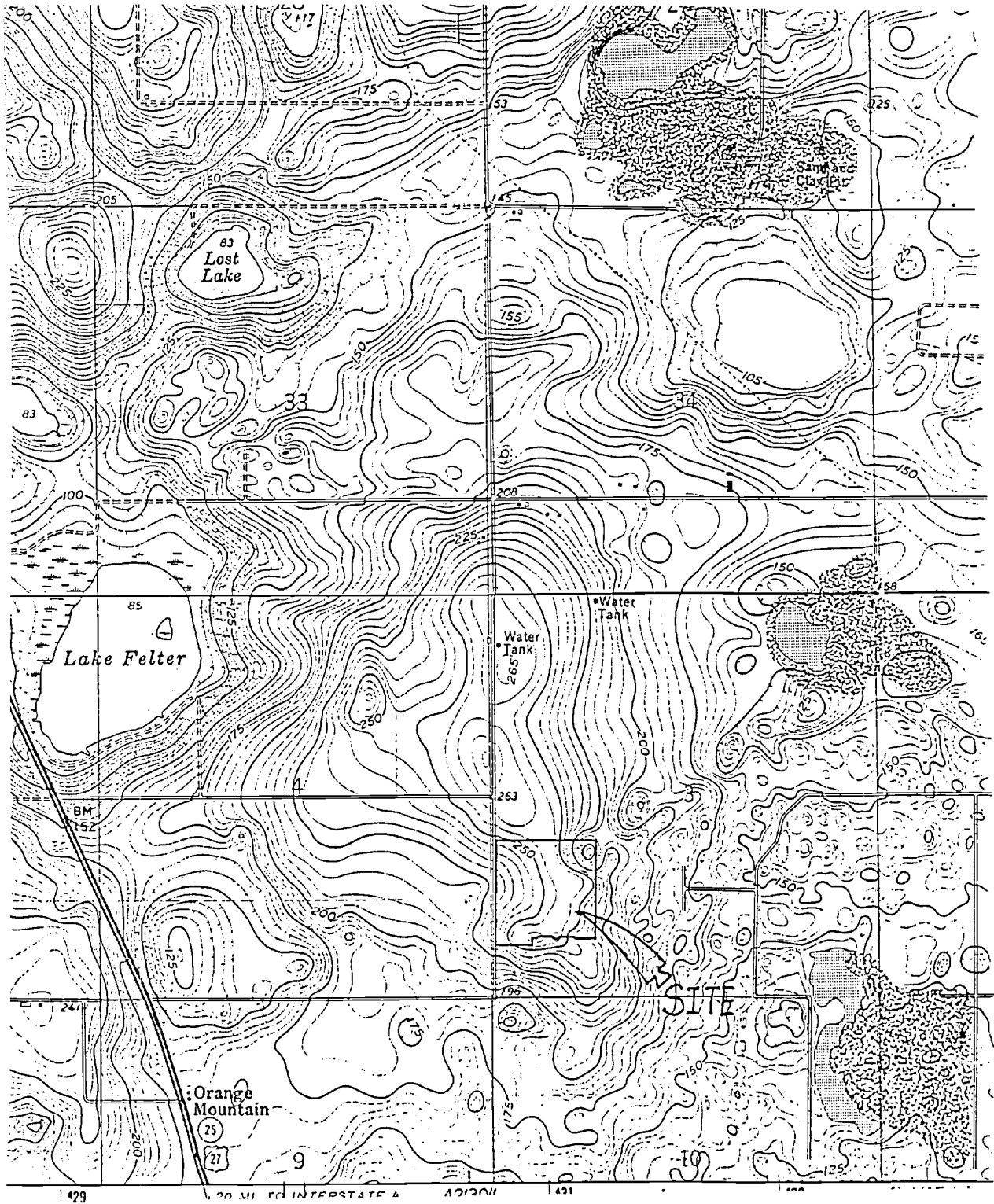
**FARNER  
BARLEY**  
AND ASSOCIATES, INC.

350 North Sinclair Avenue • Tavares, Florida 32778 • (904) 343-8481

- ▲ ENGINEERS
- ▲ SURVEYORS
- ▲ PLANNERS

# LOCATION MAP

SCALE 1" = 1500'



## Clermont East, Florida Quadrangle



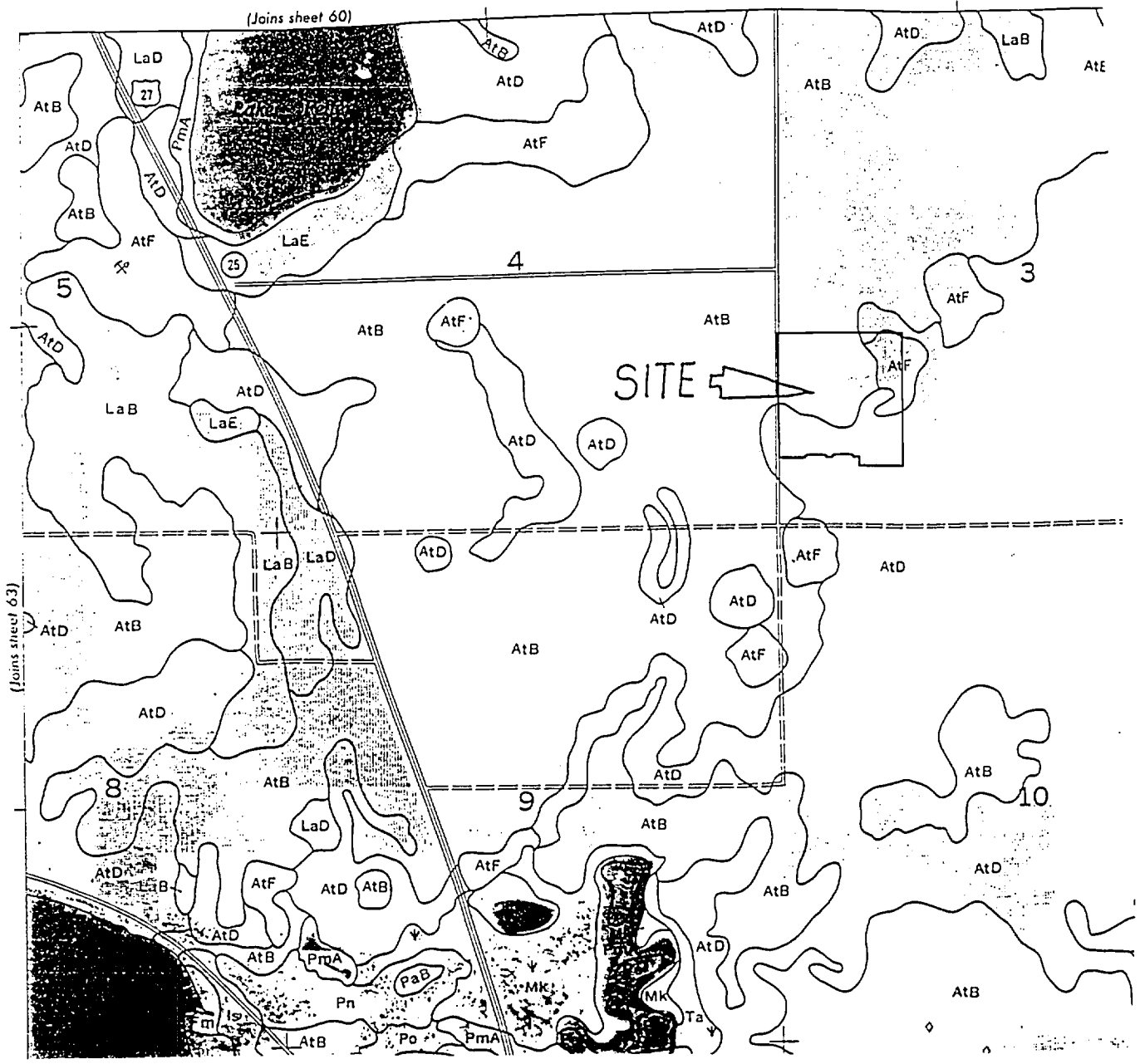
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# USGS QUAD MAP

SCALE 1" = 2000'



## LAKE COUNTY SOIL SURVEY



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# SCS SOILS MAP

SCALE 1" = 1667'

**DEVELOPED BASIN SUMMARY  
AND CURVE NUMBER CALCULATION**

4000 SF RESIDENCE

# STORM RUNOFF WORKSHEET

PROJECT #: 941216.061 PROJECT: HANCOCK ESTATES DATE: 9/28/98  PRE-DEVELOPMENT  POST-DEVELOPMENT

BASIN NO. B-1 TOTAL AREA 23.51<sup>24.86</sup> STORM: 25 YEAR 96 HOUR

SOIL	GROUP	LAND USE	AREA Pervious (acres)	AREA Imperv. (acres)	CN	AREA (%)	PRODUCT CN x AREA	
		(24 x 3486) + (62 x 4000) 67		7.67	98	32	3136	
	A	GREEN GRASS - GOOD	15.90	8.07	39	68	2652	
			16.79					
TOTALS							100	5788

GROUP	AREA Pervious	%	AREA Imperv.	%	TOTAL AREA
A					
B					
C					
D					
TOTALS					

PRODUCT COVERAGE =  $\bar{CN}$  = 58

$S = \frac{1000}{CN} - 10$   
 $R = \frac{(P - 0.2S)^2}{(P + 0.8S)}$   
 R = runoff (in.)  
 P = rainfall (in.)

RAINFALL (P) = 11.2 in.  
 RUNOFF R = 5.60 in.  
10.96 ac.ft.  
 \_\_\_\_\_ cu.ft.

BASIN NO. B-2 TOTAL AREA 10.36 STORM: 25 YEAR 96 HOUR

SOIL	GROUP	LAND USE	AREA Pervious (acres)	AREA Imperv. (acres)	CN	AREA (%)	PRODUCT CN x AREA	
		(24 x 828) + (21 x 4000)		2.38	98	23	2254	
	A	GREEN GRASS - GOOD	7.98		39	77	3003	
TOTALS							100	5257

GROUP	AREA Pervious	%	AREA Imperv.	%	TOTAL AREA
A					
B					
C					
D					
TOTALS					

PRODUCT COVERAGE =  $\bar{CN}$  = 53

$S = \frac{1000}{CN} - 10$   
 $R = \frac{(P - 0.2S)^2}{(P + 0.8S)}$   
 R = runoff (in.)  
 P = rainfall (in.)

RAINFALL (P) = 11.2 in.  
 RUNOFF R = 4.86 in.  
4.19 ac.ft.  
 \_\_\_\_\_ cu.ft.

4000 SF RESIDENCE

# STORM RUNOFF WORKSHEET

PROJECT #: 941216.061 PROJECT: HANCOCK ESTATES DATE: 12/4/98

PRE-DEVELOPMENT  
 POST-DEVELOPMENT

BASIN NO. B-3

TOTAL AREA 7.97

STORM: 25 YEAR 96 HOUR

SOIL	GROUP	LAND USE	AREA Pervious (acres)	AREA Imperv. (acres)	CN	AREA (%)	PRODUCT CN x AREA
		<u>(34 x 1940) + (23 x 4000)</u>		<u>2.62</u>	<u>98</u>	<u>33</u>	<u>3234</u>
	<u>A</u>	<u>GREEN GRASS - GOOD</u>	<u>5.35</u>		<u>39</u>	<u>67</u>	<u>2613</u>
		TOTALS				<u>100</u>	<u>5847</u>

GROUP	AREA Pervious	%	AREA Imperv.	%	TOTAL AREA
<u>A</u>					
<u>B</u>					
<u>C</u>					
<u>D</u>					
TOTALS					

PRODUCT COVERAGE =  $\bar{CN}$  = 58

$$S = \frac{1000}{CN} - 10$$

$$R = \frac{(P - 0.2S)^2}{(P + 0.15S)}$$

R = runoff (in.)  
P = rainfall (in.)

RAINFALL (P) = 11.2 in.  
 RUNOFF R = 5.45 in.  
3.02 ac.ft.  
 \_\_\_\_\_ cu.ft.

ICPR INPUT DATA









SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Node-----

Name: 1           Base Flow(cfs): 0           Init Stage(ft): 222  
Group: BASE           Length(ft): 0           Warn Stage(ft): 227  
Comment:

Stage(ft)	Area(ac)
222	1.174
223	1.267
224	1.362
225	1.46
226	1.559
227	1.662

-----Class: Node-----

Name: 2           Base Flow(cfs): 0           Init Stage(ft): 238  
Group: BASE           Length(ft): 0           Warn Stage(ft): 244  
Comment:

Stage(ft)	Area(ac)
238	0.57
239	0.676
240	0.784
241	0.894
242	1.007
243	1.122
244	1.239

-----Class: Node-----

Name: 3           Base Flow(cfs): 0           Init Stage(ft): 234  
Group: BASE           Length(ft): 0           Warn Stage(ft): 238  
Comment:

Stage(ft)	Area(ac)
234	0.332
235	0.465
236	0.601
237	0.739
238	0.88

-----Class: Node-----

Name: 999           Base Flow(cfs): 0           Init Stage(ft): 100  
Group: BASE           Length(ft): 0           Warn Stage(ft): 102  
Comment:

Time(hrs)	Stage(ft)
30	100.25
60	101
96	101.5

SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Basin-----

Basin: 1            Node: 1            Status: On Site    Type: Santa Barbara

Group: BASE

    Rainfall File: SJRWMD96            Storm Duration(hrs): 96  
    Rainfall Amount(in): 11.2            Lag Time(hrs): 0  
    Time Increment(min): 15            Concentration Time(min): 15  
    Area(ac): 24.86                    DCIA(%): 0  
    Curve #: 58

-----Class: Basin-----

Basin: 2            Node: 2            Status: On Site    Type: Santa Barbara

Group: BASE

    Rainfall File: SJRWMD96            Storm Duration(hrs): 96  
    Rainfall Amount(in): 11.2            Lag Time(hrs): 0  
    Time Increment(min): 15            Concentration Time(min): 15  
    Area(ac): 10.364                    DCIA(%): 0  
    Curve #: 53

-----Class: Basin-----

Basin: 3            Node: 3            Status: On Site    Type: Santa Barbara

Group: BASE

    Rainfall File: SJRWMD96            Storm Duration(hrs): 96  
    Rainfall Amount(in): 11.2            Lag Time(hrs): 0  
    Time Increment(min): 15            Concentration Time(min): 15  
    Area(ac): 7.974                    DCIA(%): 0  
    Curve #: 58

-----Class: Basin-----

Basin: 999          Node: 999          Status: On Site    Type: Santa Barbara

Group: BASE

    Rainfall File: SJRWMD96            Storm Duration(hrs): 96  
    Rainfall Amount(in): 11.2            Lag Time(hrs): 0  
    Time Increment(min): 15            Concentration Time(min): 999  
    Area(ac): 5                        DCIA(%): 0  
    Curve #: 50

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.01) [3]  
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SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Simulation-----

C:\ICPR2\DATA\SOMERST

Execution: Hydrology

Header: 25YR 96HR STORM EVENT

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1

Delta Z Factor: 0.05

Override Defaults: No

Time Step Optimizer: 10

Drop Structure Optimizer: 10

Sim Start Time(hrs): 0

Sim End Time(hrs): 96

Min Calc Time(sec): 15

Max Calc Time(sec): 60

To Hour: PInc(min):

96 60

To Hour: PInc(min):

96 60

-----GROUP SELECTIONS-----

+ BASE [01/15/99]

25YR 96HR STORM EVENT

\*\*\*\*\* Basin Summary - SOMERST \*\*\*\*\*

---

\*\*\*

Basin Name:	1	2	3	999
Group Name:	BASE	BASE	BASE	BASE
Node Name:	1	2	3	999
Hydrograph Type:	SB	SB	SB	SB
Spec Time Inc (sec):	15.00	15.00	15.00	15.00
Comp Time Inc (sec):	15.00	15.00	15.00	15.00
Rainfall File:	SJRWMD96	SJRWMD96	SJRWMD96	SJRWMD96
Rainfall Amount (in):	11.20	11.20	11.20	11.20
Storm Duration (hr):	96.00	96.00	96.00	96.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	15.00	15.00	15.00	999.00
Lag Time (hr):	0.00	0.00	0.00	0.00
Area (acres):	24.86	10.36	7.97	5.00
Curve Number:	58.00	53.00	58.00	50.00
DCIA (%):	0.00	0.00	0.00	0.00
Time Max (hrs):	59.75	59.75	59.75	63.75
Flow Max (cfs):	71.82	25.80	23.04	0.70
Runoff Volume (in):	5.60	4.86	5.60	4.41
Runoff Volume (cf):	505007	182730	161984	80011

ICPR NODE MAX CONDITIONS  
(STORMWATER ROUTING SUMMARY)  
25 YEAR-96 HOUR STORM

25YR 96HR STORM EVENT

\*\*\*\*\* Node Maximum Conditions - SOMERST \*\*\*\*\*

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
1	BASE	72.31	225.17	227.00	0.0461	64350.19	59.99	43.19	0.00	0.00
2	BASE	95.99	241.10	244.00	0.0346	39458.21	60.01	16.67	0.00	0.00
3	BASE	72.19	237.18	238.00	0.0433	33271.10	59.99	16.52	0.00	0.00
999	BASE	95.99	101.50	102.00	0.2500	0.00	63.99	0.70	0.00	0.00



ICPR ROUTED HYDROGRAPH  
BY BASIN  
WITH INFILTRATION INPUTED FROM "PONDS"

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	!<-----Inflow----->!					Link Q (cfs)	Outflow (cfs)	
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)			
*** Group: BASE		Node: 1								
0.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
12.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
27.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
29.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
31.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
32.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
34.004	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	
35.004	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	
36.004	222.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	
37.004	222.00	0.00	0.00	0.02	-0.02	0.00	0.00	0.00	0.00	
38.004	222.00	1.17	0.00	0.05	-0.05	0.00	0.00	0.00	0.00	
39.004	222.00	1.17	0.00	0.07	-0.07	0.00	0.00	0.00	0.00	
40.004	222.00	0.00	0.00	0.10	-0.10	0.00	0.00	0.00	0.00	
41.004	222.00	1.17	0.00	0.13	-0.13	0.00	0.00	0.00	0.00	
42.004	222.00	1.17	0.00	0.16	-0.16	0.00	0.00	0.00	0.00	
43.004	222.00	1.17	0.00	0.18	-0.18	0.00	0.00	0.00	0.00	
44.004	222.00	1.17	0.00	0.21	-0.21	0.00	0.00	0.00	0.00	

45.004 222.00 1.17 0.00 0.23 -0.23 0.00 0.00 0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
46.004	222.00	1.17	0.00	0.25	-0.25	0.00	0.00	0.00	
47.004	222.00	0.00	0.00	0.27	-0.28	0.00	0.00	0.00	
48.004	222.00	0.00	0.00	0.33	-0.34	0.00	0.00	0.00	
49.004	222.00	1.17	0.00	0.43	-0.42	0.00	0.00	0.00	
50.003	222.00	1.17	0.00	0.49	-0.50	0.00	0.00	0.00	
51.001	222.00	0.00	0.00	0.59	-0.59	0.00	0.00	0.00	
52.015	222.00	0.00	0.00	0.69	-0.71	0.00	0.00	0.00	
53.015	222.00	1.17	0.00	0.86	-0.85	0.00	0.00	0.00	
54.014	222.00	0.00	0.00	1.01	-1.03	0.00	0.00	0.00	
55.009	222.00	0.00	0.00	1.25	-1.27	0.00	0.00	0.00	
56.009	222.00	0.00	0.00	1.59	-1.67	0.00	0.00	0.00	
57.009	222.00	0.00	0.00	2.24	-2.29	0.00	0.00	0.00	
58.009	222.00	0.00	0.00	3.08	-3.70	0.00	0.00	0.00	
59.009	221.98	0.00	0.00	6.62	-14.17	0.00	0.00	0.00	
60.009	223.26	1.29	0.00	62.87	-19.72	0.00	0.00	0.00	
61.009	224.59	1.42	0.00	10.56	-9.83	0.00	0.00	0.00	
62.009	224.69	1.43	0.00	6.15	-3.39	0.00	0.00	0.00	
63.009	224.82	1.44	0.00	4.43	-2.74	0.00	0.00	0.00	
64.009	224.91	1.45	0.00	3.86	-2.38	0.00	0.00	0.00	
65.009	224.97	1.46	0.00	2.72	-2.13	0.00	0.00	0.00	
66.009	225.00	1.46	0.00	2.72	-1.96	0.00	0.00	0.00	
67.009	225.05	1.47	0.00	2.73	-1.83	0.00	0.00	0.00	
68.009	225.10	1.47	0.00	2.43	-1.72	0.00	0.00	0.00	
69.009	225.12	1.47	0.00	1.85	-1.62	0.00	0.00	0.00	
70.009	225.14	1.47	0.00	1.85	-1.54	0.00	0.00	0.00	
71.009	225.16	1.48	0.00	1.85	-1.47	0.00	0.00	0.00	
72.009	225.17	1.48	0.00	1.55	-1.40	0.00	0.00	0.00	
73.009	225.17	1.48	0.00	0.97	-1.33	0.00	0.00	0.00	
74.009	225.15	1.47	0.00	0.97	-1.27	0.00	0.00	0.00	
75.009	225.13	1.47	0.00	0.97	-1.22	0.00	0.00	0.00	
76.009	225.12	1.47	0.00	0.97	-1.17	0.00	0.00	0.00	
77.009	225.11	1.47	0.00	0.98	-1.14	0.00	0.00	0.00	
78.009	225.10	1.47	0.00	0.98	-1.11	0.00	0.00	0.00	
79.009	225.10	1.47	0.00	0.98	-1.08	0.00	0.00	0.00	
80.009	225.09	1.47	0.00	0.98	-1.05	0.00	0.00	0.00	
81.009	225.09	1.47	0.00	0.98	-1.03	0.00	0.00	0.00	
82.009	225.09	1.47	0.00	0.98	-1.01	0.00	0.00	0.00	
83.009	225.09	1.47	0.00	0.98	-0.99	0.00	0.00	0.00	
84.009	225.09	1.47	0.00	0.98	-0.97	0.00	0.00	0.00	
85.009	225.09	1.47	0.00	0.98	-0.95	0.00	0.00	0.00	
86.009	225.09	1.47	0.00	0.99	-0.94	0.00	0.00	0.00	
87.009	225.09	1.47	0.00	0.99	-0.92	0.00	0.00	0.00	
88.009	225.10	1.47	0.00	0.99	-0.91	0.00	0.00	0.00	
89.009	225.10	1.47	0.00	1.00	-0.90	0.00	0.00	0.00	
90.009	225.11	1.47	0.00	1.00	-0.89	0.00	0.00	0.00	

91.009	225.12	1.47	0.00	1.00	-0.88	0.00	0.00	0.00
92.009	225.12	1.47	0.00	1.00	-0.87	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
93.009	225.13	1.47	0.00	0.99	-0.86	0.00	0.00	0.00	
94.009	225.14	1.47	0.00	1.00	-0.85	0.00	0.00	0.00	
95.009	225.15	1.47	0.00	0.99	-0.83	0.00	0.00	0.00	
96.001	225.17	1.48	0.00	0.67	-0.01	0.00	0.00	0.00	

\*\*\* Group: BASE Node: 2

0.000	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
7.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
8.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
9.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
10.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
11.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
12.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
13.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
14.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
15.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
16.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
17.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
18.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
19.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
20.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
21.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
22.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
23.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
24.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
25.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
26.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
27.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
28.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
29.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
30.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
31.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
32.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
33.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
34.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
35.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
36.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
37.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
38.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00

39.004	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
40.004	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	<-----Inflow----->					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
41.004	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
42.004	238.00	0.00	0.00	0.01	-0.01	0.00	0.00	0.00	
43.004	238.00	0.57	0.00	0.02	-0.02	0.00	0.00	0.00	
44.004	238.00	0.57	0.00	0.03	-0.03	0.00	0.00	0.00	
45.004	238.00	0.57	0.00	0.04	-0.04	0.00	0.00	0.00	
46.004	238.00	0.57	0.00	0.04	-0.04	0.00	0.00	0.00	
47.004	238.00	0.00	0.00	0.05	-0.05	0.00	0.00	0.00	
48.004	238.00	0.00	0.00	0.07	-0.07	0.00	0.00	0.00	
49.004	238.00	0.57	0.00	0.10	-0.10	0.00	0.00	0.00	
50.003	238.00	0.00	0.00	0.12	-0.12	0.00	0.00	0.00	
51.001	238.00	0.00	0.00	0.15	-0.15	0.00	0.00	0.00	
52.015	238.00	0.00	0.00	0.18	-0.19	0.00	0.00	0.00	
53.015	238.00	0.57	0.00	0.24	-0.24	0.00	0.00	0.00	
54.014	238.00	0.00	0.00	0.29	-0.29	0.00	0.00	0.00	
55.009	238.00	0.00	0.00	0.37	-0.38	0.00	0.00	0.00	
56.009	238.00	0.00	0.00	0.48	-0.51	0.00	0.00	0.00	
57.009	238.00	0.00	0.00	0.70	-0.72	0.00	0.00	0.00	
58.009	238.00	0.00	0.00	0.99	-1.22	0.00	0.00	0.00	
59.009	237.98	0.00	0.00	2.22	-6.58	0.00	0.00	0.00	
60.009	238.91	0.67	0.00	22.97	-6.29	0.00	0.00	0.00	
61.009	240.02	0.79	0.00	3.98	-0.91	0.00	0.00	0.00	
62.009	240.27	0.81	0.00	2.33	-0.72	0.00	0.00	0.00	
63.009	240.40	0.83	0.00	1.69	-0.62	0.00	0.00	0.00	
64.009	240.50	0.84	0.00	1.48	-0.56	0.00	0.00	0.00	
65.009	240.57	0.85	0.00	1.04	-0.51	0.00	0.00	0.00	
66.009	240.62	0.85	0.00	1.04	-0.48	0.00	0.00	0.00	
67.009	240.68	0.86	0.00	1.05	-0.46	0.00	0.00	0.00	
68.009	240.73	0.86	0.00	0.94	-0.44	0.00	0.00	0.00	
69.009	240.77	0.87	0.00	0.71	-0.42	0.00	0.00	0.00	
70.009	240.80	0.87	0.00	0.71	-0.40	0.00	0.00	0.00	
71.009	240.83	0.88	0.00	0.71	-0.38	0.00	0.00	0.00	
72.009	240.85	0.88	0.00	0.60	-0.37	0.00	0.00	0.00	
73.009	240.87	0.88	0.00	0.38	-0.35	0.00	0.00	0.00	
74.009	240.87	0.88	0.00	0.37	-0.33	0.00	0.00	0.00	
75.009	240.87	0.88	0.00	0.37	-0.32	0.00	0.00	0.00	
76.009	240.88	0.88	0.00	0.38	-0.31	0.00	0.00	0.00	
77.009	240.89	0.88	0.00	0.38	-0.30	0.00	0.00	0.00	
78.009	240.89	0.88	0.00	0.38	-0.30	0.00	0.00	0.00	
79.009	240.90	0.88	0.00	0.38	-0.29	0.00	0.00	0.00	
80.009	240.91	0.88	0.00	0.38	-0.28	0.00	0.00	0.00	
81.009	240.92	0.89	0.00	0.38	-0.28	0.00	0.00	0.00	
82.009	240.93	0.89	0.00	0.38	-0.27	0.00	0.00	0.00	
83.009	240.94	0.89	0.00	0.38	-0.27	0.00	0.00	0.00	
84.009	240.95	0.89	0.00	0.38	-0.27	0.00	0.00	0.00	
85.009	240.96	0.89	0.00	0.38	-0.26	0.00	0.00	0.00	



86.009	240.97	0.89	0.00	0.38	-0.26	0.00	0.00	0.00
87.009	240.98	0.89	0.00	0.38	-0.26	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
88.009	241.00	0.89	0.00	0.38	-0.25	0.00	0.00	0.00	
89.009	241.01	0.89	0.00	0.39	-0.25	0.00	0.00	0.00	
90.009	241.02	0.90	0.00	0.39	-0.25	0.00	0.00	0.00	
91.009	241.03	0.90	0.00	0.39	-0.25	0.00	0.00	0.00	
92.009	241.05	0.90	0.00	0.39	-0.25	0.00	0.00	0.00	
93.009	241.06	0.90	0.00	0.39	-0.24	0.00	0.00	0.00	
94.009	241.07	0.90	0.00	0.39	-0.24	0.00	0.00	0.00	
95.009	241.09	0.90	0.00	0.39	-0.24	0.00	0.00	0.00	
96.001	241.10	0.91	0.00	0.26	-0.00	0.00	0.00	0.00	

\*\*\* Group: BASE Node: 3

0.000	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
6.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
7.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
8.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
9.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
10.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
11.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
12.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
13.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
14.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
15.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
16.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
17.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
18.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
19.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
20.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
21.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
22.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
23.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
24.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
25.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
26.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
27.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
28.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
29.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
30.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
31.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
32.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
33.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00

34.004	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
35.004	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	!-----Inflow----->!					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
36.004	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
37.004	234.00	0.00	0.00	0.01	-0.01	0.00	0.00	0.00	
38.004	234.00	0.33	0.00	0.02	-0.02	0.00	0.00	0.00	
39.004	234.00	0.33	0.00	0.02	-0.02	0.00	0.00	0.00	
40.004	234.00	0.00	0.00	0.03	-0.03	0.00	0.00	0.00	
41.004	234.00	0.33	0.00	0.04	-0.04	0.00	0.00	0.00	
42.004	234.00	0.33	0.00	0.05	-0.05	0.00	0.00	0.00	
43.004	234.00	0.33	0.00	0.06	-0.06	0.00	0.00	0.00	
44.004	234.00	0.33	0.00	0.07	-0.07	0.00	0.00	0.00	
45.004	234.00	0.33	0.00	0.07	-0.07	0.00	0.00	0.00	
46.004	234.00	0.33	0.00	0.08	-0.08	0.00	0.00	0.00	
47.004	234.00	0.00	0.00	0.09	-0.09	0.00	0.00	0.00	
48.004	234.00	0.00	0.00	0.10	-0.11	0.00	0.00	0.00	
49.004	234.00	0.33	0.00	0.14	-0.13	0.00	0.00	0.00	
50.003	234.00	0.33	0.00	0.16	-0.16	0.00	0.00	0.00	
51.001	234.00	0.00	0.00	0.19	-0.19	0.00	0.00	0.00	
52.015	234.00	0.00	0.00	0.22	-0.23	0.00	0.00	0.00	
53.015	234.00	0.33	0.00	0.28	-0.27	0.00	0.00	0.00	
54.014	234.00	0.00	0.00	0.32	-0.33	0.00	0.00	0.00	
55.009	234.00	0.00	0.00	0.40	-0.41	0.00	0.00	0.00	
56.009	234.00	0.00	0.00	0.51	-0.53	0.00	0.00	0.00	
57.009	234.00	0.00	0.00	0.72	-0.73	0.00	0.00	0.00	
58.009	234.00	0.00	0.00	0.99	-1.18	0.00	0.00	0.00	
59.009	233.99	0.00	0.00	2.12	-3.61	0.00	0.00	0.00	
60.009	235.49	0.53	0.00	20.17	-3.66	0.00	0.00	0.00	
61.009	236.72	0.70	0.00	3.39	-1.37	0.00	0.00	0.00	
62.009	236.89	0.72	0.00	1.97	-1.05	0.00	0.00	0.00	
63.009	236.97	0.74	0.00	1.42	-0.88	0.00	0.00	0.00	
64.009	237.03	0.74	0.00	1.24	-0.78	0.00	0.00	0.00	
65.009	237.07	0.75	0.00	0.87	-0.71	0.00	0.00	0.00	
66.009	237.09	0.75	0.00	0.87	-0.65	0.00	0.00	0.00	
67.009	237.11	0.75	0.00	0.88	-0.61	0.00	0.00	0.00	
68.009	237.14	0.76	0.00	0.78	-0.58	0.00	0.00	0.00	
69.009	237.15	0.76	0.00	0.59	-0.54	0.00	0.00	0.00	
70.009	237.16	0.76	0.00	0.59	-0.52	0.00	0.00	0.00	
71.009	237.17	0.76	0.00	0.59	-0.49	0.00	0.00	0.00	
72.009	237.18	0.76	0.00	0.50	-0.47	0.00	0.00	0.00	
73.009	237.17	0.76	0.00	0.31	-0.44	0.00	0.00	0.00	
74.009	237.16	0.76	0.00	0.31	-0.42	0.00	0.00	0.00	
75.009	237.15	0.76	0.00	0.31	-0.40	0.00	0.00	0.00	
76.009	237.14	0.76	0.00	0.31	-0.39	0.00	0.00	0.00	
77.009	237.13	0.76	0.00	0.31	-0.38	0.00	0.00	0.00	
78.009	237.12	0.76	0.00	0.31	-0.36	0.00	0.00	0.00	
79.009	237.12	0.76	0.00	0.32	-0.35	0.00	0.00	0.00	
80.009	237.11	0.76	0.00	0.31	-0.35	0.00	0.00	0.00	

81.009	237.11	0.75	0.00	0.31	-0.34	0.00	0.00	0.00
82.009	237.11	0.75	0.00	0.31	-0.33	0.00	0.00	0.00





25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	<-----Inflow----->					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
31.004	100.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
32.004	100.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33.004	100.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
34.004	100.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
35.004	100.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36.004	100.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
37.004	100.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
38.004	100.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
39.004	100.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
40.004	100.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
41.004	100.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
42.004	100.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
43.004	100.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
44.004	100.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
45.004	100.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
46.004	100.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
47.004	100.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
48.004	100.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
49.004	100.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50.003	100.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
51.001	100.78	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
52.015	100.80	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
53.015	100.83	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
54.014	100.85	0.00	0.00	0.02	0.00	0.00	0.00	0.00	
55.009	100.88	0.00	0.00	0.02	0.00	0.00	0.00	0.00	
56.009	100.90	0.00	0.00	0.03	0.00	0.00	0.00	0.00	
57.009	100.93	0.00	0.00	0.05	0.00	0.00	0.00	0.00	
58.009	100.95	0.00	0.00	0.06	0.00	0.00	0.00	0.00	
59.009	100.98	0.00	0.00	0.10	0.00	0.00	0.00	0.00	
60.009	101.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	
61.009	101.01	0.00	0.00	0.67	0.00	0.00	0.00	0.00	
62.009	101.03	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
63.009	101.04	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
64.009	101.06	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
65.009	101.07	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
66.009	101.08	0.00	0.00	0.67	0.00	0.00	0.00	0.00	
67.009	101.10	0.00	0.00	0.66	0.00	0.00	0.00	0.00	
68.009	101.11	0.00	0.00	0.65	0.00	0.00	0.00	0.00	
69.009	101.13	0.00	0.00	0.63	0.00	0.00	0.00	0.00	
70.009	101.14	0.00	0.00	0.61	0.00	0.00	0.00	0.00	
71.009	101.15	0.00	0.00	0.60	0.00	0.00	0.00	0.00	
72.009	101.17	0.00	0.00	0.58	0.00	0.00	0.00	0.00	
73.009	101.18	0.00	0.00	0.56	0.00	0.00	0.00	0.00	
74.009	101.19	0.00	0.00	0.53	0.00	0.00	0.00	0.00	
75.009	101.21	0.00	0.00	0.51	0.00	0.00	0.00	0.00	



76.009	101.22	0.00	0.00	0.49	0.00	0.00	0.00	0.00
77.009	101.24	0.00	0.00	0.47	0.00	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	<-----Inflow----->					Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	
78.009	101.25	0.00	0.00	0.46	0.00	0.00	0.00	0.00
79.009	101.26	0.00	0.00	0.44	0.00	0.00	0.00	0.00
80.009	101.28	0.00	0.00	0.42	0.00	0.00	0.00	0.00
81.009	101.29	0.00	0.00	0.41	0.00	0.00	0.00	0.00
82.009	101.31	0.00	0.00	0.40	0.00	0.00	0.00	0.00
83.009	101.32	0.00	0.00	0.38	0.00	0.00	0.00	0.00
84.009	101.33	0.00	0.00	0.37	0.00	0.00	0.00	0.00
85.009	101.35	0.00	0.00	0.36	0.00	0.00	0.00	0.00
86.009	101.36	0.00	0.00	0.35	0.00	0.00	0.00	0.00
87.009	101.38	0.00	0.00	0.34	0.00	0.00	0.00	0.00
88.009	101.39	0.00	0.00	0.33	0.00	0.00	0.00	0.00
89.009	101.40	0.00	0.00	0.32	0.00	0.00	0.00	0.00
90.009	101.42	0.00	0.00	0.31	0.00	0.00	0.00	0.00
91.009	101.43	0.00	0.00	0.30	0.00	0.00	0.00	0.00
92.009	101.44	0.00	0.00	0.30	0.00	0.00	0.00	0.00
93.009	101.46	0.00	0.00	0.29	0.00	0.00	0.00	0.00
94.009	101.47	0.00	0.00	0.28	0.00	0.00	0.00	0.00
95.009	101.49	0.00	0.00	0.28	0.00	0.00	0.00	0.00
96.001	101.50	0.00	0.00	0.27	0.00	0.00	0.00	0.00

**"PONDS" INFILTRATION ANALYSIS  
25 YEAR-96 HOUR STORM**

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a1  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 460.00  
Equivalent Pond Width, [W] (ft): 300.00

Base Of Aquifer Elevation, [B] (ft above datum): 214.36  
Water Table Elevation, [WT] (ft above datum): 214.46  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 72376

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
222.000	51131.0
223.000	55179.0
224.000	59328.0
225.000	63577.0
226.000	67926.0
227.000	72376.0

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	63.37
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	537904

Stage  
-----

Peak Stage, (ft datum):	224.87
Time, (hrs):	72.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	19.8133
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	376190

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 570.00  
Equivalent Pond Width, [W] (ft): 90.00

Base Of Aquifer Elevation, [B] (ft above datum): 236.00  
Water Table Elevation, [WT] (ft above datum): 236.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 53984

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
-----	-----
238.000	24838.0
239.000	29444.0
240.000	34151.0
241.000	38958.0
242.000	43866.0
243.000	48875.0
244.000	53984.0



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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	23.15
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	195330

Stage  
-----

Peak Stage, (ft datum):	240.81
Time, (hrs):	96.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	6.5817
Time, (hrs):	59.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	107113

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a3  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 720.00  
Equivalent Pond Width, [W] (ft): 70.00

Base Of Aquifer Elevation, [B] (ft above datum): 232.00  
Water Table Elevation, [WT] (ft above datum): 232.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 38324

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
234.000	14448.0
235.000	20266.0
236.000	26185.0
237.000	32204.0
238.000	38324.0

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	20.33
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	172536

Stage  
-----

Peak Stage, (ft datum):	237.04
Time, (hrs):	72.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	3.6779
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	102643

**"PONDS" RECOVERY ANALYSIS  
TREATMENT VOLUME**

Since every basin consists of less than 40 percent impervious, the following calculations for all basins are based on formula:

Per 40C-42 FAC

$$V_T = 1/2" (\text{area}) + 1/2 (\text{area} - \text{for volume treatment}) = 1" (\text{area})$$

$$V_T \text{ Pond 1} = 1" \times (1,082,902 \text{ Sq. Ft.}) = 90,242 \text{ Cu. Ft}$$

$$V_T \text{ Pond 2} = 1" \times (451,282 \text{ Sq. Ft.}) = 37,607 \text{ Cu. Ft}$$

$$V_T \text{ Pond 3} = 1" \times (347,173 \text{ Sq. Ft.}) = 28,931 \text{ Cu. Ft}$$

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Retention Pond Recovery Analysis  
-----

I. Job Information

Job Name: ponda1  
Engineer: kk  
Date: 3/10/99

II. Input Data

Equivalent Pond Length, [L] (ft):	460.00
Equivalent Pond Width, [W] (ft):	300.00
Pond Bottom Elevation, [PB] (ft above datum):	222.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	214.36
Water Table Elevation, [WT] (ft above datum):	214.46
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	90242.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0163
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	90242.00

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	0.0000
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	0.00
Maximum Radius Of Influence, [R] (ft):	0.00
Maximum Driving Head, [Hmax] (ft):	0.000
Minimum Driving Head, [Hmin] (ft):	0.000

TOTAL

Total Recovery Time, [T] (days):	0.0163
Total Recovered Volume, [V] (ft <sup>3</sup> ):	90242.00

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Retention Pond Recovery Analysis  
-----

I. Job Information

Job Name: ponda2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft):	570.00
Equivalent Pond Width, [W] (ft):	90.00
Pond Bottom Elevation, [PB] (ft above datum):	238.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	236.00
Water Table Elevation, [WT] (ft above datum):	236.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	37607.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	29240.91

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	0.4180
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	8366.09
Maximum Radius Of Influence, [R] (ft):	21.50
Maximum Driving Head, [Hmax] (ft):	2.063
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	0.4322
Total Recovered Volume, [V] (ft <sup>3</sup> ):	37607.00



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Retention Pond Recovery Analysis  
-----

I. Job Information

Job Name: ponda3  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft):	720.00
Equivalent Pond Width, [W] (ft):	70.00
Pond Bottom Elevation, [PB] (ft above datum):	234.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	232.00
Water Table Elevation, [WT] (ft above datum):	232.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	28931.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	28727.91

SATURATED FLOW:

Recovery Time From Saturated Flow, [T2] (days):	0.0002
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	203.09
Maximum Radius Of Influence, [R] (ft):	0.45
Maximum Driving Head, [Hmax] (ft):	1.904
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	0.0144
Total Recovered Volume, [V] (ft <sup>3</sup> ):	28931.00

**"PONDS" RECOVERY ANALYSIS  
TOTAL RUNOFF VOLUME**

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Retention Pond Recovery Analysis

---

I. Job Information

Job Name: PONDA1  
Engineer: KK  
Date: 3/10/99

II. Input Data

Equivalent Pond Length, [L] (ft):	460.00
Equivalent Pond Width, [W] (ft):	300.00
Pond Bottom Elevation, [PB] (ft above datum):	222.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	214.36
Water Table Elevation, [WT] (ft above datum):	214.46
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	505007.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0565
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	312155.75

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	2.3867
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	192851.25
Maximum Radius Of Influence, [R] (ft):	98.75
Maximum Driving Head, [Hmax] (ft):	8.937
Minimum Driving Head, [Hmin] (ft):	7.540

TOTAL

Total Recovery Time, [T] (days):	2.4433
Total Recovered Volume, [V] (ft <sup>3</sup> ):	505007.00

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Retention Pond Recovery Analysis  
-----

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 3/10/99

II. Input Data

Equivalent Pond Length, [L] (ft):	570.00
Equivalent Pond Width, [W] (ft):	90.00
Pond Bottom Elevation, [PB] (ft above datum):	238.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	236.00
Water Table Elevation, [WT] (ft above datum):	236.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	182730.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	29240.91

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	46.6990
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	153489.09
Maximum Radius Of Influence, [R] (ft):	281.91
Maximum Driving Head, [Hmax] (ft):	4.892
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	46.7133
Total Recovered Volume, [V] (ft <sup>3</sup> ):	182730.00

SINCE THE RECOVERY TIME EXCEEDS  
THE MAX. 14 DAY ALLOWED, AN ADDITIONAL  
25YR 96 HR STORM EVENT WAS EXECUTED  
TO DEMONSTRATE PEAK STAGE DOES  
NOT OVERFLOW TOP OF POND  
(SEE FOLLOWING PAGES)

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And Robert D. Casper

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 570.00  
Equivalent Pond Width, [W] (ft): 90.00

Base Of Aquifer Elevation, [B] (ft above datum): 236.00  
Water Table Elevation, [WT] (ft above datum): 236.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 53984

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
238.000	24838.0
239.000	29444.0
240.000	34151.0
241.000	38958.0
242.000	43866.0
243.000	48875.0
244.000	53984.0

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
0.0000	0.00000	0.00000
1.0000	0.00000	0.00000
2.0000	0.00000	0.00000
3.0000	0.00000	0.00000
4.0000	0.00000	0.00000
5.0000	0.00000	0.00000
6.0000	0.00000	0.00000
7.0000	0.00000	0.00000
8.0000	0.00000	0.00000
9.0000	0.00000	0.00000
10.0000	0.00000	0.00000
11.0000	0.00000	0.00000
12.0000	0.00000	0.00000
13.0000	0.00000	0.00000
14.0000	0.00000	0.00000
15.0000	0.00000	0.00000
16.0000	0.00000	0.00000
17.0000	0.00000	0.00000
18.0000	0.00000	0.00000
19.0000	0.00000	0.00000
20.0000	0.00000	0.00000
21.0000	0.00000	0.00000
22.0000	0.00000	0.00000
23.0000	0.00000	0.00000
24.0000	0.00000	0.00000
25.0000	0.00000	0.00000
26.0000	0.00000	0.00000
27.0000	0.00000	0.00000
28.0000	0.00000	0.00000
29.0000	0.00000	0.00000
30.0000	0.00000	0.00000
31.0000	0.00000	0.00000
32.0000	0.00000	0.00000
33.0000	0.00000	0.00000
34.0000	0.00000	0.00000
35.0000	0.00000	0.00000
36.0000	0.00000	0.00000
37.0000	0.00000	0.00000
38.0000	0.00000	0.00000
39.0000	0.00000	0.00000

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
40.0000	0.00000	0.00000
41.0000	0.00002	0.00000
42.0000	0.00710	0.00000
43.0000	0.01719	0.00000
44.0000	0.02677	0.00000
45.0000	0.03538	0.00000
46.0000	0.04428	0.00000
47.0000	0.05300	0.00000
48.0000	0.06896	0.00000
49.0000	0.09698	0.00000
50.0000	0.11852	0.00000
51.0000	0.14967	0.00000
52.0000	0.18243	0.00000
53.0000	0.23563	0.00000
54.0000	0.28567	0.00000
55.0000	0.36752	0.00000
56.0000	0.48100	0.00000
57.0000	0.69648	0.00000
58.0000	0.98344	0.00000
59.0000	2.02361	0.00000
60.0000	23.15018	0.00000
61.0000	3.99321	0.00000
62.0000	2.34108	0.00000
63.0000	1.69040	0.00000
64.0000	1.48052	0.00000
65.0000	1.04191	0.00000
66.0000	1.04370	0.00000
67.0000	1.05086	0.00000
68.0000	0.93789	0.00000
69.0000	0.71081	0.00000
70.0000	0.71071	0.00000
71.0000	0.71307	0.00000
72.0000	0.60119	0.00000
73.0000	0.37579	0.00000
74.0000	0.37376	0.00000
75.0000	0.37449	0.00000
76.0000	0.37625	0.00000
77.0000	0.37903	0.00000
78.0000	0.37981	0.00000
79.0000	0.38056	0.00000



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VI. Input Data - Simulation Time After Storm Event

Time  
(days)

-----

14.0000

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
0.00	0.00000	236.10	0.000000	0.000000	N.A.
1.00	0.00000	236.10	0.000000	0.000000	U
2.00	0.00000	236.10	0.000000	0.000000	U
3.00	0.00000	236.10	0.000000	0.000000	U
4.00	0.00000	236.10	0.000000	0.000000	U
5.00	0.00000	236.10	0.000000	0.000000	U
6.00	0.00000	236.10	0.000000	0.000000	U
7.00	0.00000	236.10	0.000000	0.000000	U
8.00	0.00000	236.10	0.000000	0.000000	U
9.00	0.00000	236.10	0.000000	0.000000	U
10.00	0.00000	236.10	0.000000	0.000000	U
11.00	0.00000	236.10	0.000000	0.000000	U
12.00	0.00000	236.10	0.000000	0.000000	U
13.00	0.00000	236.10	0.000000	0.000000	U
14.00	0.00000	236.10	0.000000	0.000000	U
15.00	0.00000	236.10	0.000000	0.000000	U
16.00	0.00000	236.10	0.000000	0.000000	U
17.00	0.00000	236.10	0.000000	0.000000	U
18.00	0.00000	236.10	0.000000	0.000000	U
19.00	0.00000	236.10	0.000000	0.000000	U
20.00	0.00000	236.10	0.000000	0.000000	U
21.00	0.00000	236.10	0.000000	0.000000	U
22.00	0.00000	236.10	0.000000	0.000000	U
23.00	0.00000	236.10	0.000000	0.000000	U
24.00	0.00000	236.10	0.000000	0.000000	U
25.00	0.00000	236.10	0.000000	0.000000	U
26.00	0.00000	236.10	0.000000	0.000000	U
27.00	0.00000	236.10	0.000000	0.000000	U
28.00	0.00000	236.10	0.000000	0.000000	U
29.00	0.00000	236.10	0.000000	0.000000	U
30.00	0.00000	236.10	0.000000	0.000000	U
31.00	0.00000	236.10	0.000000	0.000000	U
32.00	0.00000	236.10	0.000000	0.000000	U

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
33.00	0.00000	236.10	0.000000	0.000000	U
34.00	0.00000	236.10	0.000000	0.000000	U
35.00	0.00000	236.10	0.000000	0.000000	U
36.00	0.00000	236.10	0.000000	0.000000	U
37.00	0.00000	236.10	0.000000	0.000000	U
38.00	0.00000	236.10	0.000000	0.000000	U
39.00	0.00000	236.10	0.000000	0.000000	U
40.00	0.00000	236.10	0.000005	0.000000	U
41.00	0.00002	236.10	0.001785	0.000000	U
42.00	0.00710	236.10	0.007853	0.000000	U
43.00	0.01719	236.10	0.017063	0.000000	U
44.00	0.02677	236.11	0.026528	0.000000	U
45.00	0.03538	236.12	0.035452	0.000000	U
46.00	0.04428	236.12	0.044235	0.000000	U
47.00	0.05300	236.13	0.054810	0.000000	U
48.00	0.06896	236.15	0.071975	0.000000	U
49.00	0.09698	236.17	0.095360	0.000000	U
50.00	0.11852	236.19	0.120922	0.000000	U
51.00	0.14967	236.22	0.150073	0.000000	U
52.00	0.18243	236.26	0.187540	0.000000	U
53.00	0.23563	236.30	0.234840	0.000000	U
54.00	0.28567	236.36	0.293622	0.000000	U
55.00	0.36752	236.43	0.375427	0.000000	U
56.00	0.48100	236.53	0.506500	0.000000	U
57.00	0.69648	236.66	0.714350	0.000000	U
58.00	0.98344	236.85	1.171742	0.000000	U
59.00	2.02361	237.18	6.581673	0.000000	U
60.00	23.15018	238.13	6.346226	0.000000	U/S
61.00	3.99321	239.69	0.907490	0.000000	S
62.00	2.34108	239.94	0.719672	0.000000	S
63.00	1.69040	240.09	0.621259	0.000000	S
64.00	1.48052	240.19	0.559347	0.000000	S
65.00	1.04191	240.27	0.512987	0.000000	S

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
66.00	1.04370	240.32	0.480315	0.000000	S
67.00	1.05086	240.38	0.458008	0.000000	S
68.00	0.93789	240.43	0.437079	0.000000	S
69.00	0.71081	240.47	0.415597	0.000000	S
70.00	0.71071	240.50	0.398179	0.000000	S
71.00	0.71307	240.53	0.384184	0.000000	S
72.00	0.60119	240.56	0.367747	0.000000	S
73.00	0.37579	240.58	0.349067	0.000000	S
74.00	0.37376	240.58	0.333200	0.000000	S
75.00	0.37449	240.58	0.321097	0.000000	S
76.00	0.37625	240.59	0.311135	0.000000	S
77.00	0.37903	240.60	0.302905	0.000000	S
78.00	0.37981	240.60	0.295699	0.000000	S
79.00	0.38056	240.61	0.289182	0.000000	S
80.00	0.38026	240.62	0.283516	0.000000	S
81.00	0.37897	240.63	0.278513	0.000000	S
82.00	0.37965	240.64	0.273922	0.000000	S
83.00	0.38036	240.65	0.269819	0.000000	S
84.00	0.38106	240.66	0.266178	0.000000	S
85.00	0.38178	240.67	0.262834	0.000000	S
86.00	0.38247	240.69	0.259782	0.000000	S
87.00	0.38315	240.70	0.256960	0.000000	S
88.00	0.38487	240.71	0.254579	0.000000	S
89.00	0.38763	240.72	0.252368	0.000000	S
90.00	0.38834	240.74	0.250322	0.000000	S
91.00	0.38901	240.75	0.248424	0.000000	S
92.00	0.38862	240.76	0.246522	0.000000	S
93.00	0.38721	240.78	0.244909	0.000000	S
94.00	0.38784	240.79	0.243417	0.000000	S
95.00	0.38848	240.80	0.240403	0.000000	S
96.00	0.25935	240.81	0.237582	0.000000	S
432.00	0.00000	239.30	-----	-----	N.A. → STAGE OF 1 <sup>ST</sup> 254296HR STORM EVENT AFTER 14 DAY RECOVERY

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	23.15
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	195330

Stage  
-----

Peak Stage, (ft datum):	240.81
Time, (hrs):	96.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	6.5817
Time, (hrs):	59.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	159121

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 570.00  
Equivalent Pond Width, [W] (ft): 90.00

Base Of Aquifer Elevation, [B] (ft above datum): 236.00  
Water Table Elevation, [WT] (ft above datum): 236.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 53984

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
239.300	30856.0
240.000	34151.0
241.000	38958.0
242.000	43866.0
243.000	48875.0
244.000	53984.0

→ 14 DAY RECOVERY STAGE  
OF 1ST 25YR 96HR STORM EVENT

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
0.0000	0.00000	0.00000
1.0000	0.00000	0.00000
2.0000	0.00000	0.00000
3.0000	0.00000	0.00000
4.0000	0.00000	0.00000
5.0000	0.00000	0.00000
6.0000	0.00000	0.00000
7.0000	0.00000	0.00000
8.0000	0.00000	0.00000
9.0000	0.00000	0.00000
10.0000	0.00000	0.00000
11.0000	0.00000	0.00000
12.0000	0.00000	0.00000
13.0000	0.00000	0.00000
14.0000	0.00000	0.00000
15.0000	0.00000	0.00000
16.0000	0.00000	0.00000
17.0000	0.00000	0.00000
18.0000	0.00000	0.00000
19.0000	0.00000	0.00000
20.0000	0.00000	0.00000
21.0000	0.00000	0.00000
22.0000	0.00000	0.00000
23.0000	0.00000	0.00000
24.0000	0.00000	0.00000
25.0000	0.00000	0.00000
26.0000	0.00000	0.00000
27.0000	0.00000	0.00000
28.0000	0.00000	0.00000
29.0000	0.00000	0.00000
30.0000	0.00000	0.00000
31.0000	0.00000	0.00000
32.0000	0.00000	0.00000
33.0000	0.00000	0.00000
34.0000	0.00000	0.00000
35.0000	0.00000	0.00000
36.0000	0.00000	0.00000
37.0000	0.00000	0.00000
38.0000	0.00000	0.00000
39.0000	0.00000	0.00000



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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
40.0000	0.00000	0.00000
41.0000	0.00002	0.00000
42.0000	0.00710	0.00000
43.0000	0.01719	0.00000
44.0000	0.02677	0.00000
45.0000	0.03538	0.00000
46.0000	0.04428	0.00000
47.0000	0.05300	0.00000
48.0000	0.06896	0.00000
49.0000	0.09698	0.00000
50.0000	0.11852	0.00000
51.0000	0.14967	0.00000
52.0000	0.18243	0.00000
53.0000	0.23563	0.00000
54.0000	0.28567	0.00000
55.0000	0.36752	0.00000
56.0000	0.48100	0.00000
57.0000	0.69648	0.00000
58.0000	0.98344	0.00000
59.0000	2.02361	0.00000
60.0000	23.15018	0.00000
61.0000	3.99321	0.00000
62.0000	2.34108	0.00000
63.0000	1.69040	0.00000
64.0000	1.48052	0.00000
65.0000	1.04191	0.00000
66.0000	1.04370	0.00000
67.0000	1.05086	0.00000
68.0000	0.93789	0.00000
69.0000	0.71081	0.00000
70.0000	0.71071	0.00000
71.0000	0.71307	0.00000
72.0000	0.60119	0.00000
73.0000	0.37579	0.00000
74.0000	0.37376	0.00000
75.0000	0.37449	0.00000
76.0000	0.37625	0.00000
77.0000	0.37903	0.00000
78.0000	0.37981	0.00000
79.0000	0.38056	0.00000

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
-----	-----	-----
80.0000	0.38026	0.00000
81.0000	0.37897	0.00000
82.0000	0.37965	0.00000
83.0000	0.38036	0.00000
84.0000	0.38106	0.00000
85.0000	0.38178	0.00000
86.0000	0.38247	0.00000
87.0000	0.38315	0.00000
88.0000	0.38487	0.00000
89.0000	0.38763	0.00000
90.0000	0.38834	0.00000
91.0000	0.38901	0.00000
92.0000	0.38862	0.00000
93.0000	0.38721	0.00000
94.0000	0.38784	0.00000
95.0000	0.38848	0.00000
96.0000	0.25935	0.00000

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VI. Input Data - Simulation Time After Storm Event

Time  
(days)  
-----

14.0000

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
0.00	0.00000	236.10	0.000000	0.000000	N.A.
1.00	0.00000	236.10	0.000000	0.000000	U
2.00	0.00000	236.10	0.000000	0.000000	U
3.00	0.00000	236.10	0.000000	0.000000	U
4.00	0.00000	236.10	0.000000	0.000000	U
5.00	0.00000	236.10	0.000000	0.000000	U
6.00	0.00000	236.10	0.000000	0.000000	U
7.00	0.00000	236.10	0.000000	0.000000	U
8.00	0.00000	236.10	0.000000	0.000000	U
9.00	0.00000	236.10	0.000000	0.000000	U
10.00	0.00000	236.10	0.000000	0.000000	U
11.00	0.00000	236.10	0.000000	0.000000	U
12.00	0.00000	236.10	0.000000	0.000000	U
13.00	0.00000	236.10	0.000000	0.000000	U
14.00	0.00000	236.10	0.000000	0.000000	U
15.00	0.00000	236.10	0.000000	0.000000	U
16.00	0.00000	236.10	0.000000	0.000000	U
17.00	0.00000	236.10	0.000000	0.000000	U
18.00	0.00000	236.10	0.000000	0.000000	U
19.00	0.00000	236.10	0.000000	0.000000	U
20.00	0.00000	236.10	0.000000	0.000000	U
21.00	0.00000	236.10	0.000000	0.000000	U
22.00	0.00000	236.10	0.000000	0.000000	U
23.00	0.00000	236.10	0.000000	0.000000	U
24.00	0.00000	236.10	0.000000	0.000000	U
25.00	0.00000	236.10	0.000000	0.000000	U
26.00	0.00000	236.10	0.000000	0.000000	U
27.00	0.00000	236.10	0.000000	0.000000	U
28.00	0.00000	236.10	0.000000	0.000000	U
29.00	0.00000	236.10	0.000000	0.000000	U
30.00	0.00000	236.10	0.000000	0.000000	U
31.00	0.00000	236.10	0.000000	0.000000	U
32.00	0.00000	236.10	0.000000	0.000000	U

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
33.00	0.00000	236.10	0.000000	0.000000	U
34.00	0.00000	236.10	0.000000	0.000000	U
35.00	0.00000	236.10	0.000000	0.000000	U
36.00	0.00000	236.10	0.000000	0.000000	U
37.00	0.00000	236.10	0.000000	0.000000	U
38.00	0.00000	236.10	0.000000	0.000000	U
39.00	0.00000	236.10	0.000000	0.000000	U
40.00	0.00000	236.10	0.000005	0.000000	U
41.00	0.00002	236.10	0.001785	0.000000	U
42.00	0.00710	236.10	0.007853	0.000000	U
43.00	0.01719	236.10	0.017063	0.000000	U
44.00	0.02677	236.11	0.026528	0.000000	U
45.00	0.03538	236.12	0.035452	0.000000	U
46.00	0.04428	236.12	0.044235	0.000000	U
47.00	0.05300	236.13	0.054810	0.000000	U
48.00	0.06896	236.15	0.071975	0.000000	U
49.00	0.09698	236.17	0.095360	0.000000	U
50.00	0.11852	236.19	0.120922	0.000000	U
51.00	0.14967	236.22	0.150073	0.000000	U
52.00	0.18243	236.26	0.187540	0.000000	U
53.00	0.23563	236.30	0.234840	0.000000	U
54.00	0.28567	236.36	0.293622	0.000000	U
55.00	0.36752	236.43	0.375427	0.000000	U
56.00	0.48100	236.53	0.506500	0.000000	U
57.00	0.69648	236.66	0.714350	0.000000	U
58.00	0.98344	236.85	1.171742	0.000000	U
59.00	2.02361	237.18	7.045208	0.000000	U
60.00	23.15018	239.30	7.945194	0.000000	U/P
61.00	3.99321	240.40	2.186782	0.000000	U/S
62.00	2.34108	240.61	0.954537	0.000000	S
63.00	1.69040	240.72	0.781550	0.000000	S
64.00	1.48052	240.81	0.685858	0.000000	S
65.00	1.04191	240.86	0.619426	0.000000	S

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
66.00	1.04370	240.91	0.573149	0.000000	S
67.00	1.05086	240.95	0.540910	0.000000	S
68.00	0.93789	241.00	0.512267	0.000000	S
69.00	0.71081	241.03	0.484663	0.000000	S
70.00	0.71071	241.05	0.462112	0.000000	S
71.00	0.71307	241.07	0.443884	0.000000	S
72.00	0.60119	241.09	0.423936	0.000000	S
73.00	0.37579	241.10	0.402057	0.000000	S
74.00	0.37376	241.10	0.383394	0.000000	S
75.00	0.37449	241.10	0.368897	0.000000	S
76.00	0.37625	241.10	0.356860	0.000000	S
77.00	0.37903	241.10	0.346589	0.000000	S
78.00	0.37981	241.10	0.337560	0.000000	S
79.00	0.38056	241.11	0.329578	0.000000	S
80.00	0.38026	241.11	0.322476	0.000000	S
81.00	0.37897	241.12	0.316022	0.000000	S
82.00	0.37965	241.13	0.310133	0.000000	S
83.00	0.38036	241.13	0.304817	0.000000	S
84.00	0.38106	241.14	0.300080	0.000000	S
85.00	0.38178	241.15	0.295834	0.000000	S
86.00	0.38247	241.15	0.291731	0.000000	S
87.00	0.38315	241.16	0.288030	0.000000	S
88.00	0.38487	241.17	0.284753	0.000000	S
89.00	0.38763	241.18	0.281728	0.000000	S
90.00	0.38834	241.19	0.279010	0.000000	S
91.00	0.38901	241.20	0.276412	0.000000	S
92.00	0.38862	241.21	0.273858	0.000000	S
93.00	0.38721	241.22	0.271540	0.000000	S
94.00	0.38784	241.23	0.269472	0.000000	S
95.00	0.38848	241.24	0.265875	0.000000	S
96.00	0.25935	241.25	0.262678	0.000000	S
432.00	0.00000	239.61	-----	-----	N.A.

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	23.15
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	195330

Stage  
-----

Peak Stage, (ft datum):	241.25	→ 2 <u>ND</u> STORM PEAK STAGE
Time, (hrs):	96.00	

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	7.9452
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	185634

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Retention Pond Recovery Analysis

I. Job Information

Job Name: PONDA3  
Engineer: KK  
Date: 3/10/99

II. Input Data

Equivalent Pond Length, [L] (ft):	720.00
Equivalent Pond Width, [W] (ft):	70.00
Pond Bottom Elevation, [PB] (ft above datum):	234.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	232.00
Water Table Elevation, [WT] (ft above datum):	232.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	161984.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	28727.91

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	28.7058
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	133256.09
Maximum Radius Of Influence, [R] (ft):	227.39
Maximum Driving Head, [Hmax] (ft):	4.544
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	28.7201
Total Recovered Volume, [V] (ft <sup>3</sup> ):	161984.00

SINCE THE RECOVERY TIME EXCEEDS THE MAX. 14 DAY ALLOWED, AN ADDITIONAL 25YR 96HR STORM EVENT WAS EXECUTED TO DEMONSTRATE PEAK STAGE DOES NOT OVERFLOW TOP OF POND (SEE FOLLOWING PAGES)



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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a3  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 720.00  
Equivalent Pond Width, [W] (ft): 70.00

Base Of Aquifer Elevation, [B] (ft above datum): 232.00  
Water Table Elevation, [WT] (ft above datum): 232.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 38324

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
234.000	14448.0
235.000	20266.0
236.000	26185.0
237.000	32204.0
238.000	38324.0

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
-----	-----	-----
0.0000	0.00000	0.00000
1.0000	0.00000	0.00000
2.0000	0.00000	0.00000
3.0000	0.00000	0.00000
4.0000	0.00000	0.00000
5.0000	0.00000	0.00000
6.0000	0.00000	0.00000
7.0000	0.00000	0.00000
8.0000	0.00000	0.00000
9.0000	0.00000	0.00000
10.0000	0.00000	0.00000
11.0000	0.00000	0.00000
12.0000	0.00000	0.00000
13.0000	0.00000	0.00000
14.0000	0.00000	0.00000
15.0000	0.00000	0.00000
16.0000	0.00000	0.00000
17.0000	0.00000	0.00000
18.0000	0.00000	0.00000
19.0000	0.00000	0.00000
20.0000	0.00000	0.00000
21.0000	0.00000	0.00000
22.0000	0.00000	0.00000
23.0000	0.00000	0.00000
24.0000	0.00000	0.00000
25.0000	0.00000	0.00000
26.0000	0.00000	0.00000
27.0000	0.00000	0.00000
28.0000	0.00000	0.00000
29.0000	0.00000	0.00000
30.0000	0.00000	0.00000
31.0000	0.00000	0.00000
32.0000	0.00000	0.00000
33.0000	0.00000	0.00000
34.0000	0.00000	0.00000
35.0000	0.00000	0.00000
36.0000	0.00003	0.00000
37.0000	0.00640	0.00000
38.0000	0.01527	0.00000
39.0000	0.02395	0.00000

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
40.0000	0.03279	0.00000
41.0000	0.04221	0.00000
42.0000	0.05078	0.00000
43.0000	0.05911	0.00000
44.0000	0.06648	0.00000
45.0000	0.07256	0.00000
46.0000	0.07979	0.00000
47.0000	0.08685	0.00000
48.0000	0.10477	0.00000
49.0000	0.13728	0.00000
50.0000	0.15810	0.00000
51.0000	0.18959	0.00000
52.0000	0.22122	0.00000
53.0000	0.27448	0.00000
54.0000	0.32140	0.00000
55.0000	0.40026	0.00000
56.0000	0.50872	0.00000
57.0000	0.71437	0.00000
58.0000	0.98025	0.00000
59.0000	1.94849	0.00000
60.0000	20.32775	0.00000
61.0000	3.40058	0.00000
62.0000	1.97749	0.00000
63.0000	1.42299	0.00000
64.0000	1.24305	0.00000
65.0000	0.87318	0.00000
66.0000	0.87334	0.00000
67.0000	0.87802	0.00000
68.0000	0.78255	0.00000
69.0000	0.59246	0.00000
70.0000	0.59183	0.00000
71.0000	0.59326	0.00000
72.0000	0.49976	0.00000
73.0000	0.31222	0.00000
74.0000	0.31039	0.00000
75.0000	0.31086	0.00000
76.0000	0.31219	0.00000
77.0000	0.31436	0.00000
78.0000	0.31487	0.00000
79.0000	0.31535	0.00000

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
80.0000	0.31496	0.00000
81.0000	0.31377	0.00000
82.0000	0.31420	0.00000
83.0000	0.31466	0.00000
84.0000	0.31510	0.00000
85.0000	0.31557	0.00000
86.0000	0.31602	0.00000
87.0000	0.31646	0.00000
88.0000	0.31775	0.00000
89.0000	0.31990	0.00000
90.0000	0.32037	0.00000
91.0000	0.32080	0.00000
92.0000	0.32035	0.00000
93.0000	0.31907	0.00000
94.0000	0.31947	0.00000
95.0000	0.31988	0.00000
96.0000	0.21348	0.00000

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VI. Input Data - Simulation Time After Storm Event

Time  
(days)

-----  
14.0000

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
0.00	0.00000	232.10	0.000000	0.000000	N.A.
1.00	0.00000	232.10	0.000000	0.000000	U
2.00	0.00000	232.10	0.000000	0.000000	U
3.00	0.00000	232.10	0.000000	0.000000	U
4.00	0.00000	232.10	0.000000	0.000000	U
5.00	0.00000	232.10	0.000000	0.000000	U
6.00	0.00000	232.10	0.000000	0.000000	U
7.00	0.00000	232.10	0.000000	0.000000	U
8.00	0.00000	232.10	0.000000	0.000000	U
9.00	0.00000	232.10	0.000000	0.000000	U
10.00	0.00000	232.10	0.000000	0.000000	U
11.00	0.00000	232.10	0.000000	0.000000	U
12.00	0.00000	232.10	0.000000	0.000000	U
13.00	0.00000	232.10	0.000000	0.000000	U
14.00	0.00000	232.10	0.000000	0.000000	U
15.00	0.00000	232.10	0.000000	0.000000	U
16.00	0.00000	232.10	0.000000	0.000000	U
17.00	0.00000	232.10	0.000000	0.000000	U
18.00	0.00000	232.10	0.000000	0.000000	U
19.00	0.00000	232.10	0.000000	0.000000	U
20.00	0.00000	232.10	0.000000	0.000000	U
21.00	0.00000	232.10	0.000000	0.000000	U
22.00	0.00000	232.10	0.000000	0.000000	U
23.00	0.00000	232.10	0.000000	0.000000	U
24.00	0.00000	232.10	0.000000	0.000000	U
25.00	0.00000	232.10	0.000000	0.000000	U
26.00	0.00000	232.10	0.000000	0.000000	U
27.00	0.00000	232.10	0.000000	0.000000	U
28.00	0.00000	232.10	0.000000	0.000000	U
29.00	0.00000	232.10	0.000000	0.000000	U
30.00	0.00000	232.10	0.000000	0.000000	U
31.00	0.00000	232.10	0.000000	0.000000	U
32.00	0.00000	232.10	0.000000	0.000000	U

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
33.00	0.00000	232.10	0.000000	0.000000	U
34.00	0.00000	232.10	0.000000	0.000000	U
35.00	0.00000	232.10	0.000007	0.000000	U
36.00	0.00003	232.10	0.001615	0.000000	U
37.00	0.00640	232.10	0.007025	0.000000	U
38.00	0.01527	232.10	0.015223	0.000000	U
39.00	0.02395	232.11	0.023990	0.000000	U
40.00	0.03279	232.12	0.032935	0.000000	U
41.00	0.04221	232.13	0.041997	0.000000	U
42.00	0.05076	232.15	0.050720	0.000000	U
43.00	0.05911	232.16	0.058870	0.000000	U
44.00	0.06648	232.18	0.066158	0.000000	U
45.00	0.07256	232.20	0.072848	0.000000	U
46.00	0.07979	232.23	0.079747	0.000000	U
47.00	0.08685	232.25	0.089565	0.000000	U
48.00	0.10477	232.28	0.108417	0.000000	U
49.00	0.13728	232.32	0.134357	0.000000	U
50.00	0.15810	232.37	0.160767	0.000000	U
51.00	0.18959	232.42	0.189625	0.000000	U
52.00	0.22122	232.49	0.226627	0.000000	U
53.00	0.27448	232.56	0.272895	0.000000	U
54.00	0.32140	232.66	0.329385	0.000000	U
55.00	0.40026	232.77	0.407660	0.000000	U
56.00	0.50872	232.91	0.533018	0.000000	U
57.00	0.71437	233.10	0.729428	0.000000	U
58.00	0.98025	233.37	1.155840	0.000000	U
59.00	1.94849	233.83	3.611584	0.000000	U
60.00	20.32775	235.10	3.677904	0.000000	U/S
61.00	3.40058	236.56	1.376590	0.000000	S
62.00	1.97749	236.75	1.051122	0.000000	S
63.00	1.42299	236.84	0.885699	0.000000	S
64.00	1.24305	236.89	0.782231	0.000000	S
65.00	0.87318	236.93	0.706231	0.000000	S



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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
66.00	0.87334	236.95	0.651817	0.000000	S
67.00	0.87802	236.98	0.613055	0.000000	S
68.00	0.78255	237.01	0.578017	0.000000	S
69.00	0.59246	237.02	0.544237	0.000000	S
70.00	0.59183	237.03	0.516581	0.000000	S
71.00	0.59326	237.04	0.493938	0.000000	S
72.00	0.49976	237.04	0.469512	0.000000	S
73.00	0.31222	237.04	0.443085	0.000000	S
74.00	0.31039	237.03	0.420444	0.000000	S
75.00	0.31086	237.01	0.402799	0.000000	S
76.00	0.31219	237.01	0.388177	0.000000	S
77.00	0.31436	237.00	0.375623	0.000000	S
78.00	0.31487	236.99	0.364609	0.000000	S
79.00	0.31535	236.99	0.354892	0.000000	S
80.00	0.31496	236.98	0.346054	0.000000	S
81.00	0.31377	236.98	0.338040	0.000000	S
82.00	0.31420	236.98	0.330789	0.000000	S
83.00	0.31466	236.98	0.324302	0.000000	S
84.00	0.31510	236.98	0.318367	0.000000	S
85.00	0.31557	236.98	0.312915	0.000000	S
86.00	0.31602	236.98	0.307932	0.000000	S
87.00	0.31646	236.98	0.303285	0.000000	S
88.00	0.31775	236.98	0.299134	0.000000	S
89.00	0.31990	236.98	0.295336	0.000000	S
90.00	0.32037	236.98	0.291779	0.000000	S
91.00	0.32080	236.99	0.288440	0.000000	S
92.00	0.32035	236.99	0.285321	0.000000	S
93.00	0.31907	237.00	0.282393	0.000000	S
94.00	0.31947	237.00	0.279617	0.000000	S
95.00	0.31988	237.00	0.275291	0.000000	S
96.00	0.21348	237.00	0.271593	0.000000	S
432.00	0.00000	235.16	-----	-----	S

N.A. → STAGE OF 1<sup>st</sup> 254296HR STORM  
 EVENT AFTER 14 DAY RECOVERY

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow

Peak Inflow Rate, (cfs):	20.33
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	172536

Stage

Peak Stage, (ft datum):	237.04
Time, (hrs):	72.00

Overflow Discharge

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate

Peak Infiltration Rate, (cfs):	3.6779
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	151873

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a3  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 720.00  
Equivalent Pond Width, [W] (ft): 70.00

Base Of Aquifer Elevation, [B] (ft above datum): 232.00  
Water Table Elevation, [WT] (ft above datum): 232.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 38324

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
235.160	21213.0
236.000	26185.0
237.000	32204.0
238.000	38324.0

→ 14 DAY RECOVERY STAGE  
OF 151 254R 96HR STORM EVENT

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
0.0000	0.00000	0.00000
1.0000	0.00000	0.00000
2.0000	0.00000	0.00000
3.0000	0.00000	0.00000
4.0000	0.00000	0.00000
5.0000	0.00000	0.00000
6.0000	0.00000	0.00000
7.0000	0.00000	0.00000
8.0000	0.00000	0.00000
9.0000	0.00000	0.00000
10.0000	0.00000	0.00000
11.0000	0.00000	0.00000
12.0000	0.00000	0.00000
13.0000	0.00000	0.00000
14.0000	0.00000	0.00000
15.0000	0.00000	0.00000
16.0000	0.00000	0.00000
17.0000	0.00000	0.00000
18.0000	0.00000	0.00000
19.0000	0.00000	0.00000
20.0000	0.00000	0.00000
21.0000	0.00000	0.00000
22.0000	0.00000	0.00000
23.0000	0.00000	0.00000
24.0000	0.00000	0.00000
25.0000	0.00000	0.00000
26.0000	0.00000	0.00000
27.0000	0.00000	0.00000
28.0000	0.00000	0.00000
29.0000	0.00000	0.00000
30.0000	0.00000	0.00000
31.0000	0.00000	0.00000
32.0000	0.00000	0.00000
33.0000	0.00000	0.00000
34.0000	0.00000	0.00000
35.0000	0.00000	0.00000
36.0000	0.00003	0.00000
37.0000	0.00640	0.00000
38.0000	0.01527	0.00000
39.0000	0.02395	0.00000

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
40.0000	0.03279	0.00000
41.0000	0.04221	0.00000
42.0000	0.05078	0.00000
43.0000	0.05911	0.00000
44.0000	0.06648	0.00000
45.0000	0.07256	0.00000
46.0000	0.07979	0.00000
47.0000	0.08685	0.00000
48.0000	0.10477	0.00000
49.0000	0.13728	0.00000
50.0000	0.15810	0.00000
51.0000	0.18959	0.00000
52.0000	0.22122	0.00000
53.0000	0.27448	0.00000
54.0000	0.32140	0.00000
55.0000	0.40026	0.00000
56.0000	0.50872	0.00000
57.0000	0.71437	0.00000
58.0000	0.98025	0.00000
59.0000	1.94849	0.00000
60.0000	20.32775	0.00000
61.0000	3.40058	0.00000
62.0000	1.97749	0.00000
63.0000	1.42299	0.00000
64.0000	1.24305	0.00000
65.0000	0.87318	0.00000
66.0000	0.87334	0.00000
67.0000	0.87802	0.00000
68.0000	0.78255	0.00000
69.0000	0.59246	0.00000
70.0000	0.59183	0.00000
71.0000	0.59326	0.00000
72.0000	0.49976	0.00000
73.0000	0.31222	0.00000
74.0000	0.31039	0.00000
75.0000	0.31086	0.00000
76.0000	0.31219	0.00000
77.0000	0.31436	0.00000
78.0000	0.31487	0.00000
79.0000	0.31535	0.00000

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V. Input Data - Inflow Hydrograph

Time (hrs)	Inflow Rate (cfs)	Outside Recharge (ft/day)
80.0000	0.31496	0.00000
81.0000	0.31377	0.00000
82.0000	0.31420	0.00000
83.0000	0.31466	0.00000
84.0000	0.31510	0.00000
85.0000	0.31557	0.00000
86.0000	0.31602	0.00000
87.0000	0.31646	0.00000
88.0000	0.31775	0.00000
89.0000	0.31990	0.00000
90.0000	0.32037	0.00000
91.0000	0.32080	0.00000
92.0000	0.32035	0.00000
93.0000	0.31907	0.00000
94.0000	0.31947	0.00000
95.0000	0.31988	0.00000
96.0000	0.21348	0.00000

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VI. Input Data - Simulation Time After Storm Event

Time  
(days)

-----  
14.0000



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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
0.00	0.00000	232.10	0.000000	0.000000	N.A.
1.00	0.00000	232.10	0.000000	0.000000	U
2.00	0.00000	232.10	0.000000	0.000000	U
3.00	0.00000	232.10	0.000000	0.000000	U
4.00	0.00000	232.10	0.000000	0.000000	U
5.00	0.00000	232.10	0.000000	0.000000	U
6.00	0.00000	232.10	0.000000	0.000000	U
7.00	0.00000	232.10	0.000000	0.000000	U
8.00	0.00000	232.10	0.000000	0.000000	U
9.00	0.00000	232.10	0.000000	0.000000	U
10.00	0.00000	232.10	0.000000	0.000000	U
11.00	0.00000	232.10	0.000000	0.000000	U
12.00	0.00000	232.10	0.000000	0.000000	U
13.00	0.00000	232.10	0.000000	0.000000	U
14.00	0.00000	232.10	0.000000	0.000000	U
15.00	0.00000	232.10	0.000000	0.000000	U
16.00	0.00000	232.10	0.000000	0.000000	U
17.00	0.00000	232.10	0.000000	0.000000	U
18.00	0.00000	232.10	0.000000	0.000000	U
19.00	0.00000	232.10	0.000000	0.000000	U
20.00	0.00000	232.10	0.000000	0.000000	U
21.00	0.00000	232.10	0.000000	0.000000	U
22.00	0.00000	232.10	0.000000	0.000000	U
23.00	0.00000	232.10	0.000000	0.000000	U
24.00	0.00000	232.10	0.000000	0.000000	U
25.00	0.00000	232.10	0.000000	0.000000	U
26.00	0.00000	232.10	0.000000	0.000000	U
27.00	0.00000	232.10	0.000000	0.000000	U
28.00	0.00000	232.10	0.000000	0.000000	U
29.00	0.00000	232.10	0.000000	0.000000	U
30.00	0.00000	232.10	0.000000	0.000000	U
31.00	0.00000	232.10	0.000000	0.000000	U
32.00	0.00000	232.10	0.000000	0.000000	U

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
33.00	0.00000	232.10	0.000000	0.000000	U
34.00	0.00000	232.10	0.000000	0.000000	U
35.00	0.00000	232.10	0.000007	0.000000	U
36.00	0.00003	232.10	0.001615	0.000000	U
37.00	0.00640	232.10	0.007025	0.000000	U
38.00	0.01527	232.10	0.015223	0.000000	U
39.00	0.02395	232.11	0.023990	0.000000	U
40.00	0.03279	232.12	0.032935	0.000000	U
41.00	0.04221	232.13	0.041997	0.000000	U
42.00	0.05078	232.15	0.050720	0.000000	U
43.00	0.05911	232.16	0.058870	0.000000	U
44.00	0.06648	232.18	0.066158	0.000000	U
45.00	0.07256	232.20	0.072848	0.000000	U
46.00	0.07979	232.23	0.079747	0.000000	U
47.00	0.08685	232.25	0.089565	0.000000	U
48.00	0.10477	232.28	0.108417	0.000000	U
49.00	0.13728	232.32	0.134357	0.000000	U
50.00	0.15810	232.37	0.160767	0.000000	U
51.00	0.18959	232.42	0.189625	0.000000	U
52.00	0.22122	232.49	0.226627	0.000000	U
53.00	0.27448	232.56	0.272895	0.000000	U
54.00	0.32140	232.66	0.329385	0.000000	U
55.00	0.40026	232.77	0.407660	0.000000	U
56.00	0.50872	232.91	0.533018	0.000000	U
57.00	0.71437	233.10	0.729428	0.000000	U
58.00	0.98025	233.37	1.155840	0.000000	U
59.00	1.94849	233.83	4.669820	0.000000	U
60.00	20.32775	235.68	4.807216	0.000000	U/S
61.00	3.40058	236.97	1.498238	0.000000	S
62.00	1.97749	237.13	1.142914	0.000000	S
63.00	1.42299	237.20	0.962223	0.000000	S
64.00	1.24305	237.25	0.848522	0.000000	S
65.00	0.87318	237.28	0.765026	0.000000	S

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VII. Results - Summary

Elapsed Time (hrs)	Inflow Rate (cfs)	Stage Elevation (ft datum)	Infiltration Rate (cfs)	Overflow Discharge Rate (cfs)	Flow Type
66.00	0.87334	237.29	0.704870	0.000000	S
67.00	0.87802	237.31	0.661371	0.000000	S
68.00	0.78255	237.33	0.622526	0.000000	S
69.00	0.59246	237.34	0.585704	0.000000	S
70.00	0.59183	237.34	0.555395	0.000000	S
71.00	0.59326	237.35	0.530378	0.000000	S
72.00	0.49976	237.35	0.503966	0.000000	S
73.00	0.31222	237.34	0.475924	0.000000	S
74.00	0.31039	237.33	0.451791	0.000000	S
75.00	0.31086	237.31	0.432891	0.000000	S
76.00	0.31219	237.30	0.416991	0.000000	S
77.00	0.31436	237.29	0.403210	0.000000	S
78.00	0.31487	237.28	0.391109	0.000000	S
79.00	0.31535	237.28	0.380356	0.000000	S
80.00	0.31496	237.27	0.370582	0.000000	S
81.00	0.31377	237.26	0.361699	0.000000	S
82.00	0.31420	237.26	0.353668	0.000000	S
83.00	0.31466	237.26	0.346359	0.000000	S
84.00	0.31510	237.25	0.339713	0.000000	S
85.00	0.31557	237.25	0.333583	0.000000	S
86.00	0.31602	237.25	0.327956	0.000000	S
87.00	0.31646	237.25	0.322818	0.000000	S
88.00	0.31775	237.25	0.318107	0.000000	S
89.00	0.31990	237.25	0.313691	0.000000	S
90.00	0.32037	237.25	0.309638	0.000000	S
91.00	0.32080	237.25	0.305852	0.000000	S
92.00	0.32035	237.25	0.302262	0.000000	S
93.00	0.31907	237.25	0.298956	0.000000	S
94.00	0.31947	237.26	0.295782	0.000000	S
95.00	0.31988	237.26	0.290888	0.000000	S
96.00	0.21348	237.26	0.286865	0.000000	S
432.00	0.00000	235.34	-----	-----	N.A.

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow

Peak Inflow Rate, (cfs):	20.33
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	172536

Stage

Peak Stage, (ft datum):	237.35 → 2 <sup>ND</sup> STORM PEAK STAGE
Time, (hrs):	72.00

Overflow Discharge

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate

Peak Infiltration Rate, (cfs):	4.8072
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	168669

**CITY OF CLERMONT  
&  
FDOT (CRITICAL EVENT & DURATION)  
100 YEAR - 24 HOUR STORM EVENT  
HYDROLOGY & ROUTING ANALYSIS**

100YR 24HR STORM EVENT

\*\*\*\*\* Basin Summary - SOWERST \*\*\*\*\*

```

-----
***
Basin Name:          1          2          3          999
Group Name:          BASE      BASE      BASE      BASE
Node Name:           1          2          3          999
Hydrograph Type:     SB        SB        SB        SB

Spec Time Inc (sec): 15.00    15.00    15.00    15.00
Comp Time Inc (sec): 15.00    15.00    15.00    15.00
Rainfall File:       FLMOD    FLMOD    FLMOD    FLMOD
Rainfall Amount (in): 10.20    10.20    10.20    10.20
Storm Duration (hr): 24.00    24.00    24.00    24.00
Status:              ONSITE    ONSITE    ONSITE    ONSITE
Time of Conc. (min): 15.00    15.00    15.00    999.00
Lag Time (hr):       0.00     0.00     0.00     0.00
Area (acres):        23.51    10.36    7.97     5.00
Curve Number:        58.00    53.00    58.00    50.00
DCIA (%):            0.00     0.00     0.00     0.00

Time Max (hrs):      12.00    12.00    12.00    17.25
Flow Max (cfs):      69.11    25.83    23.44    0.70
Runoff Volume (in):  4.79     4.11     4.79     3.69
Runoff Volume (cf):  408708   154460   138624   67055
    
```

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Retention Pond Recovery Analysis - Inflow Hydrograph

---

I. Job Information

Job Name: a1  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 460.00  
Equivalent Pond Width, [W] (ft): 300.00

Base Of Aquifer Elevation, [B] (ft above datum): 214.36  
Water Table Elevation, [WT] (ft above datum): 214.46  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 72376

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
222.000	51131.0
223.000	55179.0
224.000	59328.0
225.000	63577.0
226.000	67926.0
227.000	72376.0



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### III. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

#### Inflow

-----

Peak Inflow Rate, (cfs): 48.32

Time, (hrs): 12.00

Cumulative Inflow Volume, (ft<sup>3</sup>): 410853

#### Stage

-----

Peak Stage, (ft datum): 224.37

Time, (hrs): 24.00

#### Overflow Discharge

-----

Peak Discharge Rate, (cfs): 0.00

Time, (hrs): 0.00

Cumulative weir discharge volume, (ft<sup>3</sup>): 0

#### Infiltration Rate

-----

Peak Infiltration Rate, (cfs): 24.3458

Time, (hrs): 12.00

Cumulative Infiltration Volume, (ft<sup>3</sup>): 277935

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Retention Pond Recovery Analysis - Inflow Hydrograph

---

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 570.00  
Equivalent Pond Width, [W] (ft): 90.00

Base Of Aquifer Elevation, [B] (ft above datum): 236.00  
Water Table Elevation, [WT] (ft above datum): 236.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 53984

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
238.000	24838.0
239.000	29444.0
240.000	34151.0
241.000	38958.0
242.000	43866.0
243.000	48875.0
244.000	53984.0

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow

-----

Peak Inflow Rate, (cfs):	17.92
Time, (hrs):	12.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	155251

Stage

-----

Peak Stage, (ft datum):	240.44
Time, (hrs):	24.00

Overflow Discharge

-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate

-----

Peak Infiltration Rate, (cfs):	7.5654
Time, (hrs):	12.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	80655

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Retention Pond Recovery Analysis - Inflow Hydrograph

---

I. Job Information

Job Name: a3  
 Engineer: kk  
 Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 720.00  
 Equivalent Pond Width, [W] (ft): 70.00

Base Of Aquifer Elevation, [B] (ft above datum): 232.00  
 Water Table Elevation, [WT] (ft above datum): 232.10  
 Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
 Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
 Unsaturated vertical infiltration rate, (ft/day): 40.00  
 Maximum area for unsaturated infiltration, (sq ft): 38324

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data

Stage (ft datum)	Area (ft <sup>2</sup> )
234.000	14448.0
235.000	20266.0
236.000	26185.0
237.000	32204.0
238.000	38324.0

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/III. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	16.39
Time, (hrs):	12.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	139351

Stage  
-----

Peak Stage, (ft datum):	236.96
Time, (hrs):	24.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	4.9062
Time, (hrs):	12.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	70832

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.01) [3]  
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SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Simulation-----

C:\ICPR2\DATA\SOMERST

Execution: Hydraulics

Header: 100YR 24HR STORM EVENT

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1

Delta Z Factor: 0.05

Time Step Optimizer: 10

Drop Structure Optimizer: 10

Sim Start Time(hrs): 0

Sim End Time(hrs): 24

Min Calc Time(sec): 15

Max Calc Time(sec): 60

To Hour: PInc(min):

24 15

Override Defaults: Yes

Storm Dur(hrs): 24

Rain Amount(in): 10.2

Rainfall File: FLMOD

To Hour: PInc(min):

24 15

-----GROUP SELECTIONS-----

+ BASE [01/15/99]



100YR 24HR STORM EVENT

\*\*\*\*\* Node Maximum Conditions - SOWERST \*\*\*\*\*

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
1	BASE	24.00	224.97	227.00	0.0417	63463.44	11.99	44.45	0.00	0.00
2	BASE	24.00	240.86	244.00	0.0327	38266.13	11.99	18.11	0.00	0.00
3	BASE	24.00	237.25	238.00	0.0500	33698.77	11.99	18.41	0.00	0.00
999	BASE	0.00	100.25	102.00	0.2500	0.00	17.25	0.70	0.00	0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	Inflow					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
*** Group: BASE Node: 1									
0.000	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.258	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.754	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00
6.005	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00
6.251	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00
6.511	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00
6.761	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00
7.002	222.00	0.00	0.00	0.00	-0.02	0.00	0.00	0.00	0.00
7.252	222.00	0.00	0.00	0.00	-0.04	0.00	0.00	0.00	0.00
7.502	222.00	0.00	0.00	0.00	-0.06	0.00	0.00	0.00	0.00
7.752	222.00	0.00	0.00	0.00	-0.08	0.00	0.00	0.00	0.00
8.002	222.00	0.00	0.00	0.00	-0.16	0.00	0.00	0.00	0.00
8.252	222.00	0.00	0.00	0.02	-0.26	0.00	0.00	0.00	0.00
8.502	222.00	0.00	0.00	0.09	-0.36	0.00	0.00	0.00	0.00
8.752	222.00	0.00	0.00	0.23	-0.46	0.00	0.00	0.00	0.00
9.002	222.00	0.00	0.00	0.40	-0.73	0.00	0.00	0.00	0.00
9.252	222.00	0.00	0.00	0.58	-1.13	0.00	0.00	0.00	0.00
9.502	222.00	0.00	0.00	0.81	-1.53	0.00	0.00	0.00	0.00
9.752	222.00	0.00	0.00	1.08	-1.93	0.00	0.00	0.00	0.00
10.002	222.00	0.00	0.00	1.45	-3.17	0.00	0.00	0.00	0.00
10.252	221.99	0.00	0.00	1.89	-5.90	0.00	0.00	0.00	0.00
10.502	221.99	0.00	0.00	2.51	-8.64	0.00	0.00	0.00	0.00
10.752	221.98	0.00	0.00	3.23	-11.37	0.00	0.00	0.00	0.00
11.002	221.98	0.00	0.00	3.88	-14.07	0.00	0.00	0.00	0.00

11.252 221.98 0.00 0.00 6.32 -16.65 0.00 0.00 0.00

- 100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
11.502	222.00	1.17	0.00	20.85	-19.22	0.00	0.00	0.00	
11.752	222.32	1.20	0.00	56.16	-21.80	0.00	0.00	0.00	
12.006	222.99	1.27	0.00	68.60	-24.29	0.00	0.00	0.00	
12.259	223.55	1.32	0.00	46.42	-21.81	0.00	0.00	0.00	
12.502	223.80	1.34	0.00	28.11	-19.43	0.00	0.00	0.00	
12.752	223.87	1.35	0.00	17.98	-16.99	0.00	0.00	0.00	
13.002	223.87	1.35	0.00	13.10	-14.55	0.00	0.00	0.00	
13.252	223.85	1.35	0.00	10.85	-11.90	0.00	0.00	0.00	
13.502	223.84	1.35	0.00	9.45	-9.22	0.00	0.00	0.00	
13.752	223.86	1.35	0.00	8.32	-6.53	0.00	0.00	0.00	
14.002	223.90	1.35	0.00	7.61	-3.85	0.00	0.00	0.00	
14.252	223.97	1.36	0.00	7.05	-2.86	0.00	0.00	0.00	
14.502	224.03	1.36	0.00	6.52	-2.74	0.00	0.00	0.00	
14.752	224.08	1.37	0.00	6.01	-2.62	0.00	0.00	0.00	
15.002	224.13	1.37	0.00	5.73	-2.50	0.00	0.00	0.00	
15.252	224.18	1.38	0.00	5.53	-2.40	0.00	0.00	0.00	
15.502	224.22	1.38	0.00	5.23	-2.33	0.00	0.00	0.00	
15.752	224.26	1.39	0.00	4.90	-2.27	0.00	0.00	0.00	
16.002	224.30	1.39	0.00	4.68	-2.20	0.00	0.00	0.00	
16.252	224.34	1.40	0.00	4.49	-2.14	0.00	0.00	0.00	
16.502	224.37	1.40	0.00	4.32	-2.09	0.00	0.00	0.00	
16.752	224.40	1.40	0.00	4.14	-2.05	0.00	0.00	0.00	
17.002	224.43	1.40	0.00	4.09	-2.00	0.00	0.00	0.00	
17.252	224.47	1.41	0.00	4.08	-1.96	0.00	0.00	0.00	
17.502	224.50	1.41	0.00	3.83	-1.93	0.00	0.00	0.00	
17.752	224.52	1.41	0.00	3.51	-1.89	0.00	0.00	0.00	
18.002	224.55	1.42	0.00	3.53	-1.86	0.00	0.00	0.00	
18.252	224.57	1.42	0.00	3.66	-1.83	0.00	0.00	0.00	
18.502	224.60	1.42	0.00	3.46	-1.80	0.00	0.00	0.00	
18.752	224.62	1.42	0.00	3.15	-1.77	0.00	0.00	0.00	
19.002	224.64	1.42	0.00	3.18	-1.75	0.00	0.00	0.00	
19.252	224.66	1.43	0.00	3.31	-1.72	0.00	0.00	0.00	
19.502	224.68	1.43	0.00	3.24	-1.70	0.00	0.00	0.00	
19.752	224.70	1.43	0.00	3.09	-1.67	0.00	0.00	0.00	
20.002	224.72	1.43	0.00	2.92	-1.65	0.00	0.00	0.00	
20.252	224.74	1.43	0.00	2.74	-1.63	0.00	0.00	0.00	
20.502	224.76	1.44	0.00	2.68	-1.61	0.00	0.00	0.00	
20.752	224.77	1.44	0.00	2.66	-1.59	0.00	0.00	0.00	
21.002	224.79	1.44	0.00	2.66	-1.57	0.00	0.00	0.00	
21.252	224.80	1.44	0.00	2.66	-1.56	0.00	0.00	0.00	
21.502	224.82	1.44	0.00	2.66	-1.54	0.00	0.00	0.00	
21.752	224.84	1.44	0.00	2.66	-1.52	0.00	0.00	0.00	
22.002	224.85	1.45	0.00	2.67	-1.51	0.00	0.00	0.00	
22.252	224.87	1.45	0.00	2.67	-1.49	0.00	0.00	0.00	
22.502	224.88	1.45	0.00	2.55	-1.48	0.00	0.00	0.00	

22.752	224.90	1.45	0.00	2.38	-1.46	0.00	0.00	0.00
23.002	224.91	1.45	0.00	2.33	-1.45	0.00	0.00	0.00

\* 100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	'<-----Inflow----->'					Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	
23.252	224.92	1.45	0.00	2.31	-1.44	0.00	0.00	0.00
23.502	224.94	1.45	0.00	2.17	-1.36	0.00	0.00	0.00
23.752	224.95	1.46	0.00	2.00	-0.68	0.00	0.00	0.00
24.002	224.97	1.46	0.00	0.00	0.00	0.00	0.00	0.00
24.011	224.97	1.46	0.00	0.00	0.00	0.00	0.00	0.00

\*\*\* Group: BASE Node: 2

0.000	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
0.258	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
0.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
0.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.005	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.251	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.511	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.761	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
7.002	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.252	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.502	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.752	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
8.002	238.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
8.252	238.00	0.00	0.00	0.00	-0.02	0.00	0.00	0.00
8.502	238.00	0.00	0.00	0.00	-0.04	0.00	0.00	0.00
8.752	238.00	0.00	0.00	0.00	-0.05	0.00	0.00	0.00
9.002	238.00	0.00	0.00	0.00	-0.12	0.00	0.00	0.00
9.252	238.00	0.00	0.00	0.01	-0.23	0.00	0.00	0.00

9.502	238.00	0.00	0.00	0.05	-0.35	0.00	0.00	0.00
9.752	238.00	0.00	0.00	0.13	-0.46	0.00	0.00	0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	!<-----Inflow----->!					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
10.002	238.00	0.00	0.00	0.24	-0.95	0.00	0.00	0.00	
10.252	237.99	0.00	0.00	0.38	-2.11	0.00	0.00	0.00	
10.502	237.99	0.00	0.00	0.59	-3.27	0.00	0.00	0.00	
10.752	237.98	0.00	0.00	0.83	-4.43	0.00	0.00	0.00	
11.002	237.98	0.00	0.00	1.08	-5.47	0.00	0.00	0.00	
11.252	237.98	0.00	0.00	1.90	-6.00	0.00	0.00	0.00	
11.502	238.00	0.57	0.00	6.97	-6.52	0.00	0.00	0.00	
11.752	238.24	0.60	0.00	20.26	-7.05	0.00	0.00	0.00	
12.006	238.77	0.65	0.00	25.64	-7.54	0.00	0.00	0.00	
12.259	239.23	0.70	0.00	17.74	-6.44	0.00	0.00	0.00	
12.502	239.47	0.73	0.00	10.88	-5.38	0.00	0.00	0.00	
12.752	239.58	0.74	0.00	7.03	-4.29	0.00	0.00	0.00	
13.002	239.65	0.75	0.00	5.17	-3.20	0.00	0.00	0.00	
13.252	239.70	0.75	0.00	4.30	-2.55	0.00	0.00	0.00	
13.502	239.75	0.76	0.00	3.76	-1.99	0.00	0.00	0.00	
13.752	239.80	0.76	0.00	3.32	-1.42	0.00	0.00	0.00	
14.002	239.85	0.77	0.00	3.04	-0.86	0.00	0.00	0.00	
14.252	239.91	0.77	0.00	2.82	-0.65	0.00	0.00	0.00	
14.502	239.97	0.78	0.00	2.61	-0.63	0.00	0.00	0.00	
14.752	240.02	0.79	0.00	2.41	-0.61	0.00	0.00	0.00	
15.002	240.06	0.79	0.00	2.30	-0.59	0.00	0.00	0.00	
15.252	240.11	0.80	0.00	2.22	-0.58	0.00	0.00	0.00	
15.502	240.15	0.80	0.00	2.11	-0.57	0.00	0.00	0.00	
15.752	240.19	0.80	0.00	1.97	-0.56	0.00	0.00	0.00	
16.002	240.22	0.81	0.00	1.89	-0.54	0.00	0.00	0.00	
16.252	240.26	0.81	0.00	1.81	-0.53	0.00	0.00	0.00	
16.502	240.29	0.82	0.00	1.74	-0.53	0.00	0.00	0.00	
16.752	240.32	0.82	0.00	1.67	-0.52	0.00	0.00	0.00	
17.002	240.35	0.82	0.00	1.65	-0.51	0.00	0.00	0.00	
17.252	240.37	0.83	0.00	1.65	-0.50	0.00	0.00	0.00	
17.502	240.40	0.83	0.00	1.55	-0.50	0.00	0.00	0.00	
17.752	240.43	0.83	0.00	1.42	-0.49	0.00	0.00	0.00	
18.002	240.45	0.83	0.00	1.43	-0.48	0.00	0.00	0.00	
18.252	240.47	0.84	0.00	1.48	-0.48	0.00	0.00	0.00	
18.502	240.50	0.84	0.00	1.40	-0.47	0.00	0.00	0.00	
18.752	240.52	0.84	0.00	1.28	-0.47	0.00	0.00	0.00	
19.002	240.54	0.84	0.00	1.29	-0.46	0.00	0.00	0.00	
19.252	240.56	0.85	0.00	1.35	-0.46	0.00	0.00	0.00	
19.502	240.58	0.85	0.00	1.31	-0.45	0.00	0.00	0.00	
19.752	240.60	0.85	0.00	1.26	-0.45	0.00	0.00	0.00	
20.002	240.62	0.85	0.00	1.19	-0.45	0.00	0.00	0.00	
20.252	240.64	0.85	0.00	1.11	-0.44	0.00	0.00	0.00	
20.502	240.65	0.86	0.00	1.09	-0.44	0.00	0.00	0.00	
20.752	240.67	0.86	0.00	1.08	-0.43	0.00	0.00	0.00	
21.002	240.69	0.86	0.00	1.08	-0.43	0.00	0.00	0.00	



21.252	240.70	0.86	0.00	1.08	-0.43	0.00	0.00	0.00
21.502	240.72	0.86	0.00	1.08	-0.42	0.00	0.00	0.00

- 100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOWERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	Inflow					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
21.752	240.73	0.86	0.00	1.09	-0.42	0.00	0.00	0.00	
22.002	240.75	0.87	0.00	1.09	-0.42	0.00	0.00	0.00	
22.252	240.76	0.87	0.00	1.09	-0.41	0.00	0.00	0.00	
22.502	240.78	0.87	0.00	1.04	-0.41	0.00	0.00	0.00	
22.752	240.79	0.87	0.00	0.97	-0.41	0.00	0.00	0.00	
23.002	240.81	0.87	0.00	0.95	-0.41	0.00	0.00	0.00	
23.252	240.82	0.87	0.00	0.94	-0.40	0.00	0.00	0.00	
23.502	240.83	0.88	0.00	0.89	-0.38	0.00	0.00	0.00	
23.752	240.85	0.88	0.00	0.82	-0.19	0.00	0.00	0.00	
24.002	240.86	0.88	0.00	0.00	0.00	0.00	0.00	0.00	
24.011	240.86	0.88	0.00	0.00	0.00	0.00	0.00	0.00	

\*\*\* Group: BASE Node: 3

0.000	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
0.258	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
0.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
0.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.754	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.005	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.251	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.511	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.761	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.002	234.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
7.252	234.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
7.502	234.00	0.00	0.00	0.00	-0.02	0.00	0.00	0.00
7.752	234.00	0.00	0.00	0.00	-0.03	0.00	0.00	0.00

8.002	234.00	0.00	0.00	0.00	-0.05	0.00	0.00	0.00
8.252	234.00	0.00	0.00	0.01	-0.09	0.00	0.00	0.00

- 100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	<-----Inflow----->					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
8.502	234.00	0.00	0.00	0.03	-0.12	0.00	0.00	0.00	
8.752	234.00	0.00	0.00	0.08	-0.16	0.00	0.00	0.00	
9.002	234.00	0.00	0.00	0.13	-0.25	0.00	0.00	0.00	
9.252	234.00	0.00	0.00	0.20	-0.38	0.00	0.00	0.00	
9.502	234.00	0.00	0.00	0.27	-0.52	0.00	0.00	0.00	
9.752	234.00	0.00	0.00	0.37	-0.66	0.00	0.00	0.00	
10.002	234.00	0.00	0.00	0.49	-1.02	0.00	0.00	0.00	
10.252	233.99	0.00	0.00	0.64	-1.78	0.00	0.00	0.00	
10.502	233.99	0.00	0.00	0.85	-2.55	0.00	0.00	0.00	
10.752	233.98	0.00	0.00	1.09	-3.32	0.00	0.00	0.00	
11.002	233.98	0.00	0.00	1.32	-3.99	0.00	0.00	0.00	
11.252	233.98	0.00	0.00	2.14	-4.22	0.00	0.00	0.00	
11.502	234.04	0.34	0.00	7.07	-4.45	0.00	0.00	0.00	
11.752	234.52	0.40	0.00	19.05	-4.68	0.00	0.00	0.00	
12.006	235.29	0.50	0.00	23.27	-4.89	0.00	0.00	0.00	
12.259	235.86	0.58	0.00	15.74	-4.22	0.00	0.00	0.00	
12.502	236.16	0.62	0.00	9.53	-3.58	0.00	0.00	0.00	
12.752	236.31	0.64	0.00	6.10	-2.92	0.00	0.00	0.00	
13.002	236.39	0.65	0.00	4.44	-2.25	0.00	0.00	0.00	
13.252	236.45	0.66	0.00	3.68	-1.93	0.00	0.00	0.00	
13.502	236.50	0.67	0.00	3.20	-1.66	0.00	0.00	0.00	
13.752	236.55	0.68	0.00	2.82	-1.40	0.00	0.00	0.00	
14.002	236.59	0.68	0.00	2.58	-1.14	0.00	0.00	0.00	
14.252	236.64	0.69	0.00	2.39	-1.02	0.00	0.00	0.00	
14.502	236.68	0.69	0.00	2.21	-0.98	0.00	0.00	0.00	
14.752	236.71	0.70	0.00	2.04	-0.94	0.00	0.00	0.00	
15.002	236.74	0.70	0.00	1.94	-0.90	0.00	0.00	0.00	
15.252	236.77	0.71	0.00	1.88	-0.87	0.00	0.00	0.00	
15.502	236.80	0.71	0.00	1.78	-0.84	0.00	0.00	0.00	
15.752	236.83	0.71	0.00	1.66	-0.82	0.00	0.00	0.00	
16.002	236.85	0.72	0.00	1.59	-0.79	0.00	0.00	0.00	
16.252	236.87	0.72	0.00	1.52	-0.77	0.00	0.00	0.00	
16.502	236.89	0.72	0.00	1.46	-0.76	0.00	0.00	0.00	
16.752	236.91	0.73	0.00	1.40	-0.74	0.00	0.00	0.00	
17.002	236.93	0.73	0.00	1.39	-0.73	0.00	0.00	0.00	
17.252	236.95	0.73	0.00	1.38	-0.71	0.00	0.00	0.00	
17.502	236.97	0.73	0.00	1.30	-0.70	0.00	0.00	0.00	
17.752	236.98	0.74	0.00	1.19	-0.69	0.00	0.00	0.00	
18.002	237.00	0.74	0.00	1.20	-0.67	0.00	0.00	0.00	
18.252	237.01	0.74	0.00	1.24	-0.66	0.00	0.00	0.00	
18.502	237.03	0.74	0.00	1.17	-0.65	0.00	0.00	0.00	
18.752	237.04	0.74	0.00	1.07	-0.64	0.00	0.00	0.00	
19.002	237.05	0.75	0.00	1.08	-0.63	0.00	0.00	0.00	
19.252	237.07	0.75	0.00	1.12	-0.62	0.00	0.00	0.00	
19.502	237.08	0.75	0.00	1.10	-0.62	0.00	0.00	0.00	

19.752	237.09	0.75	0.00	1.05	-0.61	0.00	0.00	0.00
20.002	237.10	0.75	0.00	0.99	-0.60	0.00	0.00	0.00





100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
7.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7.752	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8.752	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9.752	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.752	100.25	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
11.002	100.25	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
11.252	100.25	0.00	0.00	0.03	0.00	0.00	0.00	0.00	
11.502	100.25	0.00	0.00	0.08	0.00	0.00	0.00	0.00	
11.752	100.25	0.00	0.00	0.25	0.00	0.00	0.00	0.00	
12.006	100.25	0.00	0.00	0.43	0.00	0.00	0.00	0.00	
12.259	100.25	0.00	0.00	0.52	0.00	0.00	0.00	0.00	
12.502	100.25	0.00	0.00	0.56	0.00	0.00	0.00	0.00	
12.752	100.25	0.00	0.00	0.58	0.00	0.00	0.00	0.00	
13.002	100.25	0.00	0.00	0.60	0.00	0.00	0.00	0.00	
13.252	100.25	0.00	0.00	0.62	0.00	0.00	0.00	0.00	
13.502	100.25	0.00	0.00	0.63	0.00	0.00	0.00	0.00	
13.752	100.25	0.00	0.00	0.64	0.00	0.00	0.00	0.00	
14.002	100.25	0.00	0.00	0.65	0.00	0.00	0.00	0.00	
14.252	100.25	0.00	0.00	0.66	0.00	0.00	0.00	0.00	
14.502	100.25	0.00	0.00	0.67	0.00	0.00	0.00	0.00	
14.752	100.25	0.00	0.00	0.68	0.00	0.00	0.00	0.00	
15.002	100.25	0.00	0.00	0.68	0.00	0.00	0.00	0.00	
15.252	100.25	0.00	0.00	0.68	0.00	0.00	0.00	0.00	
15.502	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
15.752	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
16.002	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
16.252	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
16.502	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
16.752	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
17.002	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
17.252	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
17.502	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
17.752	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
18.002	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00	



18.252	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
18.502	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00



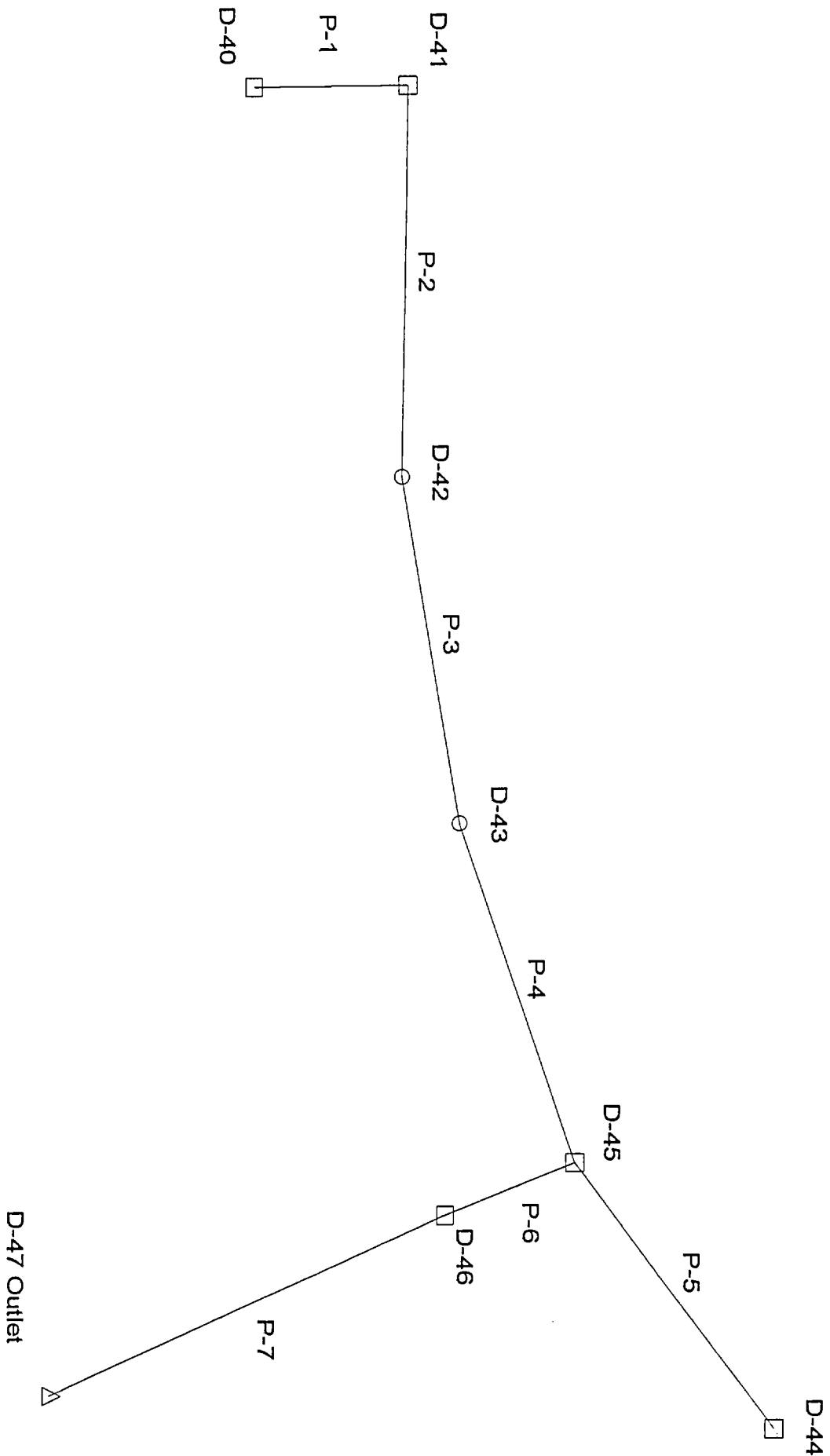
**STORM SEWER TABULATIONS**

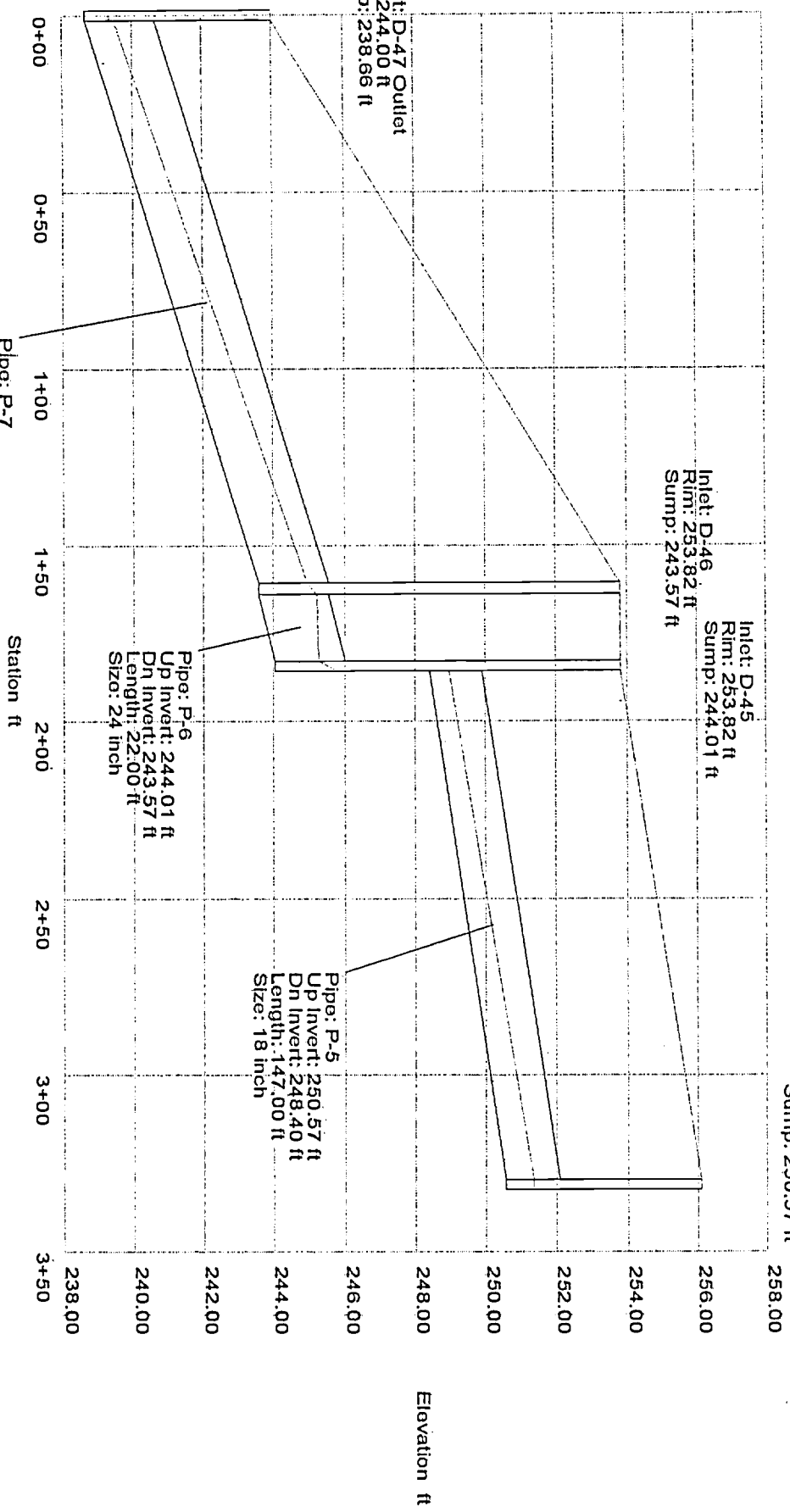
## Rainfall Table

### Return Periods

Durations	10 year
10 min	7.30
15 min	6.30
20 min	5.70
25 min	5.20
30 min	4.80
35 min	4.50

Rainfall Intensities are in (in/hr)

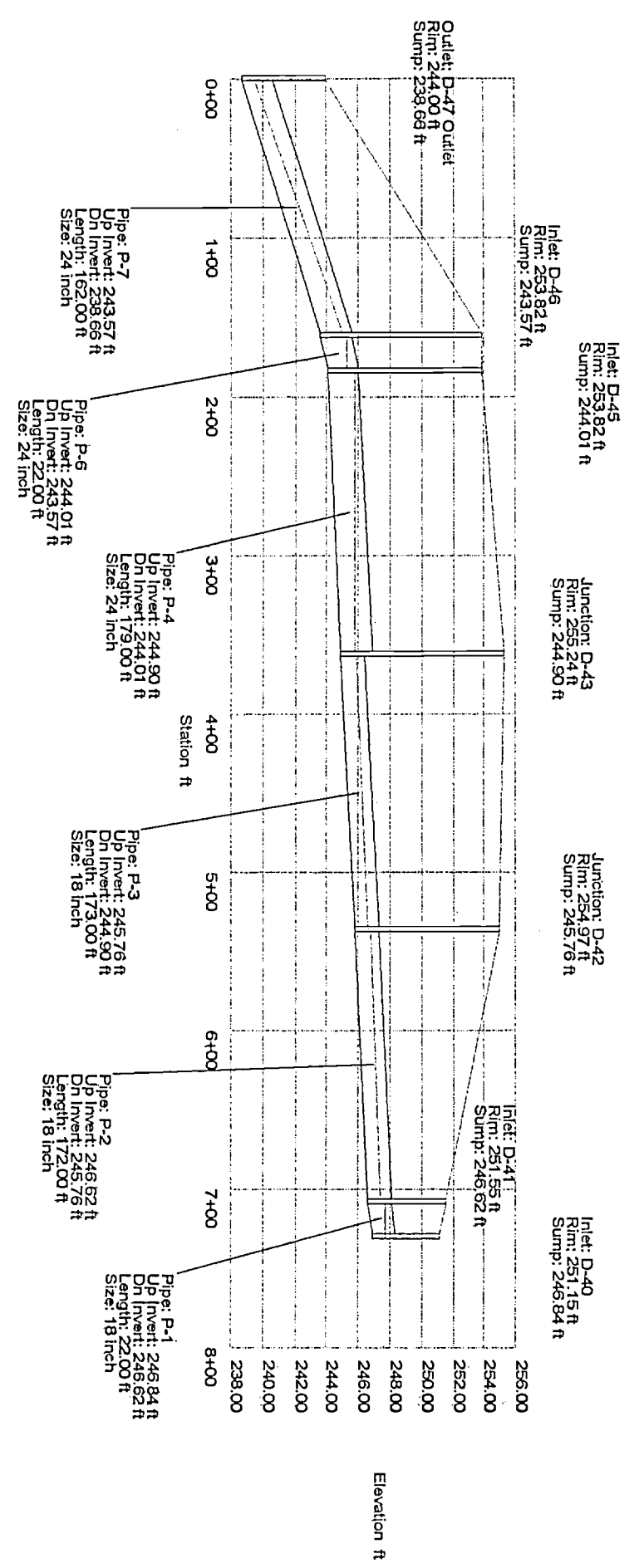




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Elevation ft

## Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-5	D-44	D-45	147.00	1.25	0.45	0.56	0.56	4.14	18 inch	12.76	5.45	250.57	248.40	0.014762	10.00
P-1	D-40	D-41	22.00	0.20	0.61	0.12	0.12	0.90	18 inch	10.50	0.79	246.84	246.62	0.010000	10.00
P-2	D-41	D-42	172.00	0.88	0.53	0.47	0.59	3.43	18 inch	7.43	3.92	246.62	245.76	0.005000	10.00
P-3	D-42	D-43	173.00	N/A	N/A	N/A	0.59	N/A	18 inch	7.41	3.87	245.76	244.90	0.004971	N/A
P-4	D-43	D-45	179.00	N/A	N/A	N/A	0.59	N/A	24 inch	15.95	2.19	244.90	244.01	0.004972	N/A
P-6	D-45	D-46	22.00	1.30	0.56	0.73	1.88	5.36	24 inch	31.99	5.21	244.01	243.57	0.020000	10.00
P-7	D-46	D-47 Outlet	162.00	0.46	0.60	0.28	2.15	2.03	24 inch	39.38	8.92	243.57	238.66	0.030309	10.00
	N/A	N/A	N/A	N/A	N/A	N/A	2.15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

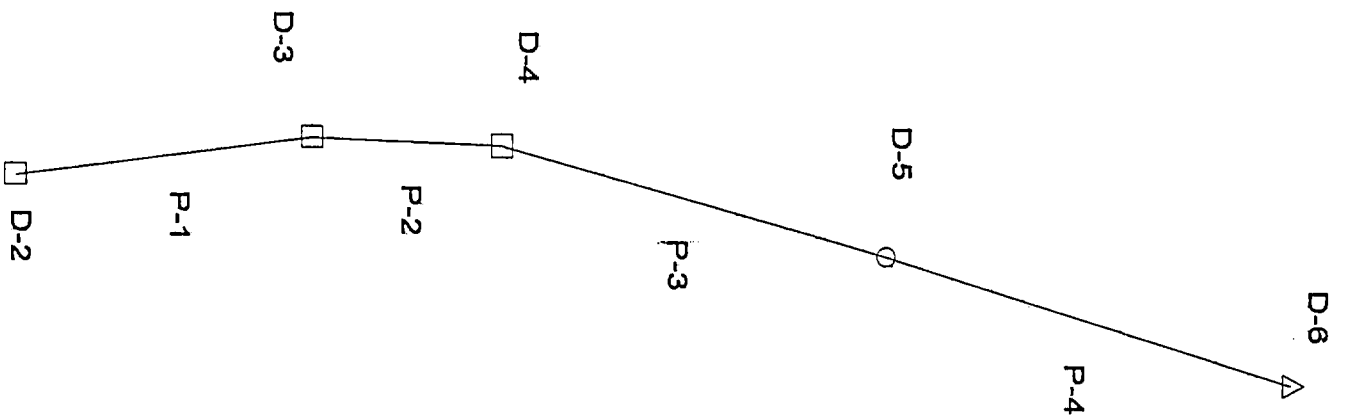
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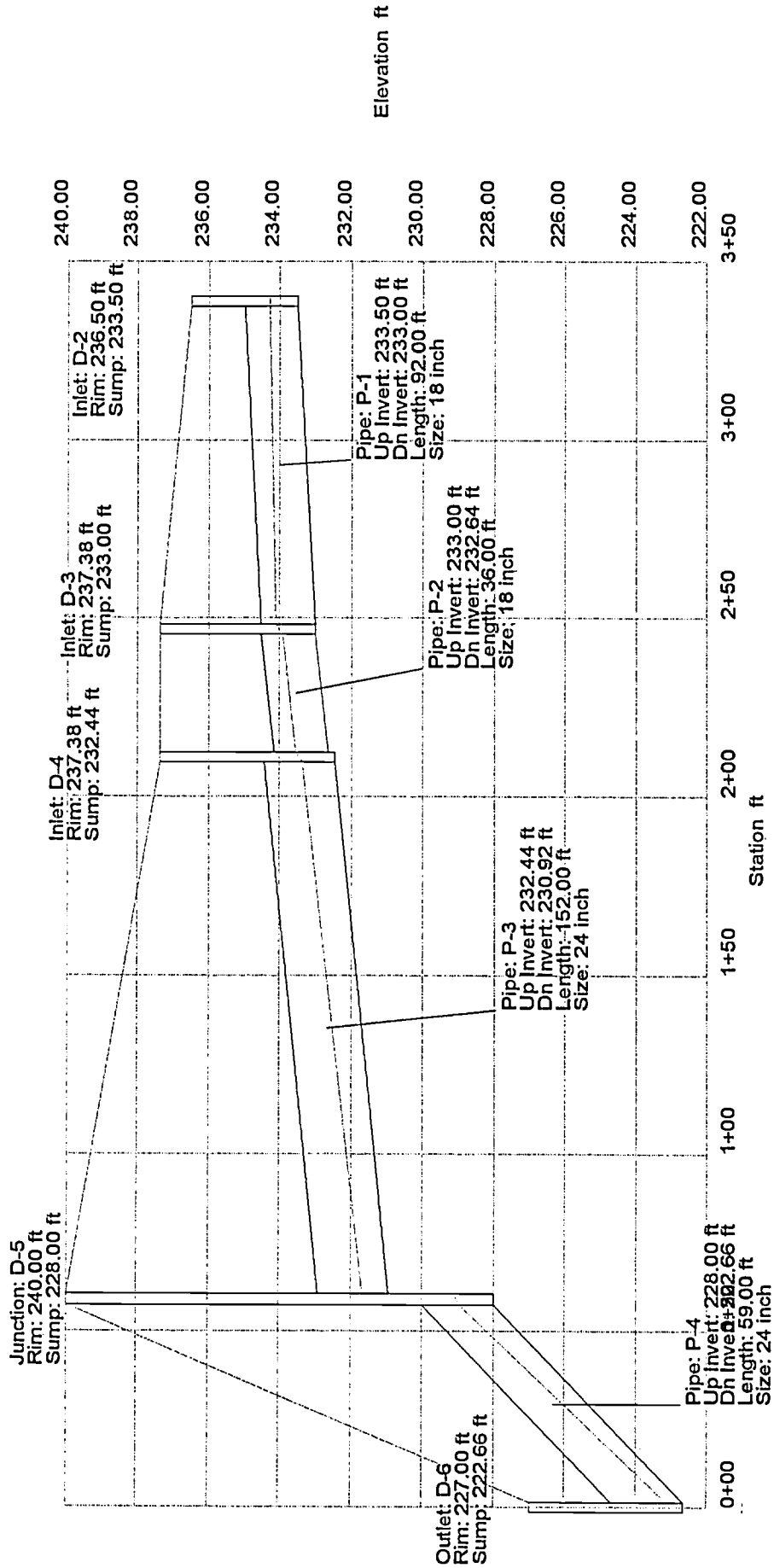
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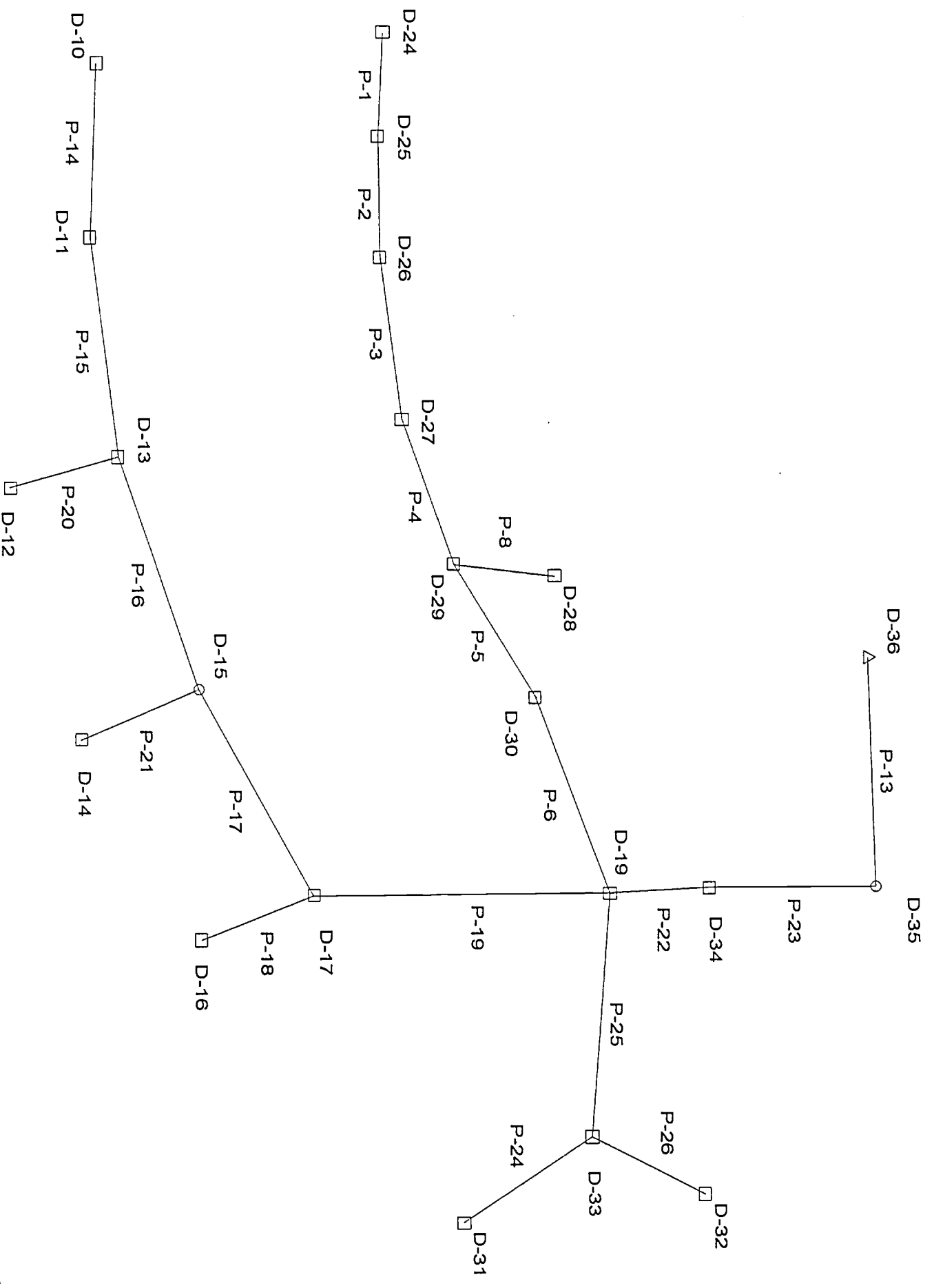






## Combined Pipe/Node Report

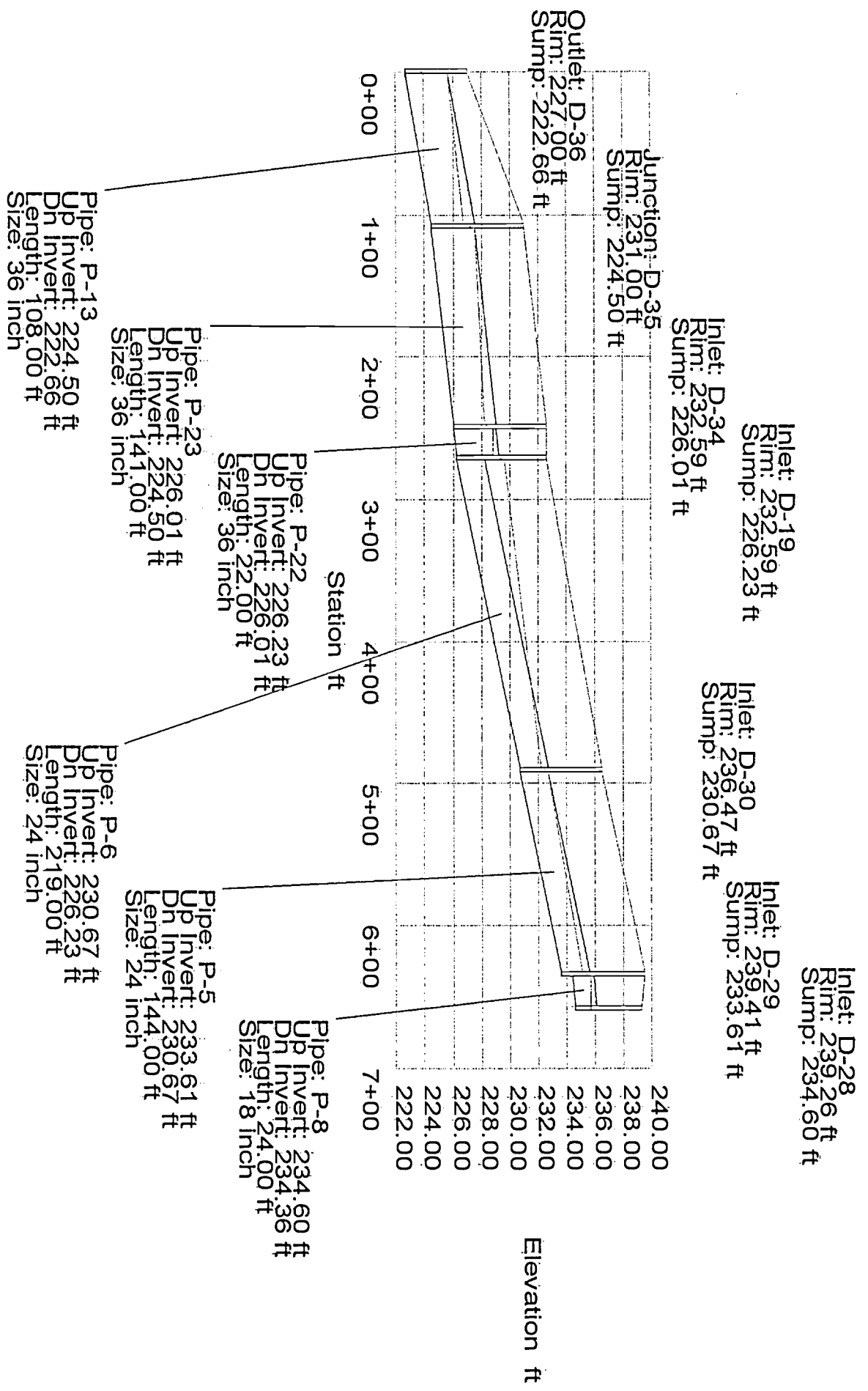
Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-1	D-2	D-3	92.00	1.29	0.46	0.59	0.59	4.38	18 inch	7.74	3.81	233.50	233.00	0.005435	10.00
P-2	D-3	D-4	36.00	0.32	0.59	0.19	0.78	1.39	18 inch	10.50	5.00	233.00	232.64	0.010000	10.00
P-3	D-4	D-5	152.00	0.32	0.59	0.19	0.97	1.39	24 inch	22.62	5.60	232.44	230.92	0.010000	10.00
P-4	D-5	D-6	59.00	N/A	N/A	N/A	0.97	N/A	24 inch	68.05	9.33	228.00	222.66	0.090508	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

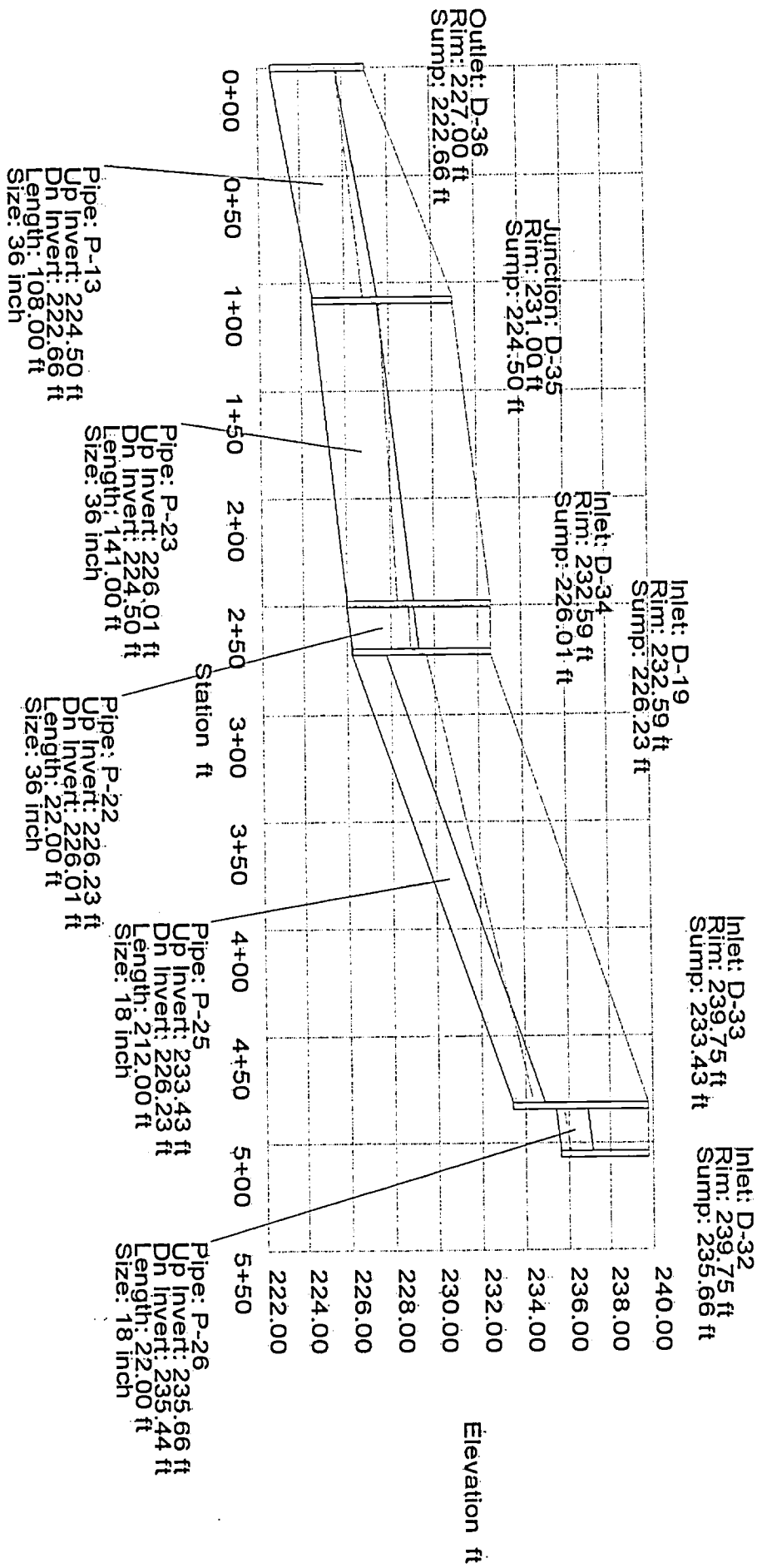


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 Page 1 of 1

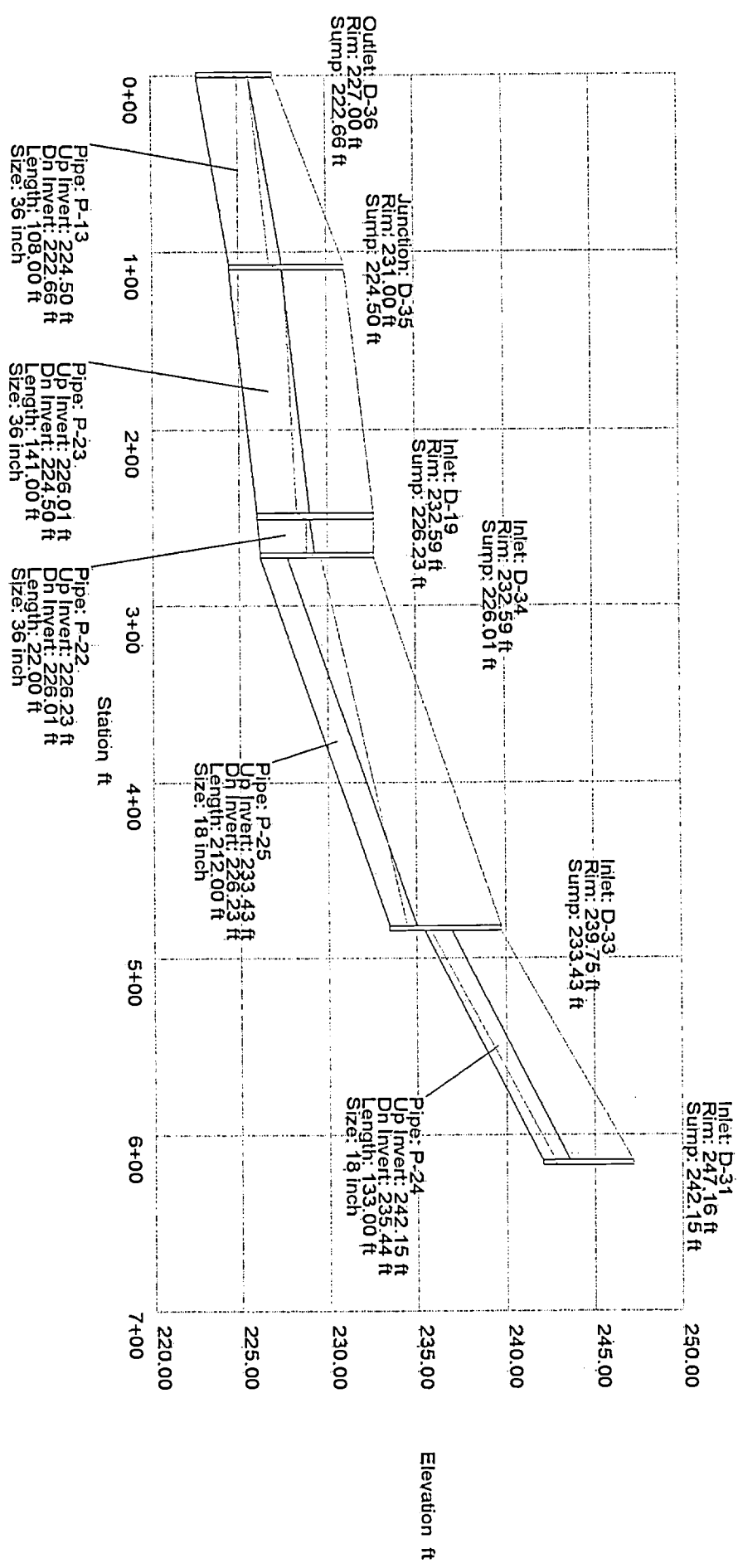




Project Title: SOMERSET  
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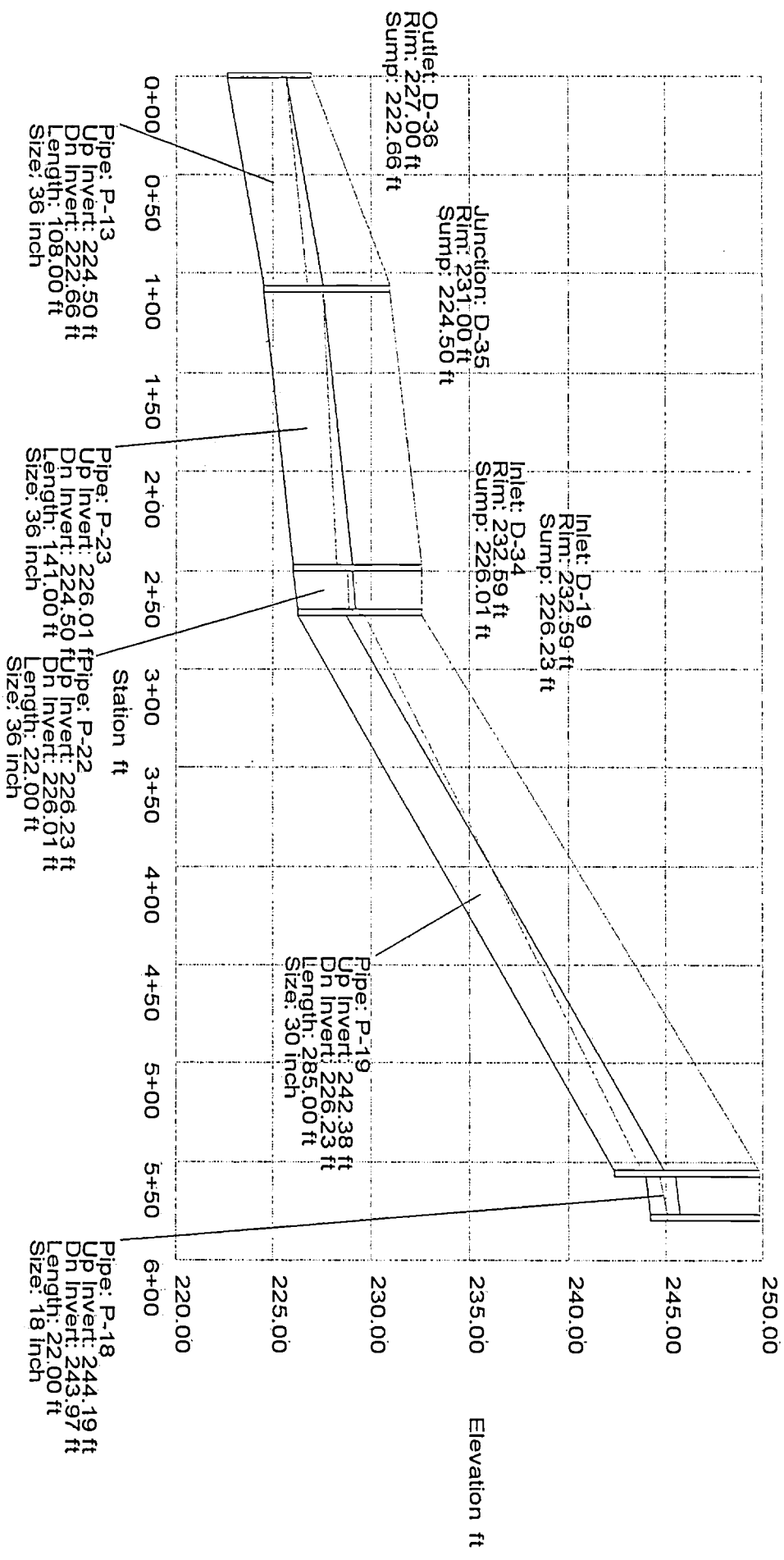
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Project Engineer: FARNER BARLEY & ASSOC.  
 StormCAD v1.0  
 Page 1 of 1

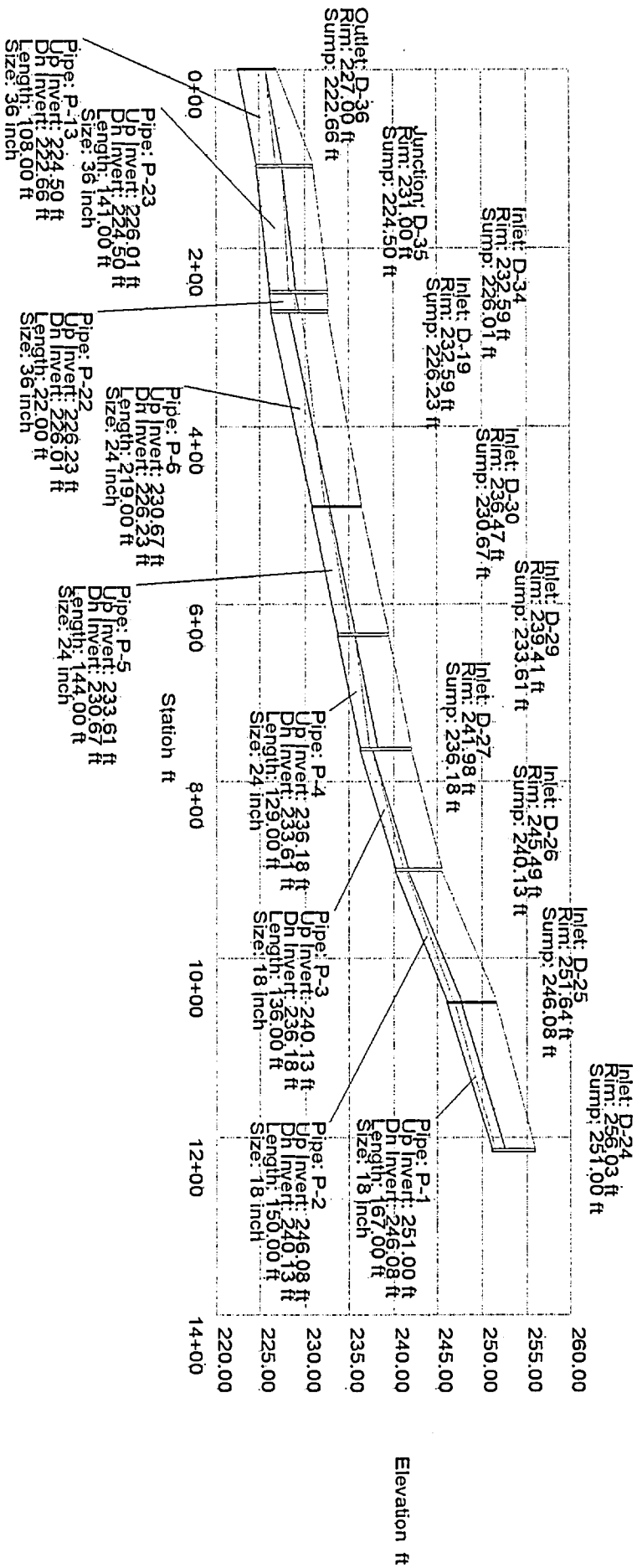


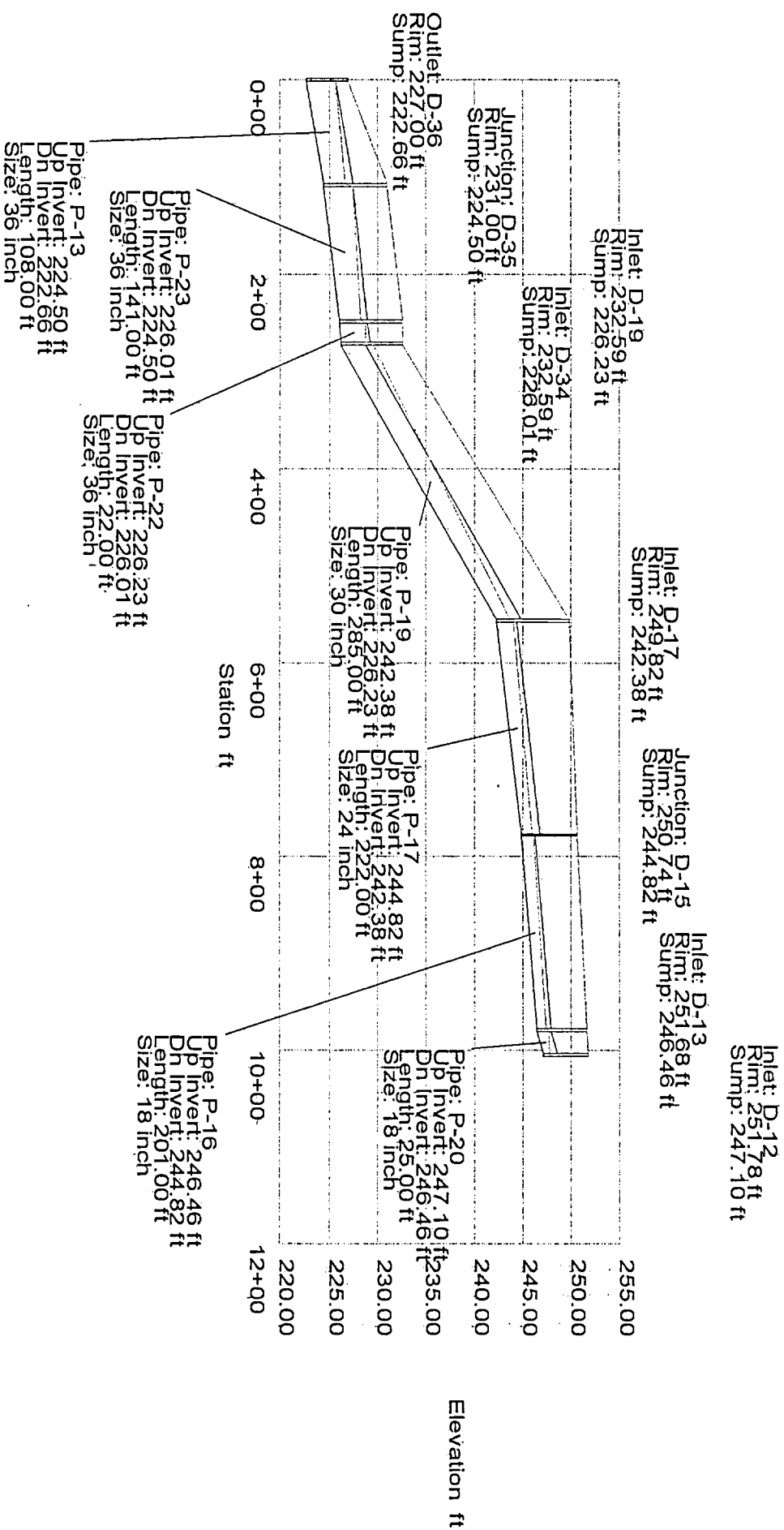
Inlet: D-17  
 Rim: 249.82 ft  
 Summp: 242.38 ft

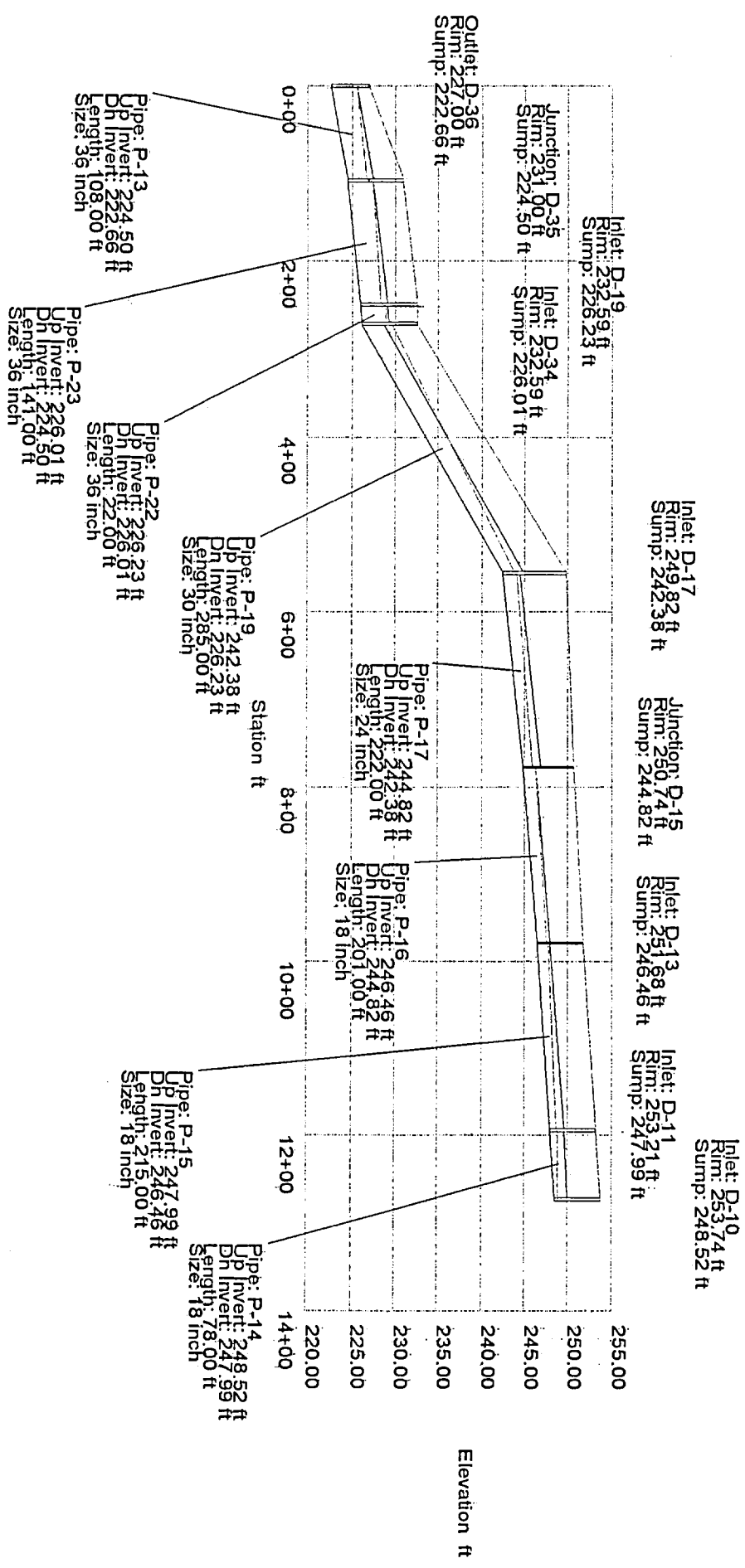
Inlet: D-16  
 Rim: 249.82 ft  
 Summp: 244.19 ft











Project Title: SOMERSET  
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# Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C (acres)	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-26	D-32	D-33	22.00	0.49	0.46	0.23	0.23	1.66	18 inch	10.50	3.83	235.66	235.44	0.010000	10.00
P-24	D-31	D-33	133.00	0.90	0.49	0.44	0.44	3.25	18 inch	23.59	6.74	242.15	235.44	0.050451	10.00
P-25	D-33	D-19	212.00	0.51	0.49	0.25	0.92	1.84	18 inch	19.36	4.56	233.43	226.23	0.033962	10.00
P-18	D-16	D-17	22.00	1.70	0.40	0.68	0.68	5.00	18 inch	10.50	5.24	244.19	243.97	0.010000	10.00
P-21	D-14	D-15	31.00	0.79	0.56	0.44	0.44	3.26	18 inch	9.80	2.10	245.09	244.82	0.008710	10.00
P-20	D-12	D-13	25.00	0.79	0.56	0.44	0.44	3.26	18 inch	16.81	3.03	247.10	246.46	0.025600	10.00
P-14	D-10	D-11	78.00	0.19	0.63	0.12	0.12	0.88	18 inch	8.66	1.81	248.52	247.99	0.006795	10.00
P-15	D-11	D-13	215.00	0.68	0.56	0.38	0.50	2.80	18 inch	8.86	3.21	247.99	246.46	0.007116	10.00
P-16	D-13	D-15	201.00	0.20	0.61	0.12	1.06	0.90	18 inch	9.49	4.98	246.46	244.82	0.008159	10.00
P-17	D-15	D-17	222.00	N/A	N/A	N/A	1.51	N/A	24 inch	23.72	4.57	244.82	242.38	0.010991	N/A
P-19	D-17	D-19	285.00	0.42	0.65	0.27	2.46	2.01	30 inch	97.63	4.66	242.38	226.23	0.056867	10.00
P-8	D-28	D-29	24.00	0.36	0.63	0.23	0.23	1.67	18 inch	10.50	1.13	234.60	234.36	0.010000	10.00
P-1	D-24	D-25	167.00	0.21	0.63	0.13	0.13	0.97	18 inch	18.03	1.90	251.00	246.03	0.029461	10.00
P-2	D-25	D-26	150.00	0.74	0.52	0.38	0.52	2.83	18 inch	20.92	3.29	246.08	240.13	0.039667	10.00
P-3	D-26	D-27	136.00	0.90	0.56	0.50	1.02	3.71	18 inch	17.90	4.75	240.13	236.18	0.029044	10.00
P-4	D-27	D-29	129.00	1.03	0.51	0.53	1.55	3.87	24 inch	31.93	4.46	236.18	233.61	0.019922	10.00
P-5	D-29	D-30	144.00	1.14	0.54	0.62	2.39	4.53	24 inch	32.32	5.86	233.61	230.67	0.020417	10.00
P-6	D-30	D-19	219.00	0.97	0.53	0.51	2.90	3.78	24 inch	32.21	6.69	230.67	226.23	0.020274	10.00
P-22	D-19	D-34	22.00	2.07	0.48	0.99	7.27	7.31	36 inch	66.69	7.00	226.23	226.01	0.010000	10.00
P-23	D-34	D-35	141.00	0.41	0.62	0.25	7.53	1.87	36 inch	69.02	7.69	226.01	224.50	0.010709	10.00
P-13	D-35	D-36	108.00	N/A	N/A	N/A	7.53	N/A	36 inch	87.05	9.38	224.50	222.66	0.017037	N/A
			N/A	N/A	N/A	N/A	7.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Project Title: SOMERSET  
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Future D-A

P-4

Future D-B

P-5

D-51

P-2

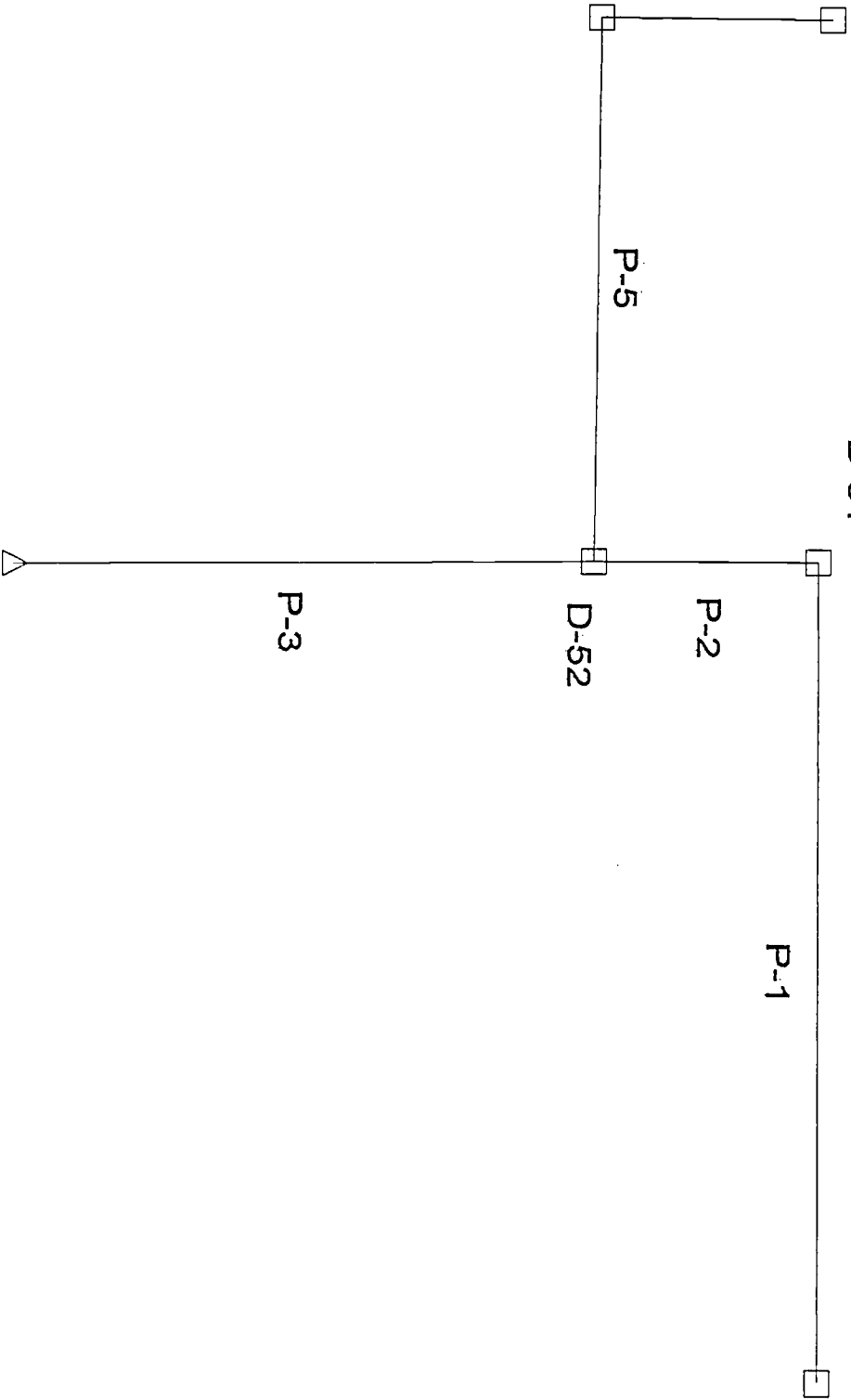
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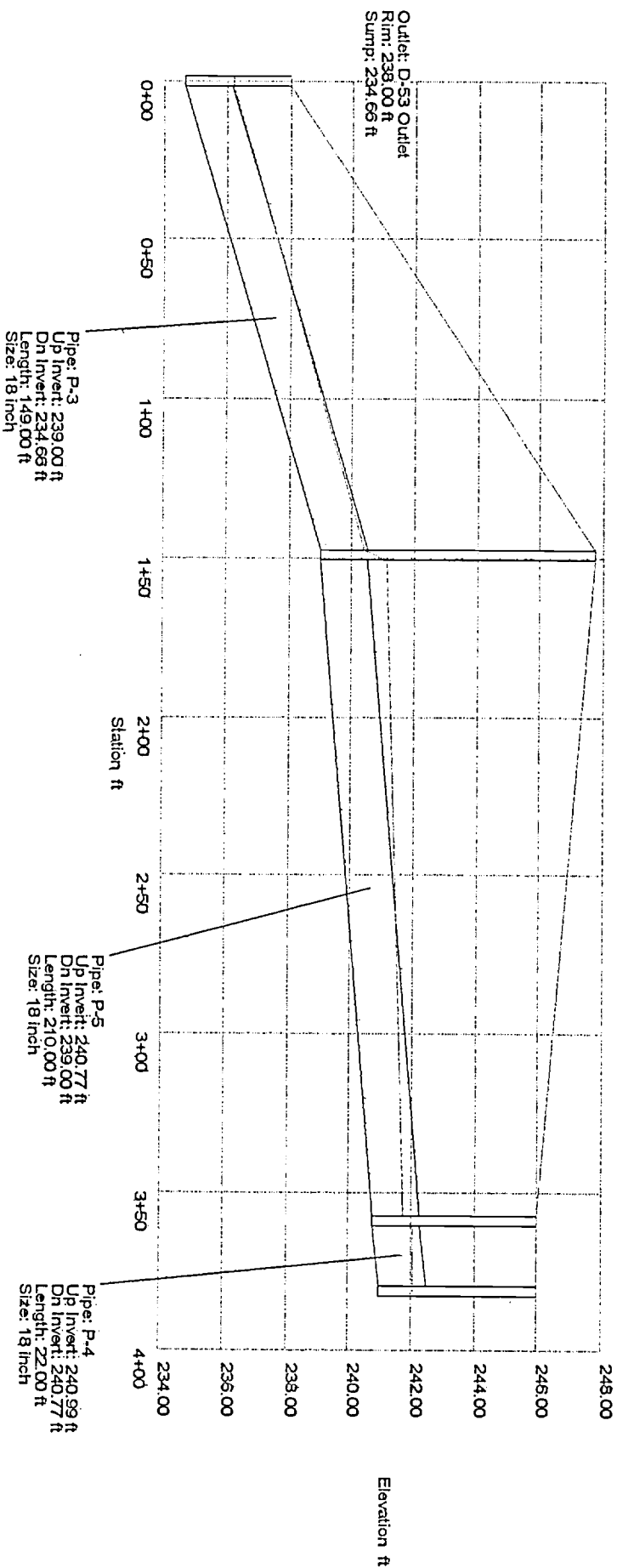
P-1

D-50

P-3

D-53 Outlet





Project Title: SOMERSET  
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 Page 1 of 1

Inlet: D-51  
 Rim: 247.74 ft  
 Summp: 242.52 ft

Inlet: D-50  
 Rim: 249.19 ft  
 Summp: 243.97 ft

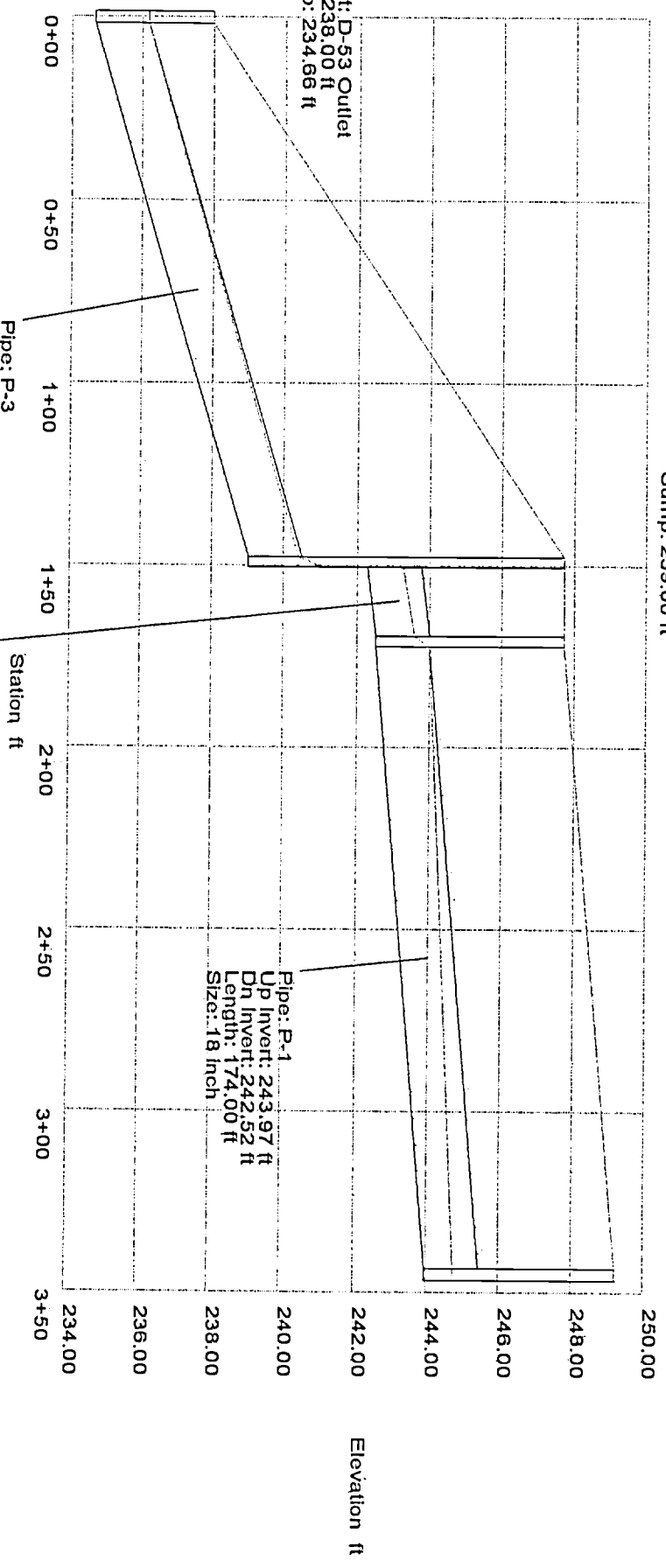
Inlet: D-52  
 Rim: 247.74 ft  
 Summp: 239.00 ft

Outlet: D-53 Outlet  
 Rim: 238.00 ft  
 Summp: 234.66 ft

Pipe: P-3  
 Up Invert: 239.00 ft  
 Dn Invert: 234.66 ft  
 Length: 149.00 ft  
 Size: 18 inch

Pipe: P-2  
 Up Invert: 242.52 ft  
 Dn Invert: 242.30 ft  
 Length: 22.00 ft  
 Size: 18 inch

Pipe: P-1  
 Up Invert: 243.97 ft  
 Dn Invert: 242.52 ft  
 Length: 174.00 ft  
 Size: 18 inch



## Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C (acres)	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-4	Future D-A	Future D-B	22.00	1.45	0.52	0.75	0.75	5.55	18 inch	10.50	3.81	240.99	240.77	0.010000	10.00
P-5	Future D-B	D-52	210.00	0.14	0.63	0.09	0.84	0.65	18 inch	9.64	4.33	240.77	239.00	0.008429	10.00
P-1	D-50	D-51	174.00	1.07	0.56	0.60	0.60	4.41	18 inch	9.59	3.53	243.97	242.52	0.008333	10.00
P-2	D-51	D-52	22.00	0.84	0.56	0.47	1.07	3.46	18 inch	10.50	6.02	242.52	242.30	0.010000	10.00
P-3	D-52	D-53 Outlet	149.00	0.29	0.61	0.18	2.09	1.30	18 inch	17.93	8.60	239.00	234.66	0.029128	10.00
	N/A	N/A	N/A	N/A	N/A	N/A	2.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Project Title: SOMERSET  
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INLET SPREAD CALCULATIONS  
"HEC 12"

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Project : SOMERSET

Sta 20+42

## INPUT

Intens.= 2.00 C1=0.45 A1= 1.25 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D44 C2=0.00 A2= 0.00 Qrunoff= 1.1 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0202 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.1 Qint= 1.1 Flowby dn= 0.0 Depth=0.22 Spread= 4.52 Veloc= 3.65

Sta 18+94

## INPUT

Intens.= 7.33 C1=0.56 A1= 1.30 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D45 C2=0.00 A2= 0.00 Qrunoff= 5.4 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

## OUTPUT

Flowby= 0.0 Qtotal= 5.4 Qint= 5.4 Flowby dn= 0.0 Depth=0.21 Spread= 1.96 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 18+94 INPUT  
Intens.= 7.33 C1=0.60 A1= 0.46 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D46 C2=0.00 A2= 0.00 Qrunoff= 2.0 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT  
Flowby= 0.0 Qtotal= 2.0 Qint= 2.0 Flowby dn= 0.0 Depth=0.11 Spread= 1.03 Veloc= 0.00

CRITERIA  
Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
Clogging Factors in Sag Location:  
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00  
Clogging Factors on Continuous Grade:  
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 13+58

## INPUT

Intens.= 2.00 C1=0.53 A1= 0.88 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D41 C2=0.00 A2= 0.00 Qrunoff= 0.9 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0199 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.9 Qint= 0.9 Flowby dn= 0.0 Depth=0.21 Spread= 3.92 Veloc= 3.63

Sta 11+22

## INPUT

Intens.= 0.73 C1=0.56 A1= 1.07 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D50 C2=0.00 A2= 0.00 Qrunoff= 0.4 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0083 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.4 Qint= 0.4 Flowby dn= 0.0 Depth=0.19 Spread= 2.87 Veloc= 2.38

Sta 9+47

## INPUT

Intens.= 0.73 C1=0.56 A1= 0.84 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D51 C2=0.00 A2= 0.00 Qrunoff= 0.3 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0083 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.3 Qint= 0.3 Flowby dn= 0.0 Depth=0.17 Spread= 2.07 Veloc= 2.37

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 13+58

## INPUT

Intens.= 7.33 C1=0.61 A1= 0.20 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D40 C2=0.00 A2= 0.00 Qrunoff= 0.9 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0199 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.9 Qint= 0.9 Flowby dn= 0.0 Depth=0.21 Spread= 3.77 Veloc= 3.64

Sta 9+47

## INPUT

Intens.= 4.00 C1=0.61 A1= 0.29 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D52 C2=0.00 A2= 0.00 Qrunoff= 0.7 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0083 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.7 Qint= 0.7 Flowby dn= 0.0 Depth=0.22 Spread= 4.47 Veloc= 2.33

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Gate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Gate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 33+58

## INPUT

Intens.= 5.00 C1=0.63 A1= 0.19 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D10 C2=0.00 A2= 0.00 Qrunoff= 0.6 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0079 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.6 Qint= 0.6 Flowby dn= 0.0 Depth=0.21 Spread= 3.97 Veloc= 2.29

Sta 30+66

## INPUT

Intens.= 5.00 C1=0.61 A1= 0.20 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D13 C2=0.00 A2= 0.00 Qrunoff= 0.6 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0071 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.6 Qint= 0.6 Flowby dn= 0.0 Depth=0.21 Spread= 4.22 Veloc= 2.17

Sta 26+38

## INPUT

Intens.= 7.33 C1=0.65 A1= 0.42 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D17 C2=0.00 A2= 0.00 Qrunoff= 2.0 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

## OUTPUT

Flowby= 0.0 Qtotal= 2.0 Qint= 2.0 Flowby dn= 0.0 Depth=0.11 Spread= 1.02 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 22+83 INPUT  
 Intens.= 2.00 C1=0.56 A1= 0.68 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D11 C2=0.00 A2= 0.00 Qrunoff= 0.8 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0071 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 0.8 Qint= 0.8 Flowby dn= 0.0 Depth=0.23 Spread= 4.97 Veloc= 2.17

Sta 30+78 INPUT  
 Intens.= 1.50 C1=0.56 A1= 0.79 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D12 C2=0.00 A2= 0.00 Qrunoff= 0.7 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0079 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 0.7 Qint= 0.7 Flowby dn= 0.0 Depth=0.22 Spread= 4.32 Veloc= 2.29

Sta 28+73 INPUT  
 Intens.= 0.73 C1=0.56 A1= 0.79 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D14 C2=0.00 A2= 0.00 Qrunoff= 0.3 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0040 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 0.3 Qint= 0.3 Flowby dn= 0.0 Depth=0.19 Spread= 3.07 Veloc= 1.64

Sta 26+38 INPUT  
 Intens.= 7.33 C1=0.40 A1= 1.70 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D16 C2=0.00 A2= 0.00 Qrunoff= 5.0 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT  
 Flowby= 0.0 Qtotal= 5.0 Qint= 5.0 Flowby dn= 0.0 Depth=0.20 Spread= 1.87 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 15+39

## INPUT

Intens.= 5.00 C1=0.63 A1= 0.36 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D28 C2=0.00 A2= 0.00 Qrunoff= 1.1 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.1 Qint= 1.1 Flowby dn= 0.0 Depth=0.22 Spread= 4.52 Veloc= 3.68

## INPUT

End of this reach of Catch Basins  
 Flowby dn flows to Catch Basin D34

## OUTPUT

Flowby dn= 0.0

Sta 22+65

## INPUT

Intens.= 4.00 C1=0.49 A1= 0.90 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D31 C2=0.00 A2= 0.00 Qrunoff= 1.8 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0480 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.8 Qint= 1.8 Flowby dn= 0.0 Depth=0.22 Spread= 4.57 Veloc= 5.64

Sta 21+22

## INPUT

Intens.= 7.33 C1=0.46 A1= 0.49 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D32 C2=0.00 A2= 0.00 Qrunoff= 1.7 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0519 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.7 Qint= 1.7 Flowby dn= 0.0 Depth=0.21 Spread= 4.22 Veloc= 5.86

Sta 19+02

## INPUT

Intens.= 7.33 C1=0.62 A1= 0.41 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D34 C2=0.00 A2= 0.00 Qrunoff= 1.9 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.9 Qint= 1.9 Flowby dn= 0.0 Depth=0.10 Spread= 0.97 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:36:47 Checked by: Date:

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Project : SOMERSET

Sta 21+22 INPUT  
 Intens.= 4.20 C1=0.49 A1= 0.90 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D33 C2=0.00 A2= 0.00 Qrunoff= 1.9 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0519 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.9 Quint= 1.9 Flowby dn= 0.0 Depth=0.22 Spread= 4.62 Veloc= 5.84

INPUT  
 End of this reach of Catch Basins  
 Flowby dn flows to Catch Basin D19

OUTPUT  
 Flowby dn= 0.0

Sta 11+15 INPUT  
 Intens.= 4.00 C1=0.52 A1= 0.74 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D25 C2=0.00 A2= 0.00 Qrunoff= 1.6 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0421 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.6 Quint= 1.6 Flowby dn= 0.0 Depth=0.22 Spread= 4.32 Veloc= 5.30

Sta 12+72 INPUT  
 Intens.= 2.00 C1=0.56 A1= 0.90 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D26 C2=0.00 A2= 0.00 Qrunoff= 1.0 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0380 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.0 Quint= 1.0 Flowby dn= 0.0 Depth=0.19 Spread= 3.07 Veloc= 5.12

Sta 14+06 INPUT  
 Intens.= 2.00 C1=0.51 A1= 1.03 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D27 C2=0.00 A2= 0.00 Qrunoff= 1.1 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.1 Quint= 1.1 Flowby dn= 0.0 Depth=0.22 Spread= 4.27 Veloc= 3.67

Sta 15+31 INPUT  
 Intens.= 3.50 C1=0.62 A1= 0.54 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D29 C2=0.00 A2= 0.00 Qrunoff= 1.2 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.2 Quint= 1.2 Flowby dn= 0.0 Depth=0.22 Spread= 4.62 Veloc= 3.69

Sta 16+75 INPUT  
 Intens.= 2.00 C1=0.53 A1= 0.97 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D30 C2=0.00 A2= 0.00 Qrunoff= 1.0 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.0 Quint= 1.0 Flowby dn= 0.0 Depth=0.21 Spread= 4.17 Veloc= 3.71

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Project : SOMERSET

Sta 19+02

## INPUT

Intens.= 7.33 C1=0.48 A1= 2.07 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D19 C2=0.00 A2= 0.00 Qrunoff= 7.3 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

## OUTPUT

Flowby= 0.0 Qtotal= 7.3 Qint= 7.3 Flowby dn= 0.0 Depth=0.26 Spread= 2.41 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:37:35 Checked by: Date:

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Project : SOMERSET

Sta 10+65

## INPUT

Intens.= 7.33 C1=0.59 A1= 0.32 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18

CB ID = D3 C2=0.00 A2= 0.00 Qrunoff= 1.4 Slope2= 0.1070 a = 5.50 Lgrate= 8.00

Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0482 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.4 Qint= 1.4 Flowby dn= 0.0 Depth=0.21 Spread= 3.77 Veloc= 5.64

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:42:39 Checked by: Date:

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Project : SOMERSET

Sta 10+65

INPUT

Intens.= 7.33 C1=0.59 A1= 0.32 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D4 C2=0.00 A2= 0.00 Qrunoff= 1.4 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0482 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT

Flowby= 0.0 Qtotal= 1.4 Qint= 1.4 Flowby dn= 0.0 Depth=0.21 Spread= 3.77 Veloc= 5.64

CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:41:17 Checked by: Date:  
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GEOTECHNICAL INVESTIGATION  
OF LEGENDS SUBDIVISION  
Clermont  
Lake County, Florida



# Andreyev Engineering, Inc.

TAVARES OFFICE  
107 W. Main St., Suite B  
Tavares, Florida 32778  
352-742-9622  
Fax: 352-742-9623  
Email: ANDENGI@AOL.COM

▼ Groundwater ▼ Environmental ▼ Geotechnical ▼ Construction Materials Testing

January 15, 1999  
Project No: TPGT-98-111R

TO: Lennar Homes  
c/o Farner Barley & Associates, Inc.  
350 North Sinclair Avenue  
Tavares, Florida 32778

Attention: Mr. Duane Booth, P.E.

SUBJECT: Geotechnical Investigation at KingsRidge Subdivision, Hancock Estates, Pavement Sections and Stormwater Retention Systems, Lake County, Florida

Dear Mr. Booth:

As requested, Andreyev Engineering, Inc. (AEI) has completed a geotechnical investigation for the subject site. The following report presents the results of our field and laboratory investigation along with evaluations and recommendations for retention pond design and selection of pavement base material.

## SITE LOCATION AND DESCRIPTION

The subject property is located off Hancock Road adjacent to the under construction school site in Clermont. Three (3) stormwater retention areas associated with the proposed development will be located along the east and west property boundaries. A vicinity map showing the site on a regional scale, as well as topographic features of the site is attached as **Figure 1**.

## PURPOSE AND SCOPE OF SERVICES

The purpose of this study was to explore shallow subsurface conditions at proposed pavement and retention areas. The field exploration consisted of drilling six (6) auger borings to a depth of 10 feet in proposed pavement areas and six (6) 15-foot auger borings in the vicinity of the three proposed retention ponds. Boring locations are shown on the attached site plan, **Figure 2**.

Samples were recovered from the borings and returned to AEI's laboratory for visual classification and stratification by a Geotechnical Engineer. Soil samples were classified according to the Unified Soil Classification System.

Laboratory tests were conducted on 2 selected soil samples recovered from the borings for moisture content and percent passing the U.S. # 200 sieve. In addition a permeability test was conducted in the retention areas to estimate the coefficient of permeability of the subsurface soils. The results of these tests are shown adjacent to the tested depth on the soil profiles, **Figure 3**.

## SUBSURFACE CONDITIONS

Results of the borings indicate that fine sand is the predominant subsurface soil existing from the ground surface to a depth of 15 feet below ground surface with sporadic layers of clayey soils occurring between 4 and

15 feet below ground surface at the location of the borings. Results of the borings are shown graphically in profile form on Figure 3.

The groundwater table was not encountered at any of the boring locations. The normal seasonal high groundwater is estimated to occur below a depth of 15 feet.

A field permeability test was conducted at boring A-1 in the vicinity the proposed retention pond #1 to measure the horizontal hydraulic conductivity of the soils. This test was conducted by installing a screen PVC piezometer in the ground to depths of 15 feet below the ground surface, and conducting a constant head field permeability test, per designation E-19, Earth Manual, 1974. The result of this test is shown adjacent to the sampled depth interval on Figure 3.

In order to measure the vertical hydraulic conductivity of the shallow soils above the clayey soils, an undisturbed tube sample was extracted from depths of about 2 feet below ground surface at boring A-4. The coefficient of permeability was measured in our laboratory using a falling head test. The result of this test is shown adjacent to the sampled depth on Figure 3.

### EVALUATION AND RECOMMENDATIONS

Based on field and laboratory results, the proposed retention pond locations may be suitable for construction and long-term performance of dry stormwater retention systems. For pavement design, either a flexible or a semi-flexible pavement sections can be used at this site. However, temporary perching of groundwater may occur above the Stratum 3 clayey soils during periods of heavy or extended rainfall and a minimum 2 foot separation should be maintained between the bottom of pavement base and top of the Stratum 3 soils, since roadway cuts could encounter some Stratum 3 soils in some areas.

#### Retention Ponds

The subsurface conditions in the vicinity of the proposed retention pond #1 are satisfactory for dry stormwater retention due to the highly permeable subsurface soil strata and deep groundwater table. However temporary perching of groundwater above the Stratum 3 clayey soils in the area of retention ponds 2 and 3 will be a concern. In order to provide adequate infiltration, a 2 to 3 foot buffer will be needed between the pond bottom and top of the Stratum 3 clayey soils. The Stratum 3 soils will need to be over-excavated and replaced with clean fine sand with less than 5% passing the U.S. No. 200 sieve. All fill used in pond and berm construction should consist of clean fine sand with less than 5% passing the U.S. #200 sieve. The Strata 1 and 2 soils should be suitable for use as fill. For purposes of design and evaluation of retention area recovery, the following aquifer characteristics should be assumed:

Parameters	Vicinity of Pond #1	Vicinity of Pond #2	Vicinity of Pond #3
Depth to Seasonal High Groundwater Table (feet)	15	4*	7*
Depth to Aquifer base (feet)	15	4*	7*
Vertical Hydraulic Conductivity (ft/day)	40	40	40
Horizontal Hydraulic Conductivity (ft/day)	42	40	40
Soil Storage Coefficient	0.30	0.30	0.30

\* Without over-excavation of the Stratum 3 soils, excavation of the clayey soils would allow the seasonal high groundwater table and the aquifer base to be set at the excavated depth.

## Paved Areas

In general, the compacted subsurface soils will be suitable for support of a flexible (limerock) or semi-flexible (soil-cement) type pavement base after subgrade preparation. A limerock base is generally used for these soil and groundwater conditions since it is the more economical alternative. Typical flexible and semi-flexible pavement sections are as follows:

### Limerock Base

1-1/2" asphaltic concrete wearing surface

6" limerock base course. quality of limerock to be in accordance with current Florida Department of Transportation specifications and compacted to a minimum density equivalent to 95 percent of the Modified Proctor (AASHTO T-180).

6" stabilized subbase with minimum Florida Bearing Value (FBV) of 50 psi or (LBR) of 30 percent. The subbase should be compacted to a minimum density equivalent to 95 percent of the Modified Proctor Maximum Density (AASHTO T-180) for a depth of 1 foot below pavement subgrade.

### Soil-Cement Base

1-1/2" asphaltic concrete wearing surface

6" soil-cement base designed and constructed in accordance with current Portland Cement Association recommended methods.

12" subgrade consisting of free draining natural fine sand or fine sand fill. Subgrade to be compacted to a minimum density of 95 percent of the Modified Proctor Maximum Density (AASHTO T-180).

Asphaltic wearing surface normally consists of Type S-1 or S-3, meeting current Florida Department of Transportation specifications. The wearing surface should be compacted to a minimum density of 95 percent of the Laboratory Density as determined by the Marshall Stability Test method for the approved job mix formula.

The recommendations presented above are minimum assuming normal light passenger car and pick-up truck traffic with an occasional garbage or delivery truck. Traffic should not be allowed on the subgrade prior to placement of the base to avoid rutting. The final pavement thickness design should be checked by the project civil engineer using data contained in this report and anticipated traffic conditions.




CLOSURE

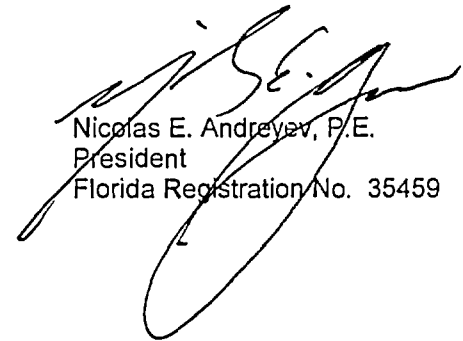
AEI appreciates the opportunity to participate in this project, and we trust that the information herein is sufficient for your immediate needs. If you have any questions or comments concerning the contents of this report, please do not hesitate to contact the undersigned.

Sincerely,

ANDREYEV ENGINEERING, INC.

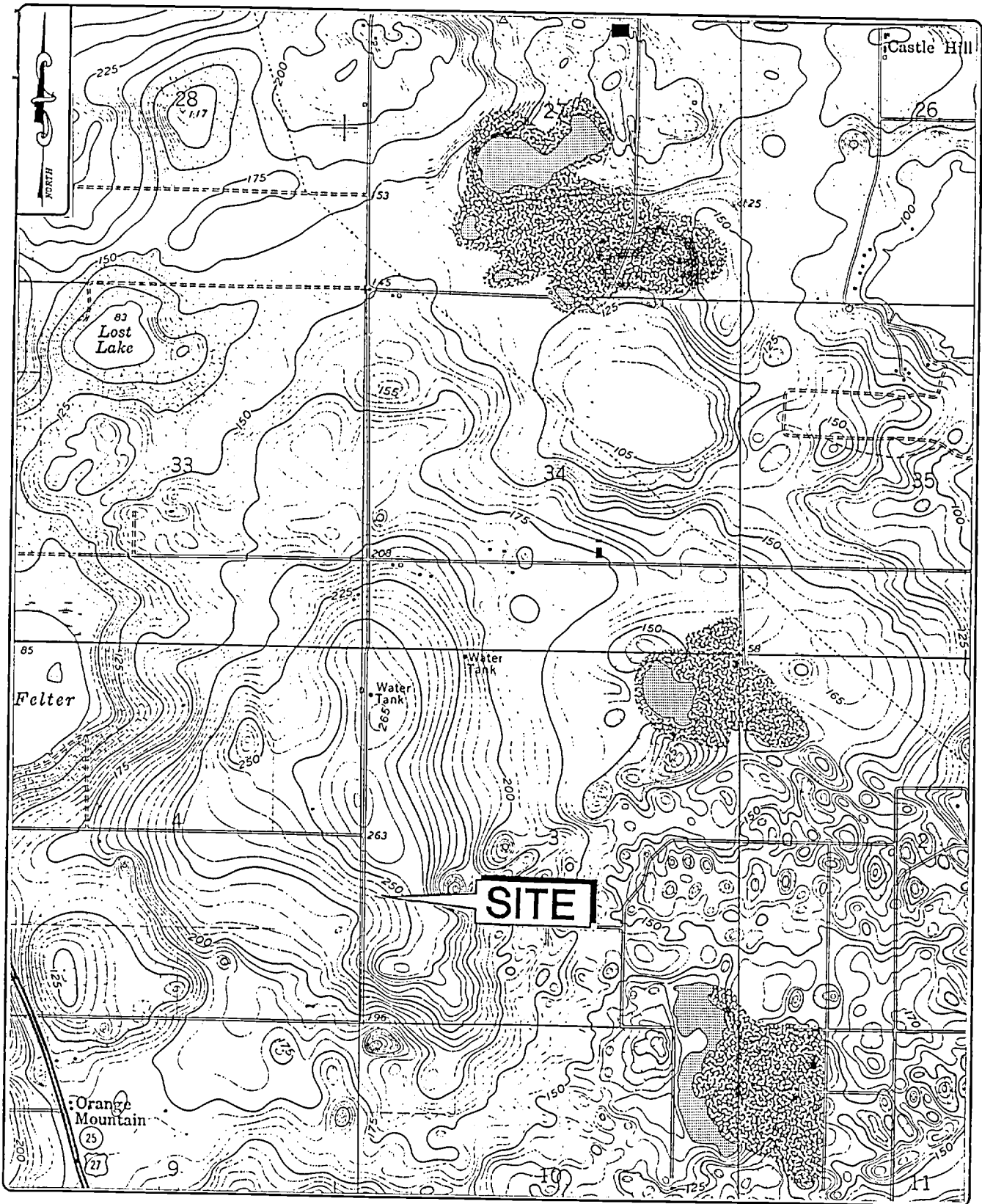


Ray Jones, E.I.  
Project Engineer  
Tavares Office



Nicolas E. Andreyev, P.E.  
President  
Florida Registration No. 35459

FIGURES



REFERENCE:  
 U.S.G.S. clermont east, FLA.  
 QUADRANGLE MAP  
 DATED 1962  
 PHOTOREVISED 1980  
 SECTION 3  
 TOWNSHIP 23 SOUTH  
 RANGE 26 EAST




**Andreyev  
 Engineering,  
 Inc.**

GEOTECHNICAL INVESTIGATION  
 HANCOCK ESTATES  
 KINGSRIDGE SUB-DIVISION  
 LAKE COUNTY, FLORIDA


SCALE: 1" = 2000'	DATE: 1/4/99	ENGINEER: RJ
	PN: TPGT-98-111	DRAWN BY: MK

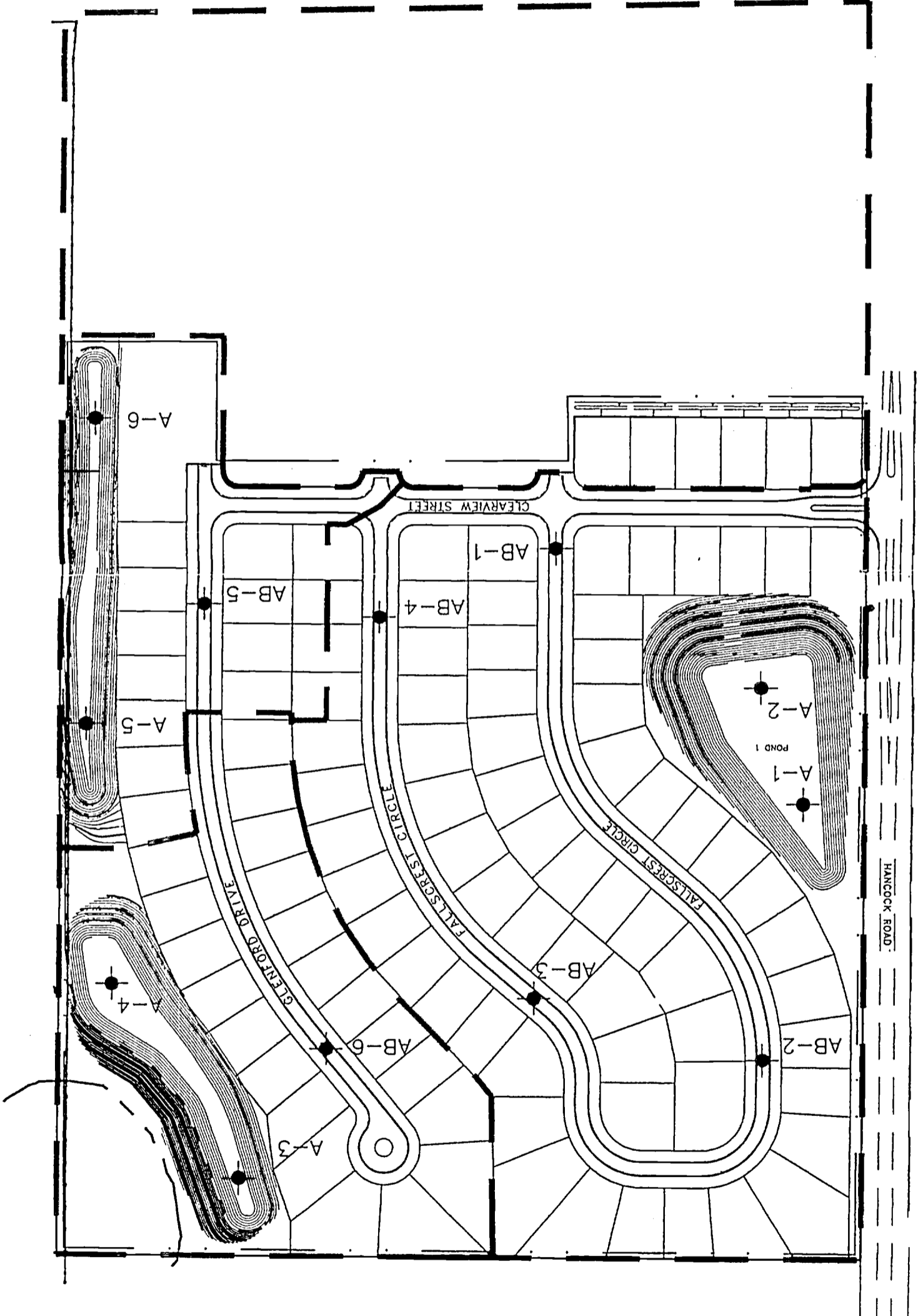
VICINITY MAP

FIGURE 1

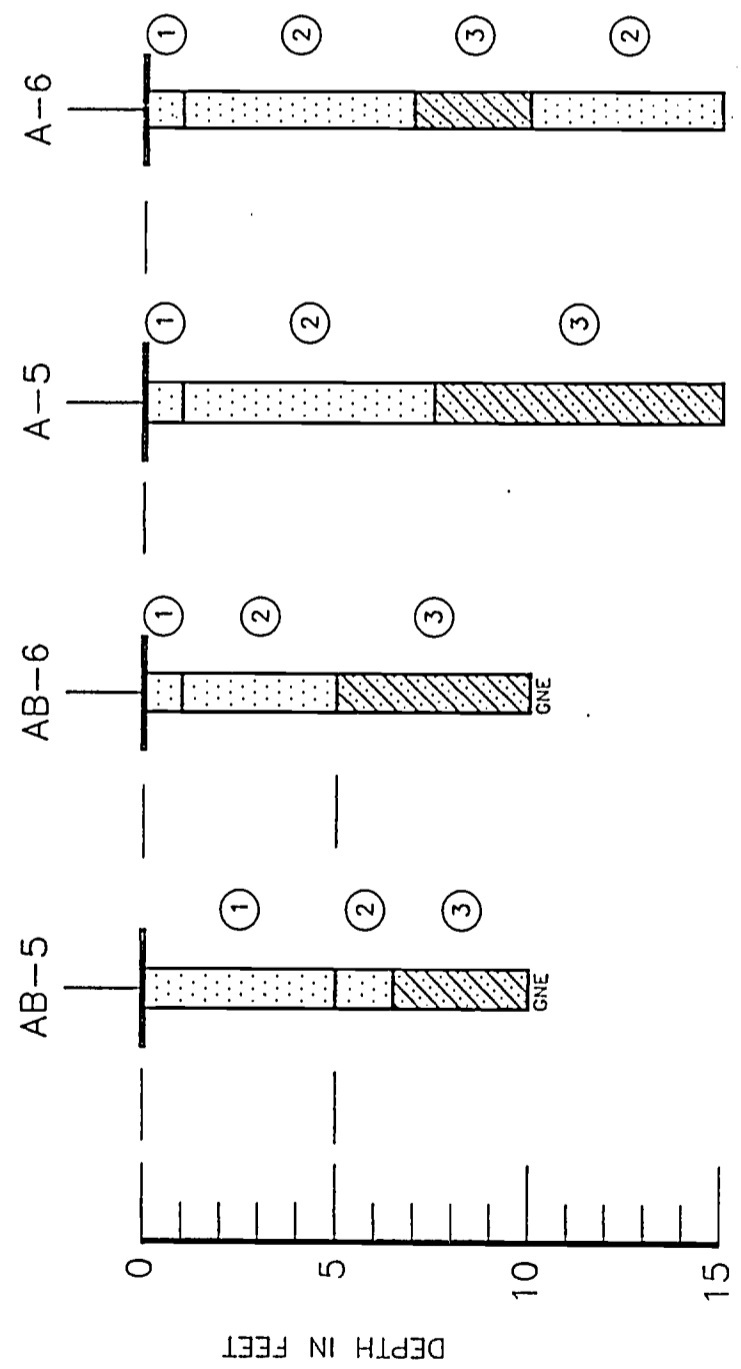
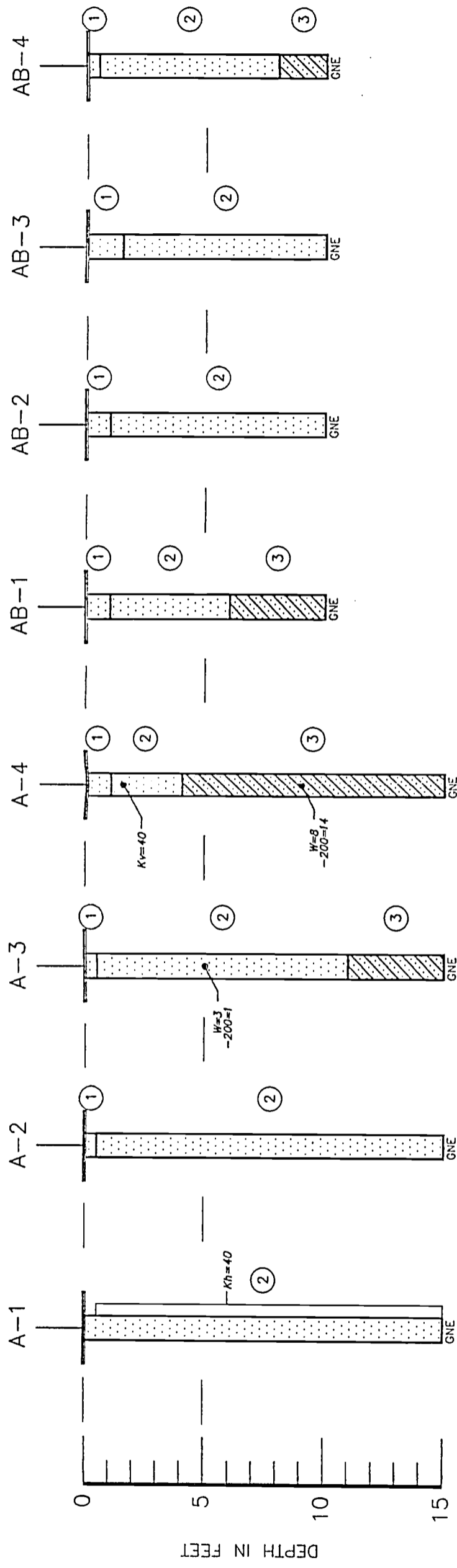
GEOLOGICAL INVESTIGATION HANCOCK ESTATES KINGSRIDGE SUB-DIVISION LAKE COUNTY, FLORIDA		 <b>Andreyev Engineering, Inc.</b>	
SITE PLAN		ENGINEER: RJ	DATE: 1/4/89
FIGURE 2		PN: PCT-98-111	DRAWN BY: MK

SCALE: 1" = 200'

LEGEND  
 AUGER BORING LOCATION



NORTH  

**LEGEND**

- ① GRAY BROWN FINE SAND (SP)
- ② LIGHT BROWN TO BROWN TO ORANGISH BROWN FINE SAND (SP)
- ③ REDDISH BROWN TO ORANGISH BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (SP-SC)(SC)
- W NATURAL MOISTURE CONTENT IN PERCENT
- 200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
- K<sub>v</sub> VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
- K<sub>h</sub> HORIZONTAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY

<p><b>Andreyev Engineering, Inc.</b></p>	GEOTECHNICAL INVESTIGATION HANCOCK ESTATES KINGSRIDGE SUB-DIVISION LAKE COUNTY, FLORIDA	
	SOIL PROFILES	
SCALE: 1" = 5'	DATE: 12/23/98	ENGINEER: RJ
	PN: TPGT-98-111	DRAWN BY: MK

SOMERSET ESTATES @ KINGS RIDGE  
STORMWATER CALCULATIONS  
FBA NO. 941216.061

RECEIVED  
JAN 27 1999  
40-069-0351A-ERP  
PDS  
ORLANDO  
SJR WMD

FARNER, BARLEY & ASSOCIATES, INC.  
350 NORTH SINCLAIR AVENUE  
TAVARES, FLORIDA 32778

BY:   
DUANE K. BOOTH, P.E.  
FLORIDA REG. NO. 44631

DATE: JAN 25 1999

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6. ICPR Node Max Conditions 25 year-96 hour Storm
7. ICPR Routed Hydrograph with Infiltration 25 year-96 hour Storm
8. "Ponds" Infiltration Analysis 25 year-96 hour Storm
9. "Ponds" Recovery Analysis (Treatment Volume)
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12. Storm Sewer Tabulations
13. "HEC 12" Water Spread Calculations
14. Soils Report:
  - A. Geotechnical Investigation of Somerset Subdivision (A.K.A. Hancock East)  
January 4, 1999

RECEIVED

JAN 27 1999

40-069-03 SIA-ERP

PDS  
ORLANDO  
SJR WMD.

## SOMERSET ESTATES @ KINGS RIDGE

### STORMWATER DESIGN SUMMARY

Somerset Estates is located in Sections 3 and 4 of Township 23S, Range 26E on U.S. Highway 27 South of Clermont consisting of approximately 40.43 acres. The property as existing today is mostly open field.

Since the subject property does not have a positive outfall, the stormwater management system is designed to retain the total runoff from the 25 year-96 hour storm event. Therefore, the pre-developed site conditions were not modeled for pre vs. post comparison.

The Stormwater Calculations meet or exceed the requirements of St. Johns River Water Management District, the City of Clermont, and Florida Department of Transportation.

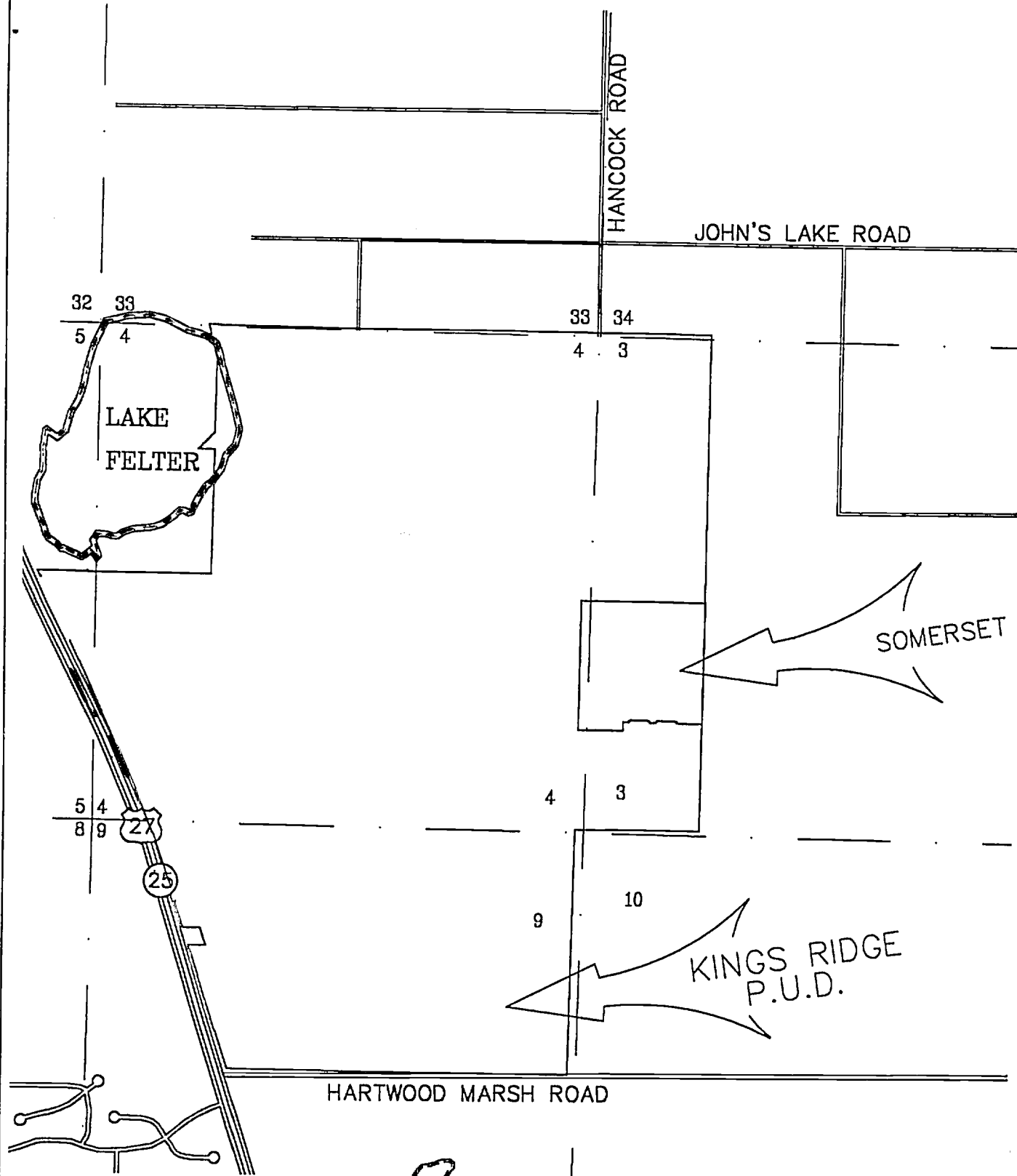
See ICPR Max Node conditions for comparison of peak stage versus pond max elevation and ponds Recovery analysis for stormwater treatment volume calculation and recovery analysis.

<i>POND</i>	<i>TOP OF POND ELEVATION</i>	<i>PEAK STAGE</i>	<i>TREATMENT VOLUME Cu.Fl.</i>	<i>TREATMENT RECOVERY TIME (Hrs.)</i>
1	227.0	224.87	85,341	0.37
2	244.0	*241.97	37,607	10.37
3	238.0	237.18	28,931	0.34

\*Peak Stage of 2nd storm due to recovery of 1st storm not within 14 days.



MAPS



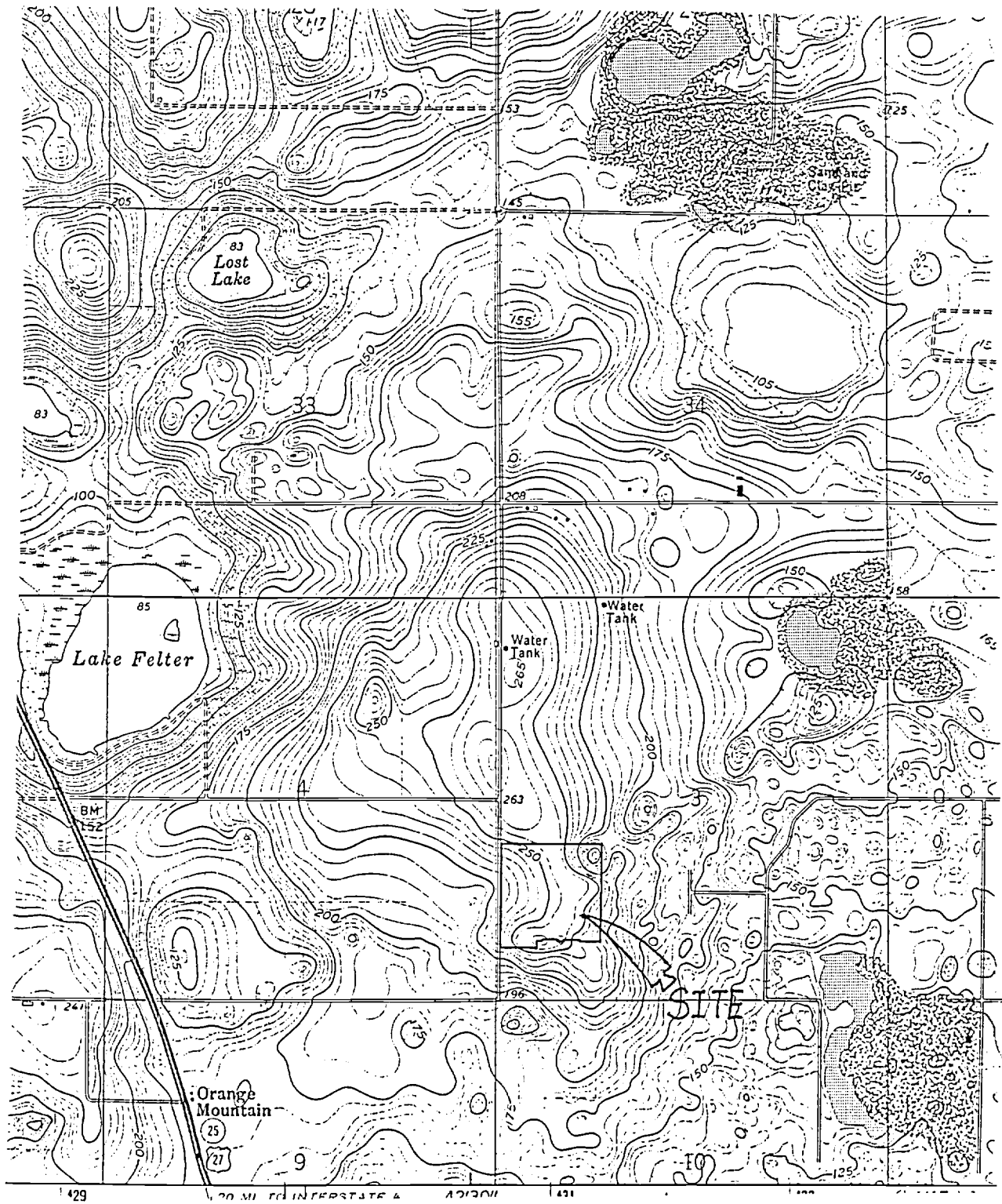
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BARLEY**  
AND ASSOCIATES, INC.

350 North Sinclair Avenue O Tavares, Florida 32778 O (904) 343-8481

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- ▲ SURVEYORS
- ▲ PLANNERS

# LOCATION MAP

SCALE 1" = 1500'



## Clermont East, Florida Quadrangle



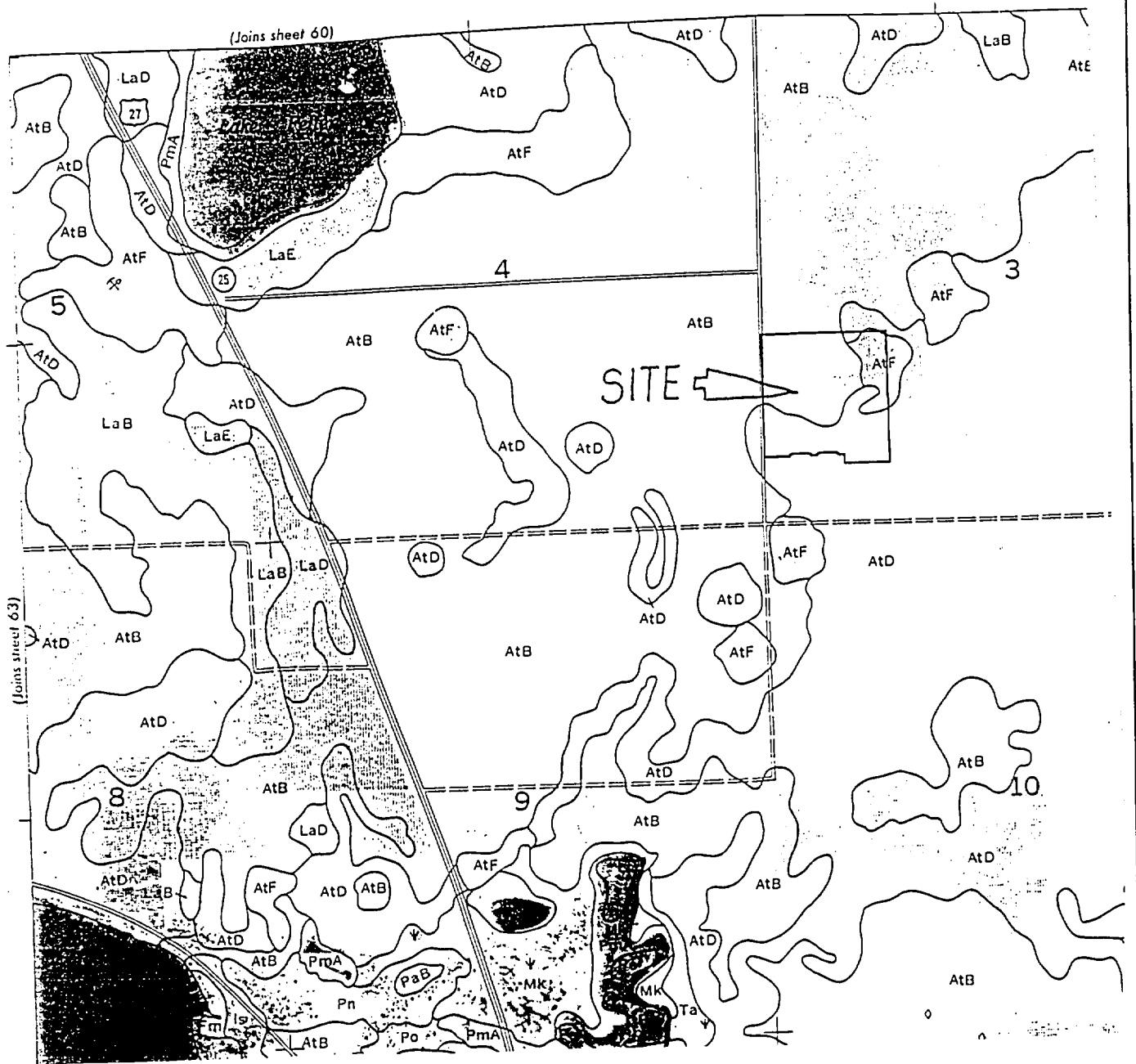
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**USGS QUAD  
MAP**

SCALE 1" = 2000'



## LAKE COUNTY SOIL SURVEY



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# SCS SOILS MAP

SCALE 1" = 1667'

**DEVELOPED BASIN SUMMARY  
AND CURVE NUMBER CALCULATION**

4000 SF RESIDENCE

# STORM RUNOFF WORKSHEET

PROJECT #: 941216.061 PROJECT: HANCOCK ESTATES DATE: 9/28/98  PRE-DEVELOPMENT  POST-DEVELOPMENT

BASIN NO. B-1 TOTAL AREA 23.51 STORM: 25 YEAR 96 HOUR

SOIL	GROUP	LAND USE	AREA Pervious (acres)	AREA Imperv. (acres)	CN	AREA (%)	PRODUCT CN x AREA	
		(24 x 3486) + (62 x 4000)		7.67	98	32	3136	
	A	GREEN GLASS - GOOD	15.90		39	68	2652	
TOTALS							100	5788

GROUP	AREA Pervious	%	AREA Imperv.	%	TOTAL AREA
A					
B					
C					
D					
TOTALS					

PRODUCT COVERAGE =  $\bar{CN}$  = 58

$$S = \frac{1000}{CN} - 10$$

$$R = \frac{(P - 0.25)^2}{(P + 0.85)}$$

R = runoff (in.)  
P = rainfall (in.)

RAINFALL (P) = 11.2 in.  
 RUNOFF R = 5.60 in.  
10.96 ac.ft.  
 \_\_\_\_\_ cu.ft.

BASIN NO. B-2 TOTAL AREA 10.36 STORM: 25 YEAR 96 HOUR

SOIL	GROUP	LAND USE	AREA Pervious (acres)	AREA Imperv. (acres)	CN	AREA (%)	PRODUCT CN x AREA	
		(24 x 828) + (21 x 4000)		2.38	98	23	2254	
	A	GREEN GLASS - GOOD	7.98		39	77	3003	
TOTALS							100	5257

GROUP	AREA Pervious	%	AREA Imperv.	%	TOTAL AREA
A					
B					
C					
D					
TOTALS					

PRODUCT COVERAGE =  $\bar{CN}$  = 53

$$S = \frac{1000}{CN} - 10$$

$$R = \frac{(P - 0.25)^2}{(P + 0.85)}$$

Q = runoff (in.)  
P = rainfall (in.)

RAINFALL (P) = 11.2 in.  
 RUNOFF R = 4.86 in.  
4.19 ac.ft.  
 \_\_\_\_\_ cu.ft.

4000 SF RESIDENCE

# STORM RUNOFF WORKSHEET

PROJECT #: 941216.061 PROJECT: HANCOCK ESTATES DATE: 12/4/98

PRE-DEVELOPMENT  
 POST-DEVELOPMENT

BASIN NO. B-3 TOTAL AREA 7.97 STORM: 25 YEAR 96 HOUR

SOIL	GROUP	LAND USE	AREA Pervious (acres)	AREA Imperv. (acres)	CN	AREA (%)	PRODUCT CN x AREA
		<u>(24 x 1940) + (23 x 4000)</u>		<u>2.62</u>	<u>98</u>	<u>33</u>	<u>3234</u>
	<u>A</u>	<u>GREEN GRASS - GOOD</u>	<u>5.35</u>		<u>39</u>	<u>67</u>	<u>2613</u>
		TOTALS				<u>100</u>	<u>5847</u>

GROUP	AREA Pervious	%	AREA Imperv.	%	TOTAL AREA
<u>A</u>					
<u>B</u>					
<u>C</u>					
<u>D</u>					
TOTALS					

PRODUCT COVERAGE =  $\overline{CN}$  = 58

$S = \frac{1000}{CN} - 10$   
 $R = \frac{(P - 0.2S)^2}{(P + 0.4S)}$   
 R = runoff (in.)  
 P = rainfall (in.)

RAINFALL (P) = 11.2 in.  
 RUNOFF R = 5.45 in.  
3.02 ac.ft.  
 \_\_\_\_\_ cu.ft.

ICPR INPUT DATA



SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Node-----  
Name: 1           Base Flow(cfs): 0           Init Stage(ft): 222  
Group: BASE       Length(ft): 0           Warn Stage(ft): 227  
Comment:

Stage(ft)	Area(ac)
222	1.174
223	1.267
224	1.362
225	1.46
226	1.559
227	1.662

-----Class: Node-----  
Name: 2           Base Flow(cfs): 0           Init Stage(ft): 238  
Group: BASE       Length(ft): 0           Warn Stage(ft): 244  
Comment:

Stage(ft)	Area(ac)
238	0.57
239	0.676
240	0.784
241	0.894
242	1.007
243	1.122
244	1.239

-----Class: Node-----  
Name: 3           Base Flow(cfs): 0           Init Stage(ft): 234  
Group: BASE       Length(ft): 0           Warn Stage(ft): 238  
Comment:

Stage(ft)	Area(ac)
234	0.332
235	0.465
236	0.601
237	0.739
238	0.88

-----Class: Node-----  
Name: 999         Base Flow(cfs): 0           Init Stage(ft): 100  
Group: BASE       Length(ft): 0           Warn Stage(ft): 102  
Comment:

Time(hrs)	Stage(ft)
30	100.25
60	101
96	101.5

SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Basin-----  
Basin: 1           Node: 1           Status: On Site   Type: Santa Barbara  
Group: BASE  
    Rainfall File: SJRWMD96           Storm Duration(hrs): 96  
Rainfall Amount(in): 11.2           Lag Time(hrs): 0  
Time Increment(min): 15           Concentration Time(min): 15  
    Area(ac): 23.51                DCIA(%): 0  
    Curve #: 58

-----Class: Basin-----  
Basin: 2           Node: 2           Status: On Site   Type: Santa Barbara  
Group: BASE  
    Rainfall File: SJRWMD96           Storm Duration(hrs): 96  
Rainfall Amount(in): 11.2           Lag Time(hrs): 0  
Time Increment(min): 15           Concentration Time(min): 15  
    Area(ac): 10.364               DCIA(%): 0  
    Curve #: 53

-----Class: Basin-----  
Basin: 3           Node: 3           Status: On Site   Type: Santa Barbara  
Group: BASE  
    Rainfall File: SJRWMD96           Storm Duration(hrs): 96  
Rainfall Amount(in): 11.2           Lag Time(hrs): 0  
Time Increment(min): 15           Concentration Time(min): 15  
    Area(ac): 7.974                DCIA(%): 0  
    Curve #: 58

-----Class: Basin-----  
Basin: 999          Node: 999          Status: On Site   Type: Santa Barbara  
Group: BASE  
    Rainfall File: SJRWMD96           Storm Duration(hrs): 96  
Rainfall Amount(in): 11.2           Lag Time(hrs): 0  
Time Increment(min): 15           Concentration Time(min): 999  
    Area(ac): 5                    DCIA(%): 0  
    Curve #: 50

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.01) [3]  
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SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Simulation-----

C:\ICPR2\DATA\SOMERST  
Execution: Hydraulics  
Header: 25YR 96HR STORM EVENT

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1	
Delta Z Factor: 0.05	Override Defaults: No
Time Step Optimizer: 10	
Drop Structure Optimizer: 10	
Sim Start Time(hrs): 0	
Sim End Time(hrs): 96	
Min Calc Time(sec): 60	
Max Calc Time(sec): 300	
To Hour: PInc(min):	To Hour: PInc(min):
96 60	96 60

-----GROUP SELECTIONS-----

+ BASE [01/06/99]

25YR 96HR STORM EVENT

\*\*\*\*\* Basin Summary - SOMERST \*\*\*\*\*

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Basin Name:	1	2	3	999
Group Name:	BASE	BASE	BASE	BASE
Node Name:	1	2	3	999
Hydrograph Type:	SB	SB	SB	SB

Spec Time Inc (sec):	15.00	15.00	15.00	15.00
Comp Time Inc (sec):	15.00	15.00	15.00	15.00
Rainfall File:	SJRWMD96	SJRWMD96	SJRWMD96	SJRWMD96
Rainfall Amount (in):	11.20	11.20	11.20	11.20
Storm Duration (hr):	96.00	96.00	96.00	96.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	15.00	15.00	15.00	999.00
Lag Time (hr):	0.00	0.00	0.00	0.00
Area (acres):	23.51	10.36	7.97	5.00
Curve Number:	58.00	53.00	58.00	50.00
DCIA (%):	0.00	0.00	0.00	0.00

Time Max (hrs):	59.75	59.75	59.75	63.75
Flow Max (cfs):	67.92	25.80	23.04	0.70
Runoff Volume (in):	5.60	4.86	5.60	4.41
Runoff Volume (cf):	477583	182730	161984	80011

**ICPR NODE MAX CONDITIONS  
(STORMWATER ROUTING SUMMARY)  
25 YEAR-96 HOUR STORM**

25YR 96HR STORM EVENT

\*\*\*\*\* Node Maximum Conditions - SOMERST \*\*\*\*\*

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
1	BASE	72.30	224.87	227.00	0.0446	63062.07	60.00	39.80	0.00	0.00
2	BASE	95.97	241.11	244.00	-0.0482	39460.96	60.00	16.80	0.00	0.00
3	BASE	72.22	237.18	238.00	0.0496	33287.20	60.00	16.65	0.00	0.00
999	BASE	95.97	101.50	102.00	0.2500	0.00	63.97	0.70	0.00	0.00

ICPR ROUTED HYDROGRAPH  
BY BASIN  
WITH INFILTRATION INPUTED FROM "PONDS"

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
*** Group: BASE		Node: 1							
0.000	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
1.050	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
2.019	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
3.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
4.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
5.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
6.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
7.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
8.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
9.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
10.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
11.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
12.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
13.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
14.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
15.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
16.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
17.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
18.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
19.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
20.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
21.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
22.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
23.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
24.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
25.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
26.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
27.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
28.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
29.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
30.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
31.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
32.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
33.014	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
34.014	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
35.014	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
36.014	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
37.014	222.00	0.00	0.00	0.02	-0.02	0.00	0.00	0.00	
38.014	222.00	1.17	0.00	0.05	-0.05	0.00	0.00	0.00	
39.014	222.00	1.17	0.00	0.07	-0.07	0.00	0.00	0.00	
40.013	222.00	0.00	0.00	0.10	-0.10	0.00	0.00	0.00	
41.016	222.00	1.17	0.00	0.12	-0.12	0.00	0.00	0.00	
42.052	222.00	1.17	0.00	0.15	-0.15	0.00	0.00	0.00	
43.052	222.00	1.17	0.00	0.18	-0.17	0.00	0.00	0.00	
44.052	222.00	1.17	0.00	0.20	-0.20	0.00	0.00	0.00	



• 45.052 222.00 1.17 0.00 0.22 -0.22 0.00 0.00 0.00

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25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!				Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	
46.052	222.00	1.17	0.00	0.24	-0.24	0.00	0.00
47.009	222.00	0.00	0.00	0.26	-0.26	0.00	0.00
48.028	222.00	0.00	0.00	0.31	-0.32	0.00	0.00
49.052	222.00	1.17	0.00	0.41	-0.40	0.00	0.00
50.003	222.00	1.17	0.00	0.47	-0.47	0.00	0.00
51.017	222.00	0.00	0.00	0.56	-0.56	0.00	0.00
52.027	222.00	0.00	0.00	0.66	-0.67	0.00	0.00
53.006	222.00	1.17	0.00	0.81	-0.81	0.00	0.00
54.002	222.00	0.00	0.00	0.95	-0.97	0.00	0.00
55.039	222.00	0.00	0.00	1.19	-1.22	0.00	0.00
56.006	222.00	0.00	0.00	1.50	-1.57	0.00	0.00
57.071	222.00	0.00	0.00	2.16	-2.24	0.00	0.00
58.071	221.99	0.00	0.00	3.09	-4.15	0.00	0.00
59.004	221.96	0.00	0.00	5.98	-14.02	0.00	0.00
60.017	223.16	1.28	0.00	59.06	-19.96	0.00	0.00
61.026	224.34	1.40	0.00	9.92	-9.96	0.00	0.00
62.033	224.42	1.40	0.00	5.78	-3.23	0.00	0.00
63.033	224.54	1.41	0.00	4.18	-2.61	0.00	0.00
64.050	224.63	1.42	0.00	3.61	-2.26	0.00	0.00
65.050	224.68	1.43	0.00	2.57	-2.03	0.00	0.00
66.050	224.72	1.43	0.00	2.58	-1.86	0.00	0.00
67.050	224.76	1.44	0.00	2.57	-1.74	0.00	0.00
68.050	224.81	1.44	0.00	2.28	-1.64	0.00	0.00
69.050	224.83	1.44	0.00	1.75	-1.54	0.00	0.00
70.050	224.84	1.44	0.00	1.75	-1.46	0.00	0.00
71.050	224.86	1.45	0.00	1.74	-1.40	0.00	0.00
72.050	224.87	1.45	0.00	1.45	-1.33	0.00	0.00
73.050	224.87	1.45	0.00	0.92	-1.26	0.00	0.00
74.050	224.85	1.45	0.00	0.92	-1.20	0.00	0.00
75.050	224.83	1.44	0.00	0.92	-1.16	0.00	0.00
76.050	224.82	1.44	0.00	0.92	-1.12	0.00	0.00
77.050	224.81	1.44	0.00	0.93	-1.08	0.00	0.00
78.050	224.80	1.44	0.00	0.93	-1.05	0.00	0.00
79.050	224.80	1.44	0.00	0.93	-1.02	0.00	0.00
80.050	224.79	1.44	0.00	0.93	-1.00	0.00	0.00
81.050	224.79	1.44	0.00	0.93	-0.98	0.00	0.00
82.050	224.79	1.44	0.00	0.93	-0.96	0.00	0.00
83.050	224.78	1.44	0.00	0.93	-0.94	0.00	0.00
84.050	224.78	1.44	0.00	0.93	-0.92	0.00	0.00
85.050	224.79	1.44	0.00	0.93	-0.90	0.00	0.00
86.050	224.79	1.44	0.00	0.93	-0.89	0.00	0.00
87.050	224.79	1.44	0.00	0.93	-0.88	0.00	0.00
88.050	224.79	1.44	0.00	0.94	-0.86	0.00	0.00
89.050	224.80	1.44	0.00	0.94	-0.85	0.00	0.00
90.050	224.80	1.44	0.00	0.94	-0.84	0.00	0.00

•	91.050	224.81	1.44	0.00	0.95	-0.83	0.00	0.00	0.00
	92.050	224.82	1.44	0.00	0.94	-0.82	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	!<-----Inflow----->!					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
93.050	224.82	1.44	0.00	0.94	-0.81	0.00	0.00	0.00	
94.050	224.83	1.44	0.00	0.94	-0.81	0.00	0.00	0.00	
95.050	224.84	1.44	0.00	0.93	-0.75	0.00	0.00	0.00	
96.008	224.86	1.45	0.00	0.64	-0.03	0.00	0.00	0.00	

\*\*\* Group: BASE Node: 2

0.000	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.050	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.019	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
7.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
8.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
9.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
10.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
11.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
12.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
13.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
14.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
15.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
16.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
17.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
18.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
19.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
20.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
21.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
22.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
23.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
24.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
25.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
26.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
27.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
28.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
29.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
30.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
31.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
32.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
33.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
34.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
35.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
36.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
37.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
38.014	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00

39.014	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
40.013	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	!<-----Inflow----->!					Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	
41.016	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
42.052	238.00	0.00	0.00	0.01	-0.01	0.00	0.00	0.00
43.052	238.00	0.57	0.00	0.02	-0.02	0.00	0.00	0.00
44.052	238.00	0.57	0.00	0.03	-0.03	0.00	0.00	0.00
45.052	238.00	0.57	0.00	0.04	-0.04	0.00	0.00	0.00
46.052	238.00	0.57	0.00	0.04	-0.04	0.00	0.00	0.00
47.009	238.00	0.00	0.00	0.05	-0.05	0.00	0.00	0.00
48.028	238.00	0.00	0.00	0.07	-0.07	0.00	0.00	0.00
49.052	238.00	0.57	0.00	0.10	-0.10	0.00	0.00	0.00
50.003	238.00	0.00	0.00	0.12	-0.12	0.00	0.00	0.00
51.017	238.00	0.00	0.00	0.15	-0.15	0.00	0.00	0.00
52.027	238.00	0.00	0.00	0.18	-0.19	0.00	0.00	0.00
53.006	238.00	0.57	0.00	0.24	-0.24	0.00	0.00	0.00
54.002	238.00	0.00	0.00	0.29	-0.29	0.00	0.00	0.00
55.039	238.00	0.00	0.00	0.37	-0.38	0.00	0.00	0.00
56.006	238.00	0.00	0.00	0.48	-0.51	0.00	0.00	0.00
57.071	238.00	0.00	0.00	0.72	-0.75	0.00	0.00	0.00
58.071	237.99	0.00	0.00	1.06	-1.55	0.00	0.00	0.00
59.004	237.96	0.00	0.00	2.12	-6.58	0.00	0.00	0.00
60.017	238.92	0.67	0.00	22.82	-6.25	0.00	0.00	0.00
61.026	240.03	0.79	0.00	3.95	-0.90	0.00	0.00	0.00
62.033	240.27	0.81	0.00	2.32	-0.72	0.00	0.00	0.00
63.033	240.40	0.83	0.00	1.68	-0.62	0.00	0.00	0.00
64.050	240.50	0.84	0.00	1.46	-0.56	0.00	0.00	0.00
65.050	240.57	0.85	0.00	1.04	-0.51	0.00	0.00	0.00
66.050	240.63	0.85	0.00	1.04	-0.48	0.00	0.00	0.00
67.050	240.68	0.86	0.00	1.05	-0.46	0.00	0.00	0.00
68.050	240.73	0.86	0.00	0.93	-0.44	0.00	0.00	0.00
69.050	240.77	0.87	0.00	0.71	-0.41	0.00	0.00	0.00
70.050	240.80	0.87	0.00	0.71	-0.40	0.00	0.00	0.00
71.050	240.83	0.88	0.00	0.71	-0.38	0.00	0.00	0.00
72.050	240.86	0.88	0.00	0.59	-0.37	0.00	0.00	0.00
73.050	240.87	0.88	0.00	0.38	-0.35	0.00	0.00	0.00
74.050	240.87	0.88	0.00	0.37	-0.33	0.00	0.00	0.00
75.050	240.88	0.88	0.00	0.37	-0.32	0.00	0.00	0.00
76.050	240.88	0.88	0.00	0.38	-0.31	0.00	0.00	0.00
77.050	240.89	0.88	0.00	0.38	-0.30	0.00	0.00	0.00
78.050	240.90	0.88	0.00	0.38	-0.30	0.00	0.00	0.00
79.050	240.90	0.88	0.00	0.38	-0.29	0.00	0.00	0.00
80.050	240.91	0.88	0.00	0.38	-0.28	0.00	0.00	0.00
81.050	240.92	0.89	0.00	0.38	-0.28	0.00	0.00	0.00
82.050	240.93	0.89	0.00	0.38	-0.27	0.00	0.00	0.00
83.050	240.94	0.89	0.00	0.38	-0.27	0.00	0.00	0.00
84.050	240.95	0.89	0.00	0.38	-0.27	0.00	0.00	0.00
85.050	240.96	0.89	0.00	0.38	-0.26	0.00	0.00	0.00

•	86.050	240.97	0.89	0.00	0.38	-0.26	0.00	0.00	0.00
	87.050	240.99	0.89	0.00	0.38	-0.26	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	!<-----Inflow----->!					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
88.050	241.00	0.89	0.00	0.39	-0.25	0.00	0.00	0.00	
89.050	241.01	0.90	0.00	0.39	-0.25	0.00	0.00	0.00	
90.050	241.02	0.90	0.00	0.39	-0.25	0.00	0.00	0.00	
91.050	241.04	0.90	0.00	0.39	-0.25	0.00	0.00	0.00	
92.050	241.05	0.90	0.00	0.39	-0.25	0.00	0.00	0.00	
93.050	241.06	0.90	0.00	0.39	-0.24	0.00	0.00	0.00	
94.050	241.07	0.90	0.00	0.39	-0.24	0.00	0.00	0.00	
95.050	241.09	0.90	0.00	0.38	-0.23	0.00	0.00	0.00	
96.008	241.11	0.91	0.00	0.26	-0.01	0.00	0.00	0.00	

\*\*\* Group: BASE Node: 3

0.000	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.050	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.019	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
6.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
7.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
8.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
9.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
10.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
11.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
12.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
13.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
14.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
15.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
16.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
17.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
18.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
19.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
20.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
21.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
22.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
23.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
24.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
25.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
26.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
27.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
28.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
29.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
30.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
31.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
32.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
33.014	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00



34.014	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
35.014	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	Inflow					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
36.014	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
37.014	234.00	0.00	0.00	0.01	-0.01	0.00	0.00	0.00	
38.014	234.00	0.33	0.00	0.02	-0.02	0.00	0.00	0.00	
39.014	234.00	0.33	0.00	0.02	-0.02	0.00	0.00	0.00	
40.013	234.00	0.00	0.00	0.03	-0.03	0.00	0.00	0.00	
41.016	234.00	0.33	0.00	0.04	-0.04	0.00	0.00	0.00	
42.052	234.00	0.33	0.00	0.05	-0.05	0.00	0.00	0.00	
43.052	234.00	0.33	0.00	0.06	-0.06	0.00	0.00	0.00	
44.052	234.00	0.33	0.00	0.07	-0.07	0.00	0.00	0.00	
45.052	234.00	0.33	0.00	0.07	-0.07	0.00	0.00	0.00	
46.052	234.00	0.33	0.00	0.08	-0.08	0.00	0.00	0.00	
47.009	234.00	0.00	0.00	0.09	-0.09	0.00	0.00	0.00	
48.028	234.00	0.00	0.00	0.11	-0.11	0.00	0.00	0.00	
49.052	234.00	0.33	0.00	0.14	-0.14	0.00	0.00	0.00	
50.003	234.00	0.33	0.00	0.16	-0.16	0.00	0.00	0.00	
51.017	234.00	0.00	0.00	0.19	-0.19	0.00	0.00	0.00	
52.027	234.00	0.00	0.00	0.22	-0.23	0.00	0.00	0.00	
53.006	234.00	0.33	0.00	0.27	-0.27	0.00	0.00	0.00	
54.002	234.00	0.00	0.00	0.32	-0.33	0.00	0.00	0.00	
55.039	234.00	0.00	0.00	0.40	-0.41	0.00	0.00	0.00	
56.006	234.00	0.00	0.00	0.51	-0.53	0.00	0.00	0.00	
57.071	234.00	0.00	0.00	0.73	-0.76	0.00	0.00	0.00	
58.071	233.99	0.00	0.00	1.05	-1.33	0.00	0.00	0.00	
59.004	233.97	0.00	0.00	2.03	-3.61	0.00	0.00	0.00	
60.017	235.51	0.53	0.00	20.03	-3.64	0.00	0.00	0.00	
61.026	236.73	0.70	0.00	3.36	-1.37	0.00	0.00	0.00	
62.033	236.90	0.72	0.00	1.96	-1.05	0.00	0.00	0.00	
63.033	236.98	0.74	0.00	1.42	-0.88	0.00	0.00	0.00	
64.050	237.04	0.74	0.00	1.22	-0.78	0.00	0.00	0.00	
65.050	237.07	0.75	0.00	0.87	-0.70	0.00	0.00	0.00	
66.050	237.09	0.75	0.00	0.87	-0.65	0.00	0.00	0.00	
67.050	237.12	0.76	0.00	0.87	-0.61	0.00	0.00	0.00	
68.050	237.14	0.76	0.00	0.77	-0.58	0.00	0.00	0.00	
69.050	237.16	0.76	0.00	0.59	-0.54	0.00	0.00	0.00	
70.050	237.16	0.76	0.00	0.59	-0.52	0.00	0.00	0.00	
71.050	237.17	0.76	0.00	0.59	-0.49	0.00	0.00	0.00	
72.050	237.18	0.76	0.00	0.49	-0.47	0.00	0.00	0.00	
73.050	237.17	0.76	0.00	0.31	-0.44	0.00	0.00	0.00	
74.050	237.16	0.76	0.00	0.31	-0.42	0.00	0.00	0.00	
75.050	237.15	0.76	0.00	0.31	-0.40	0.00	0.00	0.00	
76.050	237.14	0.76	0.00	0.31	-0.39	0.00	0.00	0.00	
77.050	237.13	0.76	0.00	0.31	-0.38	0.00	0.00	0.00	
78.050	237.13	0.76	0.00	0.31	-0.36	0.00	0.00	0.00	
79.050	237.12	0.76	0.00	0.32	-0.35	0.00	0.00	0.00	
80.050	237.12	0.76	0.00	0.31	-0.35	0.00	0.00	0.00	

81.050	237.11	0.76	0.00	0.31	-0.34	0.00	0.00	0.00
82.050	237.11	0.75	0.00	0.31	-0.33	0.00	0.00	0.00





25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
31.014	100.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
32.014	100.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33.014	100.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
34.014	100.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
35.014	100.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36.014	100.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
37.014	100.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
38.014	100.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
39.014	100.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
40.013	100.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
41.016	100.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
42.052	100.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
43.052	100.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
44.052	100.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
45.052	100.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
46.052	100.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
47.009	100.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
48.028	100.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
49.052	100.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50.003	100.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
51.017	100.78	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
52.027	100.80	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
53.006	100.83	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
54.002	100.85	0.00	0.00	0.02	0.00	0.00	0.00	0.00	
55.039	100.88	0.00	0.00	0.02	0.00	0.00	0.00	0.00	
56.006	100.90	0.00	0.00	0.03	0.00	0.00	0.00	0.00	
57.071	100.93	0.00	0.00	0.05	0.00	0.00	0.00	0.00	
58.071	100.95	0.00	0.00	0.06	0.00	0.00	0.00	0.00	
59.004	100.98	0.00	0.00	0.10	0.00	0.00	0.00	0.00	
60.017	101.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	
61.026	101.01	0.00	0.00	0.67	0.00	0.00	0.00	0.00	
62.033	101.03	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
63.033	101.04	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
64.050	101.06	0.00	0.00	0.70	0.00	0.00	0.00	0.00	
65.050	101.07	0.00	0.00	0.69	0.00	0.00	0.00	0.00	
66.050	101.08	0.00	0.00	0.67	0.00	0.00	0.00	0.00	
67.050	101.10	0.00	0.00	0.66	0.00	0.00	0.00	0.00	
68.050	101.11	0.00	0.00	0.65	0.00	0.00	0.00	0.00	
69.050	101.13	0.00	0.00	0.63	0.00	0.00	0.00	0.00	
70.050	101.14	0.00	0.00	0.61	0.00	0.00	0.00	0.00	
71.050	101.15	0.00	0.00	0.60	0.00	0.00	0.00	0.00	
72.050	101.17	0.00	0.00	0.58	0.00	0.00	0.00	0.00	
73.050	101.18	0.00	0.00	0.55	0.00	0.00	0.00	0.00	
74.050	101.20	0.00	0.00	0.53	0.00	0.00	0.00	0.00	
75.050	101.21	0.00	0.00	0.51	0.00	0.00	0.00	0.00	

76.050	101.22	0.00	0.00	0.49	0.00	0.00	0.00	0.00
77.050	101.24	0.00	0.00	0.47	0.00	0.00	0.00	0.00

25YR 96HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	<-----Inflow----->					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
78.050	101.25	0.00	0.00	0.46	0.00	0.00	0.00	0.00	
79.050	101.26	0.00	0.00	0.44	0.00	0.00	0.00	0.00	
80.050	101.28	0.00	0.00	0.42	0.00	0.00	0.00	0.00	
81.050	101.29	0.00	0.00	0.41	0.00	0.00	0.00	0.00	
82.050	101.31	0.00	0.00	0.40	0.00	0.00	0.00	0.00	
83.050	101.32	0.00	0.00	0.38	0.00	0.00	0.00	0.00	
84.050	101.33	0.00	0.00	0.37	0.00	0.00	0.00	0.00	
85.050	101.35	0.00	0.00	0.36	0.00	0.00	0.00	0.00	
86.050	101.36	0.00	0.00	0.35	0.00	0.00	0.00	0.00	
87.050	101.38	0.00	0.00	0.34	0.00	0.00	0.00	0.00	
88.050	101.39	0.00	0.00	0.33	0.00	0.00	0.00	0.00	
89.050	101.40	0.00	0.00	0.32	0.00	0.00	0.00	0.00	
90.050	101.42	0.00	0.00	0.31	0.00	0.00	0.00	0.00	
91.050	101.43	0.00	0.00	0.30	0.00	0.00	0.00	0.00	
92.050	101.45	0.00	0.00	0.30	0.00	0.00	0.00	0.00	
93.050	101.46	0.00	0.00	0.29	0.00	0.00	0.00	0.00	
94.050	101.47	0.00	0.00	0.28	0.00	0.00	0.00	0.00	
95.050	101.49	0.00	0.00	0.28	0.00	0.00	0.00	0.00	
96.008	101.50	0.00	0.00	0.27	0.00	0.00	0.00	0.00	



**"PONDS" INFILTRATION ANALYSIS  
25 YEAR-96 HOUR STORM**

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a1  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 460.00  
Equivalent Pond Width, [W] (ft): 300.00

Base Of Aquifer Elevation, [B] (ft above datum): 214.36  
Water Table Elevation, [WT] (ft above datum): 214.46  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 72376

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
-----	-----
222.000	51131.0
223.000	55179.0
224.000	59328.0
225.000	63577.0
226.000	67926.0
227.000	72376.0

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III. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	59.93
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	508694

Stage  
-----

Peak Stage, (ft datum):	224.55
Time, (hrs):	72.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	20.1339
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	367150

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 570.00  
Equivalent Pond Width, [W] (ft): 90.00

Base Of Aquifer Elevation, [B] (ft above datum): 236.00  
Water Table Elevation, [WT] (ft above datum): 236.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 53984

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

V. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
238.000	24838.0
239.000	29444.0
240.000	34151.0
241.000	38958.0
242.000	43866.0
243.000	48875.0
244.000	53984.0

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III. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	23.15
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	195330

Stage  
-----

Peak Stage, (ft datum):	240.81
Time, (hrs):	96.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	6.5817
Time, (hrs):	59.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	107113

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Retention Pond Recovery Analysis - Inflow Hydrograph  
-----

I. Job Information

Job Name: a3  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 720.00  
Equivalent Pond Width, [W] (ft): 70.00

Base Of Aquifer Elevation, [B] (ft above datum): 232.00  
Water Table Elevation, [WT] (ft above datum): 232.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 38324

Groundwater mound intersects pond bottom?: Yes



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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

IV. Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
234.000	14448.0
235.000	20266.0
236.000	26185.0
237.000	32204.0
238.000	38324.0

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	20.33
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	172536

Stage  
-----

Peak Stage, (ft datum):	237.04
Time, (hrs):	72.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	3.6779
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	102643

**"PONDS" RECOVERY ANALYSIS  
TREATMENT VOLUME**

Since every basin consists of less than 40 percent impervious, the following calculations for all basins are based on formula:

Per 40C-42 FAC

$$V_T = 1/2" (\text{area}) + 1/2 (\text{area} - \text{for volume treatment}) = 1" (\text{area})$$

$$V_T \text{ Pond 1} = 1" \times (1,024,096 \text{ Sq. Ft.}) = 85,341 \text{ Cu. Ft}$$

$$V_T \text{ Pond 2} = 1" \times (451,282 \text{ Sq. Ft.}) = 37,607 \text{ Cu. Ft}$$

$$V_T \text{ Pond 3} = 1" \times (347,173 \text{ Sq. Ft.}) = 28,931 \text{ Cu. Ft}$$

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Retention Pond Recovery Analysis  
-----

I. Job Information

Job Name: pondal  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 460.00  
Equivalent Pond Width, [W] (ft): 300.00  
Pond Bottom Elevation, [PB] (ft above datum): 222.00  
Porosity Of Material Within Pond, [p] (%): 100.00

Base Of Aquifer Elevation, [B] (ft above datum): 214.36  
Water Table Elevation, [WT] (ft above datum): 214.46  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00  
Vertical Unsaturated Infiltration, [Iv] (ft/day): 40.00

Runoff Volume, [V] (cubic feet) 85341.00  
Percent Recovery Of Runoff Volume, [PV] (%) 100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days): 0.0155  
Recovered Volume From Unsaturated Flow, [V1] (ft<sup>3</sup>): 85341.00

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days): 0.0000  
Recovered Volume From Saturated Flow, [V2] (ft<sup>3</sup>): 0.00  
Maximum Radius Of Influence, [R] (ft): 0.00  
Maximum Driving Head, [Hmax] (ft): 0.000  
Minimum Driving Head, [Hmin] (ft): 0.000

TOTAL

Total Recovery Time, [T] (days): 0.0155  
Total Recovered Volume, [V] (ft<sup>3</sup>): 85341.00

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Retention Pond Recovery Analysis

---

I. Job Information

Job Name: ponda2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft):	570.00
Equivalent Pond Width, [W] (ft):	90.00
Pond Bottom Elevation, [PB] (ft above datum):	238.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	236.00
Water Table Elevation, [WT] (ft above datum):	236.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	37607.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	29240.91

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	0.4180
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	8366.09
Maximum Radius Of Influence, [R] (ft):	21.50
Maximum Driving Head, [Hmax] (ft):	2.063
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	0.4322
Total Recovered Volume, [V] (ft <sup>3</sup> ):	37607.00

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Retention Pond Recovery Analysis

---

I. Job Information

Job Name: ponda3  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft):	720.00
Equivalent Pond Width, [W] (ft):	70.00
Pond Bottom Elevation, [PB] (ft above datum):	234.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	232.00
Water Table Elevation, [WT] (ft above datum):	232.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	28931.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	28727.91

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	0.0002
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	203.09
Maximum Radius Of Influence, [R] (ft):	0.45
Maximum Driving Head, [Hmax] (ft):	1.904
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	0.0144
Total Recovered Volume, [V] (ft <sup>3</sup> ):	28931.00

**"PONDS" RECOVERY ANALYSIS  
TOTAL RUNOFF VOLUME**



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Retention Pond Recovery Analysis

---

I. Job Information

Job Name: ponda1  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft):	460.00
Equivalent Pond Width, [W] (ft):	300.00
Pond Bottom Elevation, [PB] (ft above datum):	222.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	214.36
Water Table Elevation, [WT] (ft above datum):	214.46
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	477583.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

I. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0565
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	312155.75

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	1.8160
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	165427.25
Maximum Radius Of Influence, [R] (ft):	86.03
Maximum Driving Head, [Hmax] (ft):	8.739
Minimum Driving Head, [Hmin] (ft):	7.540

TOTAL

Total Recovery Time, [T] (days):	1.8726
Total Recovered Volume, [V] (ft <sup>3</sup> ):	477583.00

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Retention Pond Recovery Analysis

I. Job Information

Job Name: ponda2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft):	570.00
Equivalent Pond Width, [W] (ft):	90.00
Pond Bottom Elevation, [PB] (ft above datum):	238.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	236.00
Water Table Elevation, [WT] (ft above datum):	236.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	182730.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	29240.91

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	46.6990
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	153489.09
Maximum Radius Of Influence, [R] (ft):	281.91
Maximum Driving Head, [Hmax] (ft):	4.892
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	46.7133
Total Recovered Volume, [V] (ft <sup>3</sup> ):	182730.00

→ SINCE THE RECOVERY TIME  
EXCEEDS THE MAX. 14 DAY ALLOWED  
AN ADDITIONAL 25YR 96HR STORM  
WAS EXECUTED TO DEMONSTRATE  
PEAK STAGE DOES NOT OVERFLOW  
(SEE EQUATION 2 PAGES)

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Retention Pond Recovery Analysis - Inflow Hydrograph

---

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft): 570.00  
Equivalent Pond Width, [W] (ft): 90.00

Base Of Aquifer Elevation, [B] (ft above datum): 236.00  
Water Table Elevation, [WT] (ft above datum): 236.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 53984

Groundwater mound intersects pond bottom?: Yes

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III. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

Input Data - Stage vs Area Data  
-----

	Stage (ft datum)	Area (ft <sup>2</sup> )
	-----	-----
PEAK STAGE →	241.110	39498.0
OF 1 <sup>ST</sup> 25 YR.	242.000	43866.0
96 HR STORM	243.000	48875.0
EVENT	244.000	53984.0

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VIII. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	23.15
Time, (hrs):	60.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	195330

Stage  
-----

Peak Stage, (ft datum):	241.97	← 2 <sup>ND</sup> STORM PEAK STAGE
Time, (hrs):	96.00	

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	10.9702
Time, (hrs):	60.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	159765

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Retention Pond Recovery Analysis

---

I. Job Information

Job Name: ponda3  
Engineer: kk  
Date: 1/8/99

II. Input Data

Equivalent Pond Length, [L] (ft):	720.00
Equivalent Pond Width, [W] (ft):	70.00
Pond Bottom Elevation, [PB] (ft above datum):	234.00
Porosity Of Material Within Pond, [p] (%):	100.00
Base Of Aquifer Elevation, [B] (ft above datum):	232.00
Water Table Elevation, [WT] (ft above datum):	232.10
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day)	40.00
Fillable Porosity of Aquifer, [n] (%):	30.00
Vertical Unsaturated Infiltration, [Iv] (ft/day):	40.00
Runoff Volume, [V] (cubic feet)	80011.00
Percent Recovery Of Runoff Volume, [PV] (%)	100.00

III. Results

UNSATURATED FLOW

Recovery Time From Unsaturated Flow, [T1] (days):	0.0142
Recovered Volume From Unsaturated Flow, [V1] (ft <sup>3</sup> ):	28727.91

SATURATED FLOW

Recovery Time From Saturated Flow, [T2] (days):	7.3051
Recovered Volume From Saturated Flow, [V2] (ft <sup>3</sup> ):	51283.09
Maximum Radius Of Influence, [R] (ft):	100.50
Maximum Driving Head, [Hmax] (ft):	2.918
Minimum Driving Head, [Hmin] (ft):	1.900

TOTAL

Total Recovery Time, [T] (days):	7.3194
Total Recovered Volume, [V] (ft <sup>3</sup> ):	80011.00

**CITY OF CLERMONT  
&  
FDOT (CRITICAL EVENT & DURATION)  
100 YEAR - 24 HOUR STORM EVENT  
HYDROLOGY & ROUTING ANALYSIS**

100YR 24HR STORM EVENT

\*\*\*\*\* Basin Summary - SOMERST \*\*\*\*\*

---

\*\*\*

Basin Name:	1	2	3	999
Group Name:	BASE	BASE	BASE	BASE
Node Name:	1	2	3	999
Hydrograph Type:	SB	SB	SB	SB
Spec Time Inc (sec):	15.00	15.00	15.00	15.00
Comp Time Inc (sec):	15.00	15.00	15.00	15.00
Rainfall File:	FLMOD	FLMOD	FLMOD	FLMOD
Rainfall Amount (in):	10.20	10.20	10.20	10.20
Storm Duration (hr):	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	15.00	15.00	15.00	999.00
Lag Time (hr):	0.00	0.00	0.00	0.00
Area (acres):	23.51	10.36	7.97	5.00
Curve Number:	58.00	53.00	58.00	50.00
DCIA (%):	0.00	0.00	0.00	0.00
Time Max (hrs):	12.00	12.00	12.00	17.25
Flow Max (cfs):	69.11	25.83	23.44	0.70
Runoff Volume (in):	4.79	4.11	4.79	3.69
Runoff Volume (cf):	408708	154460	138624	67055



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Retention Pond Recovery Analysis - Inflow Hydrograph

---

I. Job Information

Job Name: a1  
Engineer: kk  
Date: 1/8/99

Input Data

Equivalent Pond Length, [L] (ft): 460.00  
Equivalent Pond Width, [W] (ft): 300.00

Base Of Aquifer Elevation, [B] (ft above datum): 214.36  
Water Table Elevation, [WT] (ft above datum): 214.46  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 72376

Groundwater mound intersects pond bottom?: Yes

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..II. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
222.000	51131.0
223.000	55179.0
224.000	59328.0
225.000	63577.0
226.000	67926.0
227.000	72376.0

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III. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	48.32
Time, (hrs):	12.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	410853

Stage  
-----

Peak Stage, (ft datum):	224.37
Time, (hrs):	24.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	24.3458
Time, (hrs):	12.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	277935

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Retention Pond Recovery Analysis - Inflow Hydrograph

---

I. Job Information

Job Name: a2  
Engineer: kk  
Date: 1/8/99

Input Data

Equivalent Pond Length, [L] (ft): 570.00  
Equivalent Pond Width, [W] (ft): 90.00

Base Of Aquifer Elevation, [B] (ft above datum): 236.00  
Water Table Elevation, [WT] (ft above datum): 236.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 53984

Groundwater mound intersects pond bottom?: Yes

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II. Input Data - Discharge Structures

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

Input Data - Stage vs Area Data

<u>Stage</u> <u>(ft datum)</u>	<u>Area</u> <u>(ft<sup>2</sup>)</u>
238.000	24838.0
239.000	29444.0
240.000	34151.0
241.000	38958.0
242.000	43866.0
243.000	48875.0
244.000	53984.0

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III. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	17.92
Time, (hrs):	12.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	155251

Stage  
-----

Peak Stage, (ft datum):	240.44
Time, (hrs):	24.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	7.5654
Time, (hrs):	12.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	80655

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Retention Pond Recovery Analysis - Inflow Hydrograph

---

I. Job Information

Job Name: a3  
Engineer: kk  
Date: 1/8/99

Input Data

Equivalent Pond Length, [L] (ft): 720.00  
Equivalent Pond Width, [W] (ft): 70.00

Base Of Aquifer Elevation, [B] (ft above datum): 232.00  
Water Table Elevation, [WT] (ft above datum): 232.10  
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day) 40.00  
Fillable Porosity of Aquifer, [n] (%): 30.00

Is there a ditch parallel to the pond length axis?: No

Is there a ditch parallel to the pond width axis?: No

Include unsaturated vertical infiltration?: Yes  
Unsaturated vertical infiltration rate, (ft/day): 40.00  
Maximum area for unsaturated infiltration, (sq ft): 38324

Groundwater mound intersects pond bottom?: Yes

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11. Input Data - Discharge Structures  
-----

Weir (or Orifice) #1 is Inactive

Weir (or Orifice) #2 is Inactive

Weir (or Orifice) #3 is Inactive

Input Data - Stage vs Area Data  
-----

Stage (ft datum)	Area (ft <sup>2</sup> )
-----	-----
234.000	14448.0
235.000	20266.0
236.000	26185.0
237.000	32204.0
238.000	38324.0



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I. Summary - Cumulative Volumes, Peaks Rates, and Peak Stage

Inflow  
-----

Peak Inflow Rate, (cfs):	16.39
Time, (hrs):	12.00
Cumulative Inflow Volume, (ft <sup>3</sup> ):	139351

Stage  
-----

Peak Stage, (ft datum):	236.96
Time, (hrs):	24.00

Overflow Discharge  
-----

Peak Discharge Rate, (cfs):	0.00
Time, (hrs):	0.00
Cumulative weir discharge volume, (ft <sup>3</sup> ):	0

Infiltration Rate  
-----

Peak Infiltration Rate, (cfs):	4.9062
Time, (hrs):	12.00
Cumulative Infiltration Volume, (ft <sup>3</sup> ):	70832

SOMERSET OF CLERMONT

\*\*\*\*\* Input Report \*\*\*\*\*

-----Class: Simulation-----

C:\ICPR2\DATA\SOMERST  
Execution: Hydraulics  
Header: 100YR 24HR STORM EVENT

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1	
Delta Z Factor: 0.05	Override Defaults: Yes
Time Step Optimizer: 10	Storm Dur(hrs): 24
Drop Structure Optimizer: 10	Rain Amount(in): 10.2
Sim Start Time(hrs): 0	Rainfall File: FLMOD
Sim End Time(hrs): 24	
Min Calc Time(sec): 15	
Max Calc Time(sec): 60	
To Hour: PInc(min):	To Hour: PInc(min):
24 15	24 15

-----GROUP SELECTIONS-----

+ BASE [01/15/99]

100YR 24HR STORM EVENT

\*\*\*\*\* Node Maximum Conditions - SOMERST \*\*\*\*\*

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
1	BASE	24.00	224.97	227.00	0.0417	63463.44	11.99	44.45	0.00	0.00
2	BASE	24.00	240.86	244.00	0.0327	38266.13	11.99	18.11	0.00	0.00
3	BASE	24.00	237.25	238.00	0.0500	33698.77	11.99	18.41	0.00	0.00
999	BASE	0.00	100.25	102.00	0.2500	0.00	17.25	0.70	0.00	0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	<-----Inflow----->					Link Q (cfs)	Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
*** Group: BASE		Node: 1							
0.000	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
0.258	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
0.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
0.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
1.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
1.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
1.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
1.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
2.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
2.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
2.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
2.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
3.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
3.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
3.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
3.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
4.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
4.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
4.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
4.754	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
5.004	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
5.254	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
5.504	222.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	
5.754	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
6.005	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
6.251	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
6.511	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
6.761	222.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
7.002	222.00	0.00	0.00	0.00	-0.02	0.00	0.00	0.00	
7.252	222.00	0.00	0.00	0.00	-0.04	0.00	0.00	0.00	
7.502	222.00	0.00	0.00	0.00	-0.06	0.00	0.00	0.00	
7.752	222.00	0.00	0.00	0.00	-0.08	0.00	0.00	0.00	
8.002	222.00	0.00	0.00	0.00	-0.16	0.00	0.00	0.00	
8.252	222.00	0.00	0.00	0.02	-0.26	0.00	0.00	0.00	
8.502	222.00	0.00	0.00	0.09	-0.36	0.00	0.00	0.00	
8.752	222.00	0.00	0.00	0.23	-0.46	0.00	0.00	0.00	
9.002	222.00	0.00	0.00	0.40	-0.73	0.00	0.00	0.00	
9.252	222.00	0.00	0.00	0.58	-1.13	0.00	0.00	0.00	
9.502	222.00	0.00	0.00	0.81	-1.53	0.00	0.00	0.00	
9.752	222.00	0.00	0.00	1.08	-1.93	0.00	0.00	0.00	
10.002	222.00	0.00	0.00	1.45	-3.17	0.00	0.00	0.00	
10.252	221.99	0.00	0.00	1.89	-5.90	0.00	0.00	0.00	
10.502	221.99	0.00	0.00	2.51	-8.64	0.00	0.00	0.00	
10.752	221.98	0.00	0.00	3.23	-11.37	0.00	0.00	0.00	
11.002	221.98	0.00	0.00	3.88	-14.07	0.00	0.00	0.00	

11.252 221.98 0.00 0.00 6.32 -16.65 0.00 0.00 0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	
11.502	222.00	1.17	0.00	20.85	-19.22	0.00	0.00	0.00
11.752	222.32	1.20	0.00	56.16	-21.80	0.00	0.00	0.00
12.006	222.99	1.27	0.00	68.60	-24.29	0.00	0.00	0.00
12.259	223.55	1.32	0.00	46.42	-21.81	0.00	0.00	0.00
12.502	223.80	1.34	0.00	28.11	-19.43	0.00	0.00	0.00
12.752	223.87	1.35	0.00	17.98	-16.99	0.00	0.00	0.00
13.002	223.87	1.35	0.00	13.10	-14.55	0.00	0.00	0.00
13.252	223.85	1.35	0.00	10.85	-11.90	0.00	0.00	0.00
13.502	223.84	1.35	0.00	9.45	-9.22	0.00	0.00	0.00
13.752	223.86	1.35	0.00	8.32	-6.53	0.00	0.00	0.00
14.002	223.90	1.35	0.00	7.61	-3.85	0.00	0.00	0.00
14.252	223.97	1.36	0.00	7.05	-2.86	0.00	0.00	0.00
14.502	224.03	1.36	0.00	6.52	-2.74	0.00	0.00	0.00
14.752	224.08	1.37	0.00	6.01	-2.62	0.00	0.00	0.00
15.002	224.13	1.37	0.00	5.73	-2.50	0.00	0.00	0.00
15.252	224.18	1.38	0.00	5.53	-2.40	0.00	0.00	0.00
15.502	224.22	1.38	0.00	5.23	-2.33	0.00	0.00	0.00
15.752	224.26	1.39	0.00	4.90	-2.27	0.00	0.00	0.00
16.002	224.30	1.39	0.00	4.68	-2.20	0.00	0.00	0.00
16.252	224.34	1.40	0.00	4.49	-2.14	0.00	0.00	0.00
16.502	224.37	1.40	0.00	4.32	-2.09	0.00	0.00	0.00
16.752	224.40	1.40	0.00	4.14	-2.05	0.00	0.00	0.00
17.002	224.43	1.40	0.00	4.09	-2.00	0.00	0.00	0.00
17.252	224.47	1.41	0.00	4.08	-1.96	0.00	0.00	0.00
17.502	224.50	1.41	0.00	3.83	-1.93	0.00	0.00	0.00
17.752	224.52	1.41	0.00	3.51	-1.89	0.00	0.00	0.00
18.002	224.55	1.42	0.00	3.53	-1.86	0.00	0.00	0.00
18.252	224.57	1.42	0.00	3.66	-1.83	0.00	0.00	0.00
18.502	224.60	1.42	0.00	3.46	-1.80	0.00	0.00	0.00
18.752	224.62	1.42	0.00	3.15	-1.77	0.00	0.00	0.00
19.002	224.64	1.42	0.00	3.18	-1.75	0.00	0.00	0.00
19.252	224.66	1.43	0.00	3.31	-1.72	0.00	0.00	0.00
19.502	224.68	1.43	0.00	3.24	-1.70	0.00	0.00	0.00
19.752	224.70	1.43	0.00	3.09	-1.67	0.00	0.00	0.00
20.002	224.72	1.43	0.00	2.92	-1.65	0.00	0.00	0.00
20.252	224.74	1.43	0.00	2.74	-1.63	0.00	0.00	0.00
20.502	224.76	1.44	0.00	2.68	-1.61	0.00	0.00	0.00
20.752	224.77	1.44	0.00	2.66	-1.59	0.00	0.00	0.00
21.002	224.79	1.44	0.00	2.66	-1.57	0.00	0.00	0.00
21.252	224.80	1.44	0.00	2.66	-1.56	0.00	0.00	0.00
21.502	224.82	1.44	0.00	2.66	-1.54	0.00	0.00	0.00
21.752	224.84	1.44	0.00	2.66	-1.52	0.00	0.00	0.00
22.002	224.85	1.45	0.00	2.67	-1.51	0.00	0.00	0.00
22.252	224.87	1.45	0.00	2.67	-1.49	0.00	0.00	0.00
22.502	224.88	1.45	0.00	2.55	-1.48	0.00	0.00	0.00

22.752	224.90	1.45	0.00	2.38	-1.46	0.00	0.00	0.00
23.002	224.91	1.45	0.00	2.33	-1.45	0.00	0.00	0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
23.252	224.92	1.45	0.00	2.31	-1.44	0.00	0.00	0.00	
23.502	224.94	1.45	0.00	2.17	-1.36	0.00	0.00	0.00	
23.752	224.95	1.46	0.00	2.00	-0.68	0.00	0.00	0.00	
24.002	224.97	1.46	0.00	0.00	0.00	0.00	0.00	0.00	
24.011	224.97	1.46	0.00	0.00	0.00	0.00	0.00	0.00	

\*\*\* Group: BASE Node: 2

0.000	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
0.258	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
0.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
0.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
1.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
2.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
3.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
4.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.004	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.254	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.504	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
5.754	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.005	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.251	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.511	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
6.761	238.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00
7.002	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.252	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.502	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.752	238.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
8.002	238.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
8.252	238.00	0.00	0.00	0.00	-0.02	0.00	0.00	0.00
8.502	238.00	0.00	0.00	0.00	-0.04	0.00	0.00	0.00
8.752	238.00	0.00	0.00	0.00	-0.05	0.00	0.00	0.00
9.002	238.00	0.00	0.00	0.00	-0.12	0.00	0.00	0.00
9.252	238.00	0.00	0.00	0.01	-0.23	0.00	0.00	0.00



9.502	238.00	0.00	0.00	0.05	-0.35	0.00	0.00	0.00
9.752	238.00	0.00	0.00	0.13	-0.46	0.00	0.00	0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!-----Inflow----->!					Link Q (cfs)	Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)		
10.002	238.00	0.00	0.00	0.24	-0.95	0.00	0.00	0.00	
10.252	237.99	0.00	0.00	0.38	-2.11	0.00	0.00	0.00	
10.502	237.99	0.00	0.00	0.59	-3.27	0.00	0.00	0.00	
10.752	237.98	0.00	0.00	0.83	-4.43	0.00	0.00	0.00	
11.002	237.98	0.00	0.00	1.08	-5.47	0.00	0.00	0.00	
11.252	237.98	0.00	0.00	1.90	-6.00	0.00	0.00	0.00	
11.502	238.00	0.57	0.00	6.97	-6.52	0.00	0.00	0.00	
11.752	238.24	0.60	0.00	20.26	-7.05	0.00	0.00	0.00	
12.006	238.77	0.65	0.00	25.64	-7.54	0.00	0.00	0.00	
12.259	239.23	0.70	0.00	17.74	-6.44	0.00	0.00	0.00	
12.502	239.47	0.73	0.00	10.88	-5.38	0.00	0.00	0.00	
12.752	239.58	0.74	0.00	7.03	-4.29	0.00	0.00	0.00	
13.002	239.65	0.75	0.00	5.17	-3.20	0.00	0.00	0.00	
13.252	239.70	0.75	0.00	4.30	-2.55	0.00	0.00	0.00	
13.502	239.75	0.76	0.00	3.76	-1.99	0.00	0.00	0.00	
13.752	239.80	0.76	0.00	3.32	-1.42	0.00	0.00	0.00	
14.002	239.85	0.77	0.00	3.04	-0.86	0.00	0.00	0.00	
14.252	239.91	0.77	0.00	2.82	-0.65	0.00	0.00	0.00	
14.502	239.97	0.78	0.00	2.61	-0.63	0.00	0.00	0.00	
14.752	240.02	0.79	0.00	2.41	-0.61	0.00	0.00	0.00	
15.002	240.06	0.79	0.00	2.30	-0.59	0.00	0.00	0.00	
15.252	240.11	0.80	0.00	2.22	-0.58	0.00	0.00	0.00	
15.502	240.15	0.80	0.00	2.11	-0.57	0.00	0.00	0.00	
15.752	240.19	0.80	0.00	1.97	-0.56	0.00	0.00	0.00	
16.002	240.22	0.81	0.00	1.89	-0.54	0.00	0.00	0.00	
16.252	240.26	0.81	0.00	1.81	-0.53	0.00	0.00	0.00	
16.502	240.29	0.82	0.00	1.74	-0.53	0.00	0.00	0.00	
16.752	240.32	0.82	0.00	1.67	-0.52	0.00	0.00	0.00	
17.002	240.35	0.82	0.00	1.65	-0.51	0.00	0.00	0.00	
17.252	240.37	0.83	0.00	1.65	-0.50	0.00	0.00	0.00	
17.502	240.40	0.83	0.00	1.55	-0.50	0.00	0.00	0.00	
17.752	240.43	0.83	0.00	1.42	-0.49	0.00	0.00	0.00	
18.002	240.45	0.83	0.00	1.43	-0.48	0.00	0.00	0.00	
18.252	240.47	0.84	0.00	1.48	-0.48	0.00	0.00	0.00	
18.502	240.50	0.84	0.00	1.40	-0.47	0.00	0.00	0.00	
18.752	240.52	0.84	0.00	1.28	-0.47	0.00	0.00	0.00	
19.002	240.54	0.84	0.00	1.29	-0.46	0.00	0.00	0.00	
19.252	240.56	0.85	0.00	1.35	-0.46	0.00	0.00	0.00	
19.502	240.58	0.85	0.00	1.31	-0.45	0.00	0.00	0.00	
19.752	240.60	0.85	0.00	1.26	-0.45	0.00	0.00	0.00	
20.002	240.62	0.85	0.00	1.19	-0.45	0.00	0.00	0.00	
20.252	240.64	0.85	0.00	1.11	-0.44	0.00	0.00	0.00	
20.502	240.65	0.86	0.00	1.09	-0.44	0.00	0.00	0.00	
20.752	240.67	0.86	0.00	1.08	-0.43	0.00	0.00	0.00	
21.002	240.69	0.86	0.00	1.08	-0.43	0.00	0.00	0.00	

21.252	240.70	0.86	0.00	1.08	-0.43	0.00	0.00	0.00
21.502	240.72	0.86	0.00	1.08	-0.42	0.00	0.00	0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar. (ac)	!<-----Inflow----->!					Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	
21.752	240.73	0.86	0.00	1.09	-0.42	0.00	0.00	0.00
22.002	240.75	0.87	0.00	1.09	-0.42	0.00	0.00	0.00
22.252	240.76	0.87	0.00	1.09	-0.41	0.00	0.00	0.00
22.502	240.78	0.87	0.00	1.04	-0.41	0.00	0.00	0.00
22.752	240.79	0.87	0.00	0.97	-0.41	0.00	0.00	0.00
23.002	240.81	0.87	0.00	0.95	-0.41	0.00	0.00	0.00
23.252	240.82	0.87	0.00	0.94	-0.40	0.00	0.00	0.00
23.502	240.83	0.88	0.00	0.89	-0.38	0.00	0.00	0.00
23.752	240.85	0.88	0.00	0.82	-0.19	0.00	0.00	0.00
24.002	240.86	0.88	0.00	0.00	0.00	0.00	0.00	0.00
24.011	240.86	0.88	0.00	0.00	0.00	0.00	0.00	0.00

\*\*\* Group: BASE Node: 3

0.000	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
0.258	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
0.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
0.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
1.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
2.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
3.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
4.754	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.004	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.254	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.504	234.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00
5.754	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.005	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.251	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.511	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
6.761	234.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
7.002	234.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
7.252	234.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
7.502	234.00	0.00	0.00	0.00	-0.02	0.00	0.00	0.00
7.752	234.00	0.00	0.00	0.00	-0.03	0.00	0.00	0.00

8.002	234.00	0.00	0.00	0.00	-0.05	0.00	0.00	0.00
8.252	234.00	0.00	0.00	0.01	-0.09	0.00	0.00	0.00

100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	!<-----Inflow----->!					Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	
8.502	234.00	0.00	0.00	0.03	-0.12	0.00	0.00	0.00
8.752	234.00	0.00	0.00	0.08	-0.16	0.00	0.00	0.00
9.002	234.00	0.00	0.00	0.13	-0.25	0.00	0.00	0.00
9.252	234.00	0.00	0.00	0.20	-0.38	0.00	0.00	0.00
9.502	234.00	0.00	0.00	0.27	-0.52	0.00	0.00	0.00
9.752	234.00	0.00	0.00	0.37	-0.66	0.00	0.00	0.00
10.002	234.00	0.00	0.00	0.49	-1.02	0.00	0.00	0.00
10.252	233.99	0.00	0.00	0.64	-1.78	0.00	0.00	0.00
10.502	233.99	0.00	0.00	0.85	-2.55	0.00	0.00	0.00
10.752	233.98	0.00	0.00	1.09	-3.32	0.00	0.00	0.00
11.002	233.98	0.00	0.00	1.32	-3.99	0.00	0.00	0.00
11.252	233.98	0.00	0.00	2.14	-4.22	0.00	0.00	0.00
11.502	234.04	0.34	0.00	7.07	-4.45	0.00	0.00	0.00
11.752	234.52	0.40	0.00	19.05	-4.68	0.00	0.00	0.00
12.006	235.29	0.50	0.00	23.27	-4.89	0.00	0.00	0.00
12.259	235.86	0.58	0.00	15.74	-4.22	0.00	0.00	0.00
12.502	236.16	0.62	0.00	9.53	-3.58	0.00	0.00	0.00
12.752	236.31	0.64	0.00	6.10	-2.92	0.00	0.00	0.00
13.002	236.39	0.65	0.00	4.44	-2.25	0.00	0.00	0.00
13.252	236.45	0.66	0.00	3.68	-1.93	0.00	0.00	0.00
13.502	236.50	0.67	0.00	3.20	-1.66	0.00	0.00	0.00
13.752	236.55	0.68	0.00	2.82	-1.40	0.00	0.00	0.00
14.002	236.59	0.68	0.00	2.58	-1.14	0.00	0.00	0.00
14.252	236.64	0.69	0.00	2.39	-1.02	0.00	0.00	0.00
14.502	236.68	0.69	0.00	2.21	-0.98	0.00	0.00	0.00
14.752	236.71	0.70	0.00	2.04	-0.94	0.00	0.00	0.00
15.002	236.74	0.70	0.00	1.94	-0.90	0.00	0.00	0.00
15.252	236.77	0.71	0.00	1.88	-0.87	0.00	0.00	0.00
15.502	236.80	0.71	0.00	1.78	-0.84	0.00	0.00	0.00
15.752	236.83	0.71	0.00	1.66	-0.82	0.00	0.00	0.00
16.002	236.85	0.72	0.00	1.59	-0.79	0.00	0.00	0.00
16.252	236.87	0.72	0.00	1.52	-0.77	0.00	0.00	0.00
16.502	236.89	0.72	0.00	1.46	-0.76	0.00	0.00	0.00
16.752	236.91	0.73	0.00	1.40	-0.74	0.00	0.00	0.00
17.002	236.93	0.73	0.00	1.39	-0.73	0.00	0.00	0.00
17.252	236.95	0.73	0.00	1.38	-0.71	0.00	0.00	0.00
17.502	236.97	0.73	0.00	1.30	-0.70	0.00	0.00	0.00
17.752	236.98	0.74	0.00	1.19	-0.69	0.00	0.00	0.00
18.002	237.00	0.74	0.00	1.20	-0.67	0.00	0.00	0.00
18.252	237.01	0.74	0.00	1.24	-0.66	0.00	0.00	0.00
18.502	237.03	0.74	0.00	1.17	-0.65	0.00	0.00	0.00
18.752	237.04	0.74	0.00	1.07	-0.64	0.00	0.00	0.00
19.002	237.05	0.75	0.00	1.08	-0.63	0.00	0.00	0.00
19.252	237.07	0.75	0.00	1.12	-0.62	0.00	0.00	0.00
19.502	237.08	0.75	0.00	1.10	-0.62	0.00	0.00	0.00

19.752	237.09	0.75	0.00	1.05	-0.61	0.00	0.00	0.00
20.002	237.10	0.75	0.00	0.99	-0.60	0.00	0.00	0.00







100YR 24HR STORM EVENT

\*\*\*\*\* Node Time Series by Node - SOMERST \*\*\*\*\*

Time (hrs)	Stage (ft)	Surface Ar.(ac)	<-----Inflow----->					Link Outflow (cfs)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	
7.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.752	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.752	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.752	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.002	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.252	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.502	100.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.752	100.25	0.00	0.00	0.01	0.00	0.00	0.00	0.00
11.002	100.25	0.00	0.00	0.01	0.00	0.00	0.00	0.00
11.252	100.25	0.00	0.00	0.03	0.00	0.00	0.00	0.00
11.502	100.25	0.00	0.00	0.08	0.00	0.00	0.00	0.00
11.752	100.25	0.00	0.00	0.25	0.00	0.00	0.00	0.00
12.006	100.25	0.00	0.00	0.43	0.00	0.00	0.00	0.00
12.259	100.25	0.00	0.00	0.52	0.00	0.00	0.00	0.00
12.502	100.25	0.00	0.00	0.56	0.00	0.00	0.00	0.00
12.752	100.25	0.00	0.00	0.58	0.00	0.00	0.00	0.00
13.002	100.25	0.00	0.00	0.60	0.00	0.00	0.00	0.00
13.252	100.25	0.00	0.00	0.62	0.00	0.00	0.00	0.00
13.502	100.25	0.00	0.00	0.63	0.00	0.00	0.00	0.00
13.752	100.25	0.00	0.00	0.64	0.00	0.00	0.00	0.00
14.002	100.25	0.00	0.00	0.65	0.00	0.00	0.00	0.00
14.252	100.25	0.00	0.00	0.66	0.00	0.00	0.00	0.00
14.502	100.25	0.00	0.00	0.67	0.00	0.00	0.00	0.00
14.752	100.25	0.00	0.00	0.68	0.00	0.00	0.00	0.00
15.002	100.25	0.00	0.00	0.68	0.00	0.00	0.00	0.00
15.252	100.25	0.00	0.00	0.68	0.00	0.00	0.00	0.00
15.502	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00
15.752	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00
16.002	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00
16.252	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00
16.502	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
16.752	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
17.002	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
17.252	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
17.502	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
17.752	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
18.002	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00

18.252	100.25	0.00	0.00	0.70	0.00	0.00	0.00	0.00
18.502	100.25	0.00	0.00	0.69	0.00	0.00	0.00	0.00



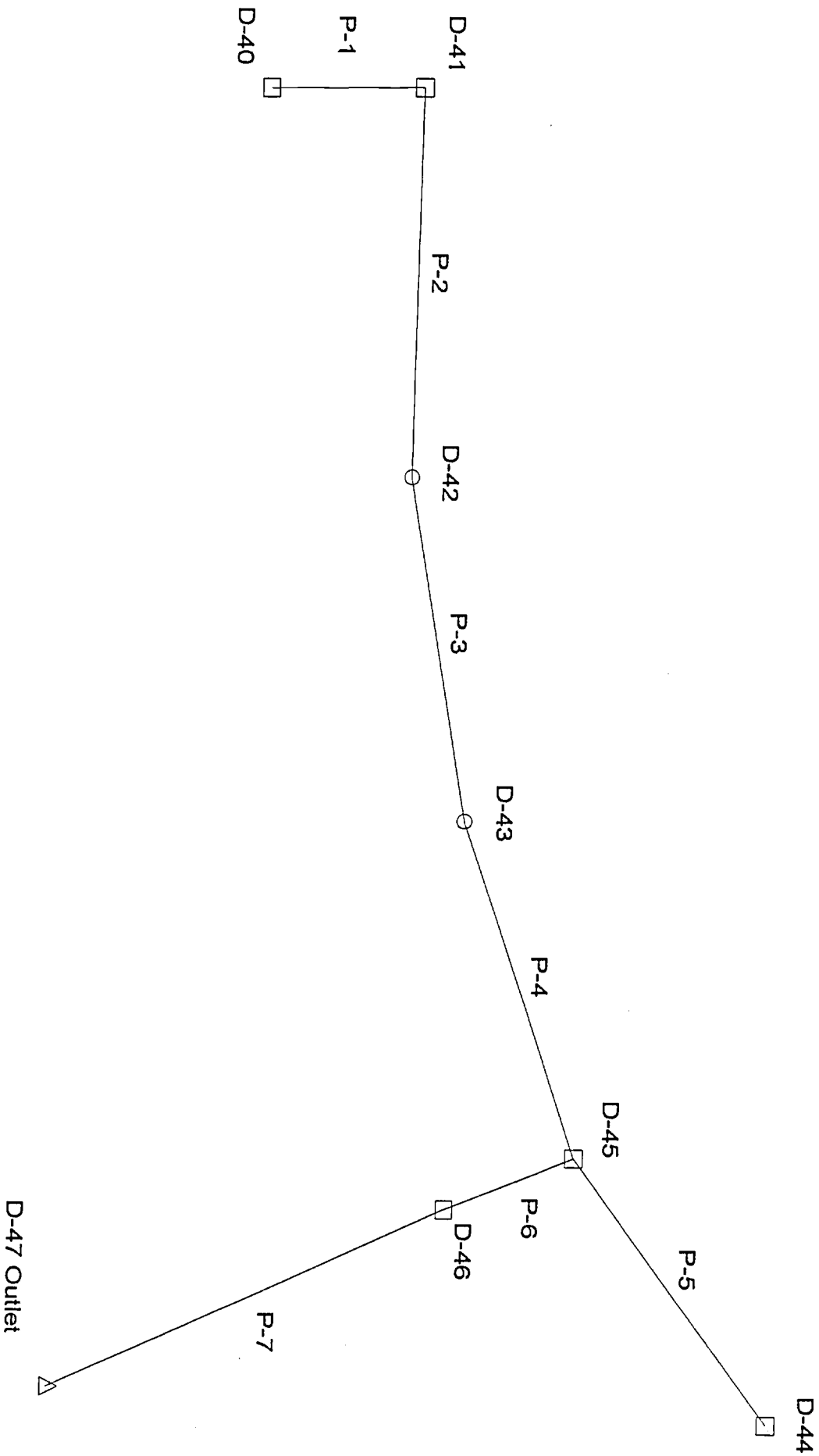
**STORM SEWER TABULATIONS**

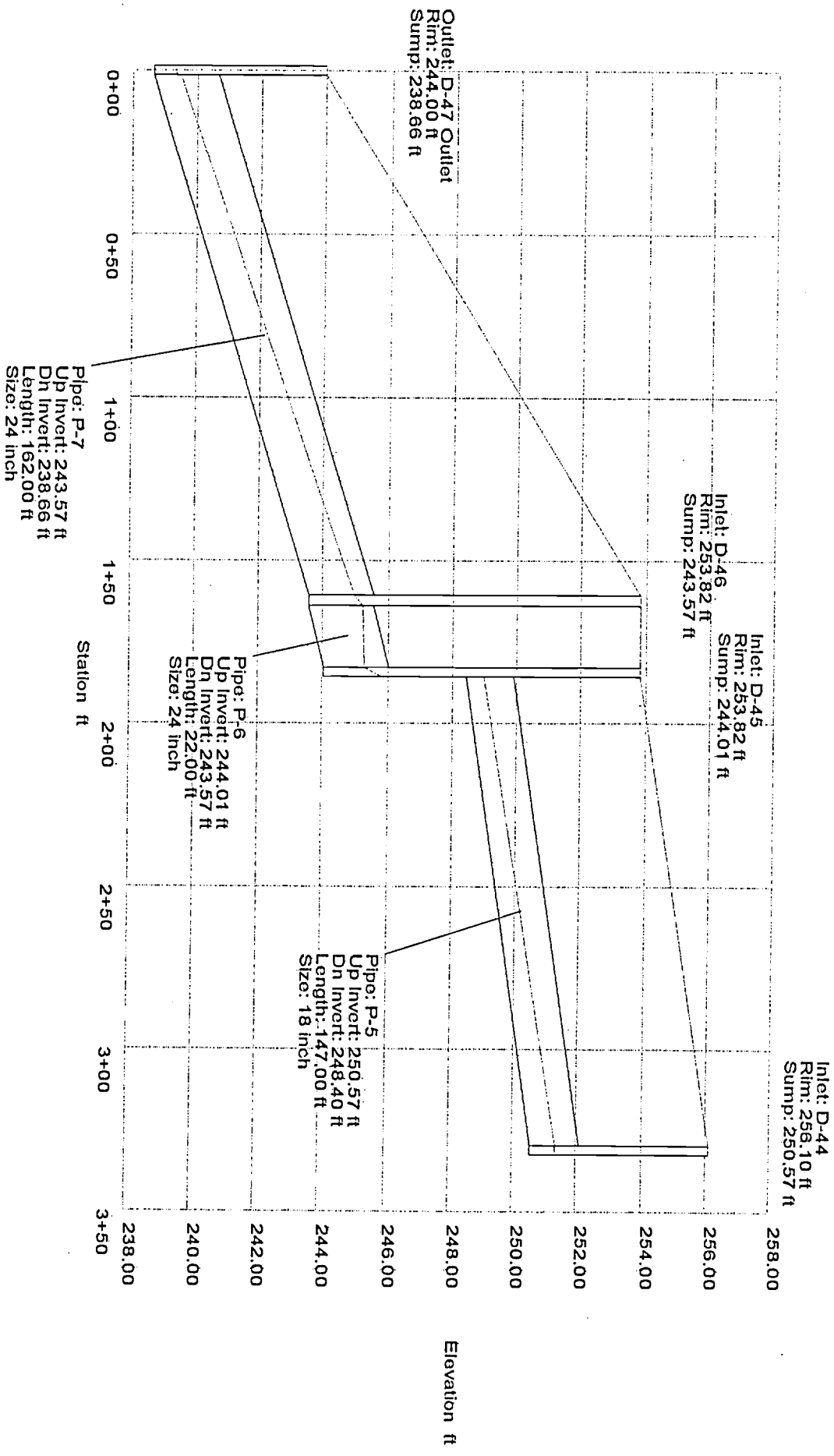
## Rainfall Table

### Return Periods

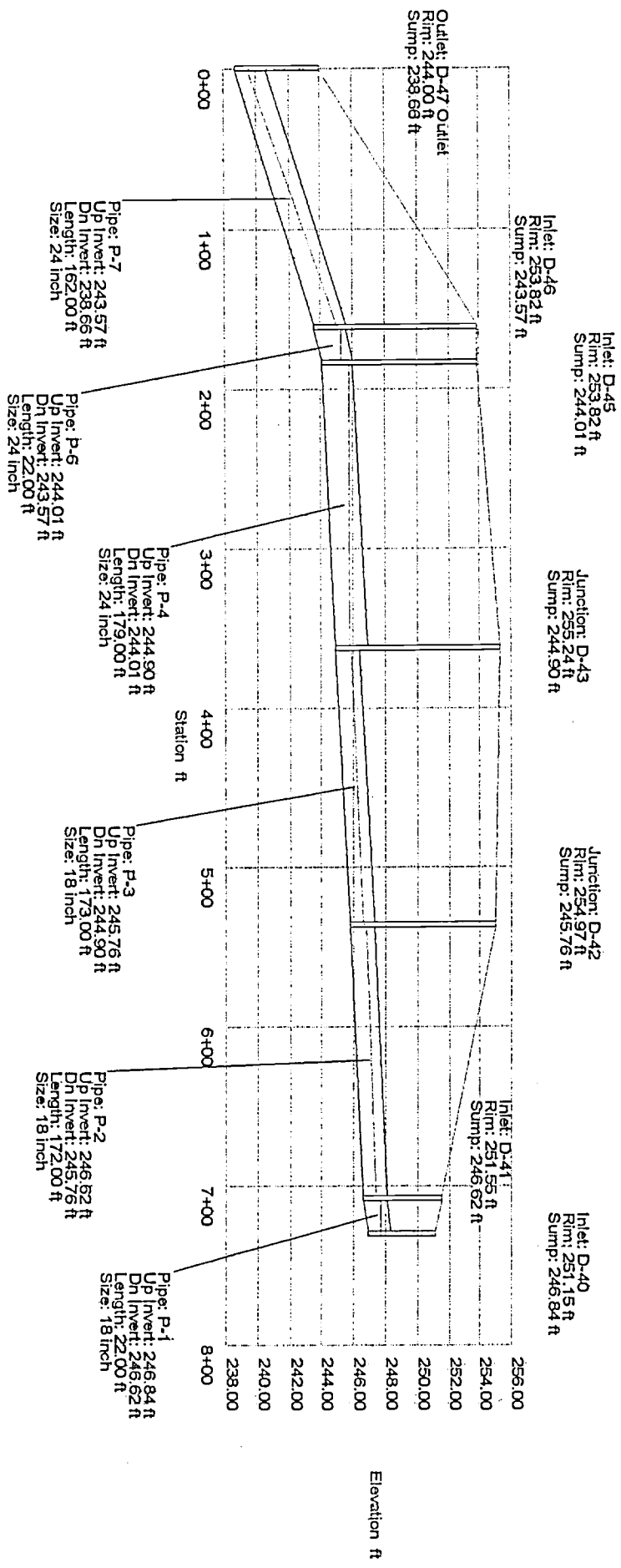
Durations	10 year
10 min	7.30
15 min	6.30
20 min	5.70
25 min	5.20
30 min	4.80
35 min	4.50

Rainfall Intensities are in (in/hr)



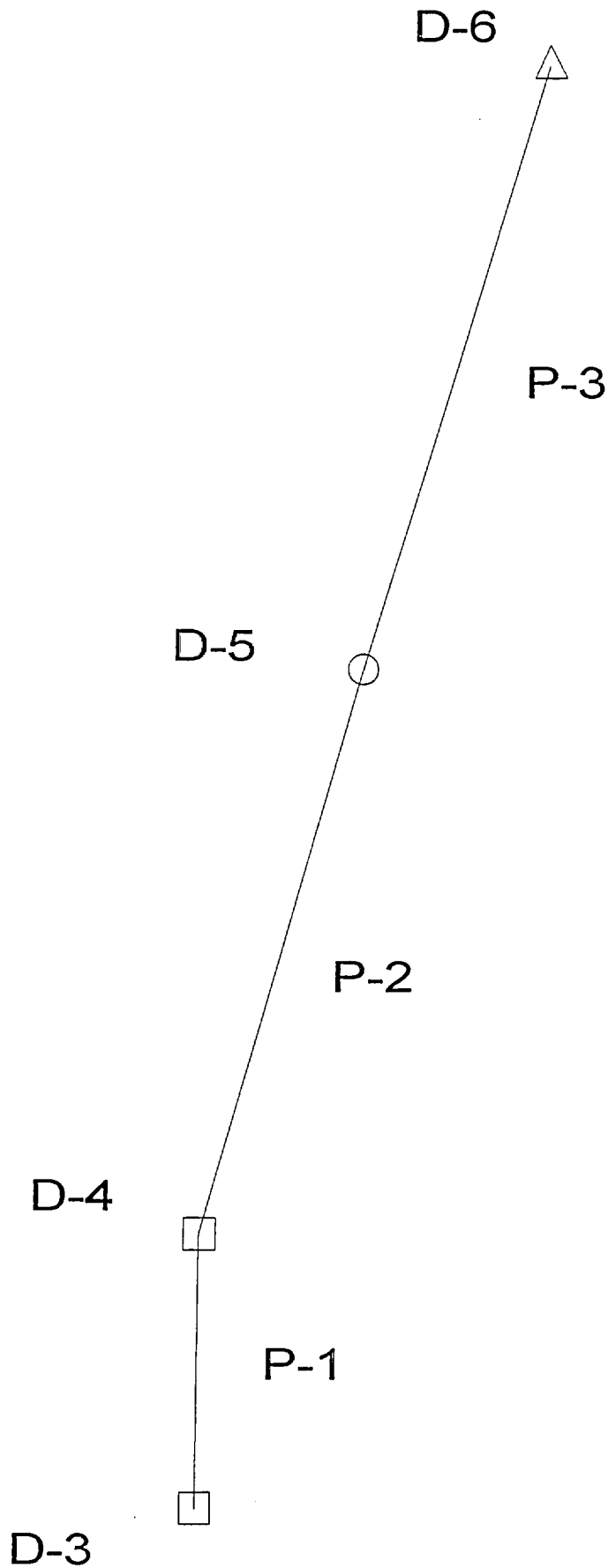






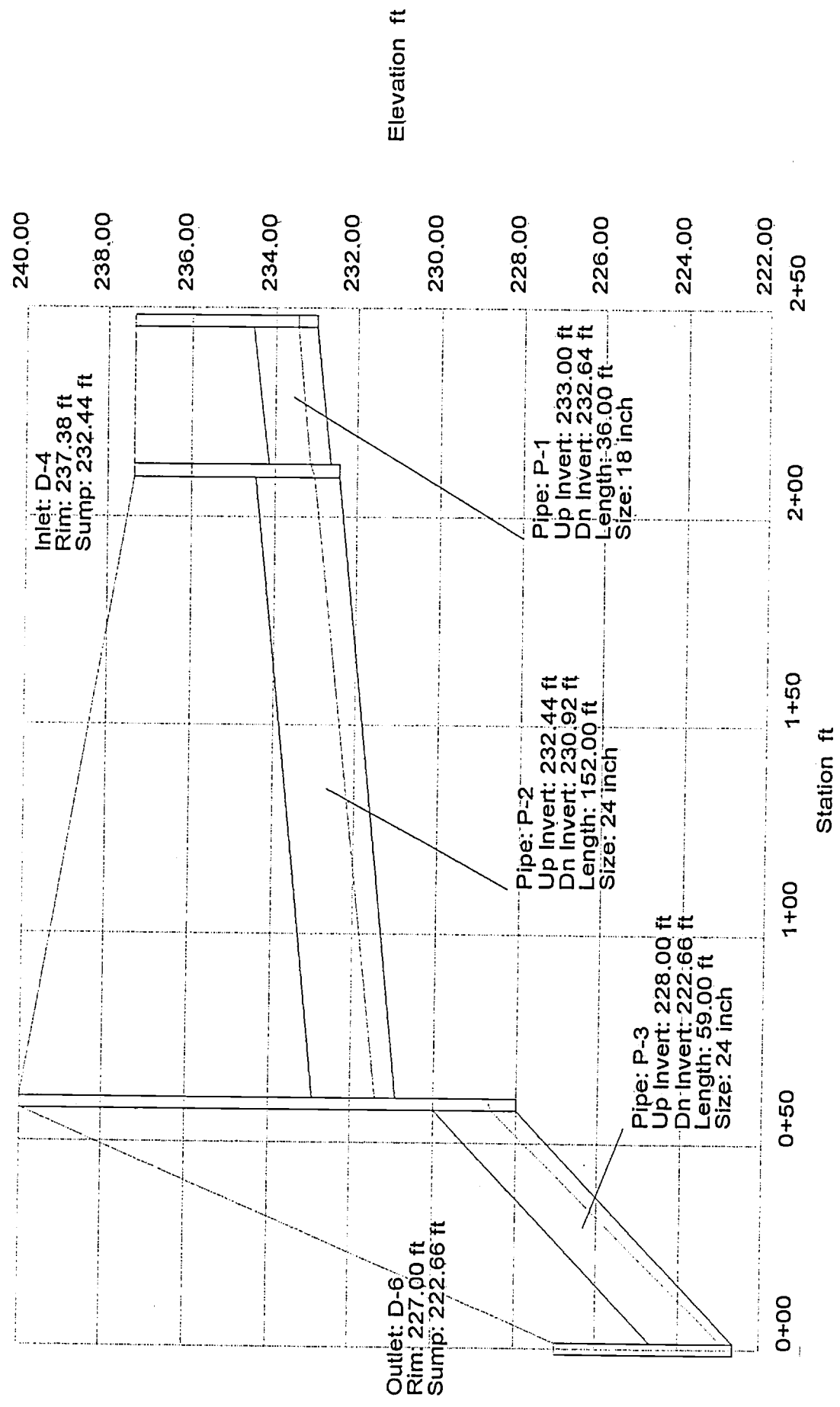
## Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-5	D-44	D-45	147.00	1.25	0.45	0.56	0.56	4.14	18 inch	12.76	5.45	250.57	248.40	0.014762	10.00
P-1	D-40	D-41	22.00	0.20	0.61	0.12	0.12	0.90	18 inch	10.50	0.79	246.84	246.62	0.010000	10.00
P-2	D-41	D-42	172.00	0.88	0.53	0.47	0.59	3.43	18 inch	7.43	3.92	246.62	245.76	0.005000	10.00
P-3	D-42	D-43	173.00	N/A	N/A	N/A	0.59	N/A	18 inch	7.41	3.87	245.76	244.90	0.004971	N/A
P-4	D-43	D-45	179.00	N/A	N/A	N/A	0.59	N/A	24 inch	15.95	2.19	244.90	244.01	0.004972	N/A
P-6	D-45	D-46	22.00	1.30	0.56	0.73	1.88	5.36	24 inch	31.99	5.21	244.01	243.57	0.020000	10.00
P-7	D-46	D-47 Outlet	162.00	0.46	0.60	0.28	2.15	2.03	24 inch	39.38	8.92	243.57	238.66	0.030309	10.00
	N/A	N/A	N/A	N/A	N/A	N/A	2.15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Inlet: D-3  
 Rim: 237.38 ft  
 Sump: 233.00 ft

Junction: D-5  
 Rim: 240.00 ft  
 Sump: 228.00 ft



Inlet: D-4  
 Rim: 237.38 ft  
 Sump: 232.44 ft

Outlet: D-6  
 Rim: 227.00 ft  
 Sump: 222.66 ft

228.00

Pipe: P-1  
 Up Invert: 233.00 ft  
 Dn Invert: 232.64 ft  
 Length: 36.00 ft  
 Size: 18 inch

Pipe: P-2  
 Up Invert: 232.44 ft  
 Dn Invert: 230.92 ft  
 Length: 152.00 ft  
 Size: 24 inch

Pipe: P-3  
 Up Invert: 228.00 ft  
 Dn Invert: 222.66 ft  
 Length: 59.00 ft  
 Size: 24 inch

224.00

222.00

2+00

1+50

1+00

0+50

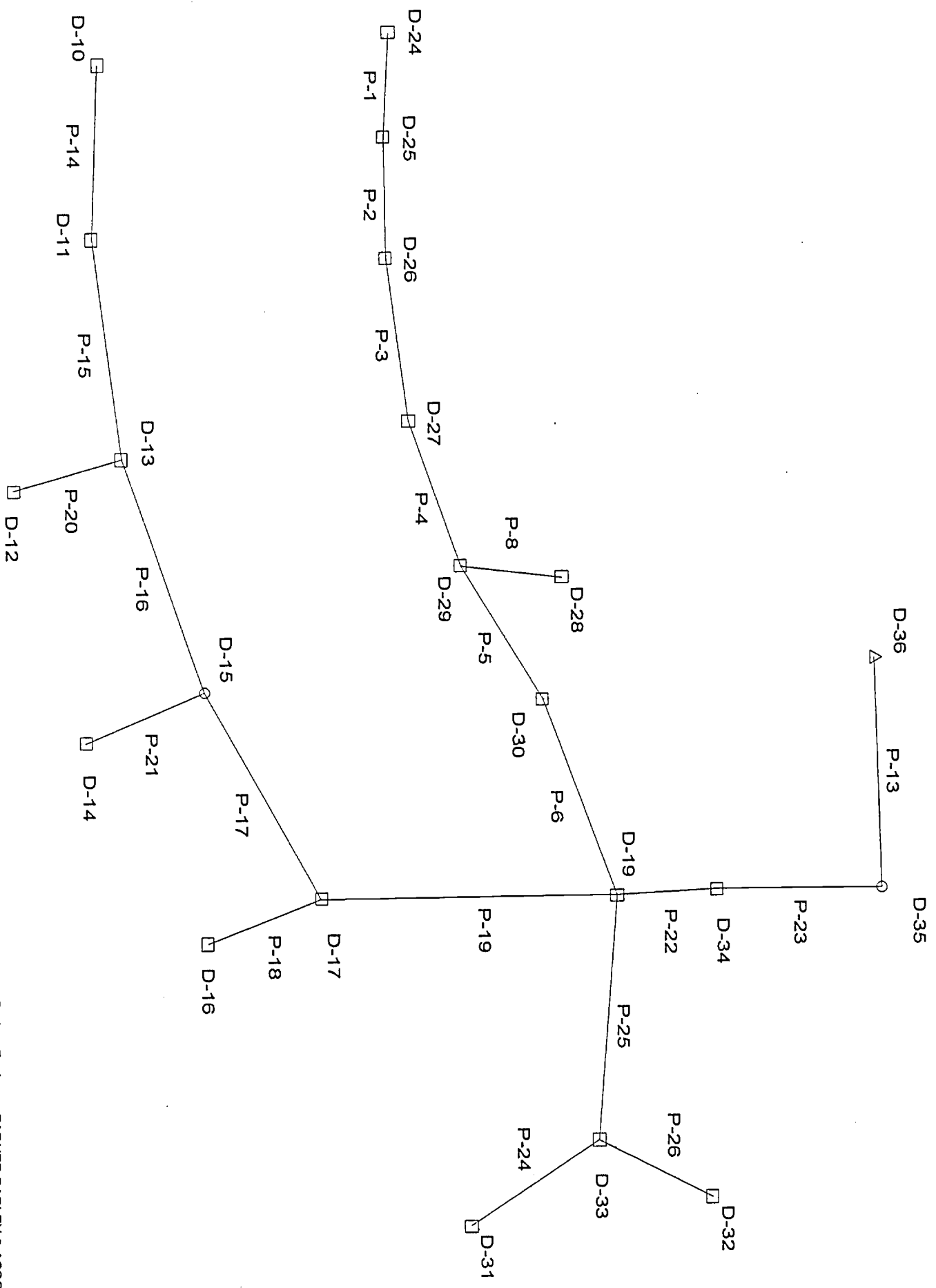
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Station ft

Elevation ft

## Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-1	D-3	D-4	36.00	0.32	0.59	0.19	0.19	1.39	18 inch	10.50	3.01	233.00	232.64	0.010000	10.00
P-2	D-4	D-5	152.00	0.32	0.59	0.38	0.38	1.39	24 inch	22.62	4.27	232.44	230.92	0.010000	10.00
P-3	D-5	D-6	59.00	N/A	N/A	0.38	0.38	N/A	24 inch	68.05	7.10	228.00	222.66	0.090508	N/A
	N/A	N/A	N/A	N/A	N/A	0.38	0.38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Outlet: D-36  
 Rim: 227.00 ft  
 Sump: 222.66 ft

Junction: D-35  
 Rim: 231.00 ft  
 Sump: 224.50 ft

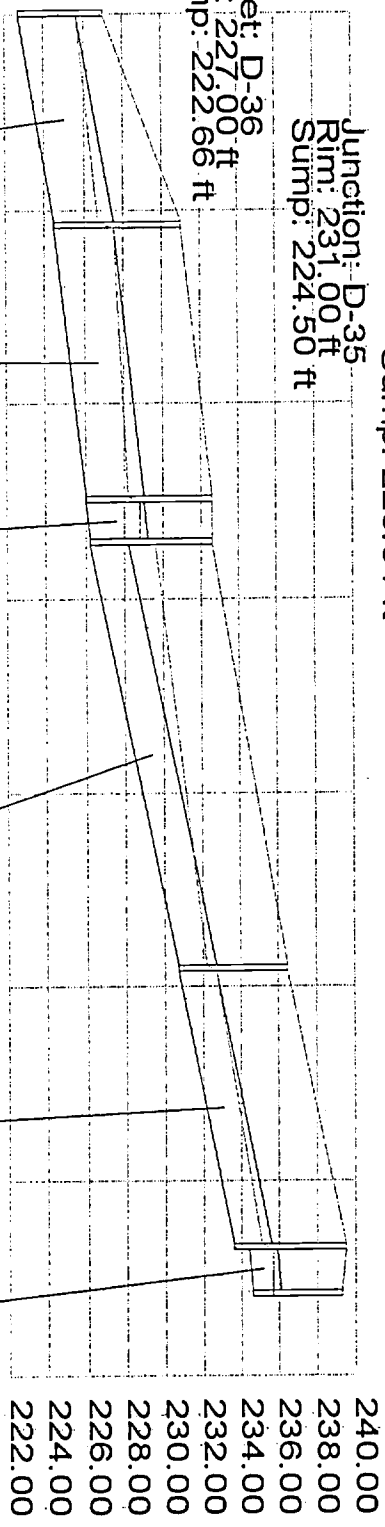
Inlet: D-34  
 Rim: 232.59 ft  
 Sump: 226.01 ft

Inlet: D-19  
 Rim: 232.59 ft  
 Sump: 226.23 ft

Inlet: D-30  
 Rim: 236.47 ft  
 Sump: 230.67 ft

Inlet: D-29  
 Rim: 239.41 ft  
 Sump: 233.61 ft

Inlet: D-28  
 Rim: 239.26 ft  
 Sump: 234.60 ft



Elevation ft

Station ft

Pipe: P-13  
 Up Invert: 224.50 ft  
 Dn Invert: 222.66 ft  
 Length: 108.00 ft  
 Size: 36 inch

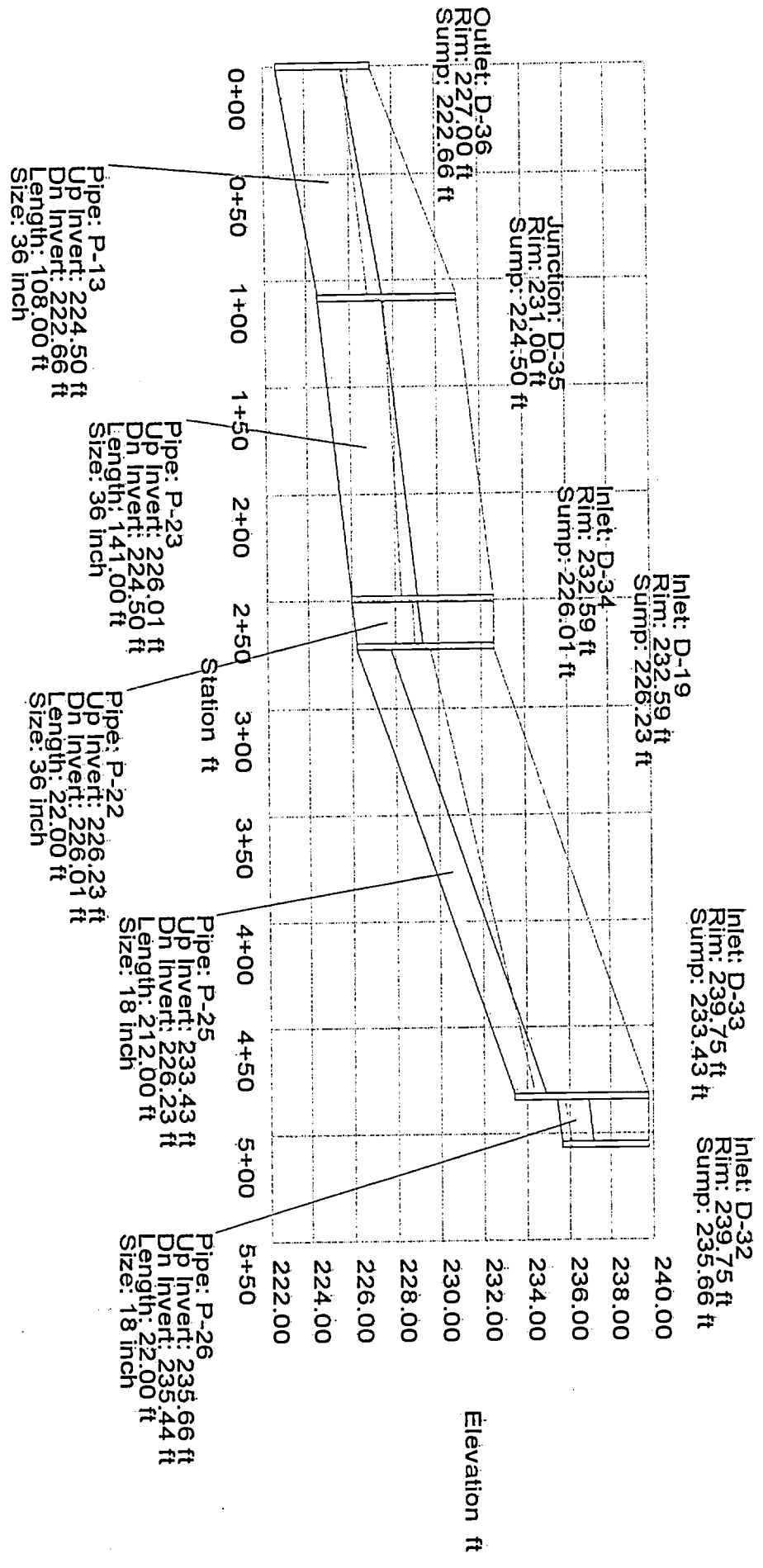
Pipe: P-23  
 Up Invert: 226.01 ft  
 Dn Invert: 224.50 ft  
 Length: 141.00 ft  
 Size: 36 inch

Pipe: P-22  
 Up Invert: 226.23 ft  
 Dn Invert: 226.01 ft  
 Length: 22.00 ft  
 Size: 36 inch

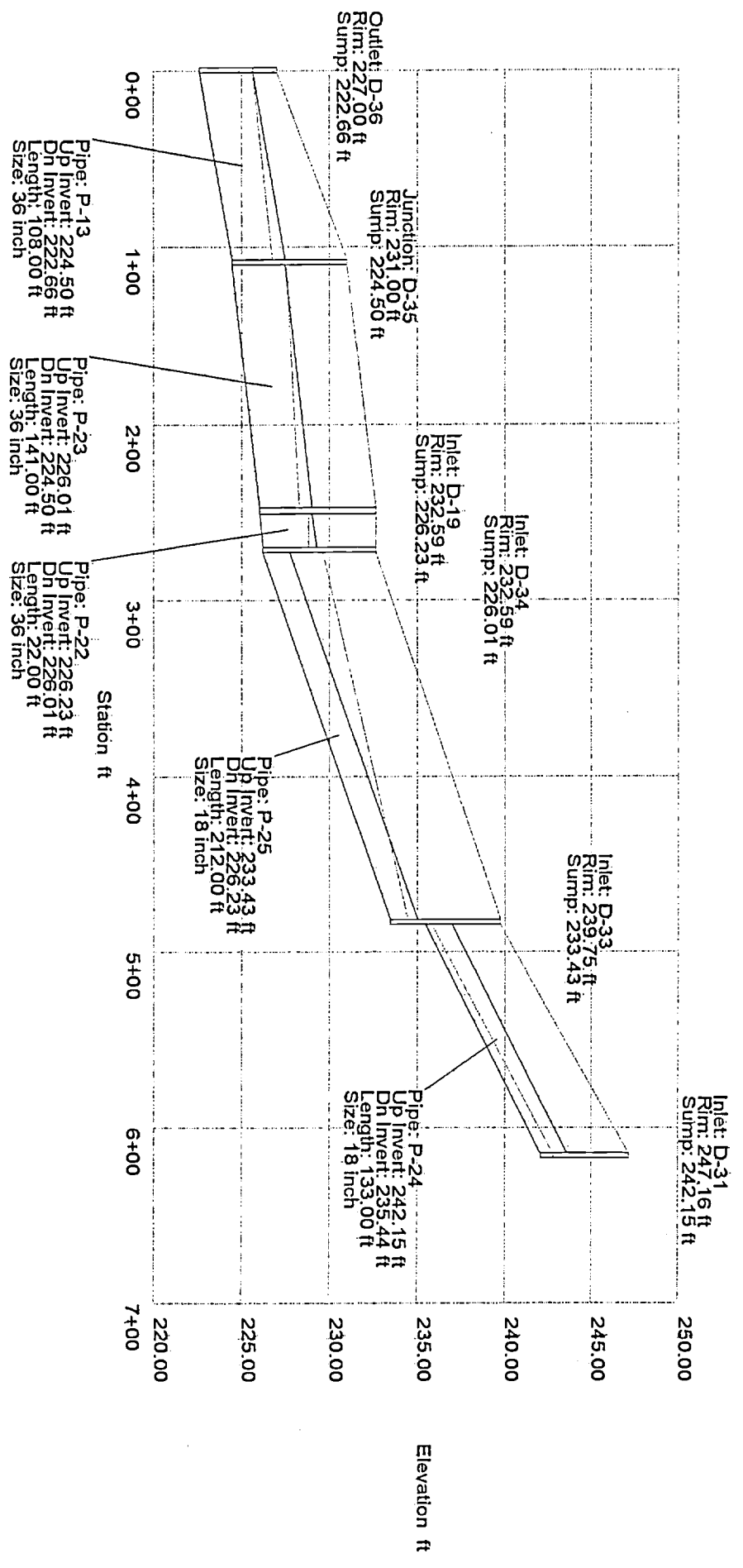
Pipe: P-6  
 Up Invert: 230.67 ft  
 Dn Invert: 226.23 ft  
 Length: 219.00 ft  
 Size: 24 inch

Pipe: P-5  
 Up Invert: 233.61 ft  
 Dn Invert: 230.67 ft  
 Length: 144.00 ft  
 Size: 24 inch

Pipe: P-8  
 Up Invert: 234.60 ft  
 Dn Invert: 234.36 ft  
 Length: 24.00 ft  
 Size: 18 inch

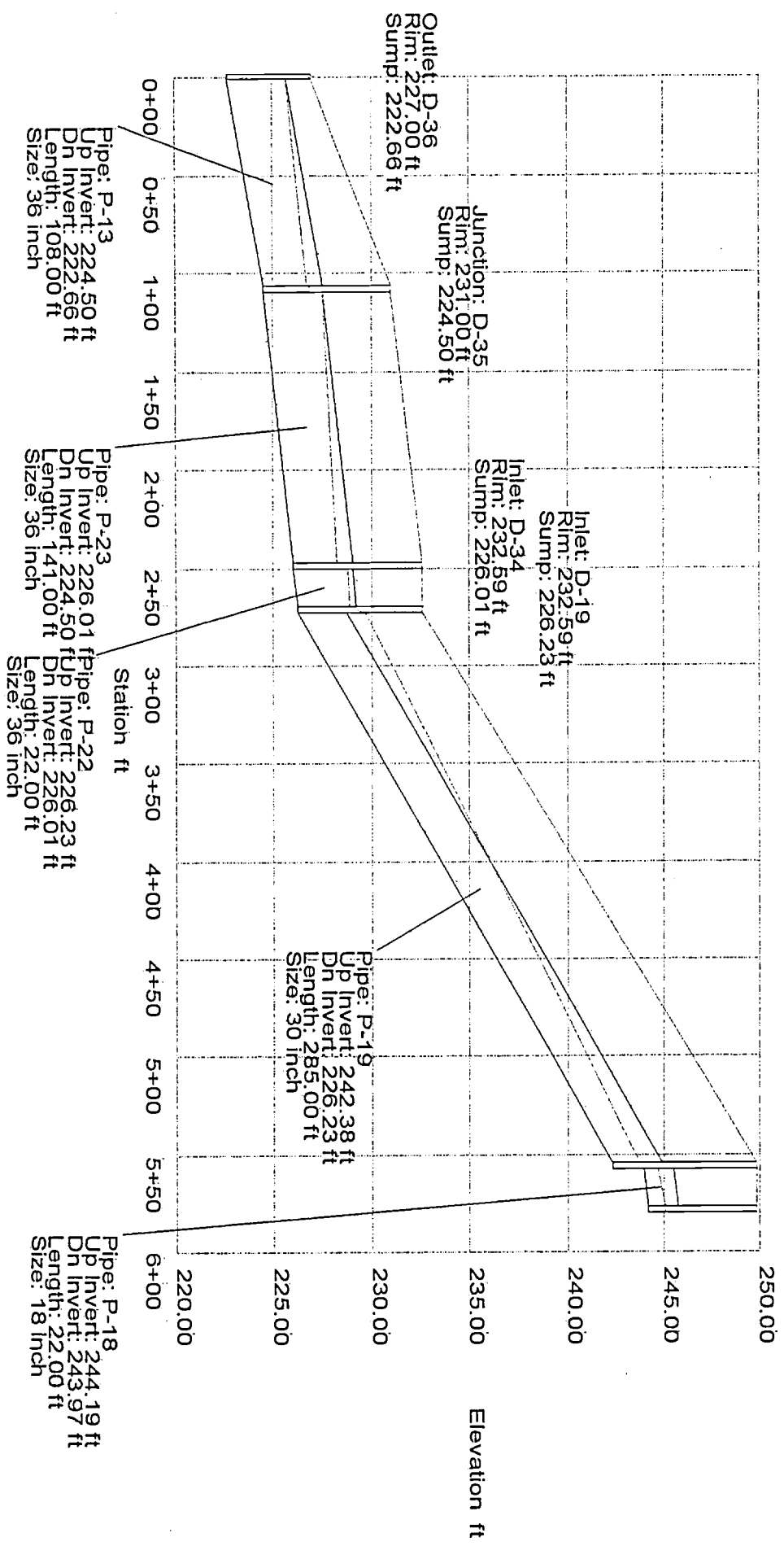


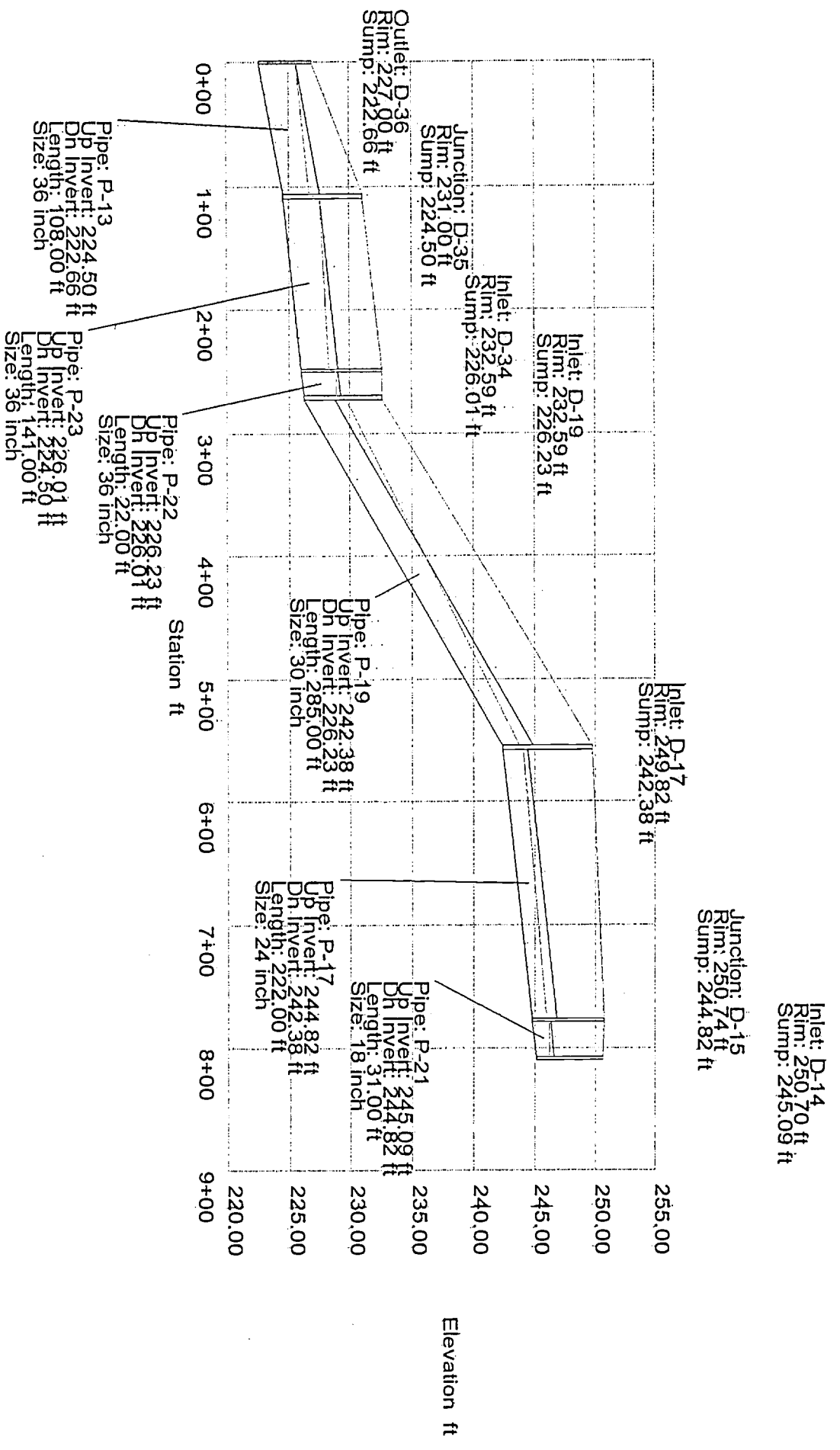


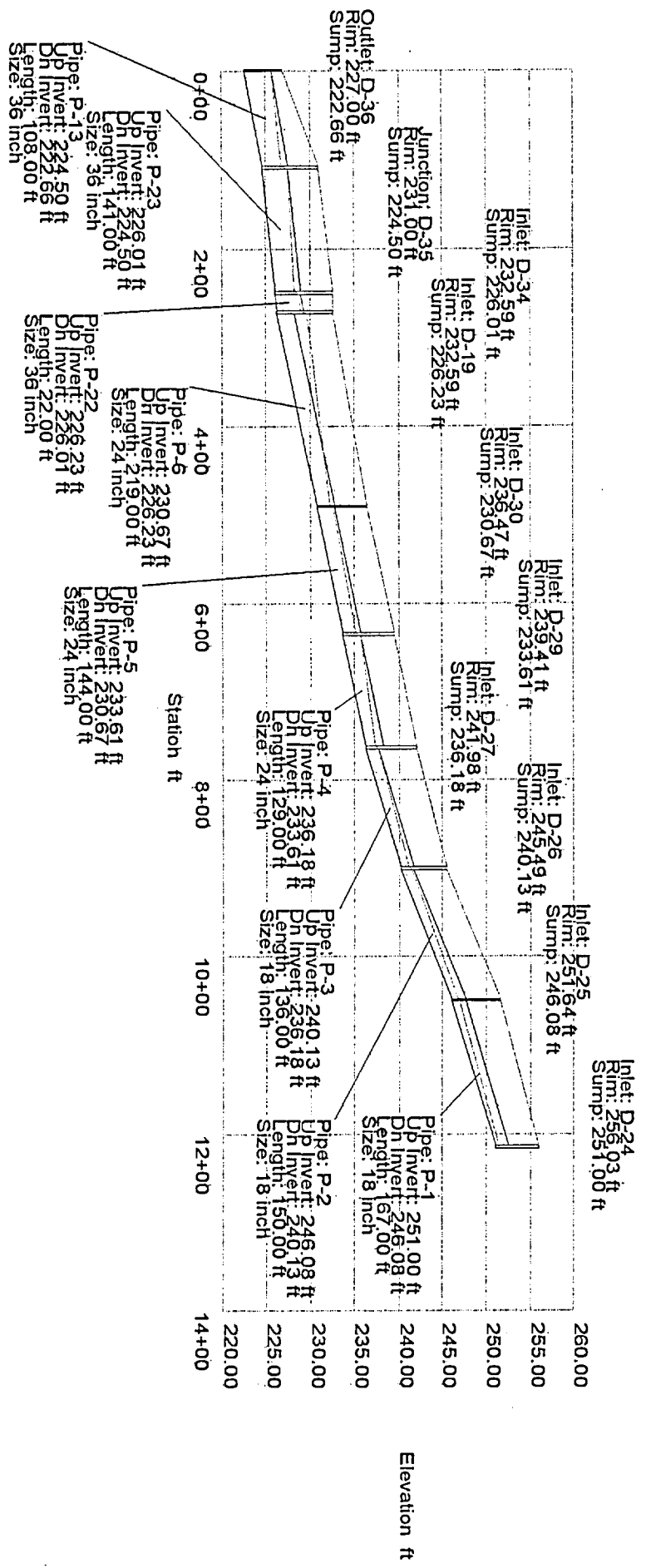


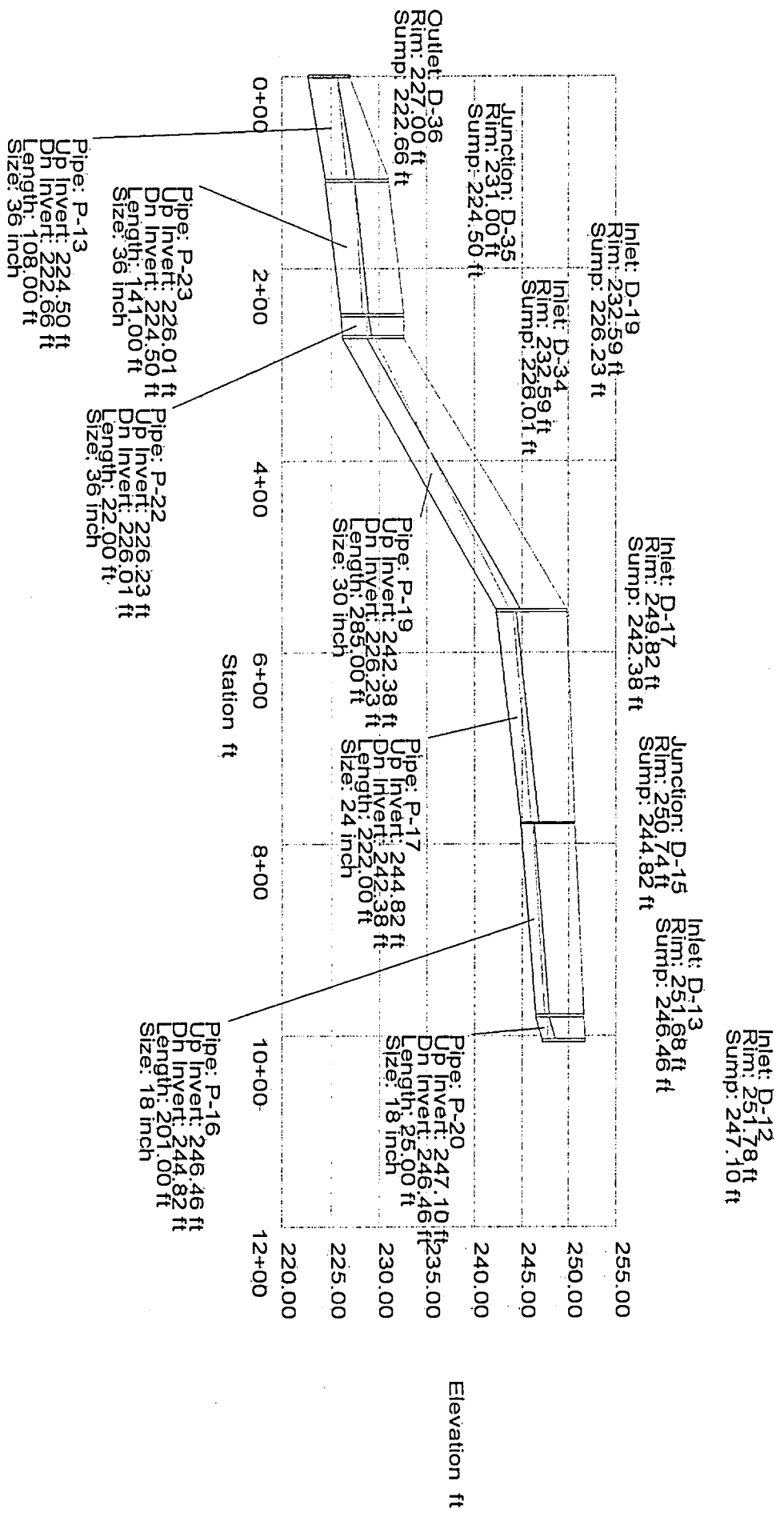
Inlet: D-17  
 Rim: 249.82 ft  
 Sump: 242.38 ft

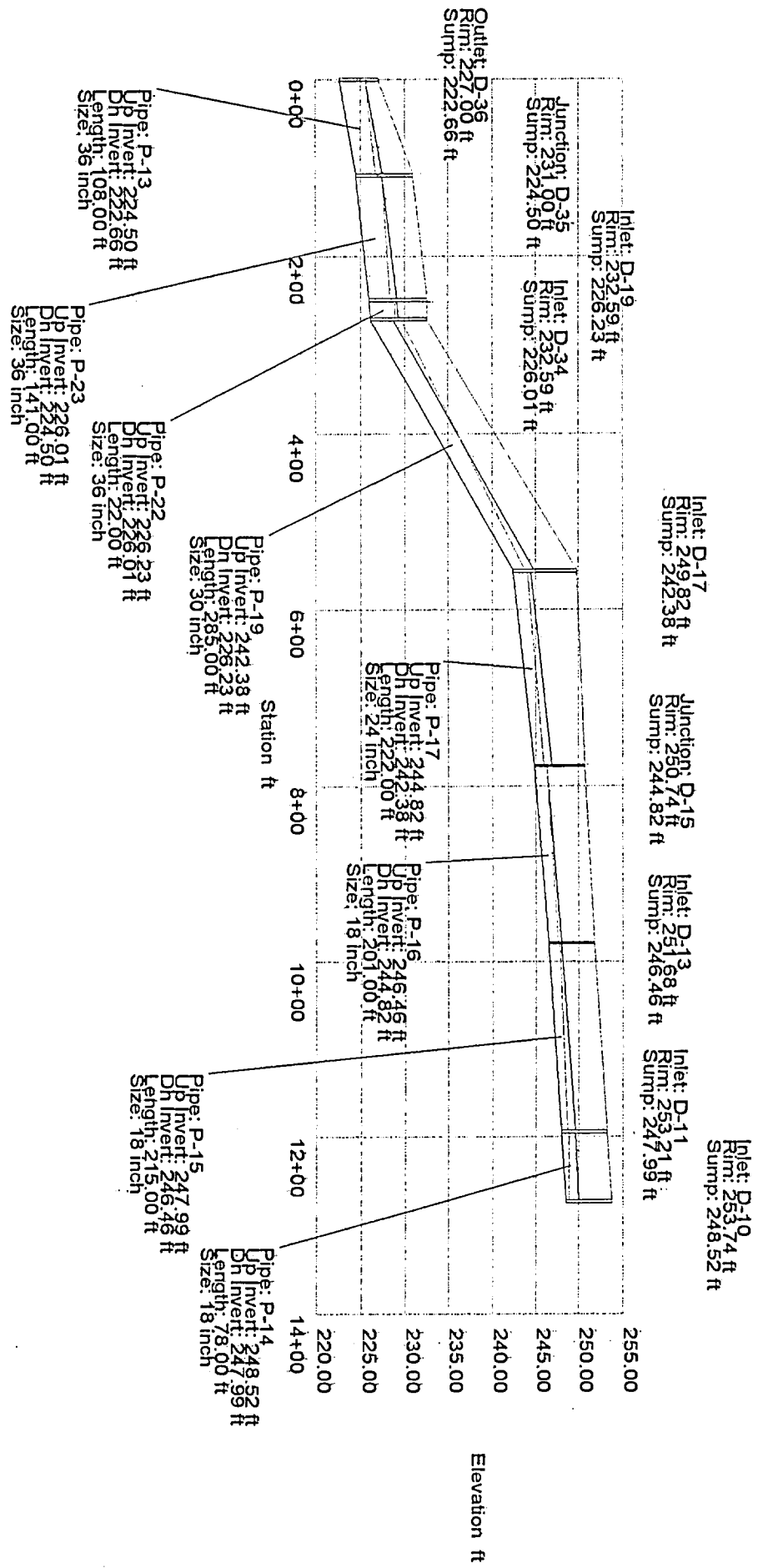
Inlet: D-16  
 Rim: 249.82 ft  
 Sump: 244.19 ft











## Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-26	D-32	D-33	22.00	0.49	0.46	0.23	0.23	1.66	18 inch	10.50	3.83	235.66	235.44	0.010000	10.00
P-24	D-31	D-33	133.00	0.90	0.49	0.44	0.44	3.25	18 inch	23.59	6.74	242.15	235.44	0.050451	10.00
P-25	D-33	D-19	212.00	0.51	0.49	0.25	0.92	1.84	18 inch	19.36	4.56	233.43	226.23	0.033962	10.00
P-18	D-16	D-17	22.00	1.70	0.40	0.68	0.68	5.00	18 inch	10.50	5.24	244.19	243.97	0.010000	10.00
P-21	D-14	D-15	31.00	0.79	0.56	0.44	0.44	3.26	18 inch	9.80	2.10	245.09	244.82	0.008710	10.00
P-20	D-12	D-13	25.00	0.79	0.56	0.44	0.44	3.26	18 inch	16.81	3.03	247.10	246.46	0.025600	10.00
P-14	D-10	D-11	78.00	0.19	0.63	0.12	0.12	0.88	18 inch	8.66	1.81	248.52	247.99	0.006795	10.00
P-15	D-11	D-13	215.00	0.68	0.56	0.38	0.50	2.80	18 inch	8.66	3.21	247.99	246.46	0.007116	10.00
P-16	D-13	D-15	201.00	0.20	0.61	0.12	1.06	0.90	18 inch	9.49	4.98	246.46	244.82	0.008159	10.00
P-17	D-15	D-17	222.00	N/A	N/A	N/A	1.51	N/A	24 inch	23.72	4.57	244.82	242.38	0.010991	N/A
P-19	D-17	D-19	285.00	0.42	0.65	0.27	2.46	2.01	30 inch	97.63	4.66	242.38	226.23	0.056667	10.00
P-8	D-28	D-29	24.00	0.36	0.63	0.23	0.23	1.67	18 inch	10.50	1.13	234.60	234.36	0.010000	10.00
P-1	D-24	D-25	167.00	0.21	0.63	0.13	0.13	0.97	18 inch	18.03	1.90	251.00	246.08	0.029461	10.00
P-2	D-25	D-26	150.00	0.74	0.52	0.38	0.52	2.83	18 inch	20.92	3.29	246.08	240.13	0.039667	10.00
P-3	D-26	D-27	136.00	0.90	0.56	0.50	1.02	3.71	18 inch	17.90	4.75	240.13	236.18	0.029044	10.00
P-4	D-27	D-29	129.00	1.03	0.51	0.53	1.55	3.87	24 inch	31.93	4.46	236.18	233.61	0.019922	10.00
P-5	D-29	D-30	144.00	1.14	0.54	0.62	2.39	4.53	24 inch	32.32	5.86	233.61	230.67	0.020417	10.00
P-6	D-30	D-19	219.00	0.97	0.53	0.51	2.90	3.78	24 inch	32.21	6.69	230.67	226.23	0.020274	10.00
P-22	D-19	D-34	22.00	2.07	0.48	0.99	7.27	7.31	36 inch	66.69	7.00	226.23	226.01	0.010000	10.00
P-23	D-34	D-35	141.00	0.41	0.62	0.25	7.53	1.87	36 inch	69.02	7.69	226.01	224.50	0.010709	10.00
P-13	D-35	D-36	108.00	N/A	N/A	N/A	7.53	N/A	36 inch	87.05	9.38	224.50	222.66	0.017037	N/A
			N/A	N/A	N/A	N/A	7.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Future D-A

D-51

D-50

P-4

P-5

P-2

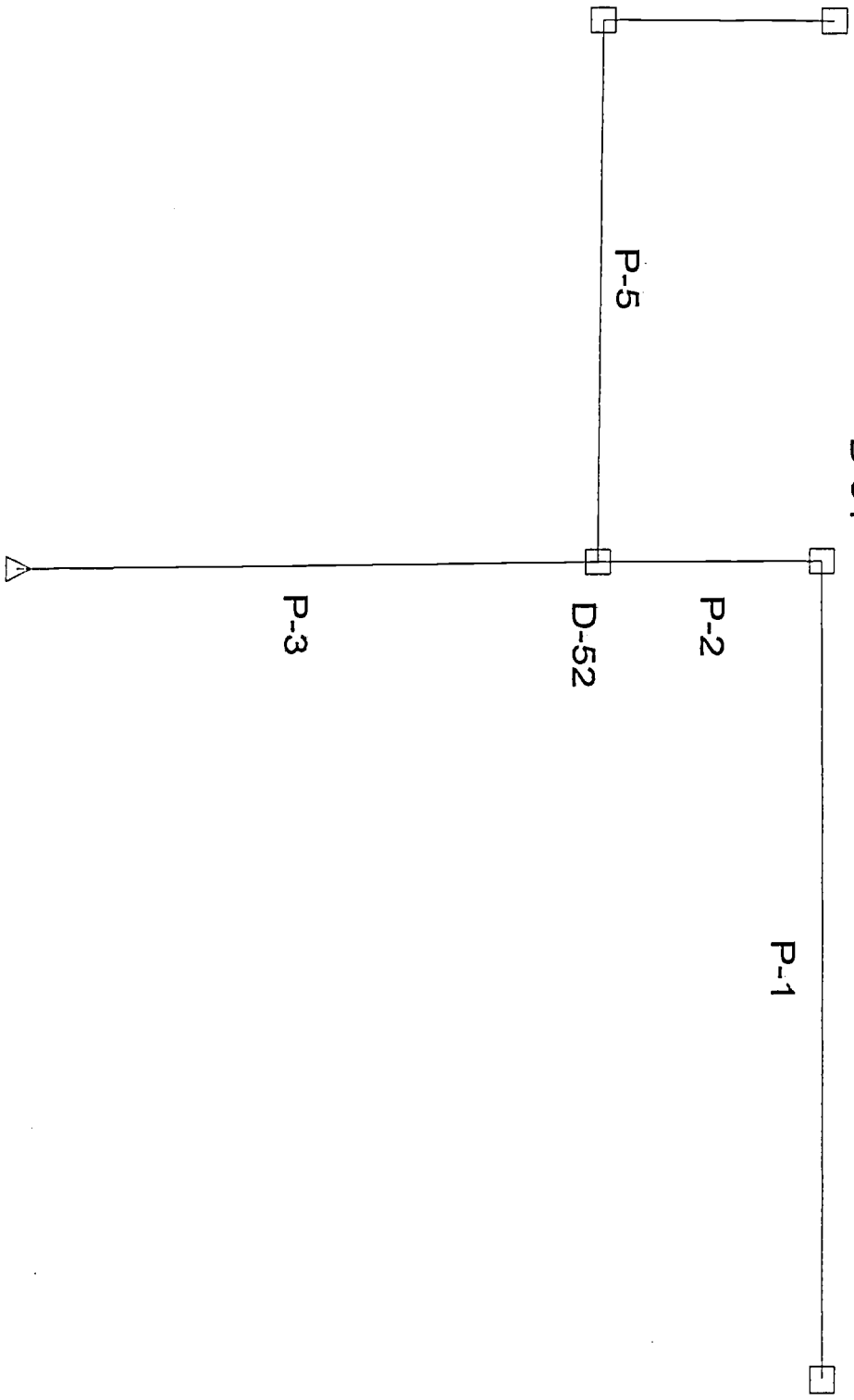
P-1

Future D-B

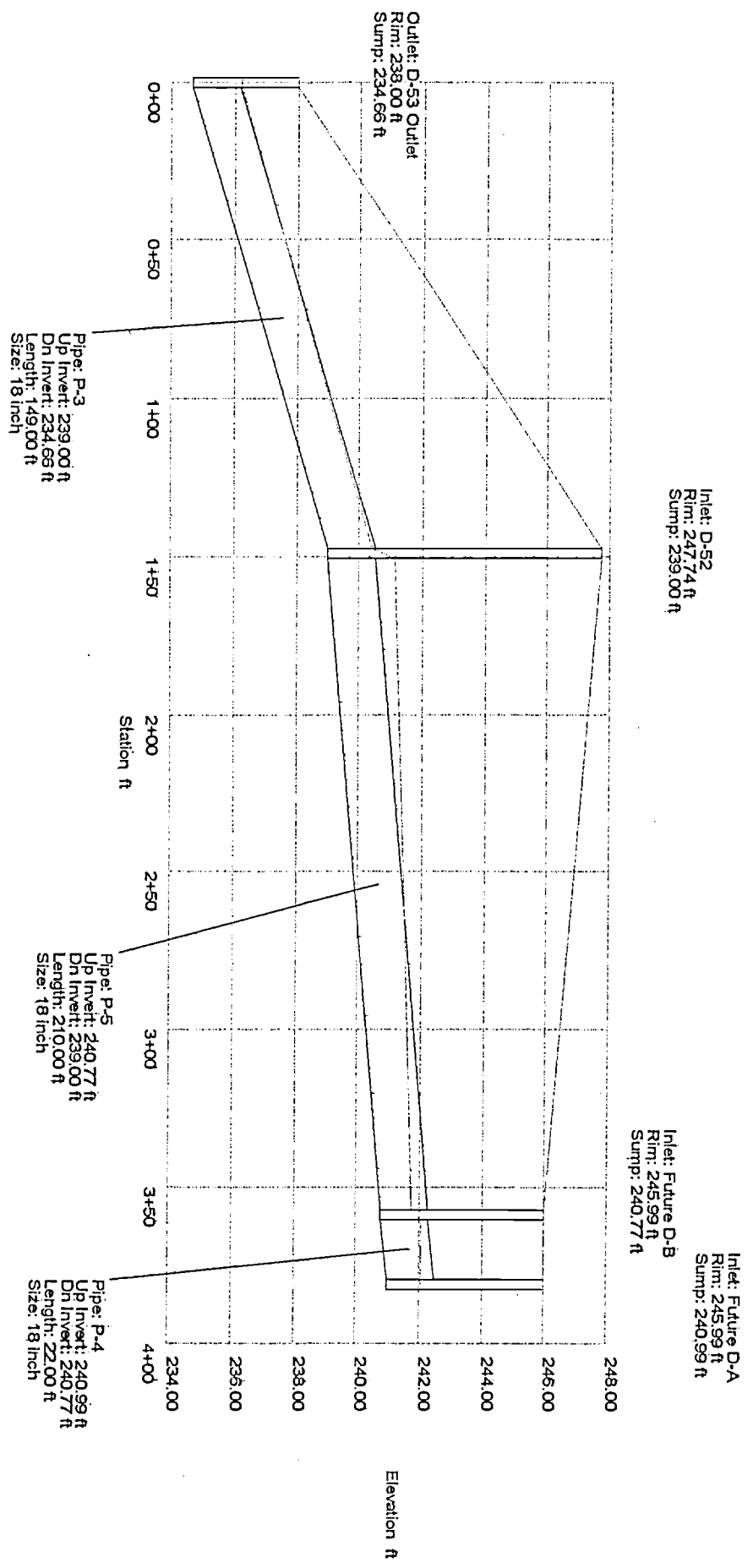
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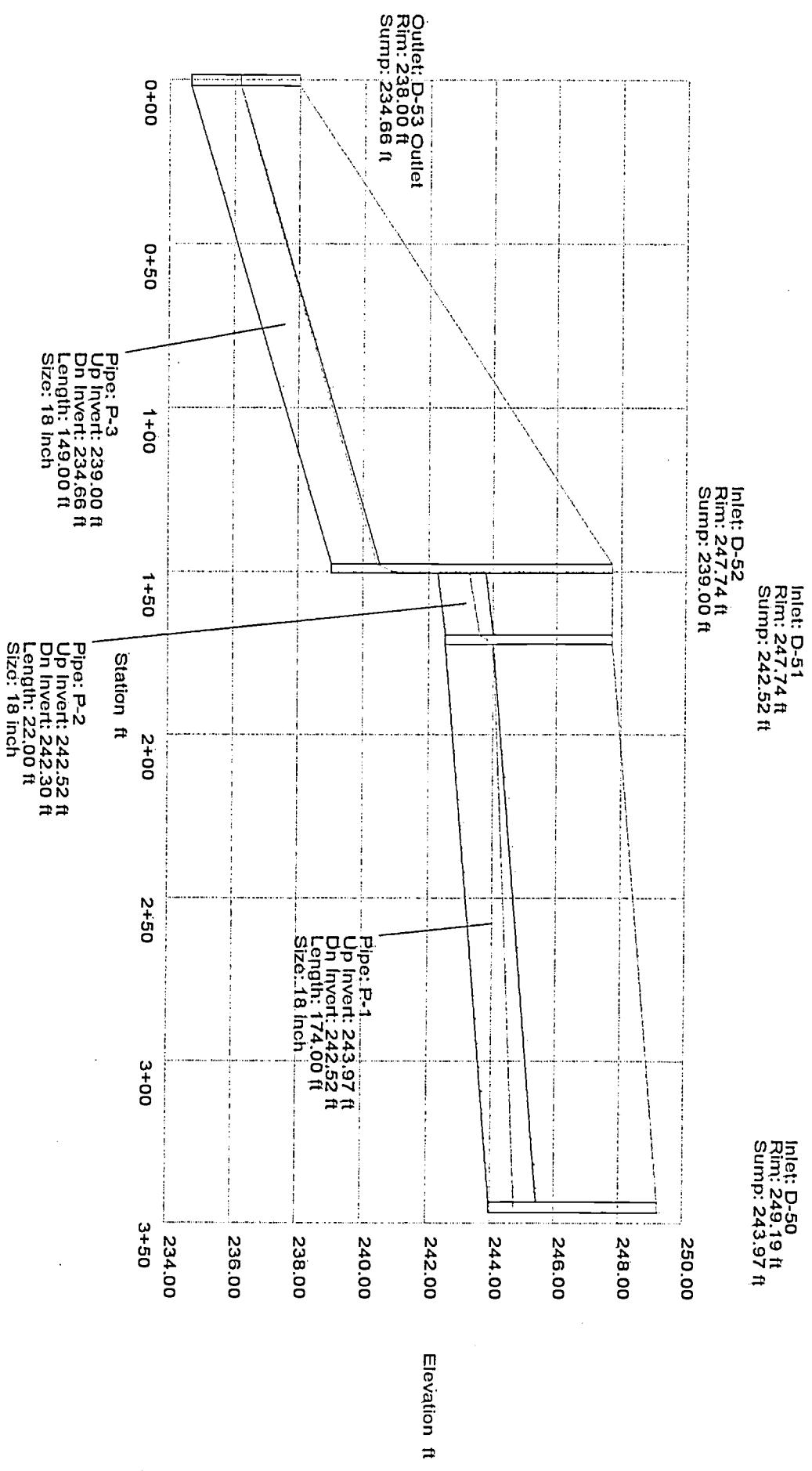
P-3

D-53 Outlet









## Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C (acres)	Inlet CA (acres)	Total CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)
P-4	Future D-A	Future D-B	22.00	1.45	0.52	0.75	0.75	5.55	18 inch	10.50	3.81	240.99	240.77	0.010000	10.00
P-5	Future D-B	D-52	210.00	0.14	0.63	0.09	0.84	0.65	18 inch	9.64	4.33	240.77	239.00	0.008429	10.00
P-1	D-50	D-51	174.00	1.07	0.56	0.60	0.60	4.41	18 inch	9.59	3.53	243.97	242.52	0.008333	10.00
P-2	D-51	D-52	22.00	0.84	0.56	0.47	1.07	3.46	18 inch	10.50	6.02	242.52	242.30	0.010000	10.00
P-3	D-52	D-53 Outlet	149.00	0.29	0.61	0.18	2.09	1.30	18 inch	17.93	8.60	239.00	234.66	0.029128	10.00
	N/A	N/A	N/A	N/A	N/A	N/A	2.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

INLET SPREAD CALCULATIONS  
"HEC 12"

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Project : SOMERSET

Sta 20+42

## INPUT

Intens.= 2.00 C1=0.45 A1= 1.25 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D44 C2=0.00 A2= 0.00 Qrunoff= 1.1 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0202 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.1 Qint= 1.1 Flowby dn= 0.0 Depth=0.22 Spread= 4.52 Veloc= 3.65

Sta 18+94

## INPUT

Intens.= 7.33 C1=0.56 A1= 1.30 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D45 C2=0.00 A2= 0.00 Qrunoff= 5.4 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

## OUTPUT

Flowby= 0.0 Qtotal= 5.4 Qint= 5.4 Flowby dn= 0.0 Depth=0.21 Spread= 1.96 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:29:22 Checked by: Date:

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Project : SOMERSET

Sta 18+94

INPUT

Intens.= 7.33 C1=0.60 A1= 0.46 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D46 C2=0.00 A2= 0.00 Qrunoff= 2.0 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT

Flowby= 0.0 Qtotal= 2.0 Qint= 2.0 Flowby dn= 0.0 Depth=0.11 Spread= 1.03 Veloc= 0.00

CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:31:21 Checked by: Date:

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Project : SOMERSET

Sta 13+58 INPUT  
 Intens.= 2.00 C1=0.53 A1= 0.88 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D41 C2=0.00 A2= 0.00 Qrunoff= 0.9 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0199 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.9 Qint= 0.9 Flowby dn= 0.0 Depth=0.21 Spread= 3.92 Veloc= 3.63

Sta 11+22 INPUT  
 Intens.= 0.73 C1=0.56 A1= 1.07 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D50 C2=0.00 A2= 0.00 Qrunoff= 0.4 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0083 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.4 Qint= 0.4 Flowby dn= 0.0 Depth=0.19 Spread= 2.87 Veloc= 2.38

Sta 9+47 INPUT  
 Intens.= 0.73 C1=0.56 A1= 0.84 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D51 C2=0.00 A2= 0.00 Qrunoff= 0.3 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0083 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.3 Qint= 0.3 Flowby dn= 0.0 Depth=0.17 Spread= 2.07 Veloc= 2.37

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
 Clogging Factors in Sag Location:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00  
 Clogging Factors on Continuous Grade:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:31:53 Checked by: Date:  
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Project : SOMERSET

Sta 13+58 INPUT  
Intens.= 7.33 C1=0.61 A1= 0.20 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D40 C2=0.00 A2= 0.00 Qrunoff= 0.9 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0199 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
Flowby= 0.0 Qtotal= 0.9 Qint= 0.9 Flowby dn= 0.0 Depth=0.21 Spread= 3.77 Veloc= 3.64

Sta 9+47 INPUT  
Intens.= 4.00 C1=0.61 A1= 0.29 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D52 C2=0.00 A2= 0.00 Qrunoff= 0.7 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0083 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
Flowby= 0.0 Qtotal= 0.7 Qint= 0.7 Flowby dn= 0.0 Depth=0.22 Spread= 4.47 Veloc= 2.33

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
Clogging Factors in Sag Location:  
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00  
Clogging Factors on Continuous Grade:  
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:34:57 Checked by: Date:  
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Project : SOMERSET

Sta 33+58

## INPUT

Intens.= 5.00 C1=0.63 A1= 0.19 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D10 C2=0.00 A2= 0.00 Qrunoff= 0.6 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0079 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.6 Qint= 0.6 Flowby dn= 0.0 Depth=0.21 Spread= 3.97 Veloc= 2.29

Sta 30+66

## INPUT

Intens.= 5.00 C1=0.61 A1= 0.20 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D13 C2=0.00 A2= 0.00 Qrunoff= 0.6 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0071 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 0.6 Qint= 0.6 Flowby dn= 0.0 Depth=0.21 Spread= 4.22 Veloc= 2.17

Sta 26+38

## INPUT

Intens.= 7.33 C1=0.65 A1= 0.42 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D17 C2=0.00 A2= 0.00 Qrunoff= 2.0 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

## OUTPUT

Flowby= 0.0 Qtotal= 2.0 Qint= 2.0 Flowby dn= 0.0 Depth=0.11 Spread= 1.02 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
 Clogging Factors in Sag Location:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00  
 Clogging Factors on Continuous Grade:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 32+83 INPUT  
 Intens.= 2.00 C1=0.56 A1= 0.68 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D11 C2=0.00 A2= 0.00 Qrunoff= 0.8 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0071 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 0.8 Qint= 0.8 Flowby dn= 0.0 Depth=0.23 Spread= 4.97 Veloc= 2.17

Sta 30+78 INPUT  
 Intens.= 1.50 C1=0.56 A1= 0.79 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D12 C2=0.00 A2= 0.00 Qrunoff= 0.7 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0079 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 0.7 Qint= 0.7 Flowby dn= 0.0 Depth=0.22 Spread= 4.32 Veloc= 2.29

Sta 28+73 INPUT  
 Intens.= 0.73 C1=0.56 A1= 0.79 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D14 C2=0.00 A2= 0.00 Qrunoff= 0.3 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0040 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 0.3 Qint= 0.3 Flowby dn= 0.0 Depth=0.19 Spread= 3.07 Veloc= 1.64

Sta 26+38 INPUT  
 Intens.= 7.33 C1=0.40 A1= 1.70 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D16 C2=0.00 A2= 0.00 Qrunoff= 5.0 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT  
 Flowby= 0.0 Qtotal= 5.0 Qint= 5.0 Flowby dn= 0.0 Depth=0.20 Spread= 1.87 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
 Clogging Factors in Sag Location:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00  
 Clogging Factors on Continuous Grade:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 15+39 INPUT  
 Intens.= 5.00 C1=0.63 A1= 0.36 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D28 C2=0.00 A2= 0.00 Qrunoff= 1.1 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.1 Qint= 1.1 Flowby dn= 0.0 Depth=0.22 Spread= 4.52 Veloc= 3.68

INPUT  
 End of this reach of Catch Basins  
 Flowby dn flows to Catch Basin D34

OUTPUT  
 Flowby dn= 0.0

Sta 22+65 INPUT  
 Intens.= 4.00 C1=0.49 A1= 0.90 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D31 C2=0.00 A2= 0.00 Qrunoff= 1.8 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0480 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.8 Qint= 1.8 Flowby dn= 0.0 Depth=0.22 Spread= 4.57 Veloc= 5.64

Sta 21+22 INPUT  
 Intens.= 7.33 C1=0.46 A1= 0.49 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D32 C2=0.00 A2= 0.00 Qrunoff= 1.7 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0519 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.7 Qint= 1.7 Flowby dn= 0.0 Depth=0.21 Spread= 4.22 Veloc= 5.86

Sta 19+02 INPUT  
 Intens.= 7.33 C1=0.62 A1= 0.41 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D34 C2=0.00 A2= 0.00 Qrunoff= 1.9 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.9 Qint= 1.9 Flowby dn= 0.0 Depth=0.10 Spread= 0.97 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
 Clogging Factors in Sag Location:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00  
 Clogging Factors on Continuous Grade:  
 ----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 21+22 INPUT  
 Intens.= 4.20 C1=0.49 A1= 0.90 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D33 C2=0.00 A2= 0.00 Qrunoff= 1.9 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0519 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.9 Qint= 1.9 Flowby dn= 0.0 Depth=0.22 Spread= 4.62 Veloc= 5.84

INPUT  
 End of this reach of Catch Basins  
 Flowby dn flows to Catch Basin D19

OUTPUT  
 Flowby dn= 0.0

Sta 11+15 INPUT  
 Intens.= 4.00 C1=0.52 A1= 0.74 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D25 C2=0.00 A2= 0.00 Qrunoff= 1.6 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0421 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.6 Qint= 1.6 Flowby dn= 0.0 Depth=0.22 Spread= 4.32 Veloc= 5.30

Sta 12+72 INPUT  
 Intens.= 2.00 C1=0.56 A1= 0.90 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D26 C2=0.00 A2= 0.00 Qrunoff= 1.0 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0380 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.0 Qint= 1.0 Flowby dn= 0.0 Depth=0.19 Spread= 3.07 Veloc= 5.12

Sta 14+06 INPUT  
 Intens.= 2.00 C1=0.51 A1= 1.03 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D27 C2=0.00 A2= 0.00 Qrunoff= 1.1 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.1 Qint= 1.1 Flowby dn= 0.0 Depth=0.22 Spread= 4.27 Veloc= 3.67

Sta 15+31 INPUT  
 Intens.= 3.50 C1=0.62 A1= 0.54 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D29 C2=0.00 A2= 0.00 Qrunoff= 1.2 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.2 Qint= 1.2 Flowby dn= 0.0 Depth=0.22 Spread= 4.62 Veloc= 3.69

Sta 16+75 INPUT  
 Intens.= 2.00 C1=0.53 A1= 0.97 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
 CB ID = D30 C2=0.00 A2= 0.00 Qrunoff= 1.0 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
 Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0205 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
 Flowby= 0.0 Qtotal= 1.0 Qint= 1.0 Flowby dn= 0.0 Depth=0.21 Spread= 4.17 Veloc= 3.71

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Project : SOMERSET

Sta 19+02

## INPUT

Intens.= 7.33 C1=0.48 A1= 2.07 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D19 C2=0.00 A2= 0.00 Qrunoff= 7.3 Slope2= 0.1070 a = 5.50 Lgrate= 4.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

## OUTPUT

Flowby= 0.0 Qtotal= 7.3 Qint= 7.3 Flowby dn= 0.0 Depth=0.26 Spread= 2.41 Veloc= 0.00

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 10+65 INPUT  
Intens.= 7.33 C1=0.59 A1= 0.32 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D3 C2=0.00 A2= 0.00 Qrunoff= 1.4 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0482 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT  
Flowby= 0.0 Qtotal= 1.4 Qint= 1.4 Flowby dn= 0.0 Depth=0.21 Spread= 3.77 Veloc= 5.64

CRITERIA  
Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022  
Clogging Factors in Sag Location:  
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00  
Clogging Factors on Continuous Grade:  
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 10+65

## INPUT

Intens.= 7.33 C1=0.59 A1= 0.32 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D4 C2=0.00 A2= 0.00 Qrunoff= 1.4 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0482 Slope3= 0.0200 W = 2.00 Length= 9.00

## OUTPUT

Flowby= 0.0 Qtotal= 1.4 Qint= 1.4 Flowby dn= 0.0 Depth=0.21 Spread= 3.77 Veloc= 5.64

## CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

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Project : SOMERSET

Sta 9+55

INPUT

Intens.= 5.00 C1=0.63 A1= 0.21 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18  
CB ID = D24 C2=0.00 A2= 0.00 Qrunoff= 0.7 Slope2= 0.1070 a = 5.50 Lgrate= 8.00  
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0100 Slope3= 0.0200 W = 2.00 Length= 9.00

OUTPUT

Flowby= 0.0 Qtotal= 0.7 Qint= 0.7 Flowby dn= 0.0 Depth=0.21 Spread= 3.92 Veloc= 2.57

CRITERIA

Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022

Clogging Factors in Sag Location:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00

Clogging Factors on Continuous Grade:

----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:01/15/99 Time:08:39:26 Checked by: Date:  
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**GEOTECHNICAL INVESTIGATION  
OF LEGENDS SUBDIVISION  
Clermont  
Lake County, Florida**



# Andreyev Engineering, Inc.

TAVARES OFFICE  
107 W. Main St., Suite B  
Tavares, Florida 32778  
352-742-9622  
Fax: 352-742-9623  
Email: ANDENGI@AOL.COM

▼ Groundwater ▼ Environmental ▼ Geotechnical ▼ Construction Materials Testing

January 15, 1999  
Project No: TPGT-98-111R

**TO:** Lennar Homes  
c/o Farmer Barley & Associates, Inc.  
350 North Sinclair Avenue  
Tavares, Florida 32778

**Attention:** Mr. Duane Booth, P.E.

**SUBJECT:** Geotechnical Investigation at KingsRidge Subdivision, Hancock Estates, Pavement Sections and Stormwater Retention Systems, Lake County, Florida

Dear Mr. Booth:

As requested, Andreyev Engineering, Inc. (AEI) has completed a geotechnical investigation for the subject site. The following report presents the results of our field and laboratory investigation along with evaluations and recommendations for retention pond design and selection of pavement base material.

## SITE LOCATION AND DESCRIPTION

The subject property is located off Hancock Road adjacent to the under construction school site in Clermont. Three (3) stormwater retention areas associated with the proposed development will be located along the east and west property boundaries. A vicinity map showing the site on a regional scale, as well as topographic features of the site is attached as **Figure 1**.

## PURPOSE AND SCOPE OF SERVICES

The purpose of this study was to explore shallow subsurface conditions at proposed pavement and retention areas. The field exploration consisted of drilling six (6) auger borings to a depth of 10 feet in proposed pavement areas and six (6) 15-foot auger borings in the vicinity of the three proposed retention ponds. Boring locations are shown on the attached site plan, **Figure 2**.

Samples were recovered from the borings and returned to AEI's laboratory for visual classification and stratification by a Geotechnical Engineer. Soil samples were classified according to the Unified Soil Classification System.

Laboratory tests were conducted on 2 selected soil samples recovered from the borings for moisture content and percent passing the U.S. # 200 sieve. In addition a permeability test was conducted in the retention areas to estimate the coefficient of permeability of the subsurface soils. The results of these tests are shown adjacent to the tested depth on the soil profiles, **Figure 3**.

## SUBSURFACE CONDITIONS

Results of the borings indicate that fine sand is the predominant subsurface soil existing from the ground surface to a depth of 15 feet below ground surface with sporadic layers of clayey soils occurring between 4 and

15 feet below ground surface at the location of the borings. Results of the borings are shown graphically in profile form on Figure 3.

The groundwater table was not encountered at any of the boring locations. The normal seasonal high groundwater is estimated to occur below a depth of 15 feet.

A field permeability test was conducted at boring A-1 in the vicinity the proposed retention pond #1 to measure the horizontal hydraulic conductivity of the soils. This test was conducted by installing a screen PVC piezometer in the ground to depths of 15 feet below the ground surface, and conducting a constant head field permeability test, per designation E-19, Earth Manual, 1974. The result of this test is shown adjacent to the sampled depth interval on Figure 3.

In order to measure the vertical hydraulic conductivity of the shallow soils above the clayey soils, an undisturbed tube sample was extracted from depths of about 2 feet below ground surface at boring A-4. The coefficient of permeability was measured in our laboratory using a falling head test. The result of this test is shown adjacent to the sampled depth on Figure 3.

### EVALUATION AND RECOMMENDATIONS

Based on field and laboratory results, the proposed retention pond locations may be suitable for construction and long-term performance of dry stormwater retention systems. For pavement design, either a flexible or a semi-flexible pavement sections can be used at this site. However, temporary perching of groundwater may occur above the Stratum 3 clayey soils during periods of heavy or extended rainfall and a minimum 2 foot separation should be maintained between the bottom of pavement base and top of the Stratum 3 soils, since roadway cuts could encounter some Stratum 3 soils in some areas.

#### Retention Ponds

The subsurface conditions in the vicinity of the proposed retention pond #1 are satisfactory for dry stormwater retention due to the highly permeable subsurface soil strata and deep groundwater table. However temporary perching of groundwater above the Stratum 3 clayey soils in the area of retention ponds 2 and 3 will be a concern. In order to provide adequate infiltration, a 2 to 3 foot buffer will be needed between the pond bottom and top of the Stratum 3 clayey soils. The Stratum 3 soils will need to be over-excavated and replaced with clean fine sand with less than 5% passing the U.S. No. 200 sieve. All fill used in pond and berm construction should consist of clean fine sand with less than 5% passing the U.S. #200 sieve. The Strata 1 and 2 soils should be suitable for use as fill. For purposes of design and evaluation of retention area recovery, the following aquifer characteristics should be assumed:

Parameters	Vicinity of Pond #1	Vicinity of Pond #2	Vicinity of Pond #3
Depth to Seasonal High Groundwater Table (feet)	15	4*	7*
Depth to Aquifer base (feet)	15	4*	7*
Vertical Hydraulic Conductivity (ft/day)	40	40	40
Horizontal Hydraulic Conductivity (ft/day)	42	40	40
Soil Storage Coefficient	0.20	0.20	0.20

\* Without over-excavation of the Stratum 3 soils, excavation of the clayey soils would allow the seasonal high groundwater table and the aquifer base to be set at the excavated depth.

## Paved Areas

In general, the compacted subsurface soils will be suitable for support of a flexible (limerock) or semi-flexible (soil-cement) type pavement base after subgrade preparation. A limerock base is generally used for these soil and groundwater conditions since it is the more economical alternative. Typical flexible and semi-flexible pavement sections are as follows:

### Limerock Base

1-1/2" asphaltic concrete wearing surface

6" limerock base course. quality of limerock to be in accordance with current Florida Department of Transportation specifications and compacted to a minimum density equivalent to 95 percent of the Modified Proctor (AASHTO T-180).

6" stabilized subbase with minimum Florida Bearing Value (FBV) of 50 psi or (LBR) of 30 percent. The subbase should be compacted to a minimum density equivalent to 95 percent of the Modified Proctor Maximum Density (AASHTO T-180) for a depth of 1 foot below pavement subgrade.

### Soil-Cement Base

1-1/2" asphaltic concrete wearing surface

6" soil-cement base designed and constructed in accordance with current Portland Cement Association recommended methods.

12" subgrade consisting of free draining natural fine sand or fine sand fill. Subgrade to be compacted to a minimum density of 95 percent of the Modified Proctor Maximum Density (AASHTO T-180).

Asphaltic wearing surface normally consists of Type S-1 or S-3, meeting current Florida Department of Transportation specifications. The wearing surface should be compacted to a minimum density of 95 percent of the Laboratory Density as determined by the Marshall Stability Test method for the approved job mix formula.

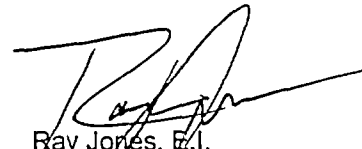
The recommendations presented above are minimum assuming normal light passenger car and pick-up truck traffic with an occasional garbage or delivery truck. Traffic should not be allowed on the subgrade prior to placement of the base to avoid rutting. The final pavement thickness design should be checked by the project civil engineer using data contained in this report and anticipated traffic conditions.

CLOSURE

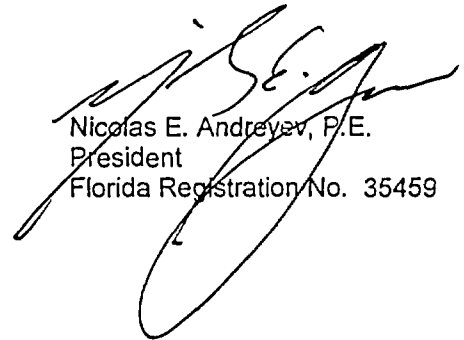
AEI appreciates the opportunity to participate in this project, and we trust that the information herein is sufficient for your immediate needs. If you have any questions or comments concerning the contents of this report, please do not hesitate to contact the undersigned.

Sincerely,

ANDREYEV ENGINEERING, INC.

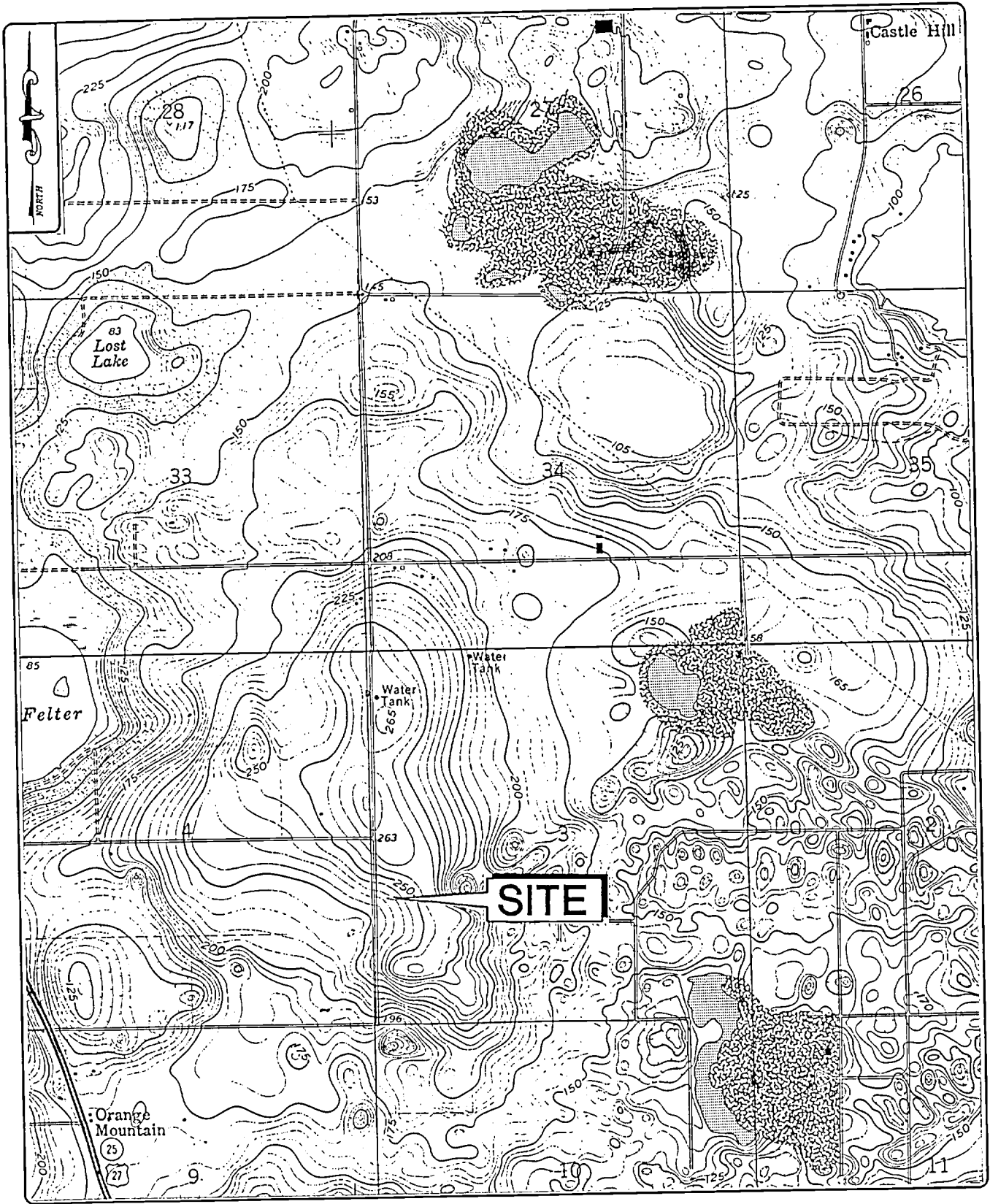


Ray Jones, E.I.  
Project Engineer  
Tavares Office



Nicolas E. Andreyev, P.E.  
President  
Florida Registration No. 35459

FIGURES



**REFERENCE:**

U.S.G.S. clermont east, FLA.  
 QUADRANGLE MAP  
 DATED 1962  
 PHOTOREVISED 1980  
 SECTION 3  
 TOWNSHIP 23 SOUTH  
 RANGE 26 EAST



**Andreyev  
 Engineering,  
 Inc.**

GEOTECHNICAL INVESTIGATION  
 HANCOCK ESTATES  
 KINGSRIDGE SUB-DIVISION  
 LAKE COUNTY, FLORIDA

VICINITY MAP

FIGURE 1


SCALE:  
 1" = 2000'

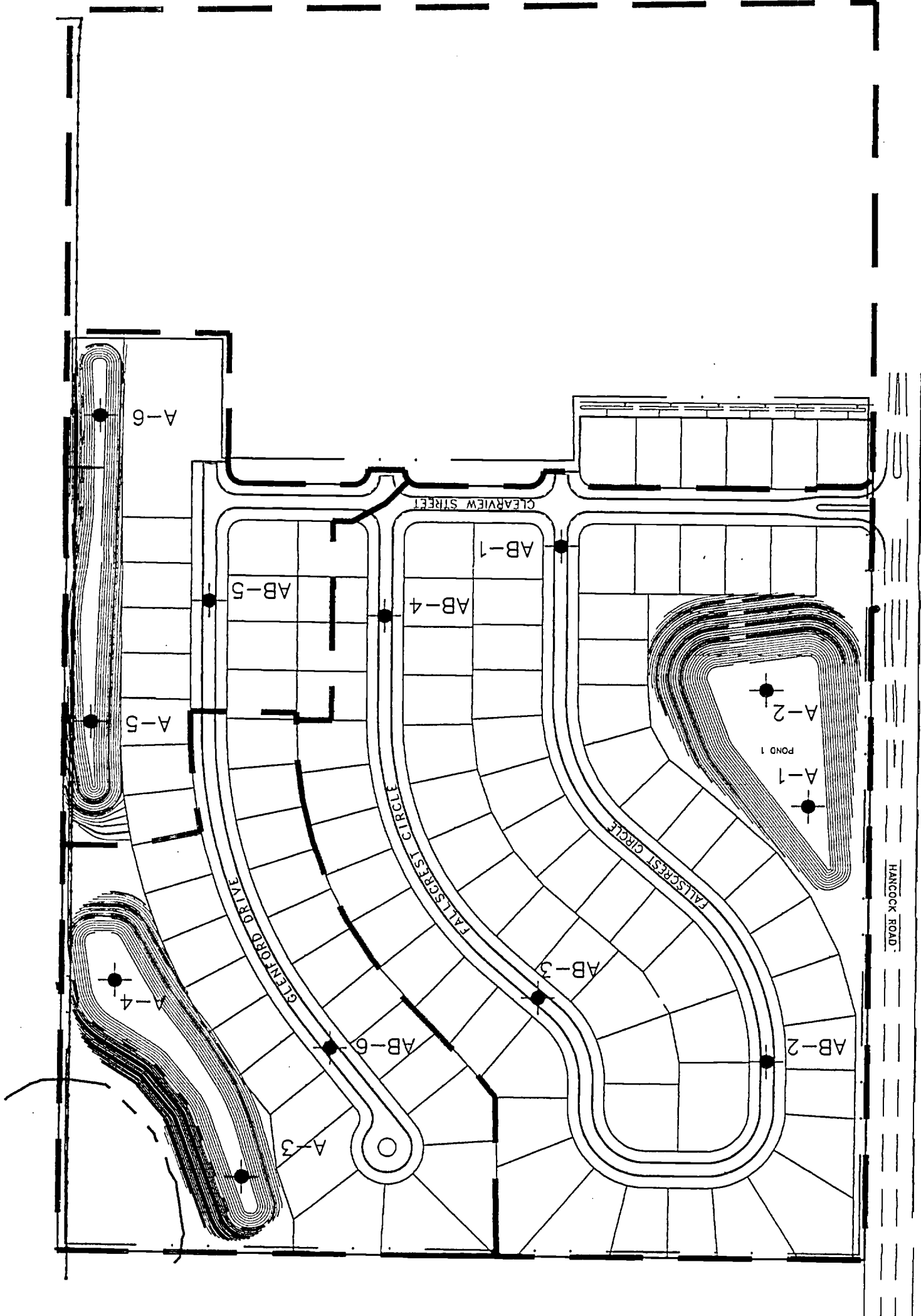
DATE: 1/4/99  
 PN: TPGT-98-111

ENGINEER: RJ  
 DRAWN BY: MK

GEOCHEMICAL INVESTIGATION HANCOCK ESTATES KINGSDRIDGE SUB-DIVISION LAKE COUNTY, FLORIDA		ENGINEER: RJ		SCALE: 1" = 200'
SITE PLAN		DATE: 1/4/99	PN: TPGT-98-111	DRAWN BY: MK
FIGURE 2				



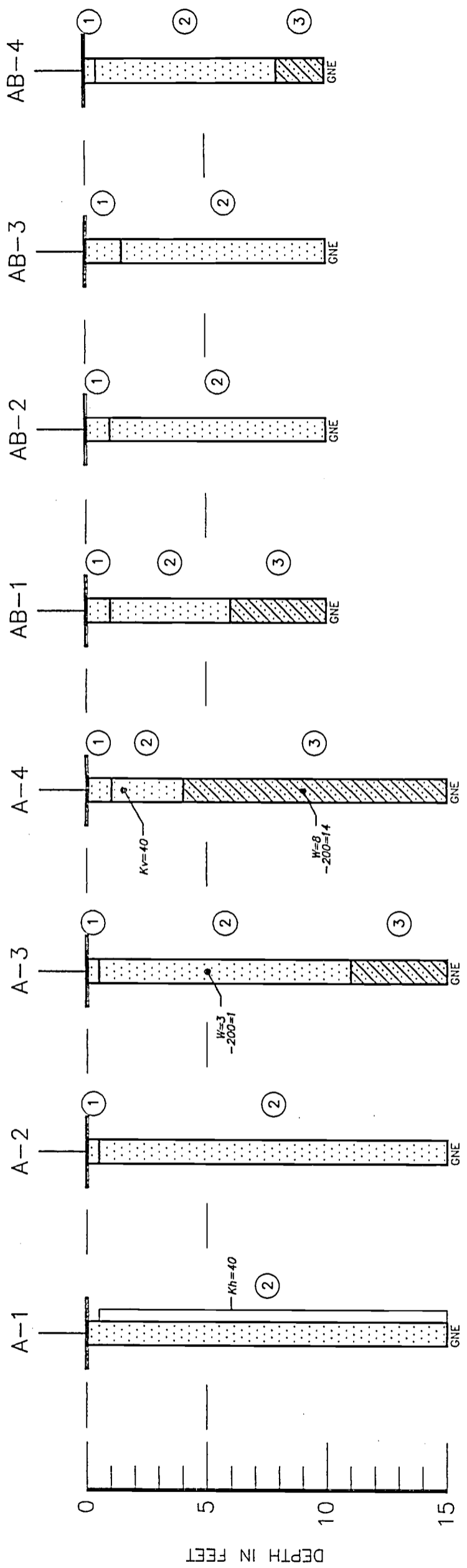
LEGEND  
 AUGER BORING LOCATION



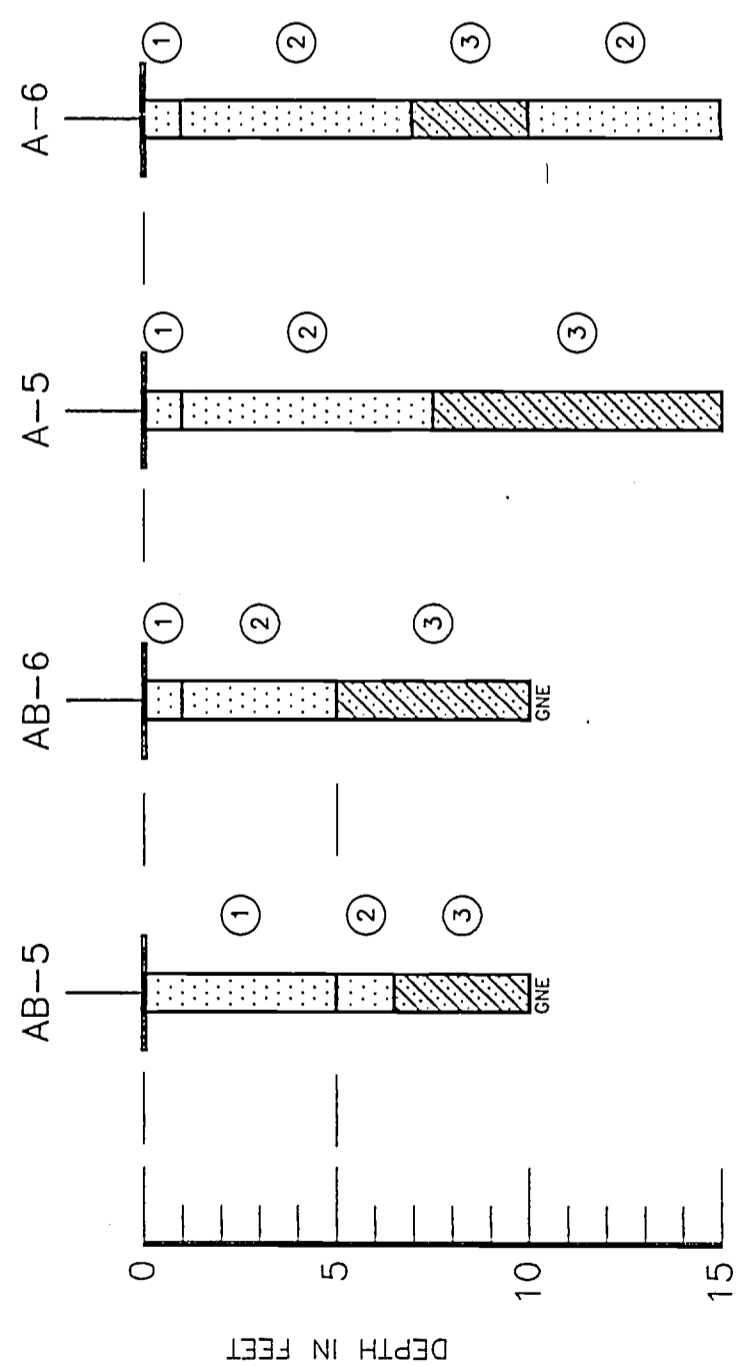
NORTH







- LEGEND**
- ① GRAY BROWN FINE SAND (SP)
  - ② LIGHT BROWN TO BROWN TO ORANGISH BROWN FINE SAND (SP)
  - ③ REDDISH BROWN TO ORANGISH BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (SP-SC)(SC)
  - W NATURAL MOISTURE CONTENT IN PERCENT
  - 200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
  - $K_v$  VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
  - $K_h$  HORIZONTAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY



 <b>Andreyev Engineering, Inc.</b>		GEOTECHNICAL INVESTIGATION HANCOCK ESTATES KINGSRIDGE SUB-DIVISION LAKE COUNTY, FLORIDA	
		SCALE: 1"=5'	DATE: 12/23/98 PN: TPCT-98-111
			SOIL PROFILES
			FIGURE 3