BANNING LEWIS RANCH
VILLAGE 2 MDDP UPDATE

OCTOBER 2007

NOLTE

BEYOND ENGINEERING

BANNING LEWIS RANCH
VILLAGE 2 MDDP UPDATE

OCTOBER 2007

Prepared For:

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Prepared: February 2007
Revised: June 6, 2007
Revised July 24, 2007
Revised: October 11, 2007

CERTIFICATION

Engineer's Statement:

This attached drainage plan and report for Banning Lewis Ranch Village 2 was prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the City of Colorado Springs/El Paso County for drainage reports and said report is in conformity with the master plan of the Sand Creek Drainage Basin. I accept responsibility for any liability caused by any acts, errors or omissions on my part in preparing this report.

Roger L. Mieden, Professional Engineer No. 23830
Nolte Associates, Inc.

10/11/07

Developer's Statement:

The developer has read and will comply with all of the requirements specified in this report and plan.

By: Mr. Patrick W. McNamara, P.E.
Title: Owner Representative
Banning Lewis Ranch Company Development I & II, LLC, a Delaware limited liability company / The Banning Lewis Ranch Company, LLC, a Delaware limited liability company, its managing member / Banning Lewis Ranch Management Company, LLC, a Delaware limited liability company, its co-managing member.

City of Colorado Springs:

Filed in accordance with Section 7.7.906 of the Code of the City of Colorado Springs, 2001, as amended.

For the City Engineer — Date: 10/26/07

Conditions:

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EXECUTIVE SUMMARY

In 2004, Turner Collie & Braden (TCB) created a Master Development Drainage Plan (MDDP) for Phases 1 and 2 of the Banning Lewis Ranch development. The Phase 1 and 2 MDDP updated and revised hydrologic modeling and other information in the Sand Creek Drainage Basin Planning Study (DBPS) to address modifications associated with the proposed development of the Banning Lewis Ranch Phase 1 and 2 site. The MDDP proposed numerous regional drainage facilities including channels, road crossings and stormwater detention ponds to conform to City of Colorado Springs requirements and the intent of the DBPS.

Banning Lewis Ranch Village 2 lies within the area addressed by the original MDDP. The intent of this Master Development Drainage Plan Update for Banning Lewis Ranch Village 2 (MDDP Update) is to provide more current information regarding the proposed land use plan and update hydrologic and hydraulic information to reflect the current plan.

Notable revisions to the MDDP that are incorporated into this MDDP Update include revisions to drainage basin boundaries and other hydrologic parameters to reflect the best available current information. Revisions to the hydrologic model resulted in changes to design flows at several locations that were evaluated with respect to facilities previously planned or designed. Where significant increases are apparent, revisions to drainage facilities recommended in the MDDP are proposed.

One other change is that the hydrologic modeling for the Phase 1 and Phase 2 area were previously included in a single model utilizing the Soil Conservation Service TR-20 model. For this MDDP Update, the hydrologic model was split into two models. The hydrologic model for the eastern portion of Village 2 that is tributary to Pond 97 and 89 as well as offsite basins tributary to those ponds is included in a TR-20 model included in this report. The hydrologic model for the western portion of Village 2 and other basins tributary to Pond 96 is included in a separate TR-20 model prepared for "Design Report For Sand Creek Regional Pond 96", prepared by JR Engineering in October 2007 (Reference 12).

With modifications noted in this MDDP Update, the proposed facilities are in accordance with the intent of the DBPS, the original MDDP and City of Colorado Springs requirements.

GENERAL LOCATION AND DESCRIPTION

Location

The Banning Lewis Ranch, Village 2 property is located in the east half of section 9 and the west half of section 10, Township 13 South, Range 65 West of the 6th Principal Meridian, in the City of Colorado Springs, El Paso County. This report covers the MDDP basins in Village 2 and the associated Filings 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22 (see Appendix L for the location of individual filings within Village 2). The site is bordered by undeveloped parcels to the north, the proposed Banning Lewis Parkway to the East, proposed Dublin Boulevard to the South, and channel 68 to the West. See Appendix A for a location map.

Description of Property

The site encompasses approximately 429 acres of existing native ground. This drainage report addresses the development of single-family, multi-family, school, park, and neighborhood commercial units on this area, totaling roughly 1692 units. Currently, the site is undeveloped and covered with native and non-native grasses. The existing topography slopes toward the south. Two proposed major open channels run through the Village 2 area. Channel 70 runs centrally through the village from North to South to a culvert under Dublin Boulevard. Channel 72 runs across the Northeast corner of Village 2 to a culvert under Banning Lewis Parkway.

According to the Natural Resources Conservation Service's National Cooperative Soil Survey, the primary soils in this area are Blakeland loamy sand, and Columbine gravelly sandy loam. Both are classified as Soil Conservation Service (SCS) hydrologic soil group A. In accordance with the Colorado Springs Drainage Criteria Manual type A soil was not assumed in areas where there is proposed overlot grading or filling. A copy of the soil map for the site can be found in Appendix B.

The FEMA Flood Insurance Rate Map (FIRM # 08041C0545F) shows the proposed development to be within a Zone X area, and thus not delineated for the 100-year flood plain. A copy of the flood plain map has been included in Appendix C.

Basin Descriptions

This site is located within the Sand Creek Drainage Basin. The Sand Creek Drainage is located less than a quarter mile to west. The 100-year floodplain for the Sand Creek does not extend onto the property. Development of the site will not extend into the delineated

100-year floodplain. The Village 2 area has been split into two separate hydrologic models for the Village 2 MDDP analysis. Nolte prepared the hydrologic model for the East side of the overall drainage which includes all basins tributary to Detention Pond 97 and 89 as noted in the original MDDP. There are three drainage basin delineations in this model that extend through the proposed Village 2. These areas are 3N, 72, and 20N. See Appendix L for basin maps.

Area 3N is the upstream sub-basin of a larger basin flowing to the South. The proposed design catches runoff from this basin in a swale on the Northwest corner of the Dublin Blvd/Banning Lewis Parkway intersection and pipes it via a proposed 66" RCP storm sewer to a temporary swale downstream of proposed detention Pond 97. This storm sewer was designed as part of Banning Lewis Ranch Filing 1. The largest portion of Basin 3N is high density multi-family development. There are also large sections of 4000 sq ft and 6000 sq ft single family lots as well as school and park areas. Peak runoff for 3N is 306 cfs for the 100-yr event and 159 cfs for the 10-yr event.

Area 72 has a well defined channel flowing North to South. Offsite drainage basin 86 flows directly to this channel. Flow exits basin 72 and travels West to East across basin 20N. This basin has a large section of open space across the entire length due to the significant channel. There are large tracts of multi family and 6000 sq. ft. single family developments on each side of this channel. The upper half of this basin was estimated as future commercial development in accordance with the original land use plan in the Sand Creek DBPS. There is also a small section of park in the basin. Peak runoff from basin 72 (including runoff from upstream basins) is 657 cfs and 257 cfs for the 100-yr and 10-yr events respectively.

Area 20N is a smaller basin that parallels the Banning Lewis Parkway. The channel from basin 72 continues across area 20N a short distance to a proposed 14'x6' Concrete Box Culvert under the Parkway. This culvert was designed as part of Filing 4. The majority of this basin is high density multi-family development along with some open space along the channel. There will also be a section of this basin that includes part of the Banning Lewis Parkway and the associated open space alongside it; ditches, embankment, etc. This area was conservatively estimated as high density multi-family development as it would have higher runoff rates due to impervious surfaces, highly saturated ditch soils, steep embankment slopes, etc. Peak runoff for area 20N (including runoff from upstream basins) is 777 cfs and 345 cfs for the 100-yr and 10-yr events respectively.

JR Engineering prepared the model for the Toy Ranch development and all areas tributary to Detention Pond 95 and 96 as noted in the original MDDP. This model includes drainage basins 1N, 4N, 17N, 18N, 19N, 66, 68, 69, and 70 that are within or overlap the area of Village 2.

Basin 70 is a drainage basin across the northern border of Village 2. Proposed channel 70 runs from north to south across this basin and is bordered by open space along this channel as well as a small park area. The channel then flows under Vista Del Pico Boulevard and into drainage basin 19N. Basin boundaries for area 70 have been shifted significantly from the original MDDP due to some of the proposed routing through gutter and storm sewers. The north half of this basin is outside of the Village 2 area and comprised of very low density development. In addition to the open space and park along the open channel, the southern half of Basin 70 is comprised mostly of 4000 and 6000 sq. ft. single family lots. Peak runoff for Basin 70 (including runoff from upstream basins) is 226 cfs and 82 cfs for the 100-yr and 10-yr events respectively.

Basin 19N is immediately downstream of Basin 70. Open channel 70 continues to run across this area from north to south and exits to Basin 1N through a culvert under the south portion of Vista Del Pico Boulevard. The channel is bordered by a small amount open space on each side. The rest of basin 19N is composed of community park space and school area. Peak runoff from Basin 19N (including runoff from upstream basins) is 278 cfs and 101 cfs for the 100-yr and 10-yr events respectively.

Downstream from Basin 19N, Channel 70 continues to flow north to south across Drainage Basin 1N. The channel flows through a culvert under Dublin Boulevard and into drainage basin 2N (outside of the Village 2 limits). The original MDDP limits for Basin 1N used to end at Vista Del Valley Road on the western side. This edge of the boundary has been expanded as a portion of the lots west of Vista Del Valley drain to the east under the road and into Channel 70. There is open space along Channel 70 and a small strip between the channel and Vista Del Valley Road. West of the road are 4000-5000 sq. ft. single family lots. The eastern half of Basin 1N is split between commercial and multi-family development. Peak runoff from Basin 1N (including runoff from upstream basins) is 419 cfs and 174 cfs for the 100-yr and 10-yr events respectively.

Basin 69 is directly west of basin 70. The area of this drainage basin has been reduced dramatically from the original MDDP. This is due to portions of the northern half of the original Basin being routed directly west to Channel 68 and directly east to Channel 70. Land use for Basin 69 is primarily 6000-7000 sq. ft. single family lots along with a few small areas of open space. The majority runoff for the new Basin 69 is picked up by inlets and routed through a storm sewer system to combine with Basin 17 runoff. Peak runoff from Basin 69 is 101 cfs and 41 cfs for the 100-yr and 10-yr events respectively.

Immediately south of Basin 69 is Basin 17N. This area now includes a small portion of was Basin 69 in the original MDDP. This area is 6000 sq. ft. single family lots and some of the adjacent open space. The remainder of Basin 17N is community park space.

Runoff from this area is picked up by open ditches or storm sewer inlets and eventually routed combined with runoff from Basin 69 into a storm sewer pipe under Vista Del Pico Boulevard. Peak runoff from Basin 17N is 41 cfs and 16 cfs for the 100-yr and 10-yr events respectively.

Basin 66 is southwest of Basins 69 and 17. Open Channel 68 flows north to south across Basin 66. The storm sewer system from Basin 17 continues across Basin 66, picking up runoff along the way until emptying into Channel 68. The eastern half of Basin 66 is 4000 to 5000 sq. ft. single family lots, open space and park space along the channel. The western half of Basin 66 is in the Village 1 area and comprised of similar density residential development. Peak runoff from Basin 66 only is 144 cfs for the 100-yr and 59 cfs for the 10-yr event. Peak runoff from Basin 66 (including runoff from upstream basins) is 1122 cfs and 407 cfs (at DP 54) for the 100-yr and 10-yr events respectively.

Basin 18N is in the Southwest corner of Village 2. Detention Pond 95 is located within this basin. Some of the flow from this area flows directly into Pond 95. Other flows are picked up in storm sewer systems that outlet into Pond 95. The land use for this basin is divided between the park/open space around the pond area, and 4000 to 5000 sq. ft single family lots. Peak runoff from Basin 18N only is 155 cfs and 64 cfs for the 100-yr and 10-yr events respectively.

Basin 68 is located directly west of Basin 69. Open Channel 68 flows from north to south across this basin. The area is comprised primarily of 6000 to 7000 sq. ft. single family lots along with some park space and open space along the channel. Runoff from the area either drains directly into Channel 68 or is picked up by storm sewer inlets and piped to 68. Peak runoff from Basin 68 only is 53 cfs for the 100-yr and 21 cfs for the 10-yr event. Peak runoff from Basin 68 (including runoff from upstream basins) is 527 cfs and 172 cfs (at DP 51) for the 100-yr and 10-yr events respectively.

The majority of Basin 4N is outside of the Village 2 limits. However, a small section of 5000 sq ft. single family lots and associated open space from Village 2 are included in this basin. Channel 68 runs north to south across Basin 4N. Peak runoff from Basin 4N only is 72 cfs for the 100-yr and 27 cfs for the 10-yr event. Peak runoff from Basin 4N (including runoff from upstream basins) is 896 cfs and 328 cfs (at DP 53) for the 100-yr and 10-yr events respectively.

SPECIFIC UPDATES IN THE VILLAGE 2 AREA

Basin Delineations

The drainage basins with the Village 2 area that result from the proposed grading roughly follow the original basins from the MDDP. However, due to some of the specifics of grading, storm sewer routing, etc. there were some differences in basin boundaries. Basins delineations were shifted slightly and updated accordingly for the proposed systems. Areas in the TR-20 model were adjusted to match these delineations.

Curve Numbers

Using the latest land use plan (See Appendix E) for Village 2, in conjunction with the hydrologic soil map, curve numbers were developed for the drainage basins. Effort was made to continue similar curve number methodology as used for the original Banning Lewis Ranch 1 & 2 MDDP and Sand Creek DBPS. See Appendix F for curve number calculations. Basin 20N includes additional area north of Village 2 that extends to Woodmen Road. This area is owned by Banning Lewis Ranch but not currently included in the development plans. In the Sand Creek DBPS and original MDDP this land was considered future commercial development. Since no additional information for this area is available at this time, it was left as commercial for this study. The updated curve numbers were input into the revised TR-20 model.

Time of Concentration

Time of Concentration values for the Village 2 drainage basins were updated based on the latest grading plans for the site. No Time of Concentration calculations were included in the original MDDP report. For the Village 2 update, flow paths were estimated from proposed contours. Flow times were broken down into overland, shallow gutter, grassed waterway, pipe flow, and channel flow as appropriate. Calculations for Time of Concentration were consistent with those listed in the Drainage Criteria Manual for Colorado Springs and El Paso County. UDFCD equation RO-5 was used as a reference for the maximum Tc that should be used for a developed basin. Time of Concentration calculations are listed in Appendix G and were input into the TR20 proposed model. In some basins, such as 3N, Time of Concentration values in the original MDDP were long and were revised with the Village 2 MDDP update.

SPECIFIC UPDATES OFFSITE FROM VILLAGE 2

In evaluating the affect of Village 2 improvements to the overall MDDP, it was also necessary to examine areas upstream of Village 2 as well as downstream areas that would

be affected. Basins 72 and 20N drain to proposed detention Pond 97, just upstream of Dublin Boulevard. Runoff from Basin 3N is proposed to be piped to the outfall of this pond.

For the Village 2 MDDP update, the East (Pond89) TR-20 model was revised by Nolte from upstream basin 99 to the outfall of Pond 97 for the East Basins. This model will be revised from the Pond 97 outfall downstream to Pond 89 for future MDDP updates for Banning Lewis Ranch. The West (Pond96) TR-20 model was revised by JR Engineering for the West Basins from upstream basin 90 to the outfall of Pond 96. Information from the JR Engineering study is included in the Appendices of this report.

TR-20 Schematic and Overall Basin Map

Upon studying the most recent TR-20 proposed model input, it was apparent that the proposed element schematics and basin maps were not entirely updated for the last MDDP update. The schematic for the eastern basin was updated to show the correct routing order of the proposed model and can be found in Appendix H. The basin map was updated to show the correct drainage basin delineations and design points and can be found in Appendix L.

Basin Delineations

For most areas offsite from the Village 2 area, there were no new plans or information available. Drainage areas were primarily left as they were in the original MDDP (see Appendix K). In one location however, delineations were shifted and areas changed significantly. This was for the north halves of basins 68, 69, and 70 included in JR Engineering's model for the West Basins. In this area just north of Village 2, soccer fields have been developed. This area is outside the annexed City of Colorado Springs limits. A large (4 to 5-foot) berm has been constructed on the south side of the fields. The fields have been graded towards a sump in the middle of this berm. This is not in accordance with the original MDDP and does not follow the historical flow patterns. The area that is now a sump appears to have been an existing ridge on the USGS quad map. It appears that in storm events, the berm overtops and the entire flow is carried to channel 68. Therefore the upper portion of basin 68 was expanded to include the entire field area and basin 69 was reduced by the same amount. The TR20 areas were updated accordingly and the model now represents the conditions as they currently exist.

Curve Numbers

With the exception of some downstream offsite basins located in the Toy Ranch Development, the current available land use data outside of the Village 2 area is not significantly more accurate than what was used for the 2004 MDDP. Therefore many of the curve numbers were left as they were in the original MDDP for basins outside of Village 2. These numbers will need to be adjusted accordingly as plans develop for the future phases of Banning Lewis Ranch downstream.

Time of Concentration

After review of Time of Concentration values used in the 2004 MDDP, it was apparent that updating all of these values (for basins upstream of Pond 97 and Pond 95) would be warranted. Some of the values seemed long for the basin sizes and were revised for the TR-20 model for this MDDP update.

New values were calculated for all of these basins using the same methodology as described above. These calculations generally produced Tc's that generally were somewhat shorter than those in the 2004 MDDP (see Appendix G for calculations).

RESULTS AND CONCLUSIONS

Hydrology Changes

Some of the downstream channels, structures, and ponds have already been designed and/or constructed as part of filings 2 and 4 (See Appendix L, sheet 2 for a list of structures and their associated filing number). Because of this, it was necessary to evaluate the Village 2 effects on the downstream infrastructure. The TR-20 models were run using the updated Tc's, Areas, and Curve numbers and then compared to the design discharges from the original MDDP. Since most of the time of concentration adjustments were decreasing in nature, design flows at many points increased. For the Village 2 basin areas, the original MDDP used conservative curve numbers (as high as 99.9 for Basin 3N). Most of these numbers were decreased with the Village 2 update and this had the effect of decreasing downstream design flows somewhat. This helped to partially offset the higher flows caused by decreasing the time of concentrations.

Drainage Infrastructure

The Village 2 MDDP hydrology update resulted in higher design flows than shown originally. Because of this, it was necessary to check if some the original structure sizes adequately handle these increases in flow (see Appendix L for map of surrounding drainage infrastructure).

One location where the flow increased significantly is the proposed pipe picking up flows from area 3N and conveying them to Channel 57, just downstream of Pond 97. In this location the Q_{100} flow increased from approximately 191 cfs to 306cfs. The proposed pipe shown is 1,363 linear feet of 66-inch RCP at around 1% slope for the majority of the run. In most locations there is more than 1' of freeboard shown from the 100-yr hydraulic gradeline to the crown of the pipe. However, with inlet losses the 66-inch RCP is not adequate and should be upsized to 72-inch RCP (see Appendix I).

Another location where design flows increased was at the box culvert where Channel 72 crosses Banning Lewis Parkway. At this location the Q_{100} flow increased from 714 to 777 cfs. This box culvert was run with the new design flow which effectively raised the headwater from 7' to 7.9' (see Appendix I). This still meets the original MDDP design headwater criteria of 8' maximum. This rise in headwater creates no additional problems with the design as there is an approximate 6' drop in the channel immediately upstream of the inlet and the local low road elevation in the Banning Lewis Parkway is more than 12 feet above the culvert invert.

Downstream from the box culvert under the Banning Lewis Parkway is proposed Channel 6N. The design Q_{100} used for this channel was 735 cfs. This channel is a trapezoidal, riprap lined channel with an 11' flat bottom and 4 to 1 sideslopes. It was originally designed with 1.5' of freeboard. An analysis was run with the updated Q_{100} of 777 cfs and the water surface elevation increased by 0.1 feet; not a significant impact on the design.

Channel 70 crosses Vista Del Pico near station 152+88 (at DP 63). At this location the Q_{100} flow increased from 168 to 226 cfs. The original proposed 60" RCP had a headwater of 6.4'. With updated flow this headwater would raise to 8.6' – slightly above the original MDDP headwater design criteria but still reasonable.

Channel 19N flows south and crosses Vista Del Pico near station 118+94 (at DP 62). At this location the Q_{100} flow increased from 174 to 278 cfs. The original proposed 60" RCP had a headwater of 6.6'. This location was evaluated by TCB for the revised discharges and reviewed in a meeting on April 2, 2007 between the City of Colorado Springs,

Banning Lewis Ranch, LLC, JR Engineering, Nolte Associates and TCB and the structure was deemed acceptable to the City given the freeboard, velocities, and headwater to diameter (HW/D ratios provided.

Channel 19N was originally designed to convey a Q_{100} flow of 174 cfs at a normal depth of 2.1'. The updated MDDP Q_{100} flow of 278 cfs raises the normal depth to 2.62' but should be within original design criteria for the channel.

Channel 1N flows south and crosses Dublin Boulevard near station 590+80 (at DP 61). At this location the Q_{100} flow increased from 269 to 419 cfs. This culvert was increased in size from 66" to 84" in diameter and is addressed in Addendum #3 to the Filing 2 Final Drainage Report prepared by TCB in June 2007.

The design flow for Channel 1N also increased from 269 to 419cfs. This would raise the normal depth in the channel from 2.6' to 3.2'. This is still within design criteria of the original MDDP.

Channel 2N flows south from Dublin Road and is outside of the Village 2 area. The original MDDP design flow for the channel was 685 cfs with a normal depth of 4.0'. The Village 2 updated design flow is 897 cfs and increases the normal depth to 4.5'. This is slightly above the original design criteria of 4' for channel depth. This location was evaluated by TCB for the revised discharges and reviewed in a meeting on April 2, 2007 between the City of Colorado Springs, Banning Lewis Ranch, LLC, JR Engineering, Nolte Associates and TCB and the structure was deemed acceptable to the City given the freeboard, velocities, and headwater to diameter (HW/D ratios provided.

Channel 68 crosses Vista Del Pico Boulevard near station 87+66. A 6'x6' Concrete Box Culvert was originally proposed at this location. The original MDDP design Q_{100} flow was 384 cfs with a headwater of 8.5'. Using the updated MDDP flow of 527 cfs, the headwater is increased to 11.7'. This culvert was increased in size from a 6'H x 6'S box culvert to a 6'H x 10'S box culvert and is addressed in Addendum #3 to the Filing 2 Final Drainage Report prepared by TCB in June 2007. (This crossing is in Banning Lewis Ranch Village 1 adjacent to Village 2).

Detention Pond 96 design is being completed by JR Engineering and thus will be sized to adequately handle the increase of flows resulting from the Village 2 MDDP update.

The original MDDP showed a peak 100-yr flow of 3164 into Pond 97 and a ponding depth of 12.2'. The revised Village 2 MDDP 100-yr peak flow into Pond 97 is 3444 cfs with a ponding depth of 12.3'. This is not a significant increase and the original design should be adequate for the small increase in peak flow entering the pond.

Ongoing Design

The Detention Pond 96 design is currently being revised by JR Engineering to adequately handle the increase of flows resulting from the Village 2 MDDP update (Reference 12).

As mentioned previously, two major drainageways cross through the Village 2 area. These are the proposed regional channels 70 and 72. Both channels have been designed to convey the 100-yr discharge. The proposed channels have been designed as "wetland avoidance" channels to minimize impacts to wetland mitigation areas. Design of channel 70 and 72 were completed using the Village 2 updated MDDP design flows. The design plans for Channel 70 were included in the Filing 14 plans. An additional box culvert will be needed under Scenic Look Lane to convey channel 72. The size of structure needed in this location will be a 12'x6' concrete box culvert and the design will be included in a future filing. Costs for the 12' x 6' culvert have been added to the cost estimate.

Village 2 and surrounding area drainage infrastructure is shown on sheet 2 in Appendix L. A brief summary of costs for major structures and channels is presented in Appendix J. These cost estimates were compiled from BLR Filing 2, BLR Filing 4, and from the Original MDDP reports. Costs for revised culverts noted above are included in Appendix J of this report.

Stormwater Quality

Stormwater quality for the Village 2 area will be addressed by Ponds 95, 96, 97, and 89. Drainage basins 66, 68, 69, 17N, and 18N are all tributary to Pond 95. This pond has been designed as a regional detention facility that includes limited measures for stormwater quality control. The combined volume is approximately 70 Ac-ft. and a forebay is provided to collect sediment and trash (see filing 2 plan set).

Drainage basins 70, 19N, and 1N are all tributary to Pond 96 which has been designed as a regional detention facility with limited measures for stormwater quality control. This pond design is being completed by JR Engineering in coordination with downstream development and includes facilities to collect sediment and trash (see filing 2 plan set).

Drainage basins 72 and 20N are tributary to Pond 97. This facility has been designed as regional detention facility without stormwater quality control. The combined volume of Pond 97 is approximately 146 Ac-ft (see BLR Filing 4 plan set).

Drainage basin 3N is tributary to Pond 89 which has been designed as a regional detention facility with limited measures for stormwater quality control. The combined volume of Pond 89 is approximately 609 Ac-ft. The design also includes a forebay to collect sediment and trash (see BLR Filing 4 plan set).

Some of the channels through the Village 2 area are being designed as constructed wetlands channels with check structures to remove sediment from stormwater runoff. Grass swales, grass buffers, silt fences, erosion control blankets, and various types of inlet protection will all be employed where appropriate to assist in stormwater quality control during the construction process and detailed plans will be submitted for individual filings. The water quality measures provided at the regional detention facilities are not intended to meet all stormwater quality requirements. These tributary areas must be designed to provide source Stormwater Quality Facilities in the form of Extended Detention Basins or equivalent acceptable structures. Additional permanent stormwater quality measures will be required on development parcels and should be addressed with Final Drainage Reports for individual filings.

Interim Conditions

One area of additional concern is with dealing with increased flows from Village 2 construction prior to completion of downstream ponds. In order to address this concern, an interim conditions model was prepared. For this analysis, it was assumed that during construction of the area West of Banning Lewis Parkway, no development construction would be taking place in the area East of Banning Lewis Parkway and no additional development would occur in offsite basins to the north of Village 2. Curve numbers for basins to the east of Banning Lewis Parkway and upstream of Village 2 were reduced to values for undeveloped conditions. Developable land in the basins upstream of Village 2 and to the east of Banning Lewis Parkway is owned by Banning Lewis Ranch and will not be developed until some time after Pond 89 is constructed downstream. With interim conditions, there will be decreased peak input flows to Pond 97. The proposed final outlet structure for Pond 97 is a Twin 8'x8' concrete box culvert. If one of the 8'x8' box culverts is temporarily sealed off during the interim conditions, the outfall of Pond 97 combined with the Dublin Boulevard storm sewer outfall will be restricted to less than the Q_{100} historic flow (675 cfs for interim conditions versus 927 cfs for historic conditions). For the 10-year storm, the interim peak discharge is 330 cfs versus 211 cfs for existing conditions. The Q_{10} historic flow is not met for these conditions, however this temporary increase should be acceptable for an interim condition until Pond 89 is constructed. It should be noted that the proposed plans for the Original MDDP did not show flows at Dublin Boulevard to be less than historic flows for either the Q_{100} or Q_{10}. The original MDDP states that flows will be reduced to historic rates downstream at detention basin EFSC-3A (Pond 89) for fully developed conditions.

Future MDDP Updates

As development designs continue downstream of Dublin Boulevard, it will be necessary to make updates to the MDDP model. Drainage basin areas, time of concentration

values, and curve numbers, will need to be changed to accurately model proposed improvements. In addition there are still some redundantly numbered model elements leftover from the original MDDP.

DRAINAGE DESIGN CRITERIA

Development Criteria Reference

The analysis and design of the storm drainage system for this project was prepared in accordance with the criteria set forth in the City of Colorado Springs and El Paso County Drainage Criteria Manual (MANUAL) Volume 1 (October 1994) and Volume 2 (August 2002).

Compliance with Standards

The proposed drainage facility design is in accordance with the City of Colorado Springs and El Paso County Drainage Criteria Manual and the Sand Creek Drainage Basin Planning Study. In addition, this development of in general conformance with the approved drainage reports for Filings No. 1 & 2 of the Banning Lewis Ranch development.

Summary of Concept

No adverse effects to surrounding properties are anticipated from the development of this site. The design, if properly maintained and constructed, conveys, releases and protects the quality of the stormwater runoff up to, and including, the 100-year storm event, in a safe manner to protect life and property from damage.

REFERENCES

1. Drainage Criteria Manual. City of Colorado Springs and El Paso County. Volume 1 (October 1994) and Volume 2 (August 2002); latest revisions.

2. Urban Storm Drainage Criteria Manual. Urban Drainage and Flood Control District Volumes 1 and 2 (January 2001) and Volume 3 (September 1999).

3. Soil Survey of El Paso County, Colorado. Soil Conservation Service (June 1981).

4. Flood Insurance Rate Map, El Paso County, Colorado and Incorporated Areas. Map Number 08041C0512 F. Federal Emergency Management Agency (March 17, 1997).

5. Sand Creek Drainage Basin Planning Study Preliminary Design Report. Kiowa Engineering (March 1996).

6. Master Development Drainage Plan for The Banning Lewis Ranch – Phases 1 & 2. TCB (November 2004).

7. Final Drainage Report for Banning Lewis Ranch Filing 1. TCB (November 2004).

8. Final Drainage Report for Banning Lewis Ranch Filing 2. TCB (February 2005).

9. Final Drainage Report for Banning Lewis Ranch Filing 3. TCB (November 2004).

10. Final Drainage Report for Banning Lewis Ranch Filing 4. TCB (November 2004).

11. Master Development Drainage Plan for Banning Lewis Ranch Village 1. Stantec (June 1, 2006).

12. Design Report For Sand Creek Regional Pond 96. JR Engineering (October 2007).

13. Addendum #3 to the Filing 2 Final Drainage Report. TCB (June 2007).

APPENDICES

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APPENDIX B: SOIL MAP

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APPENDIX I: HYDRAULIC CALCULATIONS

APPENDIX J: COST ESTIMATES FOR DRAINAGE INFRASTRUCTURE

APPENDIX K: TR-20 INPUT/OUTPUT DATA

APPENDIX L: BASIN MAPS

APPENDIX A

VICINITY MAP

HANSENJ
TIME: 9:29:58 AM DATE: 2/28/07 PATH: N:\CSB0602\CADD\CIVIL\V2\MDDP
SERVER: DVS1 PAGE SETUP: ---- DRAWING NAME: PRHYMA.DWG
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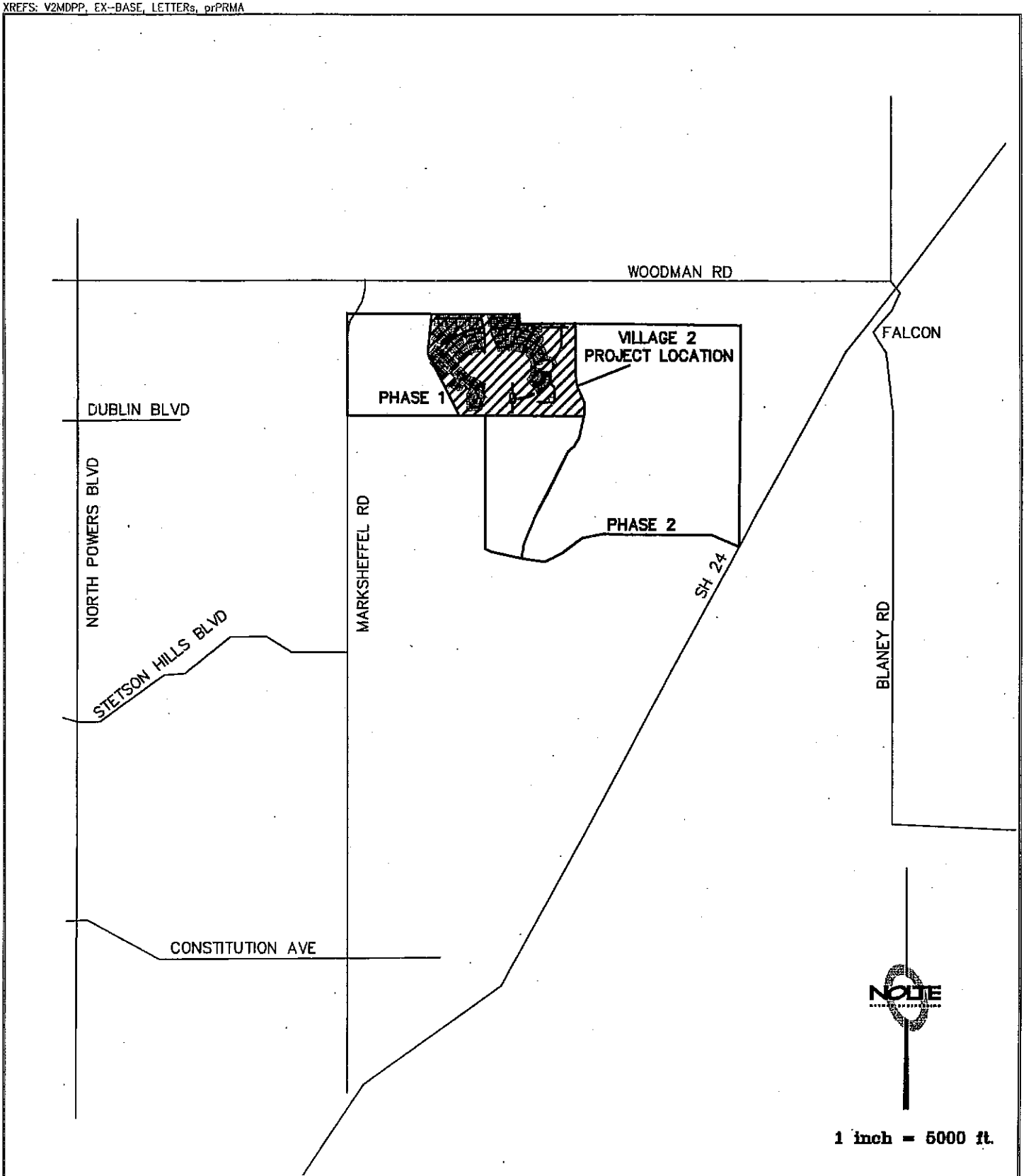
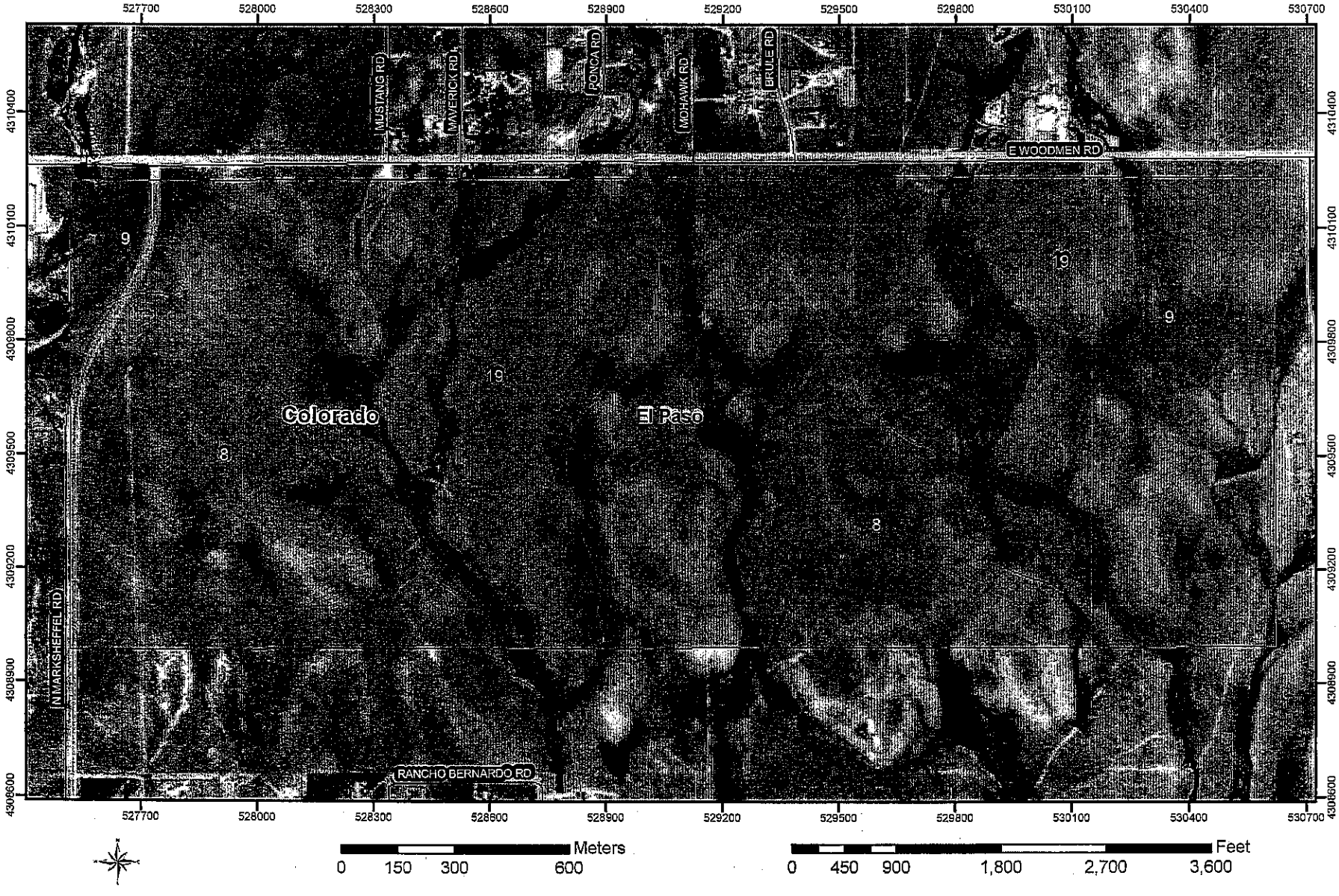


SHEET NUMBER 1 OF 1 SHEETS	NOLTE BEYOND ENGINEERING	BANNING LEWIS RANCH VILLAGE 2 MDDP VICINITY MAP
JOB NUMBER CSB060200	5225 N. ACADEMY BLVD., SUITE 304 COLORADO SPRINGS, CO 80918 719.268.6500 TEL 719.268.6200 FAX WWW.NOLTE.COM	PREPARED FOR: BANNING LEWIS RANCH DATE SUBMITTED: FEB 2007

APPENDIX B:

SOIL MAP

HYDROLOGIC GROUP RATING FOR EL PASO COUNTY AREA, COLORADO



HYDROLOGIC GROUP RATING FOR EL PASO COUNTY AREA, COLORADO

MAP LEGEND

Hydrologic Group

{Dominant Condition, <}

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available
- Soil Map Units
- Cities
- Detailed Counties
- Detailed States
- Interstate Highways
- Roads
- Rails
- Water
- Hydrography
- Oceans

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov

Coordinate System: UTM Zone 13

Soil Survey Area: El Paso County Area, Colorado
Spatial Version of Data: 1
Soil Map Compilation Scale: 1:24000

Map comprised of aerial images photographed on these dates:
1999

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables - Hydrologic Group

Summary by Map Unit - El Paso County Area, Colorado

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	A	342.6	35.5
9	Blakeland-Fluvaquentic Haplaquolls	A	384.4	39.8
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	A	238.9	24.7

Description - Hydrologic Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are placed into four groups A, B, C, and D, and three dual classes, A/D, B/D, and C/D. Definitions of the classes are as follows:

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only soils that are rated D in their natural condition are assigned to dual classes.

Parameter Summary - Hydrologic Group

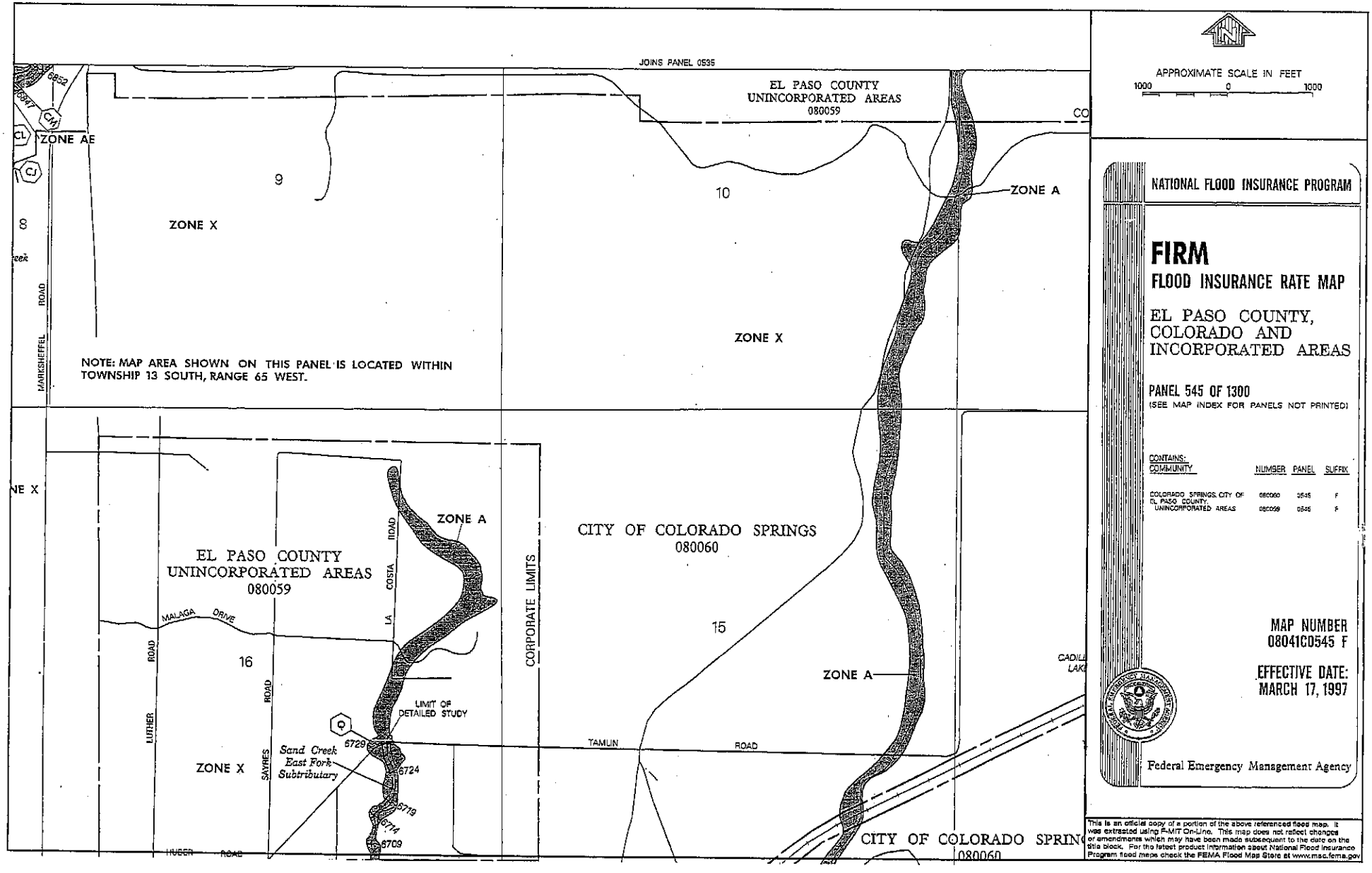
Aggregation Method: Dominant Condition

Component Percent Cutoff:

Tie-break Rule: Lower

APPENDIX C:

FEMA FLOOD MAP


JOINS PANEL 0535
EL PASO COUNTY
UNINCORPORATED AREAS
080059
ZONE AE
ZONE X
ZONE A
9
10
8
MARKSHEFFEL ROAD
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 13 SOUTH, RANGE 65 WEST.
CITY OF COLORADO SPRINGS
080060
CORPORATE LIMITS
15
16
LA COSTA ROAD
MALAGA DRIVE
LUTHER ROAD
SAYRES ROAD
LIMIT OF DETAILED STUDY
Sand Creek
East Fork
Subtributary
6729
6724
6719
6714
6709
TAMUN ROAD
HUBER ROAD
CADILLAC LAKE
APPROXIMATE SCALE IN FEET
1000 0 1000
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO AND INCORPORATED AREAS
PANEL 545 OF 1300
(SEE MAP INDEX FOR PANELS NOT PRINTED)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
COLORADO SPRINGS, CITY OF 080060 0545 F
EL PASO COUNTY, UNINCORPORATED AREAS 080059 0545 F
MAP NUMBER
08041C0545 F
EFFECTIVE DATE:
MARCH 17, 1997
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX D:

DESIGN FLOWS FOR PROPOSED MODEL

POND 89

VILLAGE 2 BASINS	DA (sq mi)	CN	Tc (hr)	Proposed Basin Runoff	
				Q10 (cfs)	Q100 (cfs)
3N	0.14	90.0	0.50	159	306
20N	0.06	91.0	0.35	81	153
72	0.24	85.0	0.51	197	425
UPSTREAM BASINS (To Pond 97)					
5N	0.05	93.8	0.39	77	138
6N	0.04	94.0	0.33	65	115
7N	0.06	71.8	0.34	20	64
8N	0.08	83.0	0.35	65	148
73	0.08	84.0	0.40	68	149
74	0.15	90.0	0.33	195	374
75	0.13	87.0	0.37	136	280
82	0.24	65.0	1.12	22	92
83	0.35	67.0	1.34	37	135
84	0.19	89.0	0.60	186	364
85	0.27	89.0	0.72	235	463
86	0.33	77.0	0.71	128	336
91	0.41	89.0	0.54	423	832
92	0.42	83.0	0.74	249	558
93	0.24	69.0	0.86	41	141
94	0.43	65.0	1.27	37	151
95	0.11	65.0	0.98	11	46
97	0.07	69.0	0.58	15	52
98	0.14	69.0	0.60	29	101
99	0.44	69.0	1.15	63	213
DOWNSTREAM & OFFSITE BASINS					
4N	0.16	86.8	1.46	76	155
9N	0.05	87.3	1.46	24	50
10N	0.18	91.0	1.54	105	198
11N	0.1	85.1	0.88	62	130
12N	0.1	85.4	1.21	50	106
13N	0.18	87.0	0.67	146	298
14N	0.04	92.0	1.47	26	47
15N	0.06	85.0	0.91	36	77
16N	0.12	84.0	0.98	63	138
44	0.29	86.0	0.27	307	647
45	0.32	88.0	0.78	248	499
47	0.19	82.0	0.91	93	213
48	0.56	66.0	0.98	63	248
49	0.27	69.0	0.76	50	171
50	0.19	81.3	1.83	53	123
51	0.13	81.4	0.67	73	170
52	0.27	90.0	1.47	154	296
53	0.15	85.1	1.02	83	178
54	0.15	90.0	0.92	121	233
55	0.22	87.3	1.47	107	217
56	0.15	85.0	1.13	76	163
57	0.51	92.0	1.46	328	604
71	0.09	92.0	1.46	58	107
76	0.14	87.0	1.08	84	173
77	0.19	85.0	1.21	92	198
78	0.31	87.0	1.06	78	386
79	0.27	65.0	1.15	25	101
80	0.08	81.0	0.41	55	131
81	0.35	66.0	0.39	61	249
96	0.14	65.0	0.88	15	63

*EFSCPR13.OUT

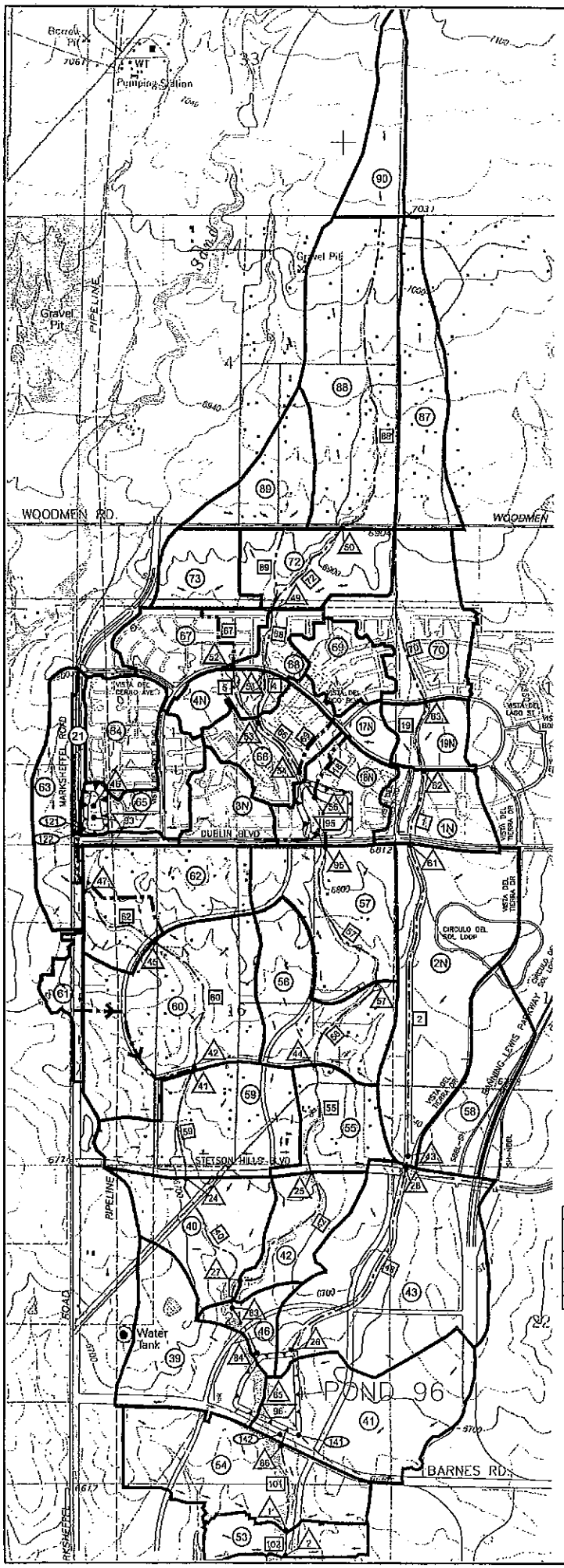
**Basins not tributary to Pond 97 have not yet had Tc, CN, or Area adjustments from original MDDP

POND 89

DESIGN POINT	DESCRIPTION	DA (sq mi)	PROPOSED DESIGN POINT FLOWS Q10 (cfs)	Q100 (cfs)
53		1.58	154	608
54		0.49	63	262
42		1.88	962	2054
69		1.71	163	632
73		3.65	1099	2495
68		3.73	1127	2550
67		4.45	1522	3336
65	Inflow to Pond 97	4.53	1558	3444
Pond 97	Outflow from Pond 97	4.53	1012	1490
85		0.57	277	657
43	Design flow for culvert under BLR Parkway	0.63	345	777
3N	Design flow for RCP from area 3N in Village 2	0.14	159	306
35		1.24	406	1009
30		1.54	585	1344
31		0.25	134	262
45		0.55	88	243
91	Inflow to Pond 89	10.63	3173	6370
Pond 89	Outflow from Pond 89	10.63	427	2321
			*EFSCPR13.OUT	

**Basins not tributary to Pond 97 have not yet had Tc, CN, Area, or routing adjustments from original MDDP

POND 96



LEGEND

DRAINAGE BASIN BOUNDARY

PIPE CONVEYENCE

ROUTING REACH

LEGEND

SUB BASIN I.D.

ANALYSIS POINT I.D.

DIVERSION I.D.

ROUTING REACH I.D.

REGIONAL DETENTION POND I.D.

ANALYSIS PTS	TRIBUTARY AREA		Q_{10}	Q_{100}
	sm	ac	cfs	cfs
1	4.420	2828.8	282	633
2	4.480	2867.2	327	851
24	0.920	588.8	650	1426
25	1.540	985.6	325	741
26	1.120	716.8	763	1708
27	1.630	1043.2	334	802
28	0.800	512.0	505	1139
41	0.740	473.6	479	1064
42	0.710	454.4	448	1000
43	0.690	441.6	385	897
44	1.460	934.4	274	610
45	0.440	281.6	228	500
46	0.170	108.8	139	316
47	0.280	179.2	83	194
49	0.560	358.4	162	493
50	0.360	230.4	116	327
51	0.600	384.0	172	527
52	0.160	102.4	178	352
53	0.810	518.4	328	896
54	0.960	614.4	407	1122
55	1.140	729.6	522	1422
57	1.310	838.4	148	329
61	0.410	262.4	174	419
62	0.330	211.2	101	278
63	0.280	179.2	82	226
83	2.690	1721.6	1037	2400
84	2.730	1747.2	1046	2446
86	4.200	2688.0	1968	4683
88	4.220	2700.8	127	786
121	0.010	6.4	14	28
122	0.010	6.4	7	14
141	0.180	115.2	127	301
142	0.030	19.2	17	41

TR-20 HYDROLOGY ANALYSIS
SUB-BASIN SUMMARY

Basin	TRIBUTARY AREA		CN	Tc	Q_{10}	Q_{100}
	sm	ac		hr	cfs	cfs
1	0.080	51.2	88	0.22	98	188
2	0.280	179.2	86	0.38	275	576
3	0.063	40.3	83	0.31	53	120
4	0.051	32.6	77	0.33	27	72
17	0.030	19.2	77	0.36	16	41
18	0.093	59.5	80	0.29	64	165
19	0.053	33.9	76	0.32	25	72
21	0.018	11.5	87	0.23	21	43
39	0.158	101.1	84	0.35	139	307
40	0.133	85.1	82	0.37	108	250
41	0.210	134.4	81	0.40	144	342
42	0.085	54.4	79	0.39	51	127
43	0.320	204.8	87	0.41	328	672
46	0.037	23.7	80	0.30	27	67
53	0.059	37.8	82	0.33	46	106
54	0.197	126.1	85	0.35	195	399
55	0.085	54.4	83	0.39	68	153
56	0.151	96.6	85	0.38	139	299
57	0.165	105.6	84	0.37	146	321
58	0.113	72.3	86	0.36	122	246
59	0.181	115.8	86	0.41	197	396
60	0.270	172.8	85	0.35	254	547
61	0.030	19.2	86	0.33	31	64
62	0.157	100.5	85	0.34	148	320
63	0.104	66.6	77	0.42	58	139
64	0.083	53.1	82	0.34	64	149
65	0.073	46.7	82	0.27	61	142
66	0.088	56.3	80	0.33	59	144
67	0.093	59.5	81	0.39	64	153
68	0.035	22.4	79	0.38	21	53
69	0.061	39.0	80	0.32	41	101
70	0.150	96.0	78	0.61	76	196
72	0.112	71.7	76	0.47	49	133
73	0.067	42.9	94	0.24	115	203
87	0.128	81.9	65	0.67	14	61
88	0.280	179.2	65	0.60	37	159
89	0.089	57.0	65	0.49	13	55
90	0.080	51.2	68	0.28	95	192

REGIONAL DETENTION POND SUMMARY

DETENTION POND ID	WATERSHED AREA (ac)	PEAK INFLOW (cfs)		PEAK OUTFLOW (cfs)		PEAK STORAGE VOLUME (ac-ft)	
		Q_{10}	Q_{100}	Q_{10}	Q_{100}	V_{10}	V_{100}
93	109	139	318	21	51	5.6	12.4
95	730	522	1422	14	285	41.5	66.3
96	2688	1968	4683	126	784	126.5	233.0

1600 800 0 1600 3200

SCALE: 1" = 1600'

TR-20 MODELING MAP
SAND CREEK POND 96
JOB NO. 29995.00
APRIL 2007

J·R ENGINEERING
A Westrian Company
4100 AnnaWest Drive • Colorado Springs, CO 80907
719-593-2593 • Fax 719-528-6848 • www.jrengineering.com

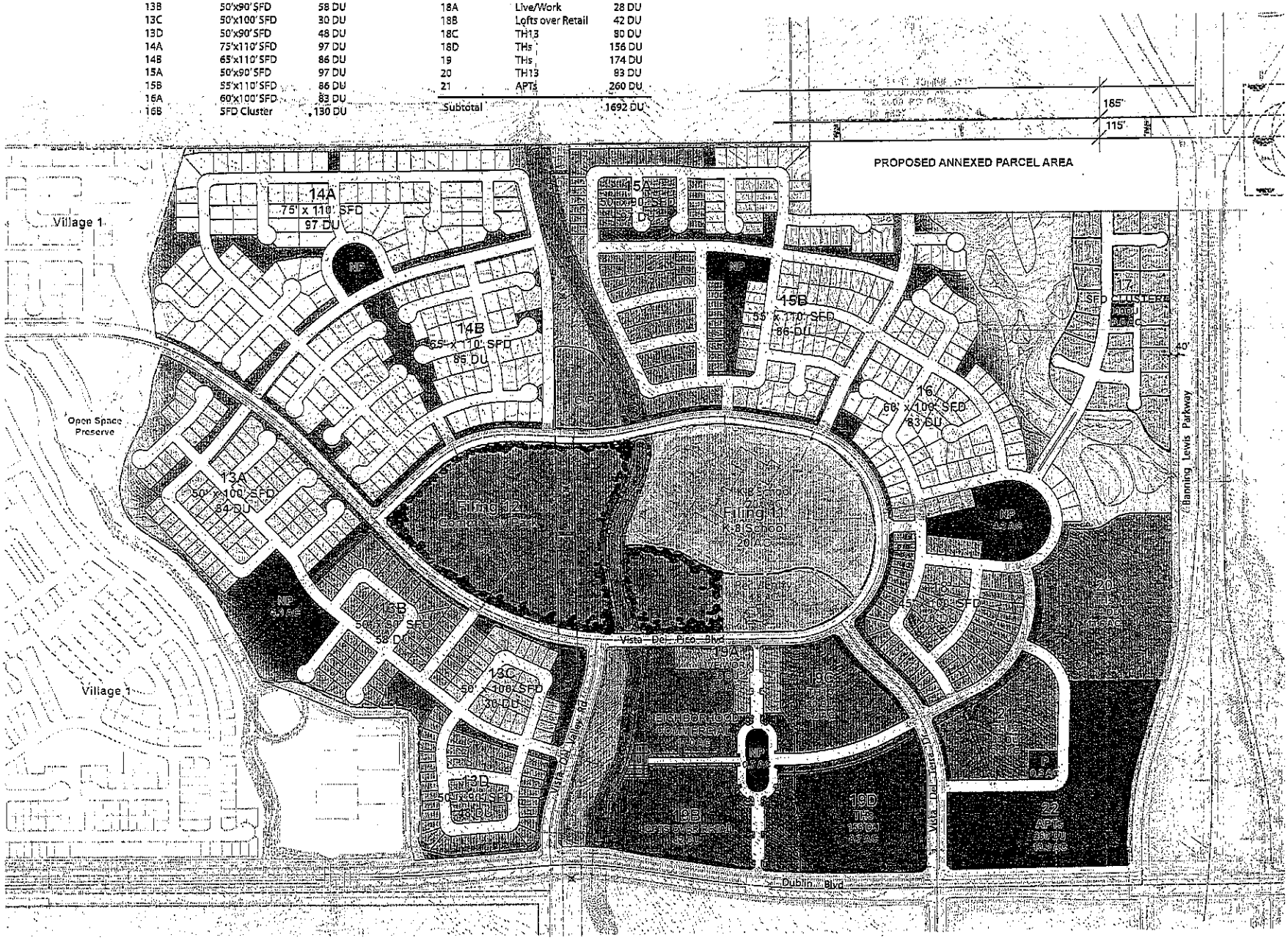
X:\29900\000.all\29995000\Drawings\Working Drgs\MDDP-Base(04-01-07).dwg, TR-20 MODELING MAP, 4/5/2007 3:26:16 PM, holste]

APPENDIX E:

LAND USE PLAN

Village Two
Statistical Summary

Product Area	Product Type	Units	Product Area	Product Type	Units
13A	50'x100' SFD	84 DU	17	45'x100' SFD	70 DU
13B	50'x90' SFD	58 DU	18A	Live/Work	28 DU
13C	50'x100' SFD	30 DU	18B	Lofts over Retail	42 DU
13D	50'x90' SFD	48 DU	18C	TH13	80 DU
14A	75'x110' SFD	97 DU	18D	THs	156 DU
14B	65'x110' SFD	86 DU	19	THs	174 DU
15A	50'x90' SFD	97 DU	20	TH13	93 DU
15B	55'x110' SFD	86 DU	21	APTs	260 DU
16A	60'x100' SFD	83 DU			
16B	SFD Cluster	130 DU	Subtotal		1692 DU



BANNING LEWIS RANCH

TRAILWOOD
BANNING LEWIS RANCH

Village 2 Composite Plan

0 200 400 800

EDAW | AECOM

01/15/07

APPENDIX F:

CURVE NUMBER CALCULATIONS

POND 89

NOTE

Land Use	% R 6000	% R 4000	% Multi Family	% Commercial	% Estate	% Industrial	% Schools	% Parks	% Open Space/Ranchette	% Open Space/Ranchette	% Weighted % Impervi	Weighted CN Value	Approx Weighted C5
Soil Type	C	C	C	C	A	A	A	A/D	A/D	B			
CN Value	83	90	94	94	69	81	87	69/92	65	69			
% Impery.	38	65	72	85	20	72	50	5	12	12			
C5	0.6	0.7	0.75	0.9	0.3	0.7	0.7	0.3	0.15	0.15			
3N	15.6	17.5	52.4				11.2	3.3			61	80	0.70
20N			89.9					10.1			65	91	0.70
72	18.3		9	49.7				2	21		58	85	0.66
0											0	0	0.00

POND 89

TCB

Land Use	%R 6000	% R 4000	% Multi Family	% Commercial	% Estate	% Industrial	% Schools	% Parks	% Open Space Ranchette	% Open Space Ranchette	Weighted % Imperv	Weighted CN Value	Approx Weighted CS
Soil Type	C	C	C	C	A	A	A	A	A	B			
CN Value	83	90	94	94	69	81	87	69	65	69			
%Imperv	38	65	72	85	20	72	50	5	12	12			
CS	0.6	0.7	0.75	0.9	0.3	0.7	0.7	0.3	0.15	0.15			
5N		5	90	5							72	94	0.76
6N			100								72	94	0.75
7N	20							80			12	72	0.36
8N	100										38	83	0.50
73	40			20			30	10			48	85	0.66
74		50		50							75	92	0.80
75	40			60							66	90	0.78
82									100		12	65	0.15
83				10					90		19	68	0.23
84				100							85	94	0.90
85				100							85	94	0.90
86				50					50		49	80	0.53
91				100							85	94	0.90
92				75					25		67	87	0.71
93				15					85		23	69	0.25
94									100		12	65	0.15
95									100		12	65	0.15
97										100	12	69	0.15
98										100	12	69	0.15
99									5	95	12	69	0.15

REGIONAL POND 96 WATERSHED

Weighed Curve Number Calculations
3/31/2007

POND 96

	SUB AREA ONE				SUB AREA TWO				SUB AREA THREE				SUB AREA FOUR							
SUB-BASIN LABEL	ASSUMED LAND USE	ESTIMATED PERCENT IMPERVIOUS	ESTIMATED CN	AREA AC.	ASSUMED LAND USE	ESTIMATED PERCENT IMPERVIOUS	ESTIMATED CN	AREA AC.	ASSUMED LAND USE	ESTIMATED PERCENT IMPERVIOUS	ESTIMATED CN	AREA AC.	ASSUMED LAND USE	ESTIMATED PERCENT IMPERVIOUS	ESTIMATED CN	AREA AC.	TOTAL AREA AC.	TOTAL AREA S.M.	WEIGHTED CN	WEIGHTED IMPERVIOUS %
1Na	Multi Fam	80.0	92.0	18.62	COMMERCIAL	90.0	95.0	8.20	MJR. STREET	76.0	91.0	8.31	PARK/OS	5.0	70.0	9.86	44.99	0.070		
1Nb	7DU/AC	62.0	87.0	3.57	COLLECT STR.	80.0	92.0	2.53									51.09	0.080	88	55.2
2Na	Multi Fam	80.0	92.0	14.50	COMMERCIAL	90.0	95.0	4.84	ART. STREET	80.0	92.0	7.37	PARK/OS	5.0	70.0	33.97	60.68	0.095		
2Nb	7DU/AC	60.0	89.0	59.03	School	50.0	83.0	6.82	7DU/AC	60.0	89.0	62.91					179.44	0.280	86	52.5
3Na	5 DU/AC	46.0	82.0	10.31	6 DU/AC	52.0	84.0	12.95	Multi Fam	80.0	92.0	3.70	MJR. STREET	76.0	91.0	6.80	33.76	0.053		
3Nb	Park/OS	5.0	70.0	6.72													40.48	0.063	83	49.3
4N	School	50.0	83.0	8.25	COLLECT STR.	80.0	92.0	1.95	Park/OS	16.0	73.0	20.71	7DU/AC	62.0	87.0	1.57	32.49	0.051	77	30.7
17N	Park /OS	5.0	70.0	13.06	MJR. STREET	76.0	91.0	6.13									19.19	0.030	77	27.7
18N	Park/OS	5.0	70.0	23.76	MJR. STREET	76.0	91.0	5.29	7DU/AC	62.0	87.0	24.08	6 DU/AC	52.0	84.0	6.02	59.15	0.092	80	39.3
19N	Park/OS	5.0	70.0	19.44	School	50.0	83.0	12.90	COLLECT STR.	80.0	92.0	1.61					33.95	0.053	76	25.7
21	Park/OS	5.0	70.0	1.70	MJR. STREET	76.0	91.0	8.75	6 DU/AC	52.0	84.0	1.11					11.55	0.018	87	63.3
39a	4 DU/AC	42.0	81.0	8.17	6 DU/AC	52.0	84.0	48.99	Commercial	90.0	95.0	11.70	MJR. STREET	80.0	92.0	15.47	84.33	0.132		
39b	Park/OS	5.0	70.0	13.24	School	50.0	83.0	3.25									100.82	0.158	84	53.7
40a	4 DU/AC	42.0	81.0	55.35	School	50.0	83.0	4.20	Comercial	90.0	95.0	13.05	PARK/OS	5.0	70.0	8.11	80.71	0.126		
40b	5 DU/AC	52.0	84.0	4.45													85.16	0.133	82	46.7
41a	PUB. FAC.	75.0	91.0	7.5	MJR. STREET	80.0	92.0	13.3	PARK/OS	8.0	70.0	36.8	5 DU/AC	46.0	82.0	62.0	119.6	0.187	80	39.9
41b	41a	39.9	80.0	119.6	8 DU/AC	65.0	86.0	6.5	10 DU/AC	75.0	91.0	8.3					134.4	0.210	81	43.3
42	4 DU/AC	42.0	81.0	45.40	Park/OS	5.0	70.0	9.30									54.70	0.085	79	35.7
43a	4 DU/AC	42.0	81.0	57.88	School	50.0	83.0	17.41	Multi Fam	80.0	92.0	74.77	COLLECT STR.	80.0	92.0	43.63	193.69	0.303		
43b	Park/OS	5.0	70.0	10.92													204.61	0.320	87	52.7
46	4 DU/AC	42.0	81.0	14.34	6 DU/AC	52.0	84.0	3.52	MJR. STREET	80.0	92.0	1.92	Park/OS	5.0	70.0	4.04	23.82	0.037	80	40.3
53.0	MJR. STREET	80.0	92.0	1.4	6 DU/AC	53.0	84.0	31.4	OPEN SPC.	3.0	69.0	5.2					38.0	0.059	82	47.2
54a	COM.	85.0	95.0	20.0	MJR. STREET	80.0	92.0	5.3	SCHOOL	50.0	83.0	22.0	OPEN SPC.	3.0	69.0	18.8	66.1	0.103		
54b	1a	49.5	83.4	66.1	5 DU/AC	46.0	82.0	27.8	7 DU/AC	62.0	87.0	17.2	11 DU/AC	80.0	92.0	15.2	126.3	0.197	85	54.2
55a	10 DU/AC	75.0	91.0	12.4	5 DU/AC	52.0	84.0	9.7	PARK/OS	8.0	70.0	14.6	SCHOOL	50.0	83.0	8.5	45.2	0.071		
55b	55a	43.8	81.2	45.2	MJR. STREET	76.0	91.0	9.2									54.4	0.085	83	49.2
56	10 DU/AC	75.0	91.0	13.0	6 DU/AC	52.0	84.0	74.0	PARK/OS	8.0	70.0	4.0	MJR. STREET	80.0	92.0	5.4	96.4	0.151	85	54.8
57	10 DU/AC	75.0	91.0	18.0	6 DU/AC	52.0	84.0	59.1	MJR. STREET	80.0	92.0	10.8	PARK/OS	8.0	70.0	17.9	105.8	0.165	84	51.3
58	Multi Fam	80.0	92.0	31.85	7DU/AC	62.0	87.0	22.34	Park/OS	5.0	70.0	6.90	ART. STREET	80.0	92.0	11.18	72.27	0.113	88	67.3
59a	10 DU/AC	75.0	91.0	16.3	6 DU/AC	53.0	84.0	44.3	MJR. STREET	76.0	91.0	20.9	SCHOOL	50.0	85.0	15.4	96.9	0.151		
59b	59a	61.0	86.8	96.9	COMMERCIAL	85.0	95.0	13.1	MJR. STREET	80.0	91.0	6.0					115.9	0.181	88	64.7
60a	10 DU/AC	75.0	91.0	36.3	6 DU/AC	53.0	82.0	105.3	PARK/OS	8.0	70.0	4.0	MJR. STREET	80.0	92.0	11.2	156.8	0.245		
60b	60a	58.9	84.5	156.8	COMMERCIAL	85.0	95.0	7.9	PARK/COM CENT	40.0	80.0	8.0					172.7	0.270	86	59.2
61.0	4 DU/AC	42.0	81.0	10.5	MJR. STREET	75.0	92.0	9.0									19.5	0.030	86	57.2
62.0	APARTMNTS	80.0	92.0	22.0	6 DU/AC	53.0	82.0	59.2	MJR. STREET	80.0	92.0	7.9	SCHOOL	50.0	83.0	11.3	100.4	0.157	85	60.7
63.0	EQUIVILAENT cr	30.0	73.0	52.6	MJR. STREET	75.0	92.0	14.0									66.6	0.104	77	39.5
64	5 DU/AC	46.0	82.0	21.46	Park/OS	5.0	70.0	5.79	6DU/AC	52.0	84.0	25.73					52.98	0.083	82	44.4
65	Multi Fam	80.0	92.0	11.03	Park/OS	5.0	70.0	14.51	5 DU/AC	45.0	82.0	18.9	COLLECT STR.	80.0	92.0	4.25	48.68	0.076	82	44.6
66	Park/OS	5.0	70.0	19.12	7DU/AC	60.0	87.0	15.37	6DU/AC	52.0	84.0	21.65					56.14	0.088	80	38.2
67	4 DU/AC	42.0	81.0	35.04	6 DU/AC	52.0	84.0	13.32	PARK/OS	5.0	70.0	7.32	COLLECT STR.	80.0	92.0	4.02	59.70	0.093	81	42.3
68	5 DU/AC	46.0	82.0	12.90	PARK/OS	5.0	70.0	6.60	COLLECT STR.	80.0	92.0	1.95	6 DU/AC	52.0	84.0	0.83	22.28	0.035	79	37.1
69	5 DU/AC	46.0	82.0	33.21	PARK/OS	5.0	70.0	5.32	COLLECT STR.	80.0	92.0	0.44					38.97	0.061	80	40.8
70a	5 DU/AC	46.0	82.0	12.59	6 DU/AC	52.0	84.0	27.00	PARK/OS	5.0	70.0	15.05	COLLECT STR.	80.0	92.0	2.98	57.62	0.090		
70b	70a	38.9	80.3	57.6	1 DU/AC	20.0	74.0	30.10	MJR. STREET	33.0	78.0	8.60					96.32	0.151	78	33.0
72	1 DU/AC	20.0	74.0	52.90	MJR. STREET	42.0	81.0	18.80									71.70	0.112	76	25.8
73	COMMERCIAL	90.0	95.0	37.00	MJR. STREET	54.0	84.0	5.60									42.60	0.067	94	85.3
87	Ranchette	12.0	65.0	82.23													82.23	0.128	65	12.0
88	Ranchette	12.0	65.0	179.03													179.03	0.280	65	12.0
89	Ranchette	12.0	65.0	56.70													56.70	0.089	65	12.0
90	COMMERCIAL	74.0	88.0	51.05													51.05	0.080	88	74.0

Assumes CN=68 for urbanized pervious areas

APPENDIX G:

TIME OF CONCENTRATION CALCULATIONS

POND 89

TIME OF CONCENTRATION

LOCATION: BANNING LEWIS RANCH VILLAGE 2 — Developed Flows — DATE: 39210.0 — 39210.0

SUB-BASIN DATA			INIT./OVERLAND TIME (Ti)			TRAVEL TIME (Tt)			TOTAL	Tc Check (Urbanized Basins)		FINAL Tc	FINAL Tc	REMARKS
DESIGNATION	C5	AREA (AC)	LENGTH (FT)	SLOPE %	Ti (Min.)*	GRASS/ PAVED	LENGTH (FT)	SLOPE %	Ti+Tt(Min.)	LGTH. (FT)	Tc = (L/180) + 10	(minutes)	(hrs)	FORMULAS:
														* Ti = 1.8 (1.1-C5)L^0.5/S^-1/3
														** V=10^(.5 log(S/100)+k
														where k=1.18 for grassed waterways and 1.3 for gutter flow
3N	0.70	83.20	100.00	1.00	7.20	PAVED	3748.00	1.90	29.9	3848.00	31.4	29.9	0.50	VILLAGE 2 AREA
20N	0.70	38.40	100.00	1.00	7.20	PAVED	2340.00	2.00	21.0	2440.00	23.6	21.0	0.35	VILLAGE 2 AREA
72	0.66	160.00	100.00	1.00	7.92	PAVED	3989.00	2.20	30.4	4089.00	32.7	30.4	0.51	VILLAGE 2 AREA
5N	0.76	32.00	100.00	1.00	6.12	PAVED	3035.00	2.10	23.6	3135.00	27.4	23.6	0.39	
6N	0.75	25.60	100.00	1.00	6.30	PAVED	2290.00	2.10	19.5	2390.00	23.3	19.5	0.33	
7N	0.36	38.40	100.00	1.00	13.32	PAVED	1720.00	2.40	22.6	1820.00	20.1	20.1	0.34	
8N	0.60	51.20	100.00	1.00	9.00	PAVED	2270.00	2.50	20.8	2370.00	23.2	20.8	0.35	
73	0.66	51.20	100.00	1.00	7.92	PAVED	2623.00	1.90	23.8	2723.00	25.1	23.8	0.40	
74	0.80	96.00	100.00	1.00	5.40	PAVED	2690.00	2.40	19.9	2790.00	25.5	19.9	0.33	
75	0.78	83.20	100.00	1.00	5.76	PAVED	3127.00	2.50	22.3	3227.00	27.9	22.3	0.37	
82	0.15	153.60	300.00	2.20	22.77	GRASS	5953.00	2.20	67.6	6253.00			1.12	UNDEVELOPED
83	0.23	224.00	300.00	1.70	22.73	GRASS	6821.00	1.70	80.3	7121.00			1.34	MOSTLY UNDEVELOPED
84	0.90	121.60	100.00	1.00	3.60	PAVED	5792.00	2.20	36.2	5892.00	42.7	36.2	0.60	
85	0.90	172.80	100.00	1.00	3.60	PAVED	6671.00	2.00	43.0	6771.00	47.6	43.0	0.72	
86	0.53	211.20	100.00	1.00	10.26	PAVED	5727.00	2.10	43.3	5827.00	42.4	42.4	0.71	
91	0.90	236.80	100.00	1.00	3.60	PAVED	5426.00	2.50	32.3	5525.00	40.7	32.3	0.54	
92	0.71	243.20	100.00	1.00	7.02	PAVED	6669.00	2.20	44.6	6769.00	47.6	44.6	0.74	
93	0.26	153.60	300.00	3.10	17.96	GRASS	5335.00	3.10	51.3	5635.00			0.86	MOSTLY UNDEVELOPED
94	0.15	153.60	300.00	2.00	23.51	GRASS	6747.00	2.00	76.0	7047.00			1.27	UNDEVELOPED
95	0.15	70.40	300.00	2.20	22.77	GRASS	4856.00	2.20	58.8	5156.00			0.98	UNDEVELOPED
97	0.15	44.80	300.00	3.70	19.15	GRASS	2720.00	3.70	34.7	3020.00			0.58	UNDEVELOPED
98	0.15	89.60	300.00	4.20	18.36	GRASS	3233.00	4.20	35.7	3533.00			0.60	UNDEVELOPED
99	0.15	281.60	300.00	3.00	20.54	GRASS	7580.00	3.00	68.7	7880.00			1.15	UNDEVELOPED
57	0.15	72.90	300.00	2.67	21.35	GRASS	1687.00	2.67	32.7	1987.00			0.55	UNDEVELOPED
69	0.57	45.20	100.00	1.00	9.54	PAVED	1617.00	1.80	19.6	1717.00	19.5	19.5	0.33	

REGIONAL POND 96 WATERSHED

FULLY DEVELOPED CONDITION TIME OF CONCENTRATION ESTIMATE

POND 96

4/02/2007

BASIN	OVERLAND FLOW				SWALE OR STREET FLOW					CHANNEL OR S.D. FLOW					CHANNEL OR S.D. FLOW					TOTAL	TOTAL
ID.	L (ft)	C(10YR)	S (%)	TC(min)	TYPE	L (ft)	S (%)	V (fps)	TC(min)	TYPE	L (ft)	S(%)	V (fps)	TC(min)	TYPE	L (ft)	S(%)	V (fps)	TC(min)	TC(min)	TC(hr)
1N	50	0.25	2.0	8.94	ST	530	4	4	2.21	SD	620	4	15	0.69	CHAN	510	1	6	1.42	13.26	0.22
2N	50	0.25	2.0	8.94	ST	350	3	3.5	1.67	SD	1020	4	15	1.13	CHAN	4700	0.05	7	11.19	22.93	0.38
3N	100	0.25	2.0	12.65	ST	400	4	4	1.67	SD	3000	2	12	4.17						18.48	0.31
4N	200	0.25	2.0	17.88	SW	300	2	2.9	1.72	SD	400	5	17	0.39						20.00	0.33
17N	300	0.25	4.0	17.42	SW	600	1.0	2.0	5.00	SD	200	1	8.0	0.42						22.84	0.38
18N	100	0.25	2.0	12.65	ST	800	2.0	2.9	4.60	SD	300	10	20.0	0.25						17.49	0.29
19N	200	0.25	4.0	14.23	SW	470	4.0	4.0	1.96	CHAN	1060	1.1	6	2.94						19.13	0.32
21	50	0.25	10.0	5.26	ST	2000	4.0	4.0	8.33											13.59	0.23
39	85	0.25	2.0	11.66	ST	1700	4	4	7.08	SD	1800	1.5	12	2.50						21.24	0.35
40	100	0.25	2.0	12.65	ST	1300	3	3.5	6.19	CHAN	1000	0.5	5	3.33						22.17	0.37
41	85	0.25	2.0	11.66	ST	2000	2.5	3	11.11	SD	900	1	10	1.50						24.27	0.40
42	100	0.25	2.0	12.65	ST	1100	2	2.9	6.32	CHAN	1300	0.5	5	4.33						23.30	0.39
43	75	0.25	2.0	10.95	ST	1600	3.7	3.9	6.84	CHAN	2100	0.5	5	7.00						24.79	0.41
46	100	0.25	2.0	12.65	ST	900	3.5	3.8	3.95	CHAN	500	0.5	5	1.67						18.26	0.30
53	76	0.25	2.0	11.02	ST	2000	4	4	8.33	SD	300	3	19	0.26						19.62	0.33
54	80	0.25	2.0	11.31	ST	1485	3.5	3.8	6.51	SD	2400	1.5	12.0	3.33						21.16	0.35
55	90	0.25	2.0	12.00	ST	1600	1.5	2.5	10.67	SD	300	1	10.0	0.50						23.16	0.39
56	90	0.25	2.0	12.00	ST	1600	1.5	2.5	10.67	SD	200	1	10.0	0.33						23.00	0.38
57	90	0.25	2.0	12.00	ST	1700	2.1	3.0	9.44	SD	300	1	10.0	0.50						21.94	0.37
58	75	0.25	2.0	10.95	ST	1400	1.8	2.8	8.33	SD	2400	2	12.0	3.33						22.62	0.38
59	90	0.25	2.0	12.00	ST	1700	1.5	2.5	11.33	SD	800	1	10.0	1.33						24.66	0.41
60	90	0.25	2.0	12.00	ST	1600	3.0	3.5	7.62	SD	900	2	12.0	1.25						20.87	0.35
61	300	0.25	6.7	14.70	ST	900	2.5	3.0	5.00											19.70	0.33
62	90	0.25	2.0	12.00	ST	1600	3.0	3.5	7.62	SD	700	2	12.0	0.97						20.59	0.34
63	100	0.25	2.0	12.65	ST	1600	1.5	2.5	10.67	SD	1400	1.5	11.0	2.12						25.43	0.42
64	100	0.25	2.0	12.65	ST	600	1.5	2.5	4.00	SD	1150	1	8.0	2.40	SD	1400	4	16	1.46	20.50	0.34
65	100	0.25	2.0	12.65	ST	300	2.0	2.9	1.72	SD	1580	4	16.0	1.65						16.02	0.27
66	100	0.25	2.0	12.65	ST	500	2.5	2.9	2.87	SD	550	2	12.0	0.76	CHAN	1080	0.5	5	3.60	19.88	0.33
67	100	0.25	2.0	12.65	ST	1300	1.5	2.5	8.67	SD	1350	2	12.0	1.88						23.19	0.39
68	100	0.25	2.0	12.65	ST	800	1.0	2.0	6.67	SD	350	2	12.0	0.49	CHAN	600	0.5	5	2.00	21.80	0.36
69	80	0.25	2.0	11.31	ST	1300	2.0	2.9	7.47	SD	300	1	8.0	0.63						19.41	0.32
70	200	0.25	2.0	17.88	ST	900	3.0	3.0	5.00					0.00	CHAN	2490	1.2	6	7.55	30.43	0.51
72	200	0.25	2.0	17.88	ST	2200	3.0	3.5	10.48					0.00						28.36	0.47
73	50	0.25	2.0	8.94	ST	1200	3.5	3.8	5.26					0.00						14.20	0.24
87	300	0.25	3.3	18.57	SW	3870	1.9	2.1	31.46					0.00	CHAN	1130	3.5	8	2.35	52.38	0.87
88	300	0.25	4.0	17.42	SW	3000	3.0	3.4	14.71					0.00	CHAN	1500	2	6	4.17	36.30	0.60
89	300	0.25	3.0	19.16	SW	2100	3.0	3.4	10.29											29.45	0.49
90	50	0.25	2.0	8.94	ST	1000	3.0	3.4	4.90	SD	2300	2	12.0	3.19						17.04	0.28

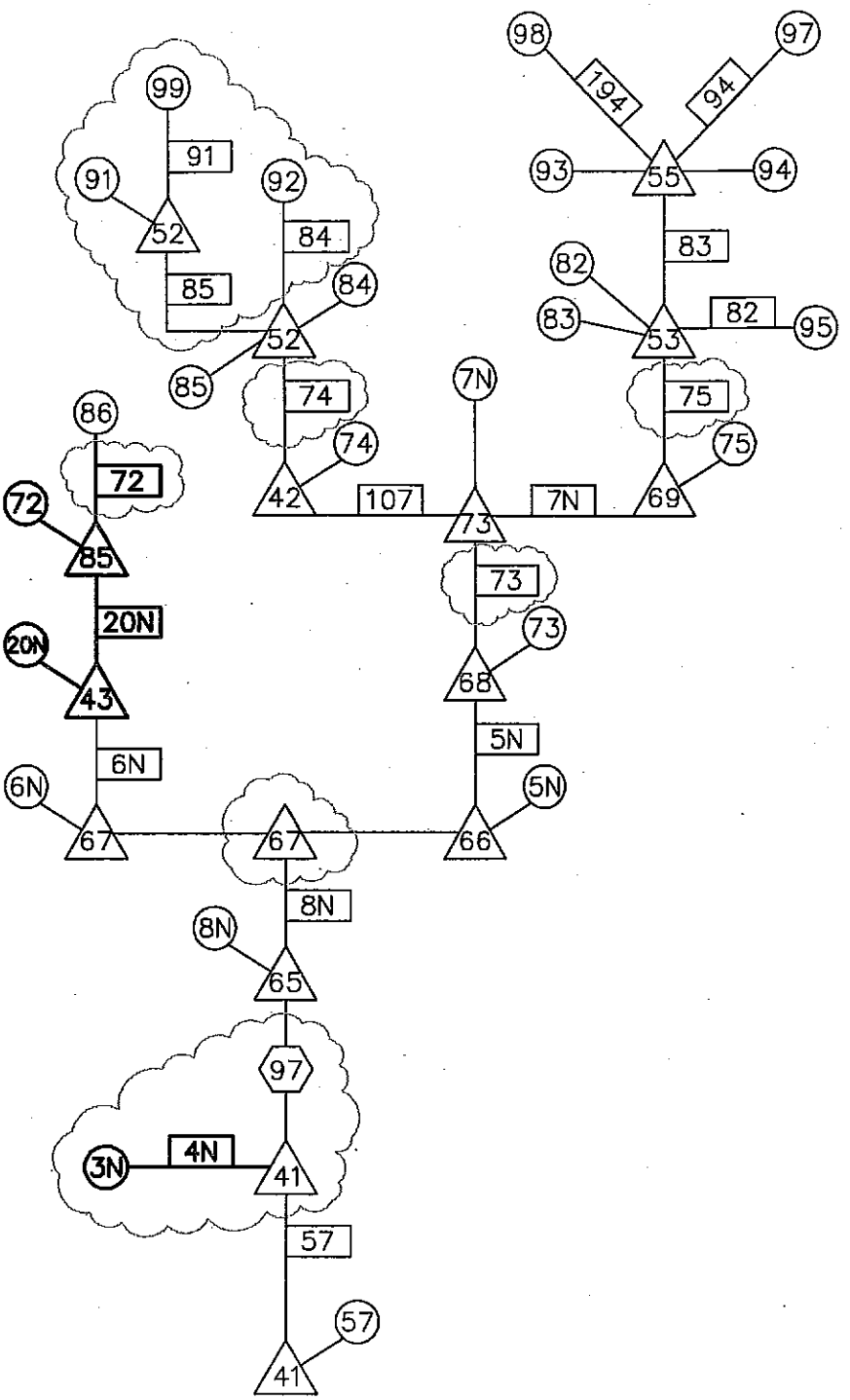
Initial Overland Flow (TC=1.87*(1.1-C10)(*L^.5)*S^-.33)

APPENDIX H:

UPDATED TR-20 SCHEMATIC

HANSENJ
TIME: 4:56:03 PM DATE: 5/8/07 PATH: N:\CSB0602\CADD\CIVIL\V2\MDDP
SERVER: DVS1 PAGE SETUP: ---- DRAWING NAME: PRHYFLDI.DWG
XREFS: LETTERs

POND 89



LEGEND

- ## DESIGN POINT
- ## CONVEYANCE ELEMENT
- ## DETENTION POND
- ## BASIN ID
- ## ELEMENT IN VILLAGE 2 AREA
- AREAS NOT UPDATED IN THE ORIGINAL MDDP

SHEET NUMBER 1 OF 1 SHEETS

JOB NUMBER CSB060200

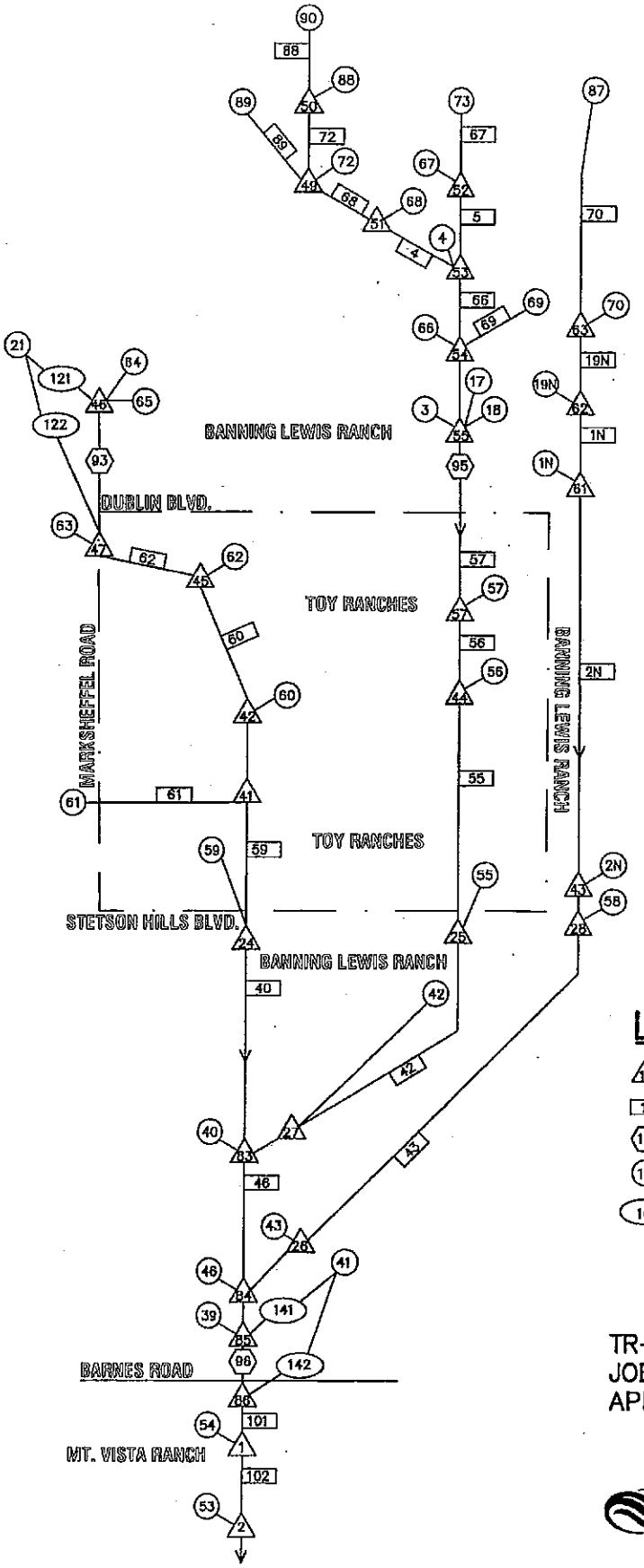
NOLTE
BEYOND ENGINEERING
5225 N. ACADEMY BLVD., SUITE 304 COLORADO SPRINGS, CO 80918
719.268.8500 TEL 719.268.9200 FAX WWW.NOLTE.COM

BANNING LEWIS RANCH
VILLAGE 2 MDDP
PROPOSED CONDITIONS TR-20 SCHEMATIC

PREPARED FOR: BANNING LEWIS RANCH DATE SUBMITTED: FEB 2007

POND 96

TR-20 MODEL SCHEMATIC



LEGEND

- ANALYSIS POINT
- CONVEYANCE ELEMENT
- DETENTION POND
- BASIN ID
- DIVERSION

TR-20 SCHEMATIC
JOB NO. 29995.00
APRIL 2007

J-R ENGINEERING
A Westrian Company
4310 ArrowsWest Drive • Colorado Springs, CO 80907
719-593-2593 • Fax 719-528-6619 • www.jrengineering.com

OPINION OF PROBABLE COSTS				
For BLR Village 2 Major Drainageway Structures				
ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	COST
Vista Del Pico Blvd Sta 81+98				
72" RCP	135	LF	$233.00	$31,455.00
Concrete Class D (Box Culvert)	30	CY	$285.00	$8,550.00
Reinforcing Steel	2150	LB	$0.50	$1,075.00
Total				$41,080.00
Vista Del Pico Blvd Sta 87+66 (Reach 66)				
6'x6' CBC	96	LF	$350.00	$33,600.00
Concrete Class D (Box Culvert)	34	CY	$285.00	$9,690.00
Reinforcing Steel	2699	LB	$0.50	$1,349.50
Total				$44,639.50
Vista Del Pico Blvd Sta 118+94 (Reach 1N)				
60" RCP	145	LF	$112.80	$16,356.00
Concrete Class D (Box Culvert)	20	CY	$285.00	$5,700.00
Reinforcing Steel	1701	LB	$0.50	$850.50
Total				$22,906.50
Vista Del Pico Blvd Sta 152+88 (Reach 19N)				
60" RCP	143	LF	$112.80	$16,130.40
Concrete Class D (Box Culvert)	20	CY	$285.00	$5,700.00
Reinforcing Steel	1701	LB	$0.50	$850.50
Total				$22,680.90
Dublin Blvd Sta 576+79 (Pond 95 Outlet)				
6'x5' CBC	134	LF	$297.50	$39,865.00
Concrete Class D (Box Culvert)	23	CY	$285.00	$6,555.00
Reinforcing Steel	2998	LB	$0.50	$1,499.00
Total				$47,919.00
Dublin Blvd Sta 590+80 (Reach 2N)				
66" RCP	184	LF	$132.77	$24,429.68
Concrete Class D (Box Culvert)	24	CY	$285.00	$6,840.00
Reinforcing Steel	1936	LB	$0.50	$968.00
Total				$32,237.68
Banning Lewis Parkway Sta. 2822+01(Reach 6N)				
14'x6' CBC	318	LF		
Concrete Class D (Box Culvert)	613	CY	$285.00	$174,705.00
Reinforcing Steel	5710	LB	$0.50	$2,855.00

Total				$177,560.00
Scenic Look Lane				
14'x6' CBC	318	LF		
Concrete Class D (Box Culvert)	613	CY	$285.00	$174,705.00
Reinforcing Steel	5710	LB	$0.50	$2,855.00
Total				$177,560.00
Dublin Blvd Storm Sewer (Reach 4N)				
72" RCP	1363	LF	$233.00	$317,579.00
Concrete Class D (Box Culvert)	30	CY	$285.00	$8,550.00
Reinforcing Steel	2150	LB	$0.50	$1,075.00
Total				$327,204.00
Drainage Structure Total				$893,787.58
Engineering and Contingency 15%				$134,068.14
Total Cost Including Contingency				$1,027,855.72

* Refer to Original MDDP Phase 1 & 2, BLR Filing 2, BLR Filing 4 for cost calculations

APPENDIX I:

HYDRAULIC CALCULATIONS

Culvert Analysis Report

VISTA DEL PICO Culvert-1

STA 81+98 CH 67

Culvert Summary					
Computed Headwater Elev	6,860.48	ft	Discharge	245.00	cfs
Inlet Control HW Elev.	6,860.21	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,860.48	ft	Control Type	Entrance Control	
Headwater Depth/Height	1.21				

ORIGINAL MDDP Q_{100} = 245c

HW = 7.3'

Grades					
Upstream Invert	6,853.20	ft	Downstream Invert	6,852.53	ft
Length	134.49	ft	Constructed Slope	0.004982	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	4.13	ft
Slope Type	Steep		Normal Depth	4.13	ft
Flow Regime	Supercritical		Critical Depth	4.29	ft
Velocity Downstream	11.80	ft/s	Critical Slope	0.004526	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	6.00	ft
Section Size	72 inch		Rise	6.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,860.48	ft	Upstream Velocity Head	2.00	ft
Ke	0.50		Entrance Loss	1.00	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,860.21	ft	Flow Control	Transition	
Inlet Type	Square edge w/headwall		Area Full	28.3	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Analysis Report

VISTA DEL PICO Culvert-1

STA 81+98 CH 67

Culvert Summary					
Computed Headwater Elev	6,863.37	ft	Discharge	352.00	cfs
Inlet Control HW Elev.	6,863.37	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,862.64	ft	Control Type	Inlet Control	
Headwater Depth/Height	1.70				

VILLAGE 2 MDDP Q_{100} = 352 CF

HW = 10.2'

Grades					
Upstream Invert	6,853.20	ft	Downstream Invert	6,852.53	ft
Length	134.49	ft	Constructed Slope	0.004982	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	5.08	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	5.08	ft
Velocity Downstream	13.79	ft/s	Critical Slope	0.006544	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	6.00	ft
Section Size	72 inch		Rise	6.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,862.64	ft	Upstream Velocity Head	2.52	ft
Ke	0.50		Entrance Loss	1.26	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,863.37	ft	Flow Control	Submerged	
Inlet Type	Square edge w/headwall		Area Full	28.3	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Analysis Report

VISTA DEL PICO Culvert-1

STA 87+66 CH68

Culvert Summary					
Computed Headwater Elev	6,856.80	ft	Discharge	384.00	cfs
Inlet Control HW Elev.	6,856.80	ft	Tailwater Elevation	6,852.20	ft
Outlet Control HW Elev.	6,856.53	ft	Control Type	Inlet Control	
Headwater Depth/Height	1.41				

ORIGINAL MDDP Q_{100} = 384 CF
HW = 8.5'

Grades					
Upstream Invert	6,848.31	ft	Downstream Invert	6,848.20	ft
Length	96.00	ft	Constructed Slope	0.001146	ft/ft

Hydraulic Profile					
Profile	CompositeM2PressureProfile		Depth, Downstream	5.03	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	5.03	ft
Velocity Downstream	12.72	ft/s	Critical Slope	0.005342	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	6.00	ft
Section Size	6 x 6 ft		Rise	6.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,856.53	ft	Upstream Velocity Head	1.77	ft
Ke	0.20		Entrance Loss	0.35	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,856.80	ft	Flow Control	Submerged	
Inlet Type	90° headwall w 45° bevels		Area Full	36.0	ft²
K	0.49500		HDS 5 Chart	10	
M	0.66700		HDS 5 Scale	2	
C	0.03140		Equation Form	2	
Y	0.82000				

Culvert Analysis Report

VISTA DEL PICO Culvert-1

STA 87+66 CH68

VILLAGE 2 MDDP = 527 CFS
HW = 11.7'

Culvert Summary					
Computed Headwater Elev	6,859.96	ft	Discharge	527.00	cfs
Inlet Control HW Elev.	6,859.96	ft	Tailwater Elevation	6,852.20	ft
Outlet Control HW Elev.	6,859.11	ft	Control Type	Inlet Control	
Headwater Depth/Height	1.94				

Grades					
Upstream Invert	6,848.31	ft	Downstream Invert	6,848.20	ft
Length	96.00	ft	Constructed Slope	0.001146	ft/ft

Hydraulic Profile					
Profile	PressureProfile		Depth, Downstream	6.00	ft
Slope Type	N/A		Normal Depth	N/A	ft
Flow Regime	N/A		Critical Depth	6.00	ft
Velocity Downstream	14.64	ft/s	Critical Slope	0.009553	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	6.00	ft
Section Size	6 x 6 ft		Rise	6.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,859.11	ft	Upstream Velocity Head	3.33	ft
Ke	0.20		Entrance Loss	0.67	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,859.96	ft	Flow Control	Submerged	
Inlet Type	90° headwall w 45° bevels		Area Full	36.0	ft²
K	0.49500		HDS 5 Chart	10	
M	0.66700		HDS 5 Scale	2	
C	0.03140		Equation Form	2	
Y	0.82000				

Culvert Analysis Report

BANNING LEWIS PARKWAY Culvert-1

STATION 2822+01

VILLAGE 2 MDDP Q_{100} = 777cfs

HW = 7.9'

Culvert Summary					
Computed Headwater Elev:	6,819.15	ft	Discharge	777.00	cfs
Inlet Control HW Elev.	6,819.15	ft	Tailwater Elevation	6,814.21	ft
Outlet Control HW Elev.	6,818.62	ft	Control Type	Inlet Control	
Headwater Depth/Height	1.31				

Grades					
Upstream Invert	6,811.30	ft	Downstream Invert	6,810.34	ft
Length	318.00	ft	Constructed Slope	0.003019	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	4.51	ft
Slope Type	Steep		Normal Depth	4.51	ft
Flow Regime	Supercritical		Critical Depth	4.57	ft
Velocity Downstream	12.31	ft/s	Critical Slope	0.002901	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	14.00	ft
Section Size	14 x 6 ft		Rise	6.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,818.62	ft	Upstream Velocity Head	2.29	ft
Ke	0.20		Entrance Loss	0.46	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,819.15	ft	Flow Control	N/A	
Inlet Type	30 to 75° wingwall flares		Area Full	84.0	ft²
K	0.02600		HDS 5 Chart	8	
M	1.00000		HDS 5 Scale	1	
C	0.03470		Equation Form	1	
Y	0.86000				

Culvert Analysis Report

BANNING LEWIS PARKWAY Culvert-1

STATION 282+01

Culvert Summary					
Computed Headwater Elev	6,818.32	ft	Discharge	714.00	cfs
Inlet Control HW Elev.	6,818.32	ft	Tailwater Elevation	6,814.06	ft
Outlet Control HW Elev.	6,818.22	ft	Control Type	Inlet Control	
Headwater Depth/Height	1.17				

ORIGINAL MDDP Q_{100} = 714 cfs
HW = 7,021'

Grades					
Upstream Invert	6,811.30	ft	Downstream Invert	6,810.34	ft
Length	318.00	ft	Constructed Slope	0.003019	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	4.25	ft
Slope Type	Steep		Normal Depth	4.25	ft
Flow Regime	Supercritical		Critical Depth	4.32	ft
Velocity Downstream	12.01	ft/s	Critical Slope	0.002871	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	14.00	ft
Section Size	14 x 6 ft		Rise	6.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,818.22	ft	Upstream Velocity Head	2.16	ft
Ke	0.20		Entrance Loss	0.43	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,818.32	ft	Flow Control	N/A	
Inlet Type	30 to 75° wingwall flares		Area Full	84.0	ft²
K	0.02600		HDS 5 Chart	8	
M	1.00000		HDS 5 Scale	1	
C	0.03470		Equation Form	1	
Y	0.86000				

Culvert Analysis Report

VISTA DEL PICO
STA 118+94 CH 19

Culvert-1

Culvert Summary					
Computed Headwater Elev	6,831.88	ft	Discharge	174.00	cfs
Inlet Control HW Elev.	6,831.75	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,831.88	ft	Control Type	Entrance Control	
Headwater Depth/Height	1.31				

ORIGINAL MDDP Q_{100} = 174 cfs
HW = 6.6'

Grades					
Upstream Invert	6,825.32	ft	Downstream Invert	6,822.46	ft
Length	144.00	ft	Constructed Slope	0.019861	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	2.65	ft
Slope Type	Steep		Normal Depth	2.42	ft
Flow Regime	Supercritical		Critical Depth	3.78	ft
Velocity Downstream	16.49	ft/s	Critical Slope	0.005268	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	5.00	ft
Section Size	60 inch		Rise	5.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,831.88	ft	Upstream Velocity Head	1.85	ft
Ke	0.50		Entrance Loss	0.93	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,831.75	ft	Flow Control	Transition	
Inlet Type	Square edge w/headwall		Area Full	19.6	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Analysis Report

VISTA DEL PICO Culvert-1

STA 118+94 CH 19

Culvert Summary					
Computed Headwater Elev:	6,836.60	ft	Discharge	278.00	cfs
Inlet Control HW Elev.	6,836.60	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,834.97	ft	Control Type	Inlet Control	
Headwater Depth/Height	2.26				

VILLAGE 2 MDDP Q_{100} = 278 cfs

HW = 11.3'

Grades					
Upstream Invert	6,825.32	ft	Downstream Invert	6,822.46	ft
Length	144.00	ft	Constructed Slope	0.019861	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	3.57	ft
Slope Type	Steep		Normal Depth	3.25	ft
Flow Regime	Supercritical		Critical Depth	4.58	ft
Velocity Downstream	18.55	ft/s	Critical Slope	0.009916	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	5.00	ft
Section Size	60 inch		Rise	5.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,834.97	ft	Upstream Velocity Head	3.39	ft
Ke	0.50		Entrance Loss	1.69	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,836.60	ft	Flow Control	Submerged	
Inlet Type	Square edge w/headwall		Area Full	19.6	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Analysis Report

VISTA DEL PICO — Culvert-1

STA 152+88 CH 70

Culvert Summary					
Computed Headwater Elev:	6,844.05	ft	Discharge	168.00	cfs
Inlet Control HW Elev.	6,843.91	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,844.05	ft	Control Type	Entrance Control	
Headwater Depth/Height	1.28				

ORIGINAL MDDP Q_{100} = 168 cfs
HW = 6.4'

Grades					
Upstream Invert	6,837.65	ft	Downstream Invert	6,836.54	ft
Length	143.00	ft	Constructed Slope	0.007762	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	3.24	ft
Slope Type	Steep		Normal Depth	3.18	ft
Flow Regime	Supercritical		Critical Depth	3.72	ft
Velocity Downstream	12.47	ft/s	Critical Slope	0.005112	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	5.00	ft
Section Size	60 inch		Rise	5.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,844.05	ft	Upstream Velocity Head	1.79	ft
Ke	0.50		Entrance Loss	0.90	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,843.91	ft	Flow Control	Transition	
Inlet Type	Square edge w/headwall		Area Full	19.6	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Analysis Report
Culvert-1

VISTA DEL PICO
STA 152+88 CH 70

Culvert Summary					
Computed Headwater Elev	6,846.25	ft	Discharge	226.00	cfs
Inlet Control HW Elev.	6,846.25	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,845.66	ft	Control Type	Inlet Control	
Headwater Depth/Height	1.72				

VILLAGE 2 MDDP Q_{100} = 226 CFS
HW = 8.6'

Grades					
Upstream Invert	6,837.65	ft	Downstream Invert	6,836.54	ft
Length	143.00	ft	Constructed Slope	0.007762	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	4.04	ft
Slope Type	Steep		Normal Depth	4.03	ft
Flow Regime	Supercritical		Critical Depth	4.26	ft
Velocity Downstream	13.29	ft/s	Critical Slope	0.007077	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	5.00	ft
Section Size	60 inch		Rise	5.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,845.66	ft	Upstream Velocity Head	2.50	ft
Ke	0.50		Entrance Loss	1.25	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,846.25	ft	Flow Control	Submerged	
Inlet Type	Square edge w/headwall		Area Full	19.6	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Analysis Report

DUBLIN BLVD
STA 590+80 CH1

Culvert-1

Culvert Summary					
Computed Headwater Elev	6,803.25	ft	Discharge	269.00	cfs
Inlet Control HW Elev.	6,803.25	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,802.84	ft	Control Type	Inlet Control	
Headwater Depth/Height	1.59				

ORIGINAL MDDP Q_{100} = 269 CFS
HW = 8.8'

Grades					
Upstream Invert	6,794.48	ft	Downstream Invert	6,793.27	ft
Length	184.00	ft	Constructed Slope	0.006576	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	4.45	ft
Slope Type	Steep		Normal Depth	4.45	ft
Flow Regime	Supercritical		Critical Depth	4.56	ft
Velocity Downstream	13.07	ft/s	Critical Slope	0.006296	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	5.50	ft
Section Size	66 inch		Rise	5.50	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,802.84	ft	Upstream Velocity Head	2.54	ft
Ke	0.50		Entrance Loss	1.27	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,803.25	ft	Flow Control	Submerged	
Inlet Type	Square edge w/headwall		Area Full	23.8	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Culvert Analysis Report
Culvert-1

DUBLIN BLVD
STA 590+80 CH1

Culvert Summary					
Computed Headwater Elev:	6,810.53	ft	Discharge	419.00	cfs
Inlet Control HW Elev.	6,810.53	ft	Tailwater Elevation	0.00	ft
Outlet Control HW Elev.	6,808.78	ft	Control Type	Inlet Control	
Headwater Depth/Height	2.92				

VILLAGE 2 MDDP Q_{100} = 419 CFS
HW = 16.1'

Grades					
Upstream Invert	6,794.48	ft	Downstream Invert	6,793.27	ft
Length	184.00	ft	Constructed Slope	0.006576	ft/ft

Hydraulic Profile					
Profile	CompositeM2PressureProfile		Depth, Downstream	5.24	ft
Slope Type	Mild		Normal Depth	N/A	ft
Flow Regime	Subcritical		Critical Depth	5.24	ft
Velocity Downstream	17.94	ft/s	Critical Slope	0.013502	ft/ft

Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	5.50	ft
Section Size	66 inch		Rise	5.50	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	6,808.78	ft	Upstream Velocity Head	4.83	ft
Ke	0.50		Entrance Loss	2.42	ft

Inlet Control Properties					
Inlet Control HW Elev.	6,810.53	ft	Flow Control	Submerged	
Inlet Type	Square edge w/headwall		Area Full	23.8	ft²
K	0.00980		HDS 5 Chart	1	
M	2.00000		HDS 5 Scale	1	
C	0.03980		Equation Form	1	
Y	0.67000				

Worksheet for Proposed Channel 1N (Original MDDP Flow)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.01100	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	8.00	ft
Discharge	264.00	ft³/s

ORIGINAL MDDP Q_{100} = 264 cfs
D = 2.61'

Results

Normal Depth	2.61	ft
Flow Area	48.26	ft²
Wetted Perimeter	29.56	ft
Top Width	28.92	ft
Critical Depth	2.25	ft
Critical Slope	0.02055	ft/ft
Velocity	5.47	ft/s
Velocity Head	0.47	ft
Specific Energy	3.08	ft
Froude Number	0.75	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.61	ft
Critical Depth	2.25	ft
Channel Slope	0.01100	ft/ft
Critical Slope	0.02055	ft/ft

Worksheet for Proposed Channel 1N (Updated MDDP Flow)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.01100	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	8.00	ft
Discharge	419.00	ft³/s

VILLAGE 2 MDDP Q_{100} = 419 CFS
D = 3.24'

Results

Normal Depth	3.24	ft
Flow Area	67.90	ft²
Wetted Perimeter	34.72	ft
Top Width	33.92	ft
Critical Depth	2.85	ft
Critical Slope	0.01929	ft/ft
Velocity	6.17	ft/s
Velocity Head	0.59	ft
Specific Energy	3.83	ft
Froude Number	0.77	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.24	ft
Critical Depth	2.85	ft
Channel Slope	0.01100	ft/ft
Critical Slope	0.01929	ft/ft

Worksheet for Proposed Channel 2N (Original MDDP Flow)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.01000	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	10.00	ft
Discharge	685.00	ft³/s

ORIGINAL MDDP Q_{100} = 685 cfs
D = 3.95'

Results

Normal Depth	3.95	ft
Flow Area	101.80	ft²
Wetted Perimeter	42.55	ft
Top Width	41.58	ft
Critical Depth	3.44	ft
Critical Slope	0.01807	ft/ft
Velocity	6.73	ft/s
Velocity Head	0.70	ft
Specific Energy	4.65	ft
Froude Number	0.76	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.95	ft
Critical Depth	3.44	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.01807	ft/ft

Worksheet for Proposed Channel 2N (Updated MDDP Flow)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.01000	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	10.00	ft
Discharge	897.00	ft³/s

VILLAGE 2 MDDP Q_{100} = 897 cfs
D = 4.46'

Results

Normal Depth	4.46	ft
Flow Area	124.34	ft²
Wetted Perimeter	46.81	ft
Top Width	45.71	ft
Critical Depth	3.93	ft
Critical Slope	0.01741	ft/ft
Velocity	7.21	ft/s
Velocity Head	0.81	ft
Specific Energy	5.27	ft
Froude Number	0.77	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.46	ft
Critical Depth	3.93	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.01741	ft/ft

Worksheet for Proposed Channel 19N (Original MDDP Flow)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.040	
Channel Slope	0.01200	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	8.00	ft
Discharge	174.00	ft³/s

ORIGINAL MDDP Q_{100} = 174 CFS
D = 2.10'

Results

Normal Depth	2.10	ft
Flow Area	34.41	ft²
Wetted Perimeter	25.31	ft
Top Width	24.79	ft
Critical Depth	1.81	ft
Critical Slope	0.02179	ft/ft
Velocity	5.06	ft/s
Velocity Head	0.40	ft
Specific Energy	2.50	ft
Froude Number	0.76	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.10	ft
Critical Depth	1.81	ft
Channel Slope	0.01200	ft/ft
Critical Slope	0.02179	ft/ft

Worksheet for Proposed Channel 19N (Updated MDDP Flow)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

VILLAGE 2 MDDP Q_{100} = 278 CFS
D = 2.62'

Roughness Coefficient	0.040	
Channel Slope	0.01200	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	8.00	ft
Discharge	278.00	ft^3/s

Results

Normal Depth	2.62	ft
Flow Area	48.55	ft^2
Wetted Perimeter	29.64	ft
Top Width	29.00	ft
Critical Depth	2.31	ft
Critical Slope	0.02040	ft/ft
Velocity	5.73	ft/s
Velocity Head	0.51	ft
Specific Energy	3.13	ft
Froude Number	0.78	
Flow Type	Subcritical	

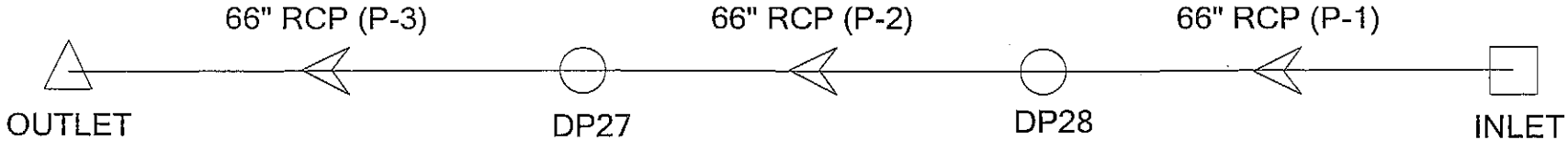
GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

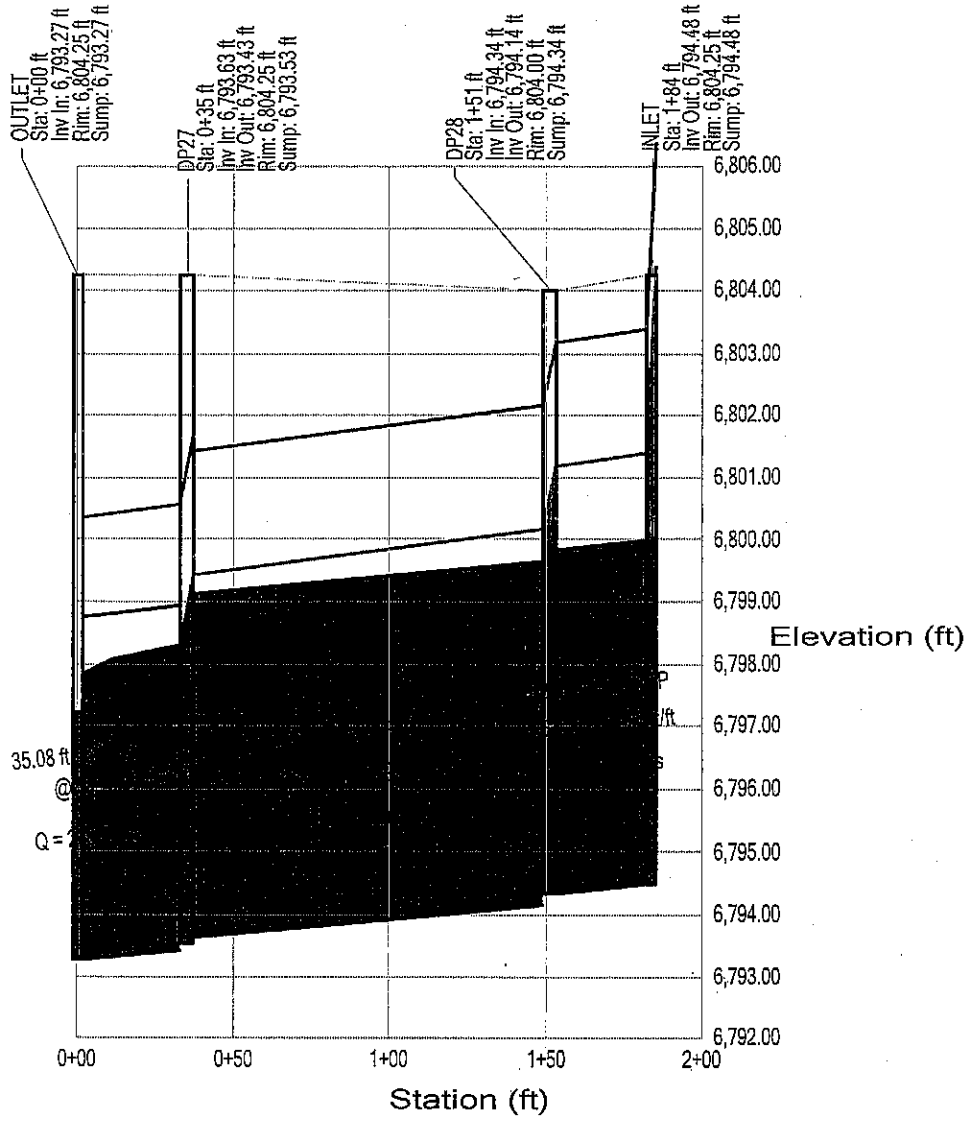
Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.62	ft
Critical Depth	2.31	ft
Channel Slope	0.01200	ft/ft
Critical Slope	0.02040	ft/ft

Scenario: DublinBlvdCulvert_EX



Profile: Profile - All

Scenario: DublinBlvdCulvert_EX



Detailed Report for Inlet: INLET

Scenario Summary	
Scenario	DublinBlvdCulvert_EX
Physical Properties Alternative	DublinBlvdCulvert_EX-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_EX-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_EX-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	10,222.76 ft	Calculated Station	3+48 ft
Y	9,948.01 ft		

Elevations			
Ground Elevation	6,804.25 ft	Hydraulic Grade Line In	6,804.38 ft
Rim Elevation	6,804.25 ft	Hydraulic Grade Line Out	6,801.39 ft
Sump Elevation	6,794.48 ft		

Headlosses			
Gravity Element Headloss	2.99 ft	Depth Out	6.91 ft
Headloss Method	Standard	Velocity Out	11.32 ft/s
Headloss Coefficient	1.50	Velocity Head Out	1.99 ft

System Flow Summary			
Total System Flow	269.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.00 min	System Additional Flow	0.00 cfs
System Intensity	0.00 in/hr	System Known Flow	269.00 cfs
System CA	0.00 acres	Total Diverted Flow In	0.00 cfs

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Inlet Flow Summary			
Area	0.00 acres	Composite Rational C	0.00
Inlet CA	0.00 acres	Carryover CA	0.00 acres
Total Inlet CA	0.00 acres	Total Inlet Intensity	0.00 in/hr
Total Inlet Rational Flow	0.00 cfs	Total Inlet Time of Concentration	0.00 min
Total Inlet Additional Flow	0.00 cfs	Total Inlet Known Flow	0.00 cfs
Total Flow To Inlet	0.00 cfs		

Inlet Characteristics			
Inlet Type	Generic Inlet	Inlet Location	In Sag
Inlet	Generic Default 100%	Inlet Section Properties	Gutter Section
Road Cross Slope	0.020 ft/ft	Depressed Gutter?	false
Gutter Cross Slope	0.020 ft/ft	Gutter Width	0.00 ft

External Pipe Flow			
External CA	0.00 acres	External Time of Concentration	0.00 min

Detailed Report for Inlet: INLET

Intercepted Flow Summary			
Intercepted Rational Flow	0.00 cfs	Intercepted CA	0.00 acres
Intercepted Additional Flow	0.00 cfs	Intercepted Intensity	0.00 in/hr
Intercepted Known Flow	0.00 cfs	Intercepted Tc	0.00 min
Total Intercepted Flow	0.00 cfs	Capture Efficiency	100.0 %

Upstream Piped Flow Summary			
Upstream Rational Flow	0.00 cfs	Upstream CA	0.00 acres
Upstream Additional Flow	0.00 cfs	Upstream Intensity	0.00 in/hr
Upstream Known Flow	0.00 cfs	Upstream Time Of Concentration	0.00 min
Total Upstream Flow	0.00 cfs		

Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Structure is flooded.

Detailed Report for Pipe: 66" RCP (P-1)

Scenario Summary	
Scenario	DublinBlvdCulvert_EX
Physical Properties Alternative	DublinBlvdCulvert_EX-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_EX-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_EX-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Pipe Characteristics					
Upstream Node	INLET		Number of Sections	1	
Downstream Node	DP28		Section Shape	Circular	
Bend Angle	0.00	degrees	Section Size	66 inch	
Length	32.61	ft	Material	Concrete	
Constructed Slope	0.004293	ft/ft	Mannings n	0.013	

Hydraulic Summary					
Total System Flow	269.00	cfs	Full Capacity	220.02	cfs
Profile Description	Pressure		Energy Slope	0.006418	ft/ft
Gravity Element Headloss	0.21	ft	Velocity In	11.32	ft/s
Average Velocity	11.32	ft/s	Velocity Out	11.32	ft/s
Constructed Slope	0.004293	ft/ft	Design Capacity	220.02	cfs
Excess Full Capacity	-48.98	cfs	Excess Design Capacity	-48.98	cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	6,794.48	6,804.25	6,799.98	4.27	6.91	6,801.39	6,803.38
Downstrear	6,794.34	6,804.00	6,799.84	4.16	6.84	6,801.18	6,803.17

Pipe Design Options					
Design Pipe?	true		Design Upstream Invert?	true	
Design Downstream Invert?	true		Specify Local Pipe Constraints?	true	
Part Full Design?	false		Design Percent Full	N/A	%
Allow Multiple Sections?	false		Maximum Number Sections	N/A	
Limit Section Size?	false		Maximum Section Rise	N/A	in

Pipe Design Constraints					
Minimum Velocity	2.00	ft/s	Maximum Velocity	15.00	ft/s
Minimum Cover	3.00	ft	Maximum Cover	15.00	ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000	ft/ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Pipe does not meet minimum slope constraint.

Detailed Report for Pipe: 66" RCP (P-1)

Message List	
Time (hr)	Message
	Warning: Pipe discharge is above full flow capacity.
	Warning: Pipe discharge is above design capacity.

Detailed Report for Junction: DP28

Scenario Summary	
Scenario	DublinBlvdCulvert_EX
Physical Properties Alternative	DublinBlvdCulvert_EX-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_EX-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_EX-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	10,125.83 ft	Calculated Station	3+15 ft
Y	9,947.99 ft	Structure Diameter	4.00 ft
		Bolted Cover?	false

Elevations			
Ground Elevation	6,804.00 ft	Hydraulic Grade Line In	6,801.18 ft
Rim Elevation	6,804.00 ft	Hydraulic Grade Line Out	6,800.18 ft
Sump Elevation	6,794.34 ft		

Headlosses			
Gravity Element Headloss	1.00 ft	Depth Out	5.84 ft
Headloss Method	Standard	Velocity Out	11.32 ft/s
Headloss Coefficient	0.50	Velocity Head Out	1.99 ft

System Flow Summary			
Total System Flow	269.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.05 min	System Known Flow	269.00 cfs
System Intensity	0.00 in/hr	System Additional Flow	0.00 cfs
System CA	0.00 acres	Total Diverted Flow In	0.00 cfs

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Notes:
No inv. elev. available. Assumed 0.1' lower than I-1 inv. elev.
No rim elev. available. Assumed 0.5' lower than I-1 rim elev.

Message List	
Time (hr)	Message
	Warning: Structure bottom is above pipe invert(s).

Detailed Report for Pipe: 66" RCP (P-2)

Scenario Summary	
Scenario	DublinBlvdCulvert_EX
Physical Properties Alternative	DublinBlvdCulvert_EX-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_EX-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_EX-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Pipe Characteristics				
Upstream Node	DP28		Number of Sections	1
Downstream Node	DP27		Section Shape	Circular
Bend Angle	0.00	degrees	Section Size	66 inch
Length	116.04	ft	Material	Concrete
Constructed Slope	0.004395	ft/ft	Mannings n	0.013

Hydraulic Summary				
Total System Flow	269.00	cfs	Full Capacity	222.61 cfs
Profile Description	Pressure		Energy Slope	0.006418 ft/ft
Gravity Element Headloss	0.74	ft	Velocity In	11.32 ft/s
Average Velocity	11.32	ft/s	Velocity Out	11.32 ft/s
Constructed Slope	0.004395	ft/ft	Design Capacity	222.61 cfs
Excess Full Capacity	-46.39	cfs	Excess Design Capacity	-46.39 cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	6,794.14	6,804.00	6,799.64	4.36	6.04	6,800.18	6,802.18
Downstrear	6,793.63	6,804.25	6,799.13	5.12	5.81	6,799.44	6,801.43

Pipe Design Options				
Design Pipe?	true		Design Upstream Invert?	true
Design Downstream Invert?	true		Specify Local Pipe Constraints?	false
Part Full Design?	false		Design Percent Full	N/A %
Allow Multiple Sections?	false		Maximum Number Sections	N/A
Limit Section Size?	false		Maximum Section Rise	N/A in

Pipe Design Constraints				
Minimum Velocity	2.00	ft/s	Maximum Velocity	15.00 ft/s
Minimum Cover	3.00	ft	Maximum Cover	15.00 ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000 ft/ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Pipe does not meet minimum slope constraint.

Detailed Report for Pipe: 66" RCP (P-2)

Message List	
Time (hr)	Message
	Warning: Pipe discharge is above full flow capacity.
	Warning: Pipe discharge is above design capacity.

Detailed Report for Junction: DP27

Scenario Summary	
Scenario	DublinBlvdCulvert_EX
Physical Properties Alternative	DublinBlvdCulvert_EX-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_EX-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_EX-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	10,030.15 ft	Calculated Station	1+99 ft
Y	9,948.03 ft	Structure Diameter	4.00 ft
		Bolted Cover?	false

Elevations			
Ground Elevation	6,804.25 ft	Hydraulic Grade Line In	6,799.44 ft
Rim Elevation	6,804.25 ft	Hydraulic Grade Line Out	6,798.30 ft
Sump Elevation	6,793.53 ft		

Headlosses			
Gravity Element Headloss	1.13 ft	Depth Out	4.77 ft
Headloss Method	Standard	Velocity Out	12.08 ft/s
Headloss Coefficient	0.50	Velocity Head Out	2.27 ft

System Flow Summary			
Total System Flow	269.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.22 min	System Known Flow	269.00 cfs
System Intensity	0.00 in/hr	System Additional Flow	0.00 cfs
System CA	0.00 acres	Total Diverted Flow In	0.00 cfs

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Structure bottom is above pipe invert(s).

Detailed Report for Pipe: 66" RCP (P-3)

Scenario Summary	
Scenario	DublinBlvdCulvert_EX
Physical Properties Alternative	DublinBlvdCulvert_EX-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_EX-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_EX-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Pipe Characteristics					
Upstream Node	DP27		Number of Sections	1	
Downstream Node	OUTLET		Section Shape	Circular	
Bend Angle	0.00	degrees	Section Size	66 inch	
Length	35.08	ft	Material	Concrete	
Constructed Slope	0.004561	ft/ft	Mannings n	0.013	

Hydraulic Summary					
Total System Flow	269.00	cfs	Full Capacity	226.78	cfs
Profile Description	M2		Energy Slope	0.005913	ft/ft
Gravity Element Headloss	0.48	ft	Velocity In	12.08	ft/s
Average Velocity	11.32	ft/s	Velocity Out	12.78	ft/s
Constructed Slope	0.004561	ft/ft	Design Capacity	226.78	cfs
Excess Full Capacity	-42.22	cfs	Excess Design Capacity	-42.22	cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	6,793.43	6,804.25	6,798.93	5.32	4.87	6,798.30	6,800.57
Downstrear	6,793.27	6,804.25	6,798.77	5.48	4.56	6,797.83	6,800.37

Pipe Design Options					
Design Pipe?	true		Design Upstream Invert?	true	
Design Downstream Invert?	true		Specify Local Pipe Constraints?	false	
Part Full Design?	false		Design Percent Full	N/A	%
Allow Multiple Sections?	false		Maximum Number Sections	N/A	
Limit Section Size?	false		Maximum Section Rise	N/A	in

Pipe Design Constraints					
Minimum Velocity	2.00	ft/s	Maximum Velocity	15.00	ft/s
Minimum Cover	3.00	ft	Maximum Cover	15.00	ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000	ft/ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Pipe does not meet minimum slope constraint.

Detailed Report for Pipe: 66" RCP (P-3)

Message List	
Time (hr)	Message
	Warning: Pipe discharge is above full flow capacity.
	Warning: Pipe discharge is above design capacity.

Detailed Report for Outlet: OUTLET

Scenario Summary	
Scenario	DublinBlvdCulvert_EX
Physical Properties Alternative	DublinBlvdCulvert_EX-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_EX-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_EX-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	9,923.45 ft	Station	1+64 ft
Y	9,947.98 ft		

Elevations			
Ground Elevation	6,804.25 ft	Sump Elevation	6,793.27 ft
Rim Elevation	6,804.25 ft		

Tailwater Hydraulics			
Tailwater Condition	User-Specified	Hydraulic Grade Line Out	6,797.22 ft

System Flow Summary			
Total System Flow	269.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.27 min	System Known Flow	269.00 cfs
System Intensity	0.00 in/hr	System Additional Flow	0.00 cfs
System CA	0.00 acres	Total Lost Surface Flow	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

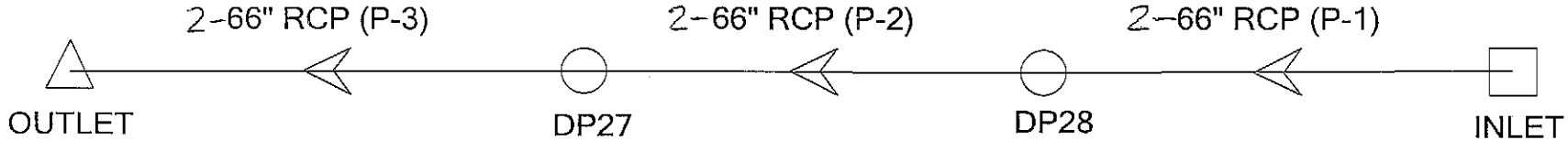
Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Notes:
To obtain the tailwater elevation at the outlet, the normal depth @ the d/s channel is calculated using the Flowmaster model.

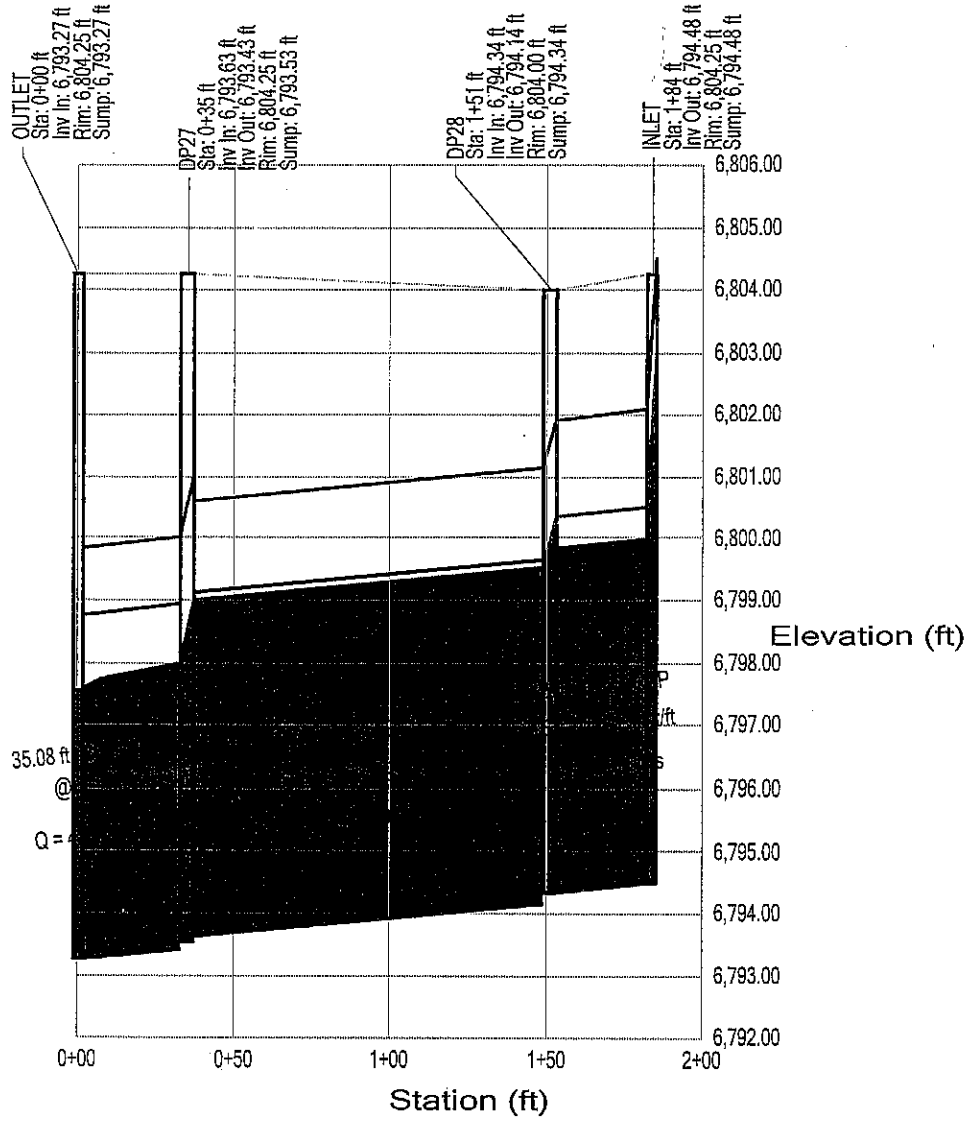
Normal Depth @ the D/S channel: 4.3'

Scenario: DublinBlvdCulvert_PR



Profile: Profile - All

Scenario: DublinBlvdCulvert_PR



Detailed Report for Inlet: INLET

Scenario Summary	
Scenario	DublinBlvdCulvert_PR
Physical Properties Alternative	DublinBlvdCulvert_PR-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_PR-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_PR-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	10,222.76 ft	Calculated Station	3+48 ft
Y	9,948.01 ft		

Elevations			
Ground Elevation	6,804.25 ft	Hydraulic Grade Line In	6,802.90 ft
Rim Elevation	6,804.25 ft	Hydraulic Grade Line Out	6,800.51 ft
Sump Elevation	6,794.48 ft		

Headlosses			
Gravity Element Headloss	2.39 ft	Depth Out	6.03 ft
Headloss Method	Standard	Velocity Out	10.12 ft/s
Headloss Coefficient	1.50	Velocity Head Out	1.59 ft

System Flow Summary			
Total System Flow	481.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.00 min	System Additional Flow	0.00 cfs
System Intensity	0.00 in/hr	System Known Flow	481.00 cfs
System CA	0.00 acres	Total Diverted Flow In	0.00 cfs

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Inlet Flow Summary			
Area	0.00 acres	Composite Rational C	0.00
Inlet CA	0.00 acres	Carryover CA	0.00 acres
Total Inlet CA	0.00 acres	Total Inlet Intensity	0.00 in/hr
Total Inlet Rational Flow	0.00 cfs	Total Inlet Time of Concentration	0.00 min
Total Inlet Additional Flow	0.00 cfs	Total Inlet Known Flow	0.00 cfs
Total Flow To Inlet	0.00 cfs		

Inlet Characteristics			
Inlet Type	Generic Inlet	Inlet Location	In Sag
Inlet	Generic Default 100%	Inlet Section Properties	Gutter Section
Road Cross Slope	0.020 ft/ft	Depressed Gutter?	false
Gutter Cross Slope	0.020 ft/ft	Gutter Width	0.00 ft

External Pipe Flow			
External CA	0.00 acres	External Time of Concentration	0.00 min

Detailed Report for Inlet: INLET

Intercepted Flow Summary			
Intercepted Rational Flow	0.00 cfs	Intercepted CA	0.00 acres
Intercepted Additional Flow	0.00 cfs	Intercepted Intensity	0.00 in/hr
Intercepted Known Flow	0.00 cfs	Intercepted Tc	0.00 min
Total Intercepted Flow	0.00 cfs	Capture Efficiency	100.0 %

Upstream Piped Flow Summary			
Upstream Rational Flow	0.00 cfs	Upstream CA	0.00 acres
Upstream Additional Flow	0.00 cfs	Upstream Intensity	0.00 in/hr
Upstream Known Flow	0.00 cfs	Upstream Time Of Concentration	0.00 min
Total Upstream Flow	0.00 cfs		

Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Detailed Report for Pipe: 66" RCP (P-1)

Scenario Summary	
Scenario	DublinBlvdCulvert_PR
Physical Properties Alternative	DublinBlvdCulvert_PR-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_PR-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_PR-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Pipe Characteristics					
Upstream Node	INLET		Number of Sections	2	
Downstream Node	DP28		Section Shape	Circular	
Bend Angle	0.00	degrees	Section Size	66 inch	
Length	32.61	ft	Material	Concrete	
Constructed Slope	0.004293	ft/ft	Mannings n	0.013	

Hydraulic Summary					
Total System Flow	481.00	cfs	Full Capacity	440.04	cfs
Profile Description	Pressure		Energy Slope	0.005130	ft/ft
Gravity Element Headloss	0.17	ft	Velocity In	10.12	ft/s
Average Velocity	10.12	ft/s	Velocity Out	10.12	ft/s
Constructed Slope	0.004293	ft/ft	Design Capacity	440.04	cfs
Excess Full Capacity	-40.96	cfs	Excess Design Capacity	-40.96	cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	6,794.48	6,804.25	6,799.98	4.27	6.03	6,800.51	6,802.10
Downstrear	6,794.34	6,804.00	6,799.84	4.16	6.00	6,800.34	6,801.93

Pipe Design Options					
Design Pipe?	true		Design Upstream Invert?	true	
Design Downstream Invert?	true		Specify Local Pipe Constraints?	true	
Part Full Design?	false		Design Percent Full	N/A	%
Allow Multiple Sections?	false		Maximum Number Sections	N/A	
Limit Section Size?	false		Maximum Section Rise	N/A	in

Pipe Design Constraints					
Minimum Velocity	2.00	ft/s	Maximum Velocity	15.00	ft/s
Minimum Cover	3.00	ft	Maximum Cover	15.00	ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000	ft/ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Pipe does not meet minimum slope constraint.

Detailed Report for Pipe: 66" RCP (P-1)

Message List	
Time (hr)	Message
	Warning: Pipe discharge is above full flow capacity.
	Warning: Pipe discharge is above design capacity.

Detailed Report for Junction: DP28

Scenario Summary	
Scenario	DublinBlvdCulvert_PR
Physical Properties Alternative	DublinBlvdCulvert_PR-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_PR-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_PR-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	10,125.83 ft	Calculated Station	3+15 ft
Y	9,947.99 ft	Structure Diameter	4.00 ft
		Bolted Cover?	false

Elevations			
Ground Elevation	6,804.00 ft	Hydraulic Grade Line In	6,800.34 ft
Rim Elevation	6,804.00 ft	Hydraulic Grade Line Out	6,799.54 ft
Sump Elevation	6,794.34 ft		

Headlosses			
Gravity Element Headloss	0.80 ft	Depth Out	5.20 ft
Headloss Method	Standard	Velocity Out	10.17 ft/s
Headloss Coefficient	0.50	Velocity Head Out	1.61 ft

System Flow Summary			
Total System Flow	481.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.05 min	System Known Flow	481.00 cfs
System Intensity	0.00 in/hr	System Additional Flow	0.00 cfs
System CA	0.00 acres	Total Diverted Flow In	0.00 cfs

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Notes:
No inv. elev. available. Assumed 0.1' lower than I-1 inv. elev.
No rim elev. available. Assumed 0.5' lower than I-1 rim elev.

Message List

Time (hr)	Message
	Warning: Structure bottom is above pipe invert(s).

Detailed Report for Pipe: 66" RCP (P-2)

Scenario Summary	
Scenario	DublinBlvdCulvert_PR
Physical Properties Alternative	DublinBlvdCulvert_PR-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_PR-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_PR-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Pipe Characteristics					
Upstream Node	DP28		Number of Sections	2	
Downstream Node	DP27		Section Shape	Circular	
Bend Angle	0.00	degrees	Section Size	66 inch	
Length	116.04	ft	Material	Concrete	
Constructed Slope	0.004395	ft/ft	Mannings n	0.013	

Hydraulic Summary					
Total System Flow	481.00	cfs	Full Capacity	445.23	cfs
Profile Description	M2		Energy Slope	0.004584	ft/ft
Gravity Element Headloss	0.54	ft	Velocity In	10.17	ft/s
Average Velocity	10.12	ft/s	Velocity Out	10.19	ft/s
Constructed Slope	0.004395	ft/ft	Design Capacity	445.23	cfs
Excess Full Capacity	-35.77	cfs	Excess Design Capacity	-35.77	cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	6,794.14	6,804.00	6,799.64	4.36	5.40	6,799.54	6,801.14
Downstrear	6,793.63	6,804.25	6,799.13	5.12	5.37	6,799.00	6,800.61

Pipe Design Options					
Design Pipe?	true		Design Upstream Invert?	true	
Design Downstream Invert?	true		Specify Local Pipe Constraints?	false	
Part Full Design?	false		Design Percent Full	N/A	%
Allow Multiple Sections?	false		Maximum Number Sections	N/A	
Limit Section Size?	false		Maximum Section Rise	N/A	in

Pipe Design Constraints					
Minimum Velocity	2.00	ft/s	Maximum Velocity	15.00	ft/s
Minimum Cover	3.00	ft	Maximum Cover	15.00	ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000	ft/ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Pipe does not meet minimum slope constraint.

Detailed Report for Pipe: 66" RCP (P-2)

Message List	
Time (hr)	Message
	Warning: Pipe discharge is above full flow capacity.
	Warning: Pipe discharge is above design capacity.

Detailed Report for Junction: DP27

Scenario Summary	
Scenario	DublinBlvdCulvert_PR
Physical Properties Alternative	DublinBlvdCulvert_PR-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_PR-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_PR-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	10,030.15 ft	Calculated Station	1+99 ft
Y	9,948.03 ft	Structure Diameter	4.00 ft
		Bolted Cover?	false

Elevations			
Ground Elevation	6,804.25 ft	Hydraulic Grade Line In	6,799.00 ft
Rim Elevation	6,804.25 ft	Hydraulic Grade Line Out	6,797.98 ft
Sump Elevation	6,793.53 ft		

Headlosses			
Gravity Element Headloss	1.02 ft	Depth Out	4.45 ft
Headloss Method	Standard	Velocity Out	11.44 ft/s
Headloss Coefficient	0.50	Velocity Head Out	2.03 ft

System Flow Summary			
Total System Flow	481.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.24 min	System Known Flow	481.00 cfs
System Intensity	0.00 in/hr	System Additional Flow	0.00 cfs
System CA	0.00 acres	Total Diverted Flow In	0.00 cfs

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Structure bottom is above pipe invert(s).

Detailed Report for Pipe: 66" RCP (P-3)

Scenario Summary	
Scenario	DublinBlvdCulvert_PR
Physical Properties Alternative	DublinBlvdCulvert_PR-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_PR-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_PR-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Pipe Characteristics				
Upstream Node	DP27		Number of Sections	2
Downstream Node	OUTLET		Section Shape	Circular
Bend Angle	0.00	degrees	Section Size	66 inch
Length	35.08	ft	Material	Concrete
Constructed Slope	0.004561	ft/ft	Mannings n	0.013

Hydraulic Summary				
Total System Flow	481.00	cfs	Full Capacity	453.55 cfs
Profile Description	M2		Energy Slope	0.005204 ft/ft
Gravity Element Headloss	0.38	ft	Velocity In	11.44 ft/s
Average Velocity	10.77	ft/s	Velocity Out	11.98 ft/s
Constructed Slope	0.004561	ft/ft	Design Capacity	453.55 cfs
Excess Full Capacity	-27.45	cfs	Excess Design Capacity	-27.45 cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	6,793.43	6,804.25	6,798.93	5.32	4.55	6,797.98	6,800.02
Downstrear	6,793.27	6,804.25	6,798.77	5.48	4.33	6,797.60	6,799.83

Pipe Design Options				
Design Pipe?	true		Design Upstream Invert?	true
Design Downstream Invert?	true		Specify Local Pipe Constraints?	false
Part Full Design?	false		Design Percent Full	N/A %
Allow Multiple Sections?	false		Maximum Number Sections	N/A
Limit Section Size?	false		Maximum Section Rise	N/A in

Pipe Design Constraints				
Minimum Velocity	2.00	ft/s	Maximum Velocity	15.00 ft/s
Minimum Cover	3.00	ft	Maximum Cover	15.00 ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000 ft/ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Pipe does not meet minimum slope constraint.

Detailed Report for Pipe: 66" RCP (P-3)

Message List	
Time (hr)	Message
	Warning: Pipe discharge is above full flow capacity.
	Warning: Pipe discharge is above design capacity.

Detailed Report for Outlet: OUTLET

Scenario Summary	
Scenario	DublinBlvdCulvert_PR
Physical Properties Alternative	DublinBlvdCulvert_PR-Physical Properties
Catchments Alternative	DublinBlvdCulvert-Catchments
System Flows Alternative	DublinBlvdCulvert_PR-System Flows
Structure Headlosses Alternative	DublinBlvdCulvert-Structure Headlosses
Boundary Conditions Alternative	DublinBlvdCulvert_PR-Boundary Conditions
Design Constraints Alternative	DublinBlvdCulvert-Design Constraints
Capital Cost Alternative	DublinBlvdCulvert-Capital Cost
User Data Alternative	DublinBlvdCulvert-User Data

Geometric Summary			
X	9,923.45 ft	Station	1+64 ft
Y	9,947.98 ft		

Elevations			
Ground Elevation	6,804.25 ft	Sump Elevation	6,793.27 ft
Rim Elevation	6,804.25 ft		

Tailwater Hydraulics			
Tailwater Condition	User-Specified	Hydraulic Grade Line Out	6,797.57 ft

System Flow Summary			
Total System Flow	481.00 cfs	System Rational Flow	0.00 cfs
System Flow Time	0.30 min	System Known Flow	481.00 cfs
System Intensity	0.00 in/hr	System Additional Flow	0.00 cfs
System CA	0.00 acres	Total Lost Surface Flow	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Incoming Diverted Flow			
Local Diverted Flow In	0.00 cfs	Global Diverted Flow In	0.00 cfs
Total Diverted Flow In	0.00 cfs		

Design Constraints Summary			
Pipe Matching	Inverts	Allow Drop Structure?	true
Matchline Offset	0.00 ft	Local Pipe Matching Constraints?	false
Design Structure Elevation?	true	Desired Sump Depth	0.00 ft

User Data
Date Installed

Notes:
To obtain the tailwater elevation at the outlet, the normal depth @ the d/s channel is calculated using the Flowmaster model.

Normal Depth @ the D/S channel: 4.3'

APPENDIX J:

COST ESTIMATES FOR DRAINAGE INFRASTRUCTURE

OPINION OF PROBABLE COSTS				
For BLR Village 2 Major Drainageway Structures				
ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	COST
Vista Del Pico Blvd Sta 81+98				
72" RCP	135	LF	$233.00	$31,455.00
Concrete Class D (Box Culvert)	30	CY	$285.00	$8,550.00
Reinforcing Steel	2150	LB	$0.50	$1,075.00
Total				$41,080.00
Vista Del Pico Blvd Sta 87+66 (Reach 66)				
6'x6' CBC	96	LF	$350.00	$33,600.00
Concrete Class D (Box Culvert)	34	CY	$285.00	$9,690.00
Reinforcing Steel	2699	LB	$0.50	$1,349.50
Total				$44,639.50
Vista Del Pico Blvd Sta 118+94 (Reach 1N)				
60" RCP	145	LF	$112.80	$16,356.00
Concrete Class D (Box Culvert)	20	CY	$285.00	$5,700.00
Reinforcing Steel	1701	LB	$0.50	$850.50
Total				$22,906.50
Vista Del Pico Blvd Sta 152+88 (Reach 19N)				
60" RCP	143	LF	$112.80	$16,130.40
Concrete Class D (Box Culvert)	20	CY	$285.00	$5,700.00
Reinforcing Steel	1701	LB	$0.50	$850.50
Total				$22,680.90
Dublin Blvd Sta 576+79 (Pond 95 Outlet)				
6'x5' CBC	134	LF	$297.50	$39,865.00
Concrete Class D (Box Culvert)	23	CY	$285.00	$6,555.00
Reinforcing Steel	2998	LB	$0.50	$1,499.00
Total				$47,919.00
Dublin Blvd Sta 590+80 (Reach 2N)				
84" RCP	184	LF	$260.00	$47,840.00
Concrete Class D (Box Culvert)	24	CY	$285.00	$6,840.00
Reinforcing Steel	1936	LB	$0.50	$968.00
Total				$55,648.00
Banning Lewis Parkway Sta. 2822+01(Reach 6N)				
14'x6' CBC	318	LF		
Concrete Class D (Box Culvert)	613	CY	$285.00	$174,705.00
Reinforcing Steel	5710	LB	$0.50	$2,855.00

Total				$177,560.00
Scenic Look Lane				
12'x6' CBC	60	LF	$918.00	$55,080.00
Concrete Class D (Box Culvert)	34	CY	$285.00	$9,690.00
Reinforcing Steel	2699	LB	$0.50	$1,349.50
Total				$66,119.50
Dublin Blvd Storm Sewer (Reach 4N)				
72" RCP	1363	LF	$233.00	$317,579.00
Concrete Class D (Box Culvert)	30	CY	$285.00	$8,550.00
Reinforcing Steel	2150	LB	$0.50	$1,075.00
Total				$327,204.00
Drainage Structure Total				$805,757.40
Engineering and Contingency 15%				$120,863.61
Total Cost Including Contingency				$926,621.01

* Refer to Original MDDP Phase 1 & 2, BLR Filing 2, BLR Filing 4 for cost calculations

OPINION OF PROBABLE COSTS				
For BLR Village 2 Major Drainageway Channels				
REACH NUMBER	REACH LENGTH (FT)	UNIT	UNIT COST	COST
1N	1231	LF	$264.85	326,030.35
18N	900	LF	$326.56	293,904.00
19N	1088	LF	$158.53	172,480.64
66	1458	LF	$478.07	697,026.06
68	1198	LF	$101.91	122,088.18
70	2911	LF	$234.49	682,600.39
72	1495	LF	$460.74	688,806.30
Channel Construction Total				2,982,935.92
Engineering and Contingency 15%				447,440.39
Total Cost Including Contingency				3,430,376.31

* Refer to Original MDDP Phase 1 & 2, BLR Filing 2, BLR Filing 4 for cost calculations

APPENDIX K:

TR-20 INPUT/OUTPUT DATA

POND 89

PROPOSED ULTIMATE CONDITIONS INPU

(DEVELOPED PHASES 1 & 2 UPDATED TO DUBLIN BLVD)

```
JOB TR-20                                                    EFSCpr13.DAT
                                                               NOPLOTS
TITLE 001 PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES  efscpr13.dat
TITLE     24 HR TYPE IIA CURVE
 5 RAINFL 1                    .50
 8                0.000       .0025       0.005       .0075       0.010
 8                0.015       0.020       0.025       0.030       0.050
 8                0.060       0.100       0.700       0.750       0.780
 8                0.798       0.820       0.830       0.840       0.850
 8                0.860       0.865       0.870       0.885       0.890
 8                0.900       0.905       0.910       0.915       0.921
 8                0.927       0.933       0.940       0.945       0.950
 8                0.955       0.960       0.965       0.970       0.975
 8                0.980       0.983       0.985       0.988       0.990
 8                0.993       0.995       0.998       1.000       1.000
 9 ENDTBL
 3 STRUCT      89
 8                          0.          0.          0.
 8                        10.21       142.        120.
 8                        15.21       185.        269.
 8                        18.01       200.        363.
 8                        18.41       215.        378.
 8                        18.71       245.        390.
 8                        19.21       330.        409.
 8                        20.21       590.        450.
 8                        21.21       930.        493.
 8                        22.21      1340.        539.
 8                        23.55      1943.        603.
 9 ENDTBL
 3 STRUCT      79
 8                          0.          0.          0.
 8                          2.        163.         35.
 8                          4.        461.         70.0
 8                          6.        826.        105.0
 8                          8.       1152.        140.
 8                         10.       1363.        175.
 8                         12.       1574.        210.
 8                         14.       1805.        245.
 8                         16.       1978.        280.
 8                         18.       2170.        315.
 8                         20.       2304.        350.
 9 ENDTBL
 3 STRUCT      77
 8                          0.          0.          0.
 8                          2.         92.         30.
 8                          4.        259.         60.0
 8                          6.        464.         90.0
 8                          8.        648.        120.
 8                         10.        767.        150.
 8                         12.        886.        180.
 8                         14.       1015.        210.
 8                         16.       1112.        240.
 8                         18.       1220.        270.
 8                         20.       1296.        300.
 9 ENDTBL
 3 STRUCT      98
 8                          0.          0.          0.
 8                       0.88          15.         26.
 8                       2.15          57.         66.
 8                       3.13          98.        109.
 8                       3.99         140.        142.
 8                       4.77         181.        172.
 8                       5.50         222.        200.
 8                       6.19         264.        228.
 8                       6.84         305.        253.
 8                       8.10         347.        304.
 8                       9.03         388.        342.
 8                       9.97         429.        382.
 9 ENDTBL
 3 STRUCT      97
 8                          0.          0.          0.
 8                       0.23          8.         0.01
 8                       1.23         72.         0.05
 8                       2.23        160.         0.19
 8                       3.23        277.         0.51
 8                       4.23        410.         1.78
 8                       5.23        575.         5.66
 8                       6.23        755.        13.96
 8                       6.73        840.        20.95
 8                       7.23        930.        27.95
 8                       7.73       1012.        37.73
 8                       8.23       1092.        47.5
 8                       8.83       1185.        61.55
 8                       9.23       1250.        70.91
 8                       9.53       1271.        83.57
 8                      10.13       1275.        87.52
 8                      10.23       1283.        96.22
 8                      11.23       1383.       122.25
 8                      12.12       1470.       148.71
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8                          13.23        1570.        175.6
9 ENDTBL
3 STRUCT       96
8                            0.           0.           0.
8                          1.0            5.          0.8
8                          2.0           13.           6.
8                          3.0           24.          22.
8                          4.0           38.          54.
8                          5.0           52.         101.
8                          6.0           69.         154.
8                          7.0           86.         206.
8                          8.0          106.         254.
8                          9.0          126.         298.
9 ENDTBL
3 STRUCT       95
8                            0.           0.           0.
8                         2.31           44.          3.5
8                         3.83           95.         11.7
8                         5.08          146.         21.0
8                         6.19          196.         29.7
8                         7.21          247.         37.9
8                         7.62          298.         41.2
8                         8.65          348.         49.7
9 ENDTBL
3 STRUCT       93
8                            0.           0.           0.
8                          0.6          0.01          0.2
8                          1.3          0.02          0.6
8                          1.9          0.03          1.6
8                         2.51          0.04          3.2
8                         3.21           8.8          5.5
8                         5.34          30.0          14.
8                          5.5           37.          15.
8                          6.4           45.          19.
8                          7.1           52.          22.
8                           8.           59.          26.
9 ENDTBL
6 RUNOFF 1  80        1        0.08         81.0         0.41          1
6 REACH  3  79   1    2      5690.7          1.7         1.25          1
6 RUNOFF 1  79        1        0.27         65.0         1.15          1
6 ADDHYD 4    38 1 2 3                                                 1
6 REACH  3  13   3    1      4848.9          1.1          1.4          1
6 RUNOFF 1  13        2        0.18         87.0         0.67          1
6 ADDHYD 4    35 1 2 3                                                 1
6 RUNOFF 1  78        1        0.31         87.0         1.06          1
6 REACH  3  51   1    2      3804.2         0.39         1.67          1
6 RUNOFF 1  51        1        0.13         81.4         0.67          1
6 RUNOFF 1  49        4        0.27         69.0         0.76          1
6 REACH  3  49   4    5      1380.0          1.0          1.4          1
6 ADDHYD 4    88 1 2 4                                                 1
6 ADDHYD 4    35 3 5 6                                                 1
6 ADDHYD 4    35 4 6 1                                                 1
6 REACH  3  50   1    2      1361.3         0.18         1.67          1
6 RUNOFF 1  50        3        0.19         81.3         1.83          1
6 ADDHYD 4    34 2 3 4                                                 1
6 REACH  3  15   4    1      1184.6          1.1          1.4          1
6 RUNOFF 1  15        2        0.06         85.0         0.91          1
6 ADDHYD 4    37 1 2 3                                          1      1
6 REACH  3  16   3    2      2040.3          1.1          1.4          1
6 RUNOFF 1  16        1        0.12         84.0         0.98          1
6 RUNOFF 1  48        3        0.56         66.0         0.98          1
6 REACH  3  48   3    4      1466.0          1.1          1.4          1
6 ADDHYD 4    33 1 2 3                                                 1
6 ADDHYD 4    89 3 4 5                                                 1
6 REACH  3  47   5    2      2201.7          0.2          1.7          1
6 RUNOFF 1  47        3        0.19         82.0         0.91          1
6 ADDHYD 4    32 2 3 1                                                 1
6 RUNOFF 1  96        2        0.14         65.0         0.88          1
6 REACH  3  81   2    3      5193.0          1.4          1.3          1
6 RUNOFF 1  81        4        0.35         66.0         0.39          1
6 ADDHYD 4    54 3 4 2                                                 1
6 REACH  3  77   2    5      3245.1         0.39         1.67          1
6 RUNOFF 1  76        6        0.14         87.0         1.08          1
6 REACH  3  11   6    2      2203.4         0.86          1.5          1
6 RUNOFF 1  11        3        0.10         85.1         0.88          1
6 ADDHYD 4    39 2 3 4                                                 1
6 REACH  3  54   4    2      2419.5         0.31         1.67          1
6 RUNOFF 1  54        3        0.15         90.0         0.92          1
6 ADDHYD 4    36 2 3 6                                                 1
6 RUNOFF 1  77        2        0.19         85.0         1.21          1
6 ADDHYD 4    70 2 5 4                                                 1
6 REACH  3  12   4    3      1478.8         0.37         1.67          1
6 RUNOFF 1  12        4        0.10         85.4         1.21          1
6 ADDHYD 4    71 3 4 5                                                 1
    1
6 REACH  3  53   5    3      2579.0         0.27         1.67          1
6 RUNOFF 1  53        2        0.15         85.1         1.02          1
6 ADDHYD 4    87 2 3 4                                                 1
```

```
6 ADDHYD 4    87 4 6 3                                                  1
6 REACH  3 55   3   2      2276.1        0.37        1.67               1
6 RUNOFF 1 55       3        0.22        87.3        1.47               1
6 ADDHYD 4    30 2 3 4                                                  1
6 REACH  3 14   4   2      1057.7        0.37        1.67               1
6 RUNOFF 1 14       3        0.04        92.0        1.47               1
6 ADDHYD 4    72 2 3 5                                    1             1
6 REACH  3 52   5   3      2987.0         0.3         1.6               1
6 RUNOFF 1 52       2        0.27        90.0        1.47               1
6 ADDHYD 4    90 2 3 4                                                  1
6 ADDHYD 4    90 1 4 2                                    1             1
6 REACH  3 145  2   3      3325.0         0.1         1.7               1
6 RUNOFF 1 45       2        0.32        88.0        0.78               1
6 ADDHYD 4    29 3 2 1                                                  1
6 RUNOFF 1 98       2        0.14        69.0        0.60               1
6 REACH  3 194  2   3      5914.0         1.8         1.3               1
6 RUNOFF 1 97       2        0.07        69.0        0.58               1
6 REACH  3 94   2   4      5914.0         1.7        1.27               1
6 RUNOFF 1 93       2        0.24        69.0        0.86               1
6 RUNOFF 1 94       5        0.43        65.0        1.27               1
6 ADDHYD 4    55 3 5 6                                                  1
6 ADDHYD 4    55 2 4 3                                                  1
6 ADDHYD 4    55 3 6 2                                                  1
6 REACH  3 83   2   3      6124.0         1.9         1.3               1
6 RUNOFF 1 83       5        0.35        67.0        1.34               1
6 RUNOFF 1 95       2        0.11        65.0        0.98               1
6 REACH  3 82   2   4      5808.0         1.4         1.3               1
6 RUNOFF 1 82       2        0.24        65.0        1.12               1
6 ADDHYD 4    53 3 5 6                                                  1
6 ADDHYD 4    53 2 4 5                                                  1
6 ADDHYD 4    53 5 6 2                                                  1
6 REACH  3 75   2   3      2699.2        0.25        1.67               1
6 RUNOFF 1 75       4        0.13        87.0        0.37               1
6 ADDHYD 4    69 3 4 5                                                  1
6 REACH  3  7   5   2      1618.0        0.21        1.67               1
6 RUNOFF 1 99       6        0.44        69.0        1.15               1
6 RUNOFF 1 92       5        0.42        83.0        0.74               1
6 REACH  3 84   5   3      5491.0         2.0         1.3               1
6 RUNOFF 1 84       4        0.19        89.0        0.60               1
6 ADDHYD 4    52 3 4 5                                                  1
6 REACH  3 91   6   3      5491.0         2.0         1.3               1
6 RUNOFF 1 91       4        0.41        89.0        0.54               1
6 ADDHYD 4    52 3 4 6                                                  1
6 REACH  3 85   6   4      6178.0         1.4         1.3               1
6 RUNOFF 1 85       6        0.27        89.0        0.72               1
6 ADDHYD 4    52 4 6 3                                                  1
6 ADDHYD 4    52 3 5 4                                                  1
6 REACH  3 74   4   3      2793.4        0.25        1.67               1
6 RUNOFF 1 74       4        0.15        90.0        0.33               1
6 ADDHYD 4    42 3 4 5                                                  1
6 REACH  3 107  5   3      1455.4         0.2        1.67               1
6 RUNOFF 1  7       4        0.06        71.8        0.34               1
6 ADDHYD 4    73 2 4 5                                                  1
6 ADDHYD 4    73 3 5 4                                    1             1
6 REACH  3 73   4   2       462.3         0.8         1.5 1 1 1 1 1     1
6 RUNOFF 1 73       3        0.08        84.0        0.40               1
6 ADDHYD 4    68 2 3 4                                                  1
6 REACH  3  5   4   2       717.2         0.8         1.5               1
6 RUNOFF 1 86       3        0.33        77.0        0.71               1
6 REACH  3 72   3   4      3305.2         1.7         1.3               1
6 RUNOFF 1 72       3        0.24        85.0        0.51               1
6 ADDHYD 4    85 3 4 5                                                  1
6 REACH  3 20   5   3      1186.8        0.33        1.67               1
6 RUNOFF 1 20       4        0.06        91.0        0.35               1
6 ADDHYD 4    43 3 4 5                                                  1
6 REACH  3  6   5   3      1460.6         1.7         1.3               1
6 RUNOFF 1  5       4        0.05        93.8        0.39               1
6 RUNOFF 1  6       5        0.04        94.0        0.33               1
6 ADDHYD 4    66 2 4 6                                                  1
6 ADDHYD 4    67 3 5 4                                                  1
6 ADDHYD 4    67 4 6 2                                                  1
6 REACH  3  8   2   3       506.6         2.9         1.4               1
6 RUNOFF 1  8       2        0.08        83.0        0.35               1
6 ADDHYD 4    65 2 3 4                                    1             1
6 RESVOR 2    97 4   3      0000.0                         1             1
6 RUNOFF 1  3       5        0.14        90.0        0.50               1
6 REACH  3  4   5   6      1900.0         2.9         1.4               1
6 ADDHYD 4    41 6 3 4                                                  1
6 REACH  3 57   4   2      1614.2         2.9         1.4               1
6 RUNOFF 1 57       3        0.51        92.0        1.46               1
6 ADDHYD 4    41 2 3 4                                                  1
6 REACH  3 56   4   2      2274.1         2.9         1.4               1
6 RUNOFF 1  4       5        0.16        86.8        1.46               1
6 REACH  3 71   5   3      1302.0         2.9         1.4               1
6 RUNOFF 1 71       4        0.09        92.0        1.46               1
6 ADDHYD 4    31 3 4 5                                                  1
6 REACH  3  9   5   3      1253.3         2.9         1.4               1
6 RUNOFF 1  9       4        0.05        87.3        1.46               1
```

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6 RUNOFF 1  56        5          0.15          85.0          1.13                1
6 ADDHYD 4    40 3 4 6                                                          1
6 ADDHYD 4    86 2 5 4                                                          1
6 ADDHYD 4    86 4 6 2                                                          1
6 REACH  3  10   2    3        711.1           .9           1.6                 1
6 RUNOFF 1  10        2          0.18          91.0          1.54                1
6 ADDHYD 4    74 2 3 4                                                          1
6 REACH  3  44   4    2       6889.9           0.9           1.6                 1
6 RUNOFF 1  44        3          0.29          86.0          0.27                1
6 ADDHYD 4    91 2 3 6                                                          1
6 ADDHYD 4    91 6 1 2                                        1                 1
6 RESVOR 2    89 2    6       0000.0                          1                 1
6 REACH  3  28   6    2       3168.0           0.2           1.6                 1
6 RUNOFF 1  29        3          0.17          90.0          0.32                1
6 REACH  3 128   3    1       3131.0           0.5           1.5                 1
6 RUNOFF 1  27        3          0.14          86.0          0.31                1
6 RUNOFF 1  28        4          0.33          90.0          0.34                1
6 ADDHYD 4    19 2 1 5                                                          1
6 ADDHYD 4    19 5 3 1                                                          1
6 ADDHYD 4    19 1 4 7                                      1 1   1             1
6 REACH  3  26   7    1       3221.0           0.2           1.6                 1
6 RUNOFF 1  26        2          0.47          81.0          0.48                1
6 ADDHYD 4    18 1 2 3                                                          1
6 REACH  3  25   3    1       2323.0           0.2           1.6                 1
6 RUNOFF 1  25        2          0.26          81.0          0.21                1
6 ADDHYD 4    17 1 2 3                                                          1
6 REACH  3  24   3    1       2524.0           0.2           1.6                 1
6 RUNOFF 1  24        2          0.28          90.0          0.26                1
6 ADDHYD 4    12 1 2 3                                                          1
6 RUNOFF 1  41        1          0.16          80.0          0.32                1
6 REACH  3  31   1    2       3358.0           0.5           1.5                 1
6 RUNOFF 1  31        1          0.24          86.0          0.19                1
6 ADDHYD 4    20 1 2 4                                                          1
6 REACH  3  30   4    1       2323.0           0.3           1.5                 1
6 RUNOFF 1  30        2          0.10          83.0          0.13                1
6 ADDHYD 4    16 1 2 4                                                          1
6 REACH  3 124   4    1       4594.0           0.7           1.6                 1
6 RUNOFF 1  32        2          0.15          82.0          0.39                1
6 REACH  3 198   2    4       5227.0           1.2           1.6                 1
6 ADDHYD 4    12 1 4 2                                                          1
6 ADDHYD 4    12 2 3 1                                                          1
6 REACH  3  18   1    2       3696.0           0.2           1.7                 1
6 RUNOFF 1  18        7          0.40          90.0          0.78                1
6 ADDHYD 4    57 2 7 1                                    1 1   1               1
6 RUNOFF 1  87        2          0.13          65.0          1.35                1
6 REACH  3  70   2    3       2742.7           1.2           1.3                 1
6 RUNOFF 1  70        2          0.15          86.0          1.66                1
6 ADDHYD 4    63 2 3 4                                                          1
6 REACH  3  19   4    3       1059.6          0.21          1.67                 1
6 RUNOFF 1  19        2          0.05          72.6          0.29                1
6 ADDHYD 4    62 2 3 4                                                          1
6 REACH  3   1   4    3       1515.0           1.9           1.3                 1
6 RUNOFF 1   1        2          0.07          94.0          0.29                1
6 ADDHYD 4    61 2 3 4                                                          1
6 REACH  3   2   4    3       4301.1           1.9           1.3                 1
6 RUNOFF 1   2        2          0.24          84.4          0.29                1
6 ADDHYD 4    43 2 3 4                                                          1
6 REACH  3  58   4    3       1291.6           1.9           1.3                 1
6 RUNOFF 1  58        2          0.11          92.8          0.76                1
6 ADDHYD 4    28 2 3 4                                        1                 1
6 REACH  3  43   4    3       4663.5           1.2           1.4                 1
6 RUNOFF 1  43        2          0.16          86.0          0.73                1
6 ADDHYD 4    26 2 3 6                                                          1
  ENDATA
7 LIST
7 INCREM 6                   .100
7 COMPUT 7  80       31          0.0           4.5          1.01 2  01  01
  ENDCMP 1
7 COMPUT 7  80       31          0.0          2.85          1.01 2  01  02
  ENDCMP 1
  ENDJOB 2
```

POND 89
PROPOSED ULTIMATE CONDITIONS OUTPUT
(DEVELOPED PHASES 1 & 2 UPDATED TO DUBLIN BLVD)

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 1

EXECUTIVE CONTROL LIST 0. 0. 0.

LISTING OF CURRENT DATA

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	77			
		.00	.00	.00
		2.00	92.00	30.00
		4.00	259.00	60.00
		6.00	464.00	90.00
		8.00	648.00	120.00
		10.00	767.00	150.00
		12.00	886.00	180.00
		14.00	1015.00	210.00
		16.00	1112.00	240.00
		18.00	1220.00	270.00
		20.00	1296.00	300.00
ENDTBL				

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	79			
		.00	.00	.00
		2.00	163.00	35.00
		4.00	461.00	70.00
		6.00	826.00	105.00
		8.00	1152.00	140.00
		10.00	1363.00	175.00
		12.00	1574.00	210.00
		14.00	1805.00	245.00
		16.00	1978.00	280.00
		18.00	2170.00	315.00
		20.00	2304.00	350.00
ENDTBL				

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 2

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	89			
		.00	.00	.00
		10.21	142.00	120.00
		15.21	185.00	269.00
		18.01	200.00	363.00
		18.41	215.00	378.00
		18.71	245.00	390.00
		19.21	330.00	409.00
		20.21	590.00	450.00
		21.21	930.00	493.00
		22.21	1340.00	539.00
		23.55	1943.00	603.00
ENDTBL				

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	93			
		.00	.00	.00
		.60	.01	.20
		1.30	.02	.60
		1.90	.03	1.60
		2.51	.04	3.20
		3.21	8.80	5.50
		5.34	30.00	14.00
		5.50	37.00	15.00
		6.40	45.00	19.00
		7.10	52.00	22.00
		8.00	59.00	26.00
ENDTBL				

STRUCT NO. ELEVATION DISCHARGE STORAGE

STRUCT 95

.00	.00	.00
2.31	44.00	3.50
3.83	95.00	11.70
5.08	146.00	21.00
6.19	196.00	29.70
7.21	247.00	37.90
7.62	298.00	41.20
8.65	348.00	49.70

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 3

STRUCT NO. ELEVATION DISCHARGE STORAGE
STRUCT 96

.00	.00	.00
1.00	5.00	.80
2.00	13.00	6.00
3.00	24.00	22.00
4.00	38.00	54.00
5.00	52.00	101.00
6.00	69.00	154.00
7.00	86.00	206.00
8.00	106.00	254.00
9.00	126.00	298.00

ENDTBL

STRUCT NO. ELEVATION DISCHARGE STORAGE
STRUCT 97

.00	.00	.00
.23	8.00	.01
1.23	72.00	.05
2.23	160.00	.19
3.23	277.00	.51
4.23	410.00	1.78
5.23	575.00	5.66
6.23	755.00	13.96
6.73	840.00	20.95
7.23	930.00	27.95
7.73	1012.00	37.73
8.23	1092.00	47.50
8.83	1185.00	61.55
9.23	1250.00	70.91
9.53	1271.00	83.57
10.13	1275.00	87.52
10.23	1283.00	96.22
11.23	1383.00	122.25
12.12	1470.00	148.71
13.23	1570.00	175.60

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 4

STRUCT NO. ELEVATION DISCHARGE STORAGE
STRUCT 98

.00	.00	.00
.88	15.00	26.00
2.15	57.00	66.00
3.13	98.00	109.00
3.99	140.00	142.00
4.77	181.00	172.00
5.50	222.00	200.00
6.19	264.00	228.00
6.84	305.00	253.00
8.10	347.00	304.00
9.03	388.00	342.00
9.97	429.00	382.00

ENDTBL

COMPUTED TIME INCREMENT
DIMHYD .0200

.0000	.0300	.1000	.1900	.3100
.4700	.6600	.8200	.9300	.9900

1.0000	.9900	.9300	.8600	.7800
.6800	.5600	.4600	.3900	.3300
.2800	.2410	.2070	.1740	.1470
.1260	.1070	.0910	.0770	.0660
.0550	.0470	.0400	.0340	.0290
.0250	.0210	.0180	.0150	.0130
.0110	.0090	.0080	.0070	.0060
.0050	.0040	.0030	.0020	.0010
.0000	.0000	.0000	.0000	.0000

ENDTBL

COMPUTED PEAK RATE FACTOR = 484.000

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 5

TABLE NO. TIME INCREMENT
RAINFL 1 .5000

.0000	.0025	.0050	.0075	.0100
.0150	.0200	.0250	.0300	.0500
.0600	.1000	.7000	.7500	.7800
.7980	.8200	.8300	.8400	.8500
.8600	.8650	.8700	.8850	.8900
.9000	.9050	.9100	.9150	.9210
.9270	.9330	.9400	.9450	.9500
.9550	.9600	.9650	.9700	.9750
.9800	.9830	.9850	.9880	.9900
.9930	.9950	.9980	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 6

TABLE NO. TIME INCREMENT
RAINFL 2 .1000

.0000	.0010	.0020	.0030	.0041
.0051	.0062	.0072	.0083	.0094
.0105	.0116	.0127	.0138	.0150
.0161	.0173	.0184	.0196	.0208
.0220	.0232	.0244	.0257	.0269
.0281	.0294	.0306	.0319	.0332
.0345	.0358	.0371	.0384	.0398
.0411	.0425	.0439	.0452	.0466
.0480	.0494	.0508	.0523	.0538
.0553	.0568	.0583	.0598	.0614
.0630	.0646	.0662	.0679	.0696
.0712	.0730	.0747	.0764	.0782
.0800	.0818	.0836	.0855	.0874
.0892	.0912	.0931	.0950	.0970
.0990	.1010	.1030	.1051	.1072
.1093	.1114	.1135	.1156	.1178
.1200	.1222	.1246	.1270	.1296
.1322	.1350	.1379	.1408	.1438
.1470	.1502	.1534	.1566	.1598
.1630	.1663	.1697	.1733	.1771
.1810	.1851	.1895	.1941	.1989
.2040	.2094	.2152	.2214	.2280
.2350	.2427	.2513	.2609	.2715
.2830	.3068	.3544	.4308	.5679
.6630	.6820	.6986	.7130	.7252
.7350	.7434	.7514	.7588	.7656
.7720	.7780	.7836	.7890	.7942
.7990	.8036	.8080	.8122	.8162
.8200	.8237	.8273	.8308	.8342
.8376	.8409	.8442	.8474	.8505
.8535	.8565	.8594	.8622	.8649
.8676	.8702	.8728	.8753	.8777
.8800	.8823	.8845	.8868	.8890
.8912	.8934	.8955	.8976	.8997
.9018	.9038	.9058	.9078	.9097
.9117	.9136	.9155	.9173	.9192
.9210	.9228	.9245	.9263	.9280
.9297	.9313	.9330	.9346	.9362
.9377	.9393	.9408	.9423	.9438
.9452	.9466	.9480	.9493	.9507
.9520	.9533	.9546	.9559	.9572
.9584	.9597	.9610	.9622	.9635

.9647	.9660	.9672	.9685	.9697
.9709	.9722	.9734	.9746	.9758
.9770	.9782	.9794	.9806	.9818
.9829	.9841	.9853	.9864	.9876
.9887	.9899	.9910	.9922	.9933
.9944	.9956	.9967	.9978	.9989
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 7

TABLE NO. TIME INCREMENT
RAINFL 3 .1000

.0000	.0022	.0043	.0063	.0082
.0100	.0118	.0137	.0157	.0178
.0200	.0228	.0257	.0287	.0318
.0350	.0380	.0410	.0439	.0470
.0500	.0531	.0563	.0595	.0628
.0660	.0692	.0724	.0756	.0788
.0820	.0851	.0883	.0915	.0947
.0980	.1015	.1050	.1086	.1123
.1160	.1197	.1234	.1272	.1311
.1350	.1390	.1431	.1473	.1516
.1560	.1606	.1653	.1701	.1750
.1800	.1849	.1900	.1952	.2005
.2060	.2120	.2181	.2243	.2306
.2370	.2429	.2488	.2549	.2613
.2680	.2752	.2829	.2912	.3002
.3100	.3314	.3547	.3788	.4026
.4250	.4394	.4517	.4623	.4716
.4800	.4890	.4975	.5055	.5130
.5200	.5266	.5329	.5389	.5446
.5500	.5556	.5612	.5666	.5718
.5770	.5820	.5868	.5916	.5964
.6010	.6058	.6104	.6150	.6196
.6240	.6284	.6326	.6368	.6410
.6450	.6489	.6527	.6565	.6603
.6640	.6677	.6715	.6753	.6791
.6830	.6866	.6903	.6939	.6974
.7010	.7047	.7084	.7120	.7155
.7190	.7225	.7259	.7293	.7326
.7360	.7394	.7428	.7461	.7495
.7528	.7561	.7594	.7627	.7660
.7692	.7725	.7757	.7789	.7821
.7853	.7885	.7916	.7947	.7979
.8010	.8041	.8071	.8102	.8132
.8163	.8193	.8223	.8252	.8282
.8312	.8341	.8370	.8399	.8428
.8457	.8486	.8514	.8542	.8570
.8598	.8626	.8654	.8681	.8709
.8736	.8763	.8790	.8817	.8844
.8870	.8896	.8923	.8949	.8974
.9000	.9026	.9051	.9076	.9101
.9126	.9151	.9176	.9200	.9225
.9249	.9273	.9297	.9321	.9344
.9368	.9391	.9414	.9437	.9460
.9482	.9505	.9527	.9550	.9572
.9594	.9615	.9637	.9658	.9680
.9701	.9722	.9743	.9764	.9784
.9804	.9825	.9845	.9865	.9884
.9904	.9924	.9943	.9962	.9981
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 8

TABLE NO. TIME INCREMENT
RAINFL 4 .1000

.0000	.0010	.0020	.0030	.0040
.0050	.0060	.0070	.0080	.0090
.0100	.0110	.0120	.0130	.0140
.0150	.0160	.0170	.0180	.0190
.0200	.0210	.0220	.0231	.0241
.0252	.0263	.0274	.0285	.0296
.0308	.0319	.0331	.0343	.0355
.0367	.0379	.0392	.0404	.0417

.0430	.0443	.0456	.0470	.0483
.0497	.0511	.0525	.0539	.0553
.0567	.0582	.0597	.0612	.0627
.0642	.0657	.0673	.0688	.0704
.0720	.0736	.0753	.0770	.0788
.0806	.0825	.0844	.0864	.0884
.0905	.0926	.0948	.0970	.0993
.1016	.1040	.1064	.1089	.1114
.1140	.1167	.1194	.1223	.1253
.1284	.1317	.1350	.1385	.1421
.1458	.1496	.1535	.1575	.1617
.1659	.1703	.1748	.1794	.1842
.1890	.1940	.1993	.2048	.2105
.2165	.2227	.2292	.2359	.2428
.2500	.2578	.2664	.2760	.2866
.2980	.3143	.3394	.3733	.4160
.5000	.5840	.6267	.6606	.6857
.7020	.7134	.7240	.7336	.7422
.7500	.7572	.7641	.7708	.7773
.7835	.7895	.7952	.8007	.8060
.8110	.8158	.8206	.8252	.8297
.8341	.8383	.8425	.8465	.8504
.8543	.8579	.8615	.8650	.8683
.8716	.8747	.8777	.8806	.8833
.8860	.8886	.8911	.8936	.8960
.8984	.9007	.9030	.9052	.9074
.9095	.9116	.9136	.9156	.9175
.9194	.9212	.9230	.9247	.9264
.9280	.9296	.9312	.9327	.9343
.9358	.9373	.9388	.9403	.9418
.9433	.9447	.9461	.9475	.9489
.9503	.9517	.9530	.9544	.9557
.9570	.9583	.9596	.9609	.9621
.9634	.9646	.9658	.9670	.9682
.9694	.9706	.9718	.9729	.9741
.9752	.9764	.9775	.9786	.9797
.9808	.9818	.9829	.9839	.9850
.9860	.9870	.9880	.9890	.9900
.9909	.9919	.9928	.9938	.9947
.9956	.9965	.9974	.9983	.9991
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 9

TABLE NO. TIME INCREMENT
RAINFL 5 .5000

.0000	.0020	.0050	.0080	.0110
.0140	.0170	.0200	.0230	.0260
.0290	.0320	.0350	.0380	.0410
.0440	.0470	.0510	.0550	.0590
.0630	.0670	.0710	.0750	.0790
.0840	.0890	.0940	.0990	.1040
.1090	.1140	.1200	.1260	.1330
.1400	.1470	.1540	.1620	.1710
.1810	.1920	.2040	.2170	.2330
.2520	.2770	.3180	.6380	.6980
.7290	.7520	.7700	.7850	.7980
.8090	.8190	.8290	.8380	.8460
.8540	.8610	.8680	.8740	.8800
.8860	.8920	.8970	.9020	.9070
.9120	.9170	.9210	.9250	.9290
.9330	.9370	.9410	.9450	.9490
.9530	.9570	.9600	.9630	.9660
.9690	.9720	.9750	.9780	.9810
.9840	.9870	.9900	.9930	.9960
.9980	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 10

TABLE NO. TIME INCREMENT
RAINFL 6 .0200

.0000	.0080	.0162	.0246	.0333
.0425	.0524	.0630	.0743	.0863
.0990	.1124	.1265	.1420	.1595

.1800	.2050	.2550	.3450	.4370
.5300	.6030	.6330	.6600	.6840
.7050	.7240	.7420	.7590	.7750
.7900	.8043	.8180	.8312	.8439
.8561	.8678	.8790	.8898	.9002
.9103	.9201	.9297	.9391	.9483
.9573	.9661	.9747	.9832	.9916
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

STANDARD CONTROL INSTRUCTIONS

RUNOFF	80	1	.0800	81.0000	.41000 0 0 0 0 1
REACH	79 1	2	5690.7000	1.7000	1.25000 0 0 0 0 1
RUNOFF	79	1	.2700	65.0000	1.15000 0 0 0 0 1
ADDHYD	38 1 2 3				0 0 0 0 0 1
REACH	13 3	1	4848.9000	1.1000	1.40000 0 0 0 0 1
RUNOFF	13	2	.1800	87.0000	.67000 0 0 0 0 1
ADDHYD	35 1 2 3				0 0 0 0 0 1
RUNOFF	78	1	.3100	87.0000	1.06000 0 0 0 0 1
REACH	51 1	2	3804.2000	.3900	1.67000 0 0 0 0 1
RUNOFF	51	1	.1300	81.4000	.67000 0 0 0 0 1
RUNOFF	49	4	.2700	69.0000	.76000 0 0 0 0 1
REACH	49 4	5	1380.0000	1.0000	1.40000 0 0 0 0 1
ADDHYD	88 1 2 4				0 0 0 0 0 1
ADDHYD	35 3 5 6				0 0 0 0 0 1
ADDHYD	35 4 6 1				0 0 0 0 0 1
REACH	50 1	2	1361.3000	.1800	1.67000 0 0 0 0 1
RUNOFF	50	3	.1900	81.3000	1.83000 0 0 0 0 1
ADDHYD	34 2 3 4				0 0 0 0 0 1
REACH	15 4	1	1184.6000	1.1000	1.40000 0 0 0 0 1
RUNOFF	15	2	.0600	85.0000	.91000 0 0 0 0 1
ADDHYD	37 1 2 3				0 1 0 0 0 1
REACH	16 3	2	2040.3000	1.1000	1.40000 0 0 0 0 1
RUNOFF	16	1	.1200	84.0000	.98000 0 0 0 0 1
RUNOFF	48	3	.5600	66.0000	.98000 0 0 0 0 1
REACH	48 3	4	1466.0000	1.1000	1.40000 0 0 0 0 1
ADDHYD	33 1 2 3				0 0 0 0 0 1
ADDHYD	89 3 4 5				0 0 0 0 0 1
REACH	47 5	2	2201.7000	.2000	1.70000 0 0 0 0 1
RUNOFF	47	3	.1900	82.0000	.91000 0 0 0 0 1
ADDHYD	32 2 3 1				0 0 0 0 0 1
RUNOFF	96	2	.1400	65.0000	.88000 0 0 0 0 1
REACH	81 2	3	5193.0000	1.4000	1.30000 0 0 0 0 1
RUNOFF	81	4	.3500	66.0000	.39000 0 0 0 0 1
ADDHYD	54 3 4 2				0 0 0 0 0 1
REACH	77 2	5	3245.1000	.3900	1.67000 0 0 0 0 1
RUNOFF	76	6	.1400	87.0000	1.08000 0 0 0 0 1
REACH	11 6	2	2203.4000	.8600	1.50000 0 0 0 0 1
RUNOFF	11	3	.1000	85.1000	.88000 0 0 0 0 1
ADDHYD	39 2 3 4				0 0 0 0 0 1
REACH	54 4	2	2419.5000	.3100	1.67000 0 0 0 0 1
RUNOFF	54	3	.1500	90.0000	.92000 0 0 0 0 1
ADDHYD	36 2 3 6				0 0 0 0 0 1
RUNOFF	77	2	.1900	85.0000	1.21000 0 0 0 0 1
ADDHYD	70 2 5 4				0 0 0 0 0 1
REACH	12 4	3	1478.8000	.3700	1.67000 0 0 0 0 1

0

RUNOFF	12	4	.1000	85.4000	1.21000 0 0 0 0 1
ADDHYD	71 3 4 5				0 0 0 0 0 1
REACH	53 5	3	2579.0000	.2700	1.67000 0 0 0 0 1
RUNOFF	53	2	.1500	85.1000	1.02000 0 0 0 0 1
ADDHYD	87 2 3 4				0 0 0 0 0 1
ADDHYD	87 4 6 3				0 0 0 0 0 1
REACH	55 3	2	2276.1000	.3700	1.67000 0 0 0 0 1
RUNOFF	55	3	.2200	87.3000	1.47000 0 0 0 0 1
ADDHYD	30 2 3 4				0 0 0 0 0 1
REACH	14 4	2	1057.7000	.3700	1.67000 0 0 0 0 1
RUNOFF	14	3	.0400	92.0000	1.47000 0 0 0 0 1
ADDHYD	72 2 3 5				0 1 0 0 0 1
REACH	52 5	3	2987.0000	.3000	1.60000 0 0 0 0 1
RUNOFF	52	2	.2700	90.0000	1.47000 0 0 0 0 1
ADDHYD	90 2 3 4				0 0 0 0 0 1

```
ADDHYD        90  1  4  2                                          0  1  0  0  0  1
REACH        145     2     3     3325.0000        .1000       1.70000  0  0  0  0  1
RUNOFF        45           2        .3200       88.0000        .78000  0  0  0  0  1
ADDHYD        29  3  2  1                                          0  0  0  0  0  1
RUNOFF        98           2        .1400       69.0000        .60000  0  0  0  0  1
REACH        194     2     3     5914.0000        1.8000       1.30000  0  0  0  0  1
RUNOFF        97           2        .0700       69.0000        .58000  0  0  0  0  1
REACH         94     2     4     5914.0000        1.7000       1.27000  0  0  0  0  1
RUNOFF        93           2        .2400       69.0000        .86000  0  0  0  0  1
RUNOFF        94           5        .4300       65.0000       1.27000  0  0  0  0  1
ADDHYD        55  3  5  6                                          0  0  0  0  0  1
ADDHYD        55  2  4  3                                          0  0  0  0  0  1
ADDHYD        55  3  6  2                                          0  0  0  0  0  1
REACH         83     2     3     6124.0000        1.9000       1.30000  0  0  0  0  1
RUNOFF        83           5        .3500       67.0000       1.34000  0  0  0  0  1
RUNOFF        95           2        .1100       65.0000        .98000  0  0  0  0  1
REACH         82     2     4     5808.0000        1.4000       1.30000  0  0  0  0  1
RUNOFF        82           2        .2400       65.0000       1.12000  0  0  0  0  1
ADDHYD        53  3  5  6                                          0  0  0  0  0  1
ADDHYD        53  2  4  5                                          0  0  0  0  0  1
ADDHYD        53  5  6  2                                          0  0  0  0  0  1
REACH         75    .2     3     2699.2000        .2500       1.67000  0  0  0  0  1
RUNOFF        75           4        .1300       87.0000        .37000  0  0  0  0  1
ADDHYD        69  3  4  5                                          0  0  0  0  0  1
REACH          7     5     2     1618.0000        .2100       1.67000  0  0  0  0  1
RUNOFF        99           6        .4400       69.0000       1.15000  0  0  0  0  1
RUNOFF        92           5        .4200       83.0000        .74000  0  0  0  0  1
REACH         84     5     3     5491.0000        2.0000       1.30000  0  0  0  0  1
RUNOFF        84           4        .1900       89.0000        .60000  0  0  0  0  1
ADDHYD        52  3  4  5                                          0  0  0  0  0  1
REACH         91     6     3     5491.0000        2.0000       1.30000  0  0  0  0  1
RUNOFF        91           4        .4100       89.0000        .54000  0  0  0  0  1
ADDHYD        52  3  4  6                                          0  0  0  0  0  1
REACH         85     6     4     6178.0000        1.4000       1.30000  0  0  0  0  1
D
```



```
RUNOFF        85           6        .2700       89.0000        .72000  0  0  0  0  1
ADDHYD        52  4  6  3                                          0  0  0  0  0  1
ADDHYD        52  3  5  4                                          0  0  0  0  0  1
REACH         74     4     3     2793.4000        .2500       1.67000  0  0  0  0  1
RUNOFF        74           4        .1500       90.0000        .33000  0  0  0  0  1
ADDHYD        42  3  4  5                                          0  0  0  0  0  1
REACH        107     5     3     1455.4000        .2000       1.67000  0  0  0  0  1
RUNOFF         7           4        .0600       71.8000        .34000  0  0  0  0  1
ADDHYD        73  2  4  5                                          0  0  0  0  0  1
ADDHYD        73  3  5  4                                          0  1  0  0  0  1
REACH         73     4     2      462.3000        .8000       1.50000  1  1  1  1  1
RUNOFF        73           3        .0800       84.0000        .40000  0  0  0  0  1
ADDHYD        68  2  3  4                                          0  0  0  0  0  1
REACH          5     4     2      717.2000        .8000       1.50000  0  0  0  0  1
RUNOFF        86           3        .3300       77.0000        .71000  0  0  0  0  1
REACH         72     3     4     3305.2000        1.7000       1.30000  0  0  0  0  1
RUNOFF        72           3        .2400       85.0000        .51000  0  0  0  0  1
ADDHYD        85  3  4  5                                          0  0  0  0  0  1
REACH         20     5     3     1186.8000        .3300       1.67000  0  0  0  0  1
RUNOFF        20           4        .0600       91.0000        .35000  0  0  0  0  1
ADDHYD        43  3  4  5                                          0  0  0  0  0  1
REACH          6     5     3     1460.6000        1.7000       1.30000  0  0  0  0  1
RUNOFF         5           4        .0500       93.8000        .39000  0  0  0  0  1
RUNOFF         6           5        .0400       94.0000        .33000  0  0  0  0  1
ADDHYD        66  2  4  6                                          0  0  0  0  0  1
ADDHYD        67  3  5  4                                          0  0  0  0  0  1
ADDHYD        67  4  6  2                                          0  0  0  0  0  1
REACH          8     2     3      506.6000        2.9000       1.40000  0  0  0  0  1
RUNOFF         8           2        .0800       83.0000        .35000  0  0  0  0  1
ADDHYD        65  2  3  4                                          0  1  0  0  0  1
RESVOR        97  4     3        .0000                           0  1  0  0  0  1
RUNOFF         3           5        .1400       90.0000        .50000  0  0  0  0  1
REACH          4     5     6     1900.0000        2.9000       1.40000  0  0  0  0  1
ADDHYD        41  6  3  4                                          0  0  0  0  0  1
REACH         57     4     2     1614.2000        2.9000       1.40000  0  0  0  0  1
RUNOFF        57           3        .5100       92.0000       1.46000  0  0  0  0  1
ADDHYD        41  2  3  4                                          0  0  0  0  0  1
REACH         56     4     2     2274.1000        2.9000       1.40000  0  0  0  0  1
RUNOFF         4           5        .1600       86.8000       1.46000  0  0  0  0  1
REACH         71     5     3     1302.0000        2.9000       1.40000  0  0  0  0  1
RUNOFF        71           4        .0900       92.0000       1.46000  0  0  0  0  1
ADDHYD        31  3  4  5                                          0  0  0  0  0  1
REACH          9     5     3     1253.3000        2.9000       1.40000  0  0  0  0  1
RUNOFF         9           4        .0500       87.3000       1.46000  0  0  0  0  1
RUNOFF        56           5        .1500       85.0000       1.13000  0  0  0  0  1
ADDHYD        40  3  4  6                                          0  0  0  0  0  1
ADDHYD        86  2  5  4                                          0  0  0  0  0  1
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ADDHYD        86 4 6 2                                        0 0 0 0 0 1
REACH      10   2   3     711.1000       .9000       1.60000 0 0 0 0 1
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/**                        24 HR TYPE IIA CURVE                      2.04TEST
14:44:13                      PASS   1   JOB NO.   1                      PAGE  14

RUNOFF     10         2         .1800      91.0000       1.54000 0 0 0 0 1
ADDHYD       74 2 3 4                                        0 0 0 0 0 1
REACH      44   4     2    6889.9000       .9000       1.60000 0 0 0 0 1
RUNOFF     44         3         .2900      86.0000        .27000 0 0 0 0 1
ADDHYD       91 2 3 6                                        0 0 0 0 0 1
ADDHYD       91 6 1 2                                        0 1 0 0 0 1
RESVOR       89 2     6         .0000                        0 1 0 0 0 1
REACH      28   6     2    3168.0000       .2000       1.60000 0 0 0 0 1
RUNOFF     29         3         .1700      90.0000        .32000 0 0 0 0 1
REACH     128   3     1    3131.0000       .5000       1.50000 0 0 0 0 1
RUNOFF     27         3         .1400      86.0000        .31000 0 0 0 0 1
RUNOFF     28         4         .3300      90.0000        .34000 0 0 0 0 1
ADDHYD       19 2 1 5                                        0 0 0 0 0 1
ADDHYD       19 5 3 1                                        0 0 0 0 0 1
ADDHYD       19 1 4 7                                        1 1 0 1 0 1
REACH      26   7     1    3221.0000       .2000       1.60000 0 0 0 0 1
RUNOFF     26         2         .4700      81.0000        .48000 0 0 0 0 1
ADDHYD       18 1 2 3                                        0 0 0 0 0 1
REACH      25   3     1    2323.0000       .2000       1.60000 0 0 0 0 1
RUNOFF     25         2         .2600      81.0000        .21000 0 0 0 0 1
ADDHYD       17 1 2 3                                        0 0 0 0 0 1
REACH      24   3     1    2524.0000       .2000       1.60000 0 0 0 0 1
RUNOFF     24         2         .2800      90.0000        .26000 0 0 0 0 1
ADDHYD       12 1 2 3                                        0 0 0 0 0 1
RUNOFF     41         1         .1600      80.0000        .32000 0 0 0 0 1
REACH      31   1     2    3358.0000       .5000       1.50000 0 0 0 0 1
RUNOFF     31         1         .2400      86.0000        .19000 0 0 0 0 1
ADDHYD       20 1 2 4                                        0 0 0 0 0 1
REACH      30   4     1    2323.0000       .3000       1.50000 0 0 0 0 1
RUNOFF     30         2         .1000      83.0000        .13000 0 0 0 0 1
ADDHYD       16 1 2 4                                        0 0 0 0 0 1
REACH     124   4     1    4594.0000       .7000       1.60000 0 0 0 0 1
RUNOFF     32         2         .1500      82.0000        .39000 0 0 0 0 1
REACH     198   2     4    5227.0000      1.2000       1.60000 0 0 0 0 1
ADDHYD       12 1 4 2                                        0 0 0 0 0 1
ADDHYD       12 2 3 1                                        0 0 0 0 0 1
REACH      18   1     2    3696.0000       .2000       1.70000 0 0 0 0 1
RUNOFF     18         7         .4000      90.0000        .78000 0 0 0 0 1
ADDHYD       57 2 7 1                                        1 1 0 1 0 1
RUNOFF     87         2         .1300      65.0000       1.35000 0 0 0 0 1
REACH      70   2     3    2742.7000      1.2000       1.30000 0 0 0 0 1
RUNOFF     70         2         .1500      86.0000       1.66000 0 0 0 0 1
ADDHYD       63 2 3 4                                        0 0 0 0 0 1
REACH      19   4     3    1059.6000       .2100       1.67000 0 0 0 0 1
RUNOFF     19         2         .0500      72.6000        .29000 0 0 0 0 1
ADDHYD       62 2 3 4                                        0 0 0 0 0 1
REACH       1   4     3    1515.0000      1.9000       1.30000 0 0 0 0 1
RUNOFF      1         2         .0700      94.0000        .29000 0 0 0 0 1
ADDHYD       61 2 3 4                                        0 0 0 0 0 1
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/**                        24 HR TYPE IIA CURVE                      2.04TEST
14:44:13                      PASS   1   JOB NO.   1                      PAGE  15

REACH       2   4     3    4301.1000      1.9000       1.30000 0 0 0 0 1
RUNOFF      2         2         .2400      84.4000        .29000 0 0 0 0 1
ADDHYD       43 2 3 4                                        0 0 0 0 0 1
REACH      58   4     3    1291.6000      1.9000       1.30000 0 0 0 0 1
RUNOFF     58         2         .1100      92.8000        .76000 0 0 0 0 1
ADDHYD       28 2 3 4                                        0 1 0 0 0 1
REACH      43   4     3    4663.5000      1.2000       1.40000 0 0 0 0 1
RUNOFF     43         2         .1600      86.0000        .73000 0 0 0 0 1
ADDHYD       26 2 3 6                                        0 0 0 0 0 1
ENDATA


END OF LISTING
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/**                        24 HR TYPE IIA CURVE                      2.04TEST
14:44:13                      PASS   1   JOB NO.   1                      PAGE  16


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =    .100 HOURS
```

```
EXECUTIVE CONTROL  COMPUT    FROM XSECTION  80  TO STRUCTURE 31
   STARTING TIME =   .00       RAIN DEPTH =  4.50       RAIN DURATION =  1.00
   ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .100 HOURS
   ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 1

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  50.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  15.       ***


OPERATION ADDHYD    STRUCTURE 37

                    HYDROGRAPH POINTS FOR   ALTERNATE = 1,   STORM = 1
    HRS      MAIN TIME INCREMENT =  .100 hr,      DRAINAGE AREA =   1.49 SQ.MI.
    5.20 CFS          0       1       2       4      22      79     198     377
    6.00 CFS        595     818    1003    1119    1162    1145    1086    1003
    6.80 CFS        909     812     718     631     554     487     428     376
    7.60 CFS        332     294     264     240     221     205     192     180
    8.40 CFS        167     154     142     131     121     113     105      98
    9.20 CFS      92.60   87.99   84.22   81.19   78.72   76.70   75.06   73.73
   10.00 CFS      72.64   71.54   70.09   67.98   65.21   61.96   58.48   55.05
   10.80 CFS      51.84   48.93   46.42   44.66   44.25   45.72   49.06   53.72
   11.60 CFS      58.79   63.04   65.40   65.77   64.47   62.19   59.82   58.08
   12.40 CFS      57.21   57.14   57.52   57.75   57.36   56.21   54.41   52.20
   13.20 CFS      49.87   47.60   45.51   43.64   42.02   40.64   39.50   38.56
   14.00 CFS      37.78   37.18   36.80   36.69   36.82   37.13   37.56   38.04
   14.80 CFS      38.51   38.95   39.35   39.70   40.00   40.25   40.46   40.63
   15.60 CFS      40.82   41.09   41.50   42.05   42.70   43.31   43.71   43.75
   16.40 CFS      43.40   42.76   41.91   41.00   40.10   39.25   38.49   37.83
   17.20 CFS      37.27   36.80   36.42   36.11   35.85   35.64   35.48   35.35
   18.00 CFS      35.25   35.16   35.10   35.05   35.01   34.98   34.96   34.94
   18.80 CFS      34.93   34.92   34.92   34.91   34.91   34.91   34.92   34.92
   19.60 CFS      34.93   34.93   34.94   34.94   34.95   34.87   34.58   33.96
   20.40 CFS      33.02   31.82   30.46   29.01   27.46   25.87   24.30   22.83
   21.20 CFS      21.60   20.70   20.13   19.83   19.69   19.58   19.38   19.04
   22.00 CFS      18.60   18.14   17.76   17.57   17.58   17.75   18.01   18.21
   22.80 CFS      18.26   18.14   17.87   17.54   17.27   17.16   17.24   17.48
   23.60 CFS      17.78   18.02   18.11   18.02   17.76   17.31   16.61   15.58
   24.40 CFS      14.24   12.70   11.07    9.48    8.02    6.71    5.56    4.58
   25.20 CFS       3.75    3.07    2.51    2.05    1.67    1.36    1.11     .91
   26.00 CFS        .75     .62     .50     .42

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                2.36 WATERSHED INCHES;    2265 CFS-HRS;     187.2 ACRE-FEET.
□

TR20 ------------------------------------------------------------------------ SCS -
        PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/**                      24 HR TYPE IIA CURVE                      2.04TEST
14:44:13                   PASS   1   JOB NO.   1                      PAGE  17


 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  47.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  12.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  55.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  14.       ***


OPERATION ADDHYD    STRUCTURE 72

                    HYDROGRAPH POINTS FOR   ALTERNATE = 1,   STORM = 1
    HRS      MAIN TIME INCREMENT =  .100 hr,      DRAINAGE AREA =   1.58 SQ.MI.
    5.10 CFS          0       1       1       3       5      16      49     125
    5.90 CFS        277     502     762    1016    1224    1351    1388    1356
    6.70 CFS       1281    1180    1063     941     824     716     621     540
    7.50 CFS        470     412     363     322     289     263     242     225
    8.30 CFS        210     195     179     164     150     138     127     118
    9.10 CFS        110     103      97      93      89      86      83      81
    9.90 CFS      79.96   78.71   77.57   76.36   74.73   72.17   68.69   64.79
   10.70 CFS      60.95   57.35   54.08   51.21   48.92   47.46   47.53   50.15
   11.50 CFS      55.17   61.30   67.16   71.59   73.35   72.38   69.80   66.78
   12.30 CFS      64.12   62.59   62.31   62.74   63.30   63.46   62.65   60.80
   13.10 CFS      58.37   55.81   53.31   50.93   48.74   46.79   45.09   43.65
   13.90 CFS      42.48   41.54   40.81   40.27   39.97   39.99   40.30   40.78
   14.70 CFS      41.32   41.85   42.36   42.82   43.23   43.59   43.90   44.15
   15.50 CFS      44.37   44.56   44.78   45.08   45.60   46.31   47.08   47.75
   16.30 CFS      48.13   47.97   47.30   46.35   45.31   44.29   43.32   42.44
```

17.10 CFS	41.65	40.97	40.40	39.93	39.55	39.25	39.01	38.82
17.90 CFS	38.66	38.54	38.44	38.36	38.29	38.24	38.21	38.18
18.70 CFS	38.16	38.14	38.13	38.12	38.12	38.11	38.12	38.12
19.50 CFS	38.12	38.13	38.13	38.14	38.15	38.15	38.11	37.98
20.30 CFS	37.60	36.76	35.47	33.95	32.37	30.76	29.05	27.26
21.10 CFS	25.53	23.99	22.74	21.93	21.53	21.38	21.33	21.23
21.90 CFS	20.96	20.49	19.93	19.41	19.04	18.94	19.11	19.42
22.70 CFS	19.74	19.95	19.92	19.65	19.25	18.87	18.61	18.59
23.50 CFS	18.83	19.20	19.57	19.82	19.82	19.56	19.12	18.54
24.30 CFS	17.71	16.43	14.72	12.84	11.01	9.31	7.79	6.45
25.10 CFS	5.31	4.33	3.51	2.84	2.30	1.86	1.51	1.22
25.90 CFS	.99	.80	.64	.52	.42			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-FEET.

OPERATION ADDHYD STRUCTURE 90
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 18

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 4.21 SQ.MI.			
5.10 CFS	0	1	2	3	7	21	78	224
5.90 CFS	510	961	1542	2163	2719	3124	3330	3346
6.70 CFS	3217	3002	2738	2455	2173	1908	1668	1455
7.50 CFS	1272	1114	981	868	776	702	643	596
8.30 CFS	555	518	481	444	408	374	344	318
9.10 CFS	296	277	261	247	237	228	221	215
9.90 CFS	210	207	203	200	196	191	183	174
10.70 CFS	164	155	145	137	130	126	124	127
11.50 CFS	136	149	163	177	185	188	184	178
12.30 CFS	171	165	161	161	162	163	162	160
13.10 CFS	155	148	142	135	129	124	119	115
13.90 CFS	112	109	107	105	104	103	104	105
14.70 CFS	106	107	109	110	111	112	113	114
15.50 CFS	114	115	115	116	117	119	120	122
16.30 CFS	124	124	123	121	119	116	114	111
17.10 CFS	109	107	105	104	103	102	101	101
17.90 CFS	100	100	100	99	99	99	99	99
18.70 CFS	98.80	98.75	98.71	98.69	98.68	98.67	98.67	98.68
19.50 CFS	98.69	98.70	98.72	98.74	98.76	98.77	98.73	98.47
20.30 CFS	97.73	96.21	93.72	90.35	86.41	82.21	77.84	73.34
21.10 CFS	68.85	64.65	61.06	58.30	56.53	55.63	55.27	55.04
21.90 CFS	54.62	53.81	52.63	51.31	50.18	49.48	49.39	49.85
22.70 CFS	50.58	51.25	51.56	51.33	50.62	49.68	48.85	48.41
23.50 CFS	48.52	49.15	50.01	50.79	51.20	51.04	50.30	48.98
24.30 CFS	47.05	44.32	40.68	36.29	31.58	26.95	22.68	18.87
25.10 CFS	15.58	12.78	10.42	8.47	6.87	5.58	4.53	3.68
25.90 CFS	2.99	2.43	1.98	1.61	1.31	1.07	.86	.70
26.70 CFS	.57	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.39 WATERSHED INCHES; 6499 CFS-HRS; 537.1 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION ADDHYD STRUCTURE 73

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 3.65 SQ.MI.			
5.00 CFS	0	1	4	8	12	18	69	257
5.80 CFS	574	972	1430	1889	2234	2425	2494	2454
6.60 CFS	2328	2149	1954	1764	1585	1419	1262	1119
7.40 CFS	990	876	777	693	623	565	518	478
8.20 CFS	443	410	380	352	327	303	282	263
9.00 CFS	246	231	219	207	198	190	183	178
9.80 CFS	173	170	167	164	160	155	149	143
10.60 CFS	137	130	124	118	112	108	107	110
11.40 CFS	116	123	132	138	142	143	143	140
12.20 CFS	138	137	136	136	136	136	133	130

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 19

13.00 CFS	127	123	119	114	110	106	102	99
13.80 CFS	95.66	92.92	90.56	88.68	87.45	86.82	86.63	86.81
14.60 CFS	87.30	87.99	88.79	89.62	90.46	91.27	92.03	92.73

15.40 CFS	93	94	94	95	96	98	99	100
16.20 CFS	101	101	100	99	98	96	95	93
17.00 CFS	91.66	90.16	88.76	87.50	86.38	85.42	84.62	83.95
17.80 CFS	83.41	82.97	82.62	82.34	82.12	81.95	81.81	81.71
18.60 CFS	81.63	81.58	81.54	81.52	81.50	81.50	81.50	81.50
19.40 CFS	81.51	81.53	81.54	81.56	81.58	81.60	81.62	81.44
20.20 CFS	80.63	79.21	77.42	75.30	72.82	69.86	66.63	63.31
21.00 CFS	59.97	56.78	54.03	51.79	50.01	48.70	47.72	46.75
21.80 CFS	45.76	44.75	43.72	42.77	42.13	41.84	41.78	41.94
22.60 CFS	42.20	42.28	42.14	41.84	41.39	40.91	40.65	40.66
23.40 CFS	40.85	41.22	41.63	41.84	41.81	41.58	41.18	40.44
24.20 CFS	38.97	36.84	34.31	31.47	28.39	25.21	22.07	19.10
25.00 CFS	16.35	13.84	11.59	9.61	7.90	6.45	5.24	4.24
25.80 CFS	3.42	2.75	2.21	1.77	1.42	1.13	.90	.72
26.60 CFS	.57	.45						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.19 WATERSHED INCHES; 5163 CFS-HRS; 426.7 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 73. ***

OPERATION REACH XSECTION 73

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 3.65 SQ.MI.

HRS								
5.00 CFS	0	1	4	8	12	18	69	257
5.80 CFS	574	972	1430	1889	2234	2425	2494	2454
6.60 CFS	2328	2149	1954	1764	1585	1419	1262	1119
7.40 CFS	990	876	777	693	623	565	518	478
8.20 CFS	443	410	380	352	327	303	282	263
9.00 CFS	246	231	219	207	198	190	183	178
9.80 CFS	173	170	167	164	160	155	149	143
10.60 CFS	137	130	124	118	112	108	107	110
11.40 CFS	116	123	132	138	142	143	143	140
12.20 CFS	138	137	136	136	136	136	133	130
13.00 CFS	127	123	119	114	110	106	102	99
13.80 CFS	95.66	92.92	90.56	88.68	87.45	86.82	86.63	86.81
14.60 CFS	87.30	87.99	88.79	89.62	90.46	91.27	92.03	92.73
15.40 CFS	93	94	94	95	96	98	99	100
16.20 CFS	101	101	100	99	98	96	95	93
17.00 CFS	91.66	90.16	88.76	87.50	86.38	85.42	84.62	83.95
17.80 CFS	83.41	82.97	82.62	82.34	82.12	81.95	81.81	81.71
18.60 CFS	81.63	81.58	81.54	81.52	81.50	81.50	81.50	81.50
19.40 CFS	81.51	81.53	81.54	81.56	81.58	81.60	81.62	81.44
20.20 CFS	80.63	79.21	77.42	75.30	72.82	69.86	66.63	63.31
21.00 CFS	59.97	56.78	54.03	51.79	50.01	48.70	47.72	46.75

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 20

21.80 CFS	45.76	44.75	43.72	42.77	42.13	41.84	41.78	41.94
22.60 CFS	42.20	42.28	42.14	41.84	41.39	40.91	40.65	40.66
23.40 CFS	40.85	41.22	41.63	41.84	41.81	41.58	41.18	40.44
24.20 CFS	38.97	36.84	34.31	31.47	28.39	25.21	22.07	19.10
25.00 CFS	16.35	13.84	11.59	9.61	7.90	6.45	5.24	4.24
25.80 CFS	3.42	2.75	2.21	1.77	1.42	1.13	.90	.72
26.60 CFS	.57	.45						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.19 WATERSHED INCHES; 5163 CFS-HRS; 426.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	574	178	136	101	92	84	82	48

DURATION(HRS)	18	20	22
FLOW(CFS)	41	8	0

--- XSECTION 73, ALTERNATE 1, STORM 1, HYDROGRAPH ADDED TO READHD FILE ---

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 5. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 20. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 6. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 8. ***

OPERATION ADDHYD STRUCTURE 65

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 4.53 SQ.MI.			
4.20 CFS	.48	.89	1.17	1.31	1.44	1.68	1.93	2.11
5.00 CFS	2	4	10	17	24	35	162	605
5.80 CFS	1264	1957	2634	3189	3423	3397	3267	3077
6.60 CFS	2839	2563	2289	2039	1817	1618	1433	1265
7.40 CFS	1117	989	881	792	719	660	612	570
8.20 CFS	528	486	448	414	384	356	332	311
9.00 CFS	293	277	264	252	242	234	227	221
9.80 CFS	217	213	210	207	200	191	182	173
10.60 CFS	165	156	149	142	135	133	138	148
11.40 CFS	160	173	184	188	186	182	178	173
12.20 CFS	171	172	173	175	175	173	168	162
13.00 CFS	156	150	144	139	134	129	125	122
13.80 CFS	118	115	113	111	110	111	111	112
14.60 CFS	113	114	115	116	117	118	118	119
15.40 CFS	120	120	121	123	124	126	128	130

D

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 21

16.20 CFS	129	128	126	124	122	120	118	116
17.00 CFS	114	113	111	110	109	108	107	106
17.80 CFS	106	105	105	105	104	104	104	104
18.60 CFS	104	104	104	104	104	104	104	104
19.40 CFS	104	104	104	104	104	104	104	103
20.20 CFS	102	99	95	92	89	84	80	75
21.00 CFS	71.25	67.61	64.98	63.18	61.85	60.91	60.06	58.77
21.80 CFS	57.19	55.62	54.14	53.01	52.65	52.94	53.43	54.02
22.60 CFS	54.46	54.23	53.51	52.67	51.79	51.14	51.18	51.76
23.40 CFS	52.50	53.30	53.89	53.82	53.20	52.42	51.57	50.14
24.20 CFS	47.22	43.27	39.17	35.10	31.08	27.16	23.46	20.07
25.00 CFS	17.02	14.30	11.91	9.84	8.06	6.56	5.31	4.29
25.80 CFS	3.45	2.77	2.22	1.78	1.42	1.13	.90	.72
26.60 CFS	.57	.45						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.30 WATERSHED INCHES; 6725 CFS-HRS; 555.8 ACRE-FEET.

*** MESSAGE - STRUCTURE 97, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS .00 FEET BELOW ASSUMED CREST ELEVATION AT .00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

*** WARNING - STRUCTURE 97, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .016 HOURS. ***

OPERATION RESVOR STRUCTURE 97

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 4.53 SQ.MI.			
4.00 CFS	.00	.09	.41	.84	1.14	1.29	1.42	1.63
4.80 CFS	1.89	2.09	2.25	3.57	8.53	16.93	23.50	34.53
5.60 CFS	134	358	557	738	897	1042	1172	1261
6.40 CFS	1282	1337	1387	1422	1449	1468	1482	1489
7.20 CFS	1490	1486	1477	1465	1450	1434	1416	1396
8.00 CFS	1375	1350	1325	1300	1281	1274	1264	1252
8.80 CFS	1208	1160	1114	1065	1013	962	907	839
9.60 CFS	781	708	628	547	447	341	238	187
10.40 CFS	186	176	167	159	150	143	137	133
11.20 CFS	136	146	158	169	180	187	187	184
12.00 CFS	179	175	172	172	173	174	175	174
12.80 CFS	169	164	158	151	146	140	135	130
13.60 CFS	126	122	119	116	113	111	110	110
14.40 CFS	111	112	112	113	115	116	117	117
15.20 CFS	118	119	120	120	121	122	124	126
16.00 CFS	128	129	129	128	127	125	123	121
16.80 CFS	119	117	115	113	112	110	109	108
17.60 CFS	107	106	106	105	105	105	104	104
18.40 CFS	104	104	104	104	104	104	104	104
19.20 CFS	104	104	104	104	104	104	104	104
20.00 CFS	104	104	102	99	96	93	89	85

D

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 1 JOB NO. 1 PAGE 22

20.80 CFS	80.71	76.24	72.04	67.52	65.39	63.11	62.08	60.87
21.60 CFS	60.20	58.83	57.35	55.71	54.27	53.06	52.66	52.90
22.40 CFS	53.40	53.97	54.44	54.28	53.57	52.73	51.86	51.17
23.20 CFS	51.15	51.71	52.44	53.24	53.86	53.85	53.26	52.48
24.00 CFS	51.64	50.28	47.50	43.58	39.48	35.41	31.38	27.45

24.80 CFS	23.73	20.32	17.24	14.50	12.08	9.98	8.19	6.82
25.60 CFS	5.46	4.45	3.56	2.87	2.30	1.85	1.47	1.17
26.40 CFS	.94	.74	.59	.47	.37	.29	.23	.18
27.20 CFS	.14	.10	.08	.06	.05	.03	.02	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.30 WATERSHED INCHES; 6726 CFS-HRS; 555.8 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 4. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 57. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 56. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 71. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 80 TO STRUCTURE 31
STARTING TIME = .00 RAIN DEPTH = 2.85 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .100 HOURS
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 15. ***

OPERATION ADDHYD STRUCTURE 37

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 1.49 SQ.MI.			
5.50 CFS	0	1	10	36	90	166	255	345
6.30 CFS	417	461	477	474	456	429	396	361
7.10 CFS	324	289	257	228	202	179	159	142
7.90 CFS	129	118	109	102	96	90	83	77
8.70 CFS	71.75	66.49	61.75	57.52	53.77	50.51	47.73	45.41
9.50 CFS	43.51	41.96	40.70	39.69	38.87	38.20	37.64	37.06
10.30 CFS	36.31	35.23	33.83	32.21	30.50	28.82	27.23	25.78

B

11.10 CFS	24.53	23.66	23.49	24.28	25.99	28.28	30.70	32.65
11.90 CFS	33.72	33.86	33.28	32.29	31.30	30.64	30.34	30.34
12.70 CFS	30.46	30.46	30.15	29.49	28.57	27.48	26.36	25.26
13.50 CFS	24.23	23.28	22.43	21.69	21.06	20.54	20.11	19.78
14.30 CFS	19.57	19.51	19.56	19.71	19.91	20.14	20.37	20.59
15.10 CFS	20.80	20.99	21.15	21.29	21.42	21.52	21.64	21.79
15.90 CFS	22.03	22.32	22.66	22.96	23.16	23.16	22.98	22.66
16.70 CFS	22.26	21.83	21.39	20.97	20.59	20.24	19.94	19.69
17.50 CFS	19.48	19.30	19.16	19.05	18.96	18.89	18.83	18.78
18.30 CFS	18.75	18.72	18.70	18.69	18.68	18.67	18.67	18.67
19.10 CFS	18.66	18.67	18.67	18.67	18.68	18.68	18.69	18.70
19.90 CFS	18.70	18.71	18.70	18.65	18.49	18.16	17.66	17.05
20.70 CFS	16.36	15.62	14.82	13.99	13.17	12.41	11.77	11.29
21.50 CFS	10.97	10.78	10.67	10.57	10.42	10.22	9.99	9.75
22.30 CFS	9.57	9.48	9.50	9.58	9.69	9.77	9.78	9.70
23.10 CFS	9.56	9.41	9.29	9.26	9.32	9.43	9.57	9.68
23.90 CFS	9.70	9.64	9.51	9.28	8.91	8.37	7.67	6.88
24.70 CFS	6.04	5.22	4.46	3.77	3.16	2.62	2.16	1.77
25.50 CFS	1.45	1.19	.97	.79	.64	.52	.43	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.10 WATERSHED INCHES; 1058 CFS-HRS; 87.4 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 14. ***

OPERATION ADDHYD STRUCTURE 72

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 1.58 SQ.MI.			
5.50 CFS	0	1	8	23	56	111	192	290
6.30 CFS	395	490	562	602	610	593	558	512
7.10 CFS	460	409	360	316	277	244	215	191
7.90 CFS	170	153	139	128	119	111	104	97
8.70 CFS	90.16	83.24	76.67	70.68	65.43	60.92	57.07	53.83
9.50 CFS	51.16	48.98	47.19	45.74	44.56	43.59	42.77	42.04

10.30 CFS	41.33	40.52	39.47	38.08	36.36	34.42	32.43	30.54
11.10 CFS	28.86	27.53	26.67	26.43	27.01	28.56	30.92	33.68
11.90 CFS	36.27	38.15	38.93	38.62	37.54	36.16	34.90	34.07
12.70 CFS	33.74	33.76	33.86	33.81	33.39	32.54	31.36	30.03
13.50 CFS	28.66	27.38	26.22	25.21	24.35	23.63	23.06	22.60
14.30 CFS	22.27	22.04	21.94	21.96	22.11	22.35	22.63	22.91
15.10 CFS	23.18	23.42	23.64	23.82	23.97	24.11	24.23	24.37
15.90 CFS	24.53	24.75	25.03	25.37	25.70	25.96	26.07	25.97
16.70 CFS	25.65	25.18	24.64	24.08	23.57	23.10	22.70	22.35
17.50 CFS	22.07	21.84	21.65	21.50	21.38	21.28	21.20	21.14
18.30 CFS	21.09	21.05	21.01	20.99	20.97	20.95	20.94	20.94
19.10 CFS	20.93	20.93	20.93	20.93	20.94	20.94	20.95	20.95
19.90 CFS	20.96	20.96	20.96	20.93	20.85	20.69	20.39	19.91
20.70 CFS	19.24	18.44	17.56	16.64	15.71	14.79	13.93	13.17

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TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 2 JOB NO. 1 PAGE 24

21.50 CFS	12.57	12.16	11.92	11.80	11.73	11.64	11.49	11.27
22.30 CFS	11.02	10.78	10.62	10.56	10.61	10.73	10.84	10.92
23.10 CFS	10.90	10.79	10.63	10.47	10.36	10.36	10.45	10.59
23.90 CFS	10.74	10.84	10.83	10.68	10.40	9.98	9.43	8.70
24.70 CFS	7.82	6.86	5.89	4.97	4.16	3.46	2.85	2.34
25.50 CFS	1.92	1.57	1.29	1.06	.87	.71	.58	.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.24 WATERSHED INCHES; 1266 CFS-HRS; 104.6 ACRE-FEET.

OPERATION ADDHYD STRUCTURE 90

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA =			4.21 SQ.MI.
5.50 CFS	0	3	13	38	91	187	336	534
6.30 CFS	760	986	1180	1315	1383	1388	1345	1269
7.10 CFS	1170	1061	951	845	747	660	584	518
7.90 CFS	461	413	373	341	315	292	273	255
8.70 CFS	238	220	204	189	175	162	152	142
9.50 CFS	135	128	123	119	115	112	110	108
10.30 CFS	106	104	101	98	94	90	85	81
11.10 CFS	76.28	72.51	69.68	68.17	68.40	70.72	75.03	80.72
11.90 CFS	86.73	91.85	95.11	96.10	95.07	92.75	90.06	87.80
12.70 CFS	86.37	85.75	85.59	85.37	84.62	83.07	80.71	77.79
13.50 CFS	74.59	71.40	68.39	65.66	63.26	61.21	59.49	58.10
14.30 CFS	57.01	56.22	55.74	55.59	55.74	56.14	56.72	57.38
15.10 CFS	58.05	58.69	59.28	59.81	60.26	60.66	61.01	61.37
15.90 CFS	61.76	62.26	62.89	63.64	64.43	65.12	65.54	65.56
16.70 CFS	65.12	64.27	63.14	61.87	60.59	59.37	58.27	57.30
17.50 CFS	56.48	55.78	55.22	54.75	54.38	54.08	53.84	53.64
18.30 CFS	53.49	53.37	53.27	53.20	53.14	53.10	53.07	53.05
19.10 CFS	53.04	53.04	53.04	53.04	53.05	53.06	53.07	53.09
19.90 CFS	53.11	53.12	53.12	53.08	52.94	52.62	52.02	51.07
20.70 CFS	49.70	47.97	45.96	43.77	41.49	39.19	36.97	34.93
21.50 CFS	33.21	31.87	30.94	30.36	29.98	29.68	29.33	28.87
22.30 CFS	28.32	27.76	27.30	27.04	27.00	27.13	27.36	27.54
23.10 CFS	27.59	27.45	27.17	26.83	26.55	26.43	26.51	26.74
23.90 CFS	27.04	27.29	27.36	27.18	26.70	25.89	24.71	23.14
24.70 CFS	21.21	19.01	16.67	14.36	12.18	10.23	8.51	7.03
25.50 CFS	5.78	4.74	3.88	3.17	2.59	2.12	1.73	1.41
26.30 CFS	1.15	.93	.75	.61	.50			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.13 WATERSHED INCHES; 3080 CFS-HRS; 254.5 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION ADDHYD STRUCTURE 73
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 2 JOB NO. 1 PAGE 25

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA =			3.65 SQ.MI.
5.30 CFS	0	1	2	24	110	251	428	637
6.10 CFS	844	993	1076	1098	1068	996	902	806
6.90 CFS	718	641	573	513	460	413	372	336
7.70 CFS	306	280	259	241	226	212	199	186
8.50 CFS	173	161	150	140	131	124	117	111
9.30 CFS	106	101	98	94	92	89	87	86

10.10 CFS	84.24	82.08	79.43	76.46	73.21	69.79	66.37	63.14
10.90 CFS	60.18	57.52	55.69	55.78	57.52	60.42	64.38	68.59
11.70 CFS	71.49	72.97	73.28	72.35	70.78	69.47	68.71	68.52
12.50 CFS	68.89	69.39	69.30	68.48	67.14	65.30	63.10	60.78
13.30 CFS	58.53	56.45	54.54	52.81	51.22	49.78	48.48	47.34
14.10 CFS	46.40	45.77	45.41	45.26	45.30	45.49	45.79	46.12
14.90 CFS	46.47	46.82	47.15	47.48	47.79	48.08	48.35	48.64
15.70 CFS	49.08	49.64	50.28	50.98	51.60	51.89	51.87	51.59
16.50 CFS	51.10	50.43	49.66	48.88	48.13	47.43	46.77	46.16
17.30 CFS	45.59	45.08	44.62	44.23	43.88	43.60	43.35	43.15
18.10 CFS	42.99	42.86	42.75	42.67	42.60	42.55	42.52	42.49
18.90 CFS	42.48	42.47	42.46	42.47	42.47	42.48	42.49	42.51
19.70 CFS	42.52	42.54	42.56	42.58	42.48	42.04	41.30	40.38
20.50 CFS	39.27	37.98	36.47	34.85	33.20	31.56	30.01	28.69
21.30 CFS	27.62	26.76	26.14	25.65	25.13	24.56	23.97	23.35
22.10 CFS	22.76	22.35	22.14	22.08	22.17	22.31	22.34	22.25
22.90 CFS	22.06	21.77	21.47	21.31	21.30	21.41	21.63	21.87
23.70 CFS	22.00	21.98	21.85	21.61	21.17	20.35	19.23	17.92
24.50 CFS	16.46	14.90	13.30	11.76	10.32	9.00	7.79	6.69
25.30 CFS	5.70	4.82	4.05	3.38	2.81	2.32	1.91	1.57
26.10 CFS	1.28	1.05	.85	.69	.56	.45		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.00 WATERSHED INCHES; 2365 CFS-HRS; 195.5 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 73. ***

OPERATION REACH XSECTION 73

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 3.65 SQ.MI.			
5.30 CFS	0	1	2	24	110	251	428	637
6.10 CFS	844	993	1076	1098	1068	996	902	806
6.90 CFS	718	641	573	513	460	413	372	336
7.70 CFS	306	280	259	241	226	212	199	186
8.50 CFS	173	161	150	140	131	124	117	111
9.30 CFS	106	101	98	94	92	89	87	86
10.10 CFS	84.24	82.08	79.43	76.46	73.21	69.79	66.37	63.14
10.90 CFS	60.18	57.52	55.69	55.78	57.52	60.42	64.38	68.59
11.70 CFS	71.49	72.97	73.28	72.35	70.78	69.47	68.71	68.52
12.50 CFS	68.89	69.39	69.30	68.48	67.14	65.30	63.10	60.78
13.30 CFS	58.53	56.45	54.54	52.81	51.22	49.78	48.48	47.34

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TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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14.10 CFS	46.40	45.77	45.41	45.26	45.30	45.49	45.79	46.12
14.90 CFS	46.47	46.82	47.15	47.48	47.79	48.08	48.35	48.64
15.70 CFS	49.08	49.64	50.28	50.98	51.60	51.89	51.87	51.59
16.50 CFS	51.10	50.43	49.66	48.88	48.13	47.43	46.77	46.16
17.30 CFS	45.59	45.08	44.62	44.23	43.88	43.60	43.35	43.15
18.10 CFS	42.99	42.86	42.75	42.67	42.60	42.55	42.52	42.49
18.90 CFS	42.48	42.47	42.46	42.47	42.47	42.48	42.49	42.51
19.70 CFS	42.52	42.54	42.56	42.58	42.48	42.04	41.30	40.38
20.50 CFS	39.27	37.98	36.47	34.85	33.20	31.56	30.01	28.69
21.30 CFS	27.62	26.76	26.14	25.65	25.13	24.56	23.97	23.35
22.10 CFS	22.76	22.35	22.14	22.08	22.17	22.31	22.34	22.25
22.90 CFS	22.06	21.77	21.47	21.31	21.30	21.41	21.63	21.87
23.70 CFS	22.00	21.98	21.85	21.61	21.17	20.35	19.23	17.92
24.50 CFS	16.46	14.90	13.30	11.76	10.32	9.00	7.79	6.69
25.30 CFS	5.70	4.82	4.05	3.38	2.81	2.32	1.91	1.57
26.10 CFS	1.28	1.05	.85	.69	.56	.45		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.00 WATERSHED INCHES; 2365 CFS-HRS; 195.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	259	92	69	52	47	44	42	25

DURATION(HRS)	18	20	21
FLOW(CFS)	22	3	0

--- XSECTION 73, ALTERNATE 1, STORM 2, HYDROGRAPH ADDED TO READHD FILE ---

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 5. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 20. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 8. ***

OPERATION ADDHYD STRUCTURE 65

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA =			4.53 SQ.MI.
5.00 CFS	0	1	1	3	4	5	49	224
5.80 CFS	503	821	1140	1411	1545	1552	1489	1389
6.60 CFS	1263	1125	992	873	772	687	612	545
7.40 CFS	488	438	396	361	334	311	293	277
8.20 CFS	260	243	225	209	194	181	169	159
9.00 CFS	150	143	136	131	126	122	119	116
9.80 CFS	113	111	110	108	105	100	95	91
10.60 CFS	86.00	81.58	77.57	73.97	70.85	69.21	71.31	76.46
11.40 CFS	82.95	89.95	96.09	98.73	98.23	96.09	93.03	89.92

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 2 JOB NO. 1 PAGE 27

12.20 CFS	88.23	88.06	88.71	89.85	90.78	90.15	88.07	85.30
13.00 CFS	82.21	78.98	75.83	72.90	70.26	67.93	65.88	64.07
13.80 CFS	62.47	61.06	59.84	58.90	58.45	58.43	58.65	59.00
14.60 CFS	59.45	59.95	60.46	60.94	61.39	61.80	62.19	62.55
15.40 CFS	62.87	63.16	63.54	64.22	65.16	66.19	67.22	68.00
16.20 CFS	68.05	67.47	66.58	65.56	64.44	63.32	62.24	61.26
17.00 CFS	60.37	59.58	58.88	58.25	57.69	57.20	56.78	56.43
17.80 CFS	56.13	55.88	55.68	55.51	55.38	55.28	55.20	55.14
18.60 CFS	55.09	55.06	55.04	55.03	55.03	55.03	55.03	55.05
19.40 CFS	55.06	55.07	55.09	55.11	55.13	55.16	55.17	54.96
20.20 CFS	54.07	52.60	50.91	49.16	47.28	45.12	42.78	40.48
21.00 CFS	38.32	36.40	34.99	34.03	33.37	32.93	32.54	31.93
21.80 CFS	31.12	30.24	29.37	28.63	28.29	28.31	28.51	28.84
22.60 CFS	29.12	29.09	28.77	28.30	27.77	27.33	27.24	27.46
23.40 CFS	27.84	28.30	28.69	28.75	28.50	28.11	27.62	26.86
24.20 CFS	25.42	23.42	21.22	19.02	16.86	14.78	12.87	11.12
25.00 CFS	9.58	8.20	6.98	5.90	4.96	4.15	3.45	2.85
25.80 CFS	2.35	1.93	1.59	1.29	1.05	.85	.69	.56
26.60 CFS	.45							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.07 WATERSHED INCHES; 3140 CFS-HRS; 259.5 ACRE-FEET.

*** MESSAGE - STRUCTURE 97, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS .00 FEET BELOW ASSUMED CREST ELEVATION AT .00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

*** WARNING - STRUCTURE 97, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .016 HOURS. ***

OPERATION RESVOR STRUCTURE 97

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA =			4.53 SQ.MI.
4.10 CFS	.00	.01	.02	.02	.03	.04	.09	.16
4.90 CFS	.20	.23	.46	1.30	2.54	3.53	4.91	43.42
5.70 CFS	179	339	471	602	713	804	877	938
6.50 CFS	971	995	1008	1012	1006	994	976	954
7.30 CFS	929	887	844	803	763	700	638	583
8.10 CFS	500	431	344	277	205	201	185	173
8.90 CFS	162	152	144	137	132	127	123	119
9.70 CFS	116	114	112	110	108	105	101	96
10.50 CFS	91.58	86.89	82.41	78.31	74.64	71.30	69.09	71.13
11.30 CFS	75.26	81.67	88.56	94.99	98.48	98.48	96.58	93.66
12.10 CFS	90.50	88.44	88.01	88.55	89.60	90.63	90.39	88.54
12.90 CFS	85.86	82.82	79.61	76.43	73.45	70.50	68.06	66.06
13.70 CFS	64.18	62.60	61.15	59.93	58.95	58.47	58.42	58.63
14.50 CFS	58.97	59.42	59.91	60.42	60.90	61.35	61.77	62.16
15.30 CFS	62.52	62.85	63.14	63.50	64.15	65.08	66.11	67.14
16.10 CFS	67.95	68.08	67.52	66.66	65.64	64.53	63.40	62.32

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 PASS 2 JOB NO. 1 PAGE 28

16.90 CFS	61.33	60.44	59.64	58.93	58.29	57.73	57.24	56.81
17.70 CFS	56.45	56.15	55.90	55.69	55.53	55.39	55.29	55.21
18.50 CFS	55.14	55.10	55.06	55.04	55.03	55.03	55.03	55.03
19.30 CFS	55.04	55.06	55.07	55.09	55.11	55.13	55.16	55.17
20.10 CFS	54.99	54.16	52.72	51.04	49.29	47.43	45.29	42.96
20.90 CFS	40.65	38.48	36.53	35.07	34.10	33.41	32.96	32.57
21.70 CFS	31.99	31.18	30.31	29.44	28.68	28.30	28.30	28.49
22.50 CFS	28.81	29.11	29.11	28.80	28.34	27.81	27.36	27.23
23.30 CFS	27.44	27.81	28.26	28.67	28.76	28.53	28.14	27.66

24.10 CFS	26.94	25.55	23.58	21.39	19.18	17.02	14.93	13.01
24.90 CFS	11.25	9.69	8.30	7.17	6.05	5.10	4.26	3.55
25.70 CFS	2.94	2.42	1.99	1.64	1.33	1.08	.88	.71
26.50 CFS	.57	.46	.37	.30	.24	.19	.15	.12
27.30 CFS	.09	.07	.05	.03	.02			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.07 WATERSHED INCHES; 3141 CFS-HRS; 259.6 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 4. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 57. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 56. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 71. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2
0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 4.50 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 1, ARC 2
MAIN TIME INCREMENT .100 HOURS

ALTERNATE 1 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
XSECTION 80	RUNOFF	.08	2.55	---	6.06	131	1637.5
XSECTION 79	REACH	.08	2.55	---	6.41	93	1162.5
XSECTION 79	RUNOFF	.27	1.33	---	6.53	101	374.1
STRUCTURE 38	ADDHYD	.35	1.61	---	6.45	192	548.6
XSECTION 13	REACH	.35	1.61	---	6.70	172	491.4
XSECTION 13	RUNOFF	.18	3.09	---	6.20	298	1655.6
STRUCTURE 35	ADDHYD	.53	2.11	---	6.31	378	713.2
XSECTION 78	RUNOFF	.31	3.10	---	6.44	386	1245.2
XSECTION 51	REACH	.31	3.10	---	6.59	376	1212.9
XSECTION 51	RUNOFF	.13	2.58	---	6.21	170	1307.7
XSECTION 49	RUNOFF	.27	1.60	---	6.26	171	633.3
XSECTION 49	REACH	.27	1.60	---	6.38	170	629.6
STRUCTURE 88	ADDHYD	.44	2.94	---	6.49	478	1086.4
STRUCTURE 35	ADDHYD	.80	1.94	---	6.34	547	683.8
STRUCTURE 35	ADDHYD	1.24	2.30	---	6.40	1009	813.7
XSECTION 50	REACH	1.24	2.30	---	6.40	1009	813.7
XSECTION 50	RUNOFF	.19	2.57	---	6.94	123	647.4
STRUCTURE 34	ADDHYD	1.43	2.33	---	6.43	1088	760.8
XSECTION 15	REACH	1.43	2.33	---	6.43	1088	760.8
XSECTION 15	RUNOFF	.06	2.91	---	6.35	77	1283.3
STRUCTURE 37	ADDHYD	1.49	2.36	---	6.42	1163	780.5
XSECTION 16	REACH	1.49	2.36	---	6.52	1163	780.5
XSECTION 16	RUNOFF	.12	2.82	---	6.40	138	1150.0
XSECTION 48	RUNOFF	.56	1.39	---	6.42	248	442.9
XSECTION 48	REACH	.56	1.39	---	6.52	248	442.9
STRUCTURE 33	ADDHYD	1.61	2.39	---	6.51	1295	804.3
STRUCTURE 89	ADDHYD	2.17	2.13	22.66	6.51	1542	710.6
XSECTION 47	REACH	2.17	2.13	---	6.51	1542	710.6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 47	RUNOFF	.19	2.63	---	6.35	213	1121.1
STRUCTURE 32	ADDHYD	2.36	2.17	---	6.49	1737	736.0
XSECTION 96	RUNOFF	.14	1.33	---	6.35	63	450.0
XSECTION 81	REACH	.14	1.33	---	6.68	50	357.1
XSECTION 81	RUNOFF	.35	1.39	---	6.05	249	711.4
STRUCTURE 54	ADDHYD	.49	1.38	---	6.07	262	534.7
XSECTION 77	REACH	.49	1.37	---	6.21	250	510.2
XSECTION 76	RUNOFF	.14	3.10	---	6.45	173	1235.7
XSECTION 11	REACH	.14	3.10	---	6.58	171	1221.4
XSECTION 11	RUNOFF	.10	2.91	---	6.33	130	1300.0
STRUCTURE 39	ADDHYD	.24	3.02	---	6.47	284	1183.3
XSECTION 54	REACH	.24	3.02	---	6.61	280	1166.7
XSECTION 54	RUNOFF	.15	3.39	---	6.35	233	1553.3
STRUCTURE 36	ADDHYD	.39	3.16	---	6.49	483	1238.5
XSECTION 77	RUNOFF	.19	2.91	---	6.54	198	1042.1
STRUCTURE 70	ADDHYD	.68	1.80	---	6.30	404	594.1
XSECTION 12	REACH	.68	1.80	---	6.30	404	594.1
XSECTION 12	RUNOFF	.10	2.94	---	6.54	106	1060.0
STRUCTURE 71	ADDHYD	.78	1.95	---	6.33	496	635.9
XSECTION 53	REACH	.78	1.95	---	6.47	488	625.6
XSECTION 53	RUNOFF	.15	2.92	---	6.42	178	1186.7
STRUCTURE 87	ADDHYD	.93	2.11	---	6.45	664	714.0
STRUCTURE 87	ADDHYD	1.32	2.42	---	6.47	1146	868.2
XSECTION 55	REACH	1.32	2.42	---	6.47	1146	868.2
XSECTION 55	RUNOFF	.22	3.13	---	6.70	217	986.4
STRUCTURE 30	ADDHYD	1.54	2.52	---	6.50	1344	872.7
XSECTION 14	REACH	1.54	2.52	---	6.50	1344	872.7
XSECTION 14	RUNOFF	.04	3.61	---	6.69	47	1175.0
STRUCTURE 72	ADDHYD	1.58	2.55	---	6.50	1388	878.5
XSECTION 52	REACH	1.58	2.55	---	6.63	1378	872.2

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TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 52	RUNOFF	.27	3.40	---	6.69	296	1096.3
STRUCTURE 90	ADDHYD	1.85	2.67	---	6.64	1672	903.8
STRUCTURE 90	ADDHYD	4.21	2.39	---	6.56	3357	797.4
XSECTION 145	REACH	4.21	2.39	---	6.69	3331	791.2
XSECTION 45	RUNOFF	.32	3.19	---	6.27	499	1559.4
STRUCTURE 29	ADDHYD	4.53	2.45	---	6.65	3619	798.9
XSECTION 98	RUNOFF	.14	1.60	---	6.17	101	721.4
XSECTION 194	REACH	.14	1.60	---	6.53	79	564.3
XSECTION 97	RUNOFF	.07	1.60	---	6.16	52	742.9
XSECTION 94	REACH	.07	1.60	---	6.56	36	514.3
XSECTION 93	RUNOFF	.24	1.60	---	6.33	141	587.5
XSECTION 94	RUNOFF	.43	1.33	---	6.61	151	351.2

STRUCTURE	55	ADDHYD	.57	1.40	---	6.57	229	401.8
STRUCTURE	55	ADDHYD	.31	1.60	---	6.38	171	551.6
STRUCTURE	55	ADDHYD	.88	1.47	---	6.49	389	442.0
XSECTION	83	REACH	.88	1.47	---	6.74	355	403.4
XSECTION	83	RUNOFF	.35	1.46	---	6.65	135	385.7
XSECTION	95	RUNOFF	.11	1.33	---	6.42	46	418.2
XSECTION	82	REACH	.11	1.33	---	6.80	35	318.2
XSECTION	82	RUNOFF	.24	1.33	---	6.51	92	383.3
STRUCTURE	53	ADDHYD	1.23	1.47	---	6.72	489	397.6
STRUCTURE	53	ADDHYD	.35	1.33	---	6.58	122	348.6
STRUCTURE	53	ADDHYD	1.58	1.44	---	6.69	608	384.8
XSECTION	75	REACH	1.58	1.44	---	6.82	603	381.6
XSECTION	75	RUNOFF	.13	3.09	---	6.04	280	2153.8
STRUCTURE	69	ADDHYD	1.71	1.56	---	6.80	632	369.6
XSECTION	7	REACH	1.71	1.56	---	6.90	632	369.6
XSECTION	99	RUNOFF	.44	1.60	---	6.52	213	484.1
XSECTION	92	RUNOFF	.42	2.72	---	6.24	558	1328.6
XSECTION	84	REACH	.42	2.72	---	6.44	506	1204.8

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 84	RUNOFF	.19	3.29	---	6.16	364	1915.8
STRUCTURE 52	ADDHYD	.61	2.90	---	6.32	782	1282.0
XSECTION 91	REACH	.44	1.60	---	6.77	196	445.5
XSECTION 91	RUNOFF	.41	3.29	---	6.12	832	2029.3
STRUCTURE 52	ADDHYD	.85	2.42	---	6.15	890	1047.1
XSECTION 85	REACH	.85	2.42	---	6.38	750	882.4
XSECTION 85	RUNOFF	.27	3.29	---	6.23	463	1714.8
STRUCTURE 52	ADDHYD	1.12	2.63	---	6.32	1183	1056.3
STRUCTURE 52	ADDHYD	1.73	2.72	---	6.32	1965	1135.8
XSECTION 74	REACH	1.73	2.72	---	6.42	1964	1135.3
XSECTION 74	RUNOFF	.15	3.39	---	6.01	374	2493.3
STRUCTURE 42	ADDHYD	1.88	2.78	---	6.39	2054	1092.6
XSECTION 107	REACH	1.88	2.78	---	6.39	2054	1092.6
XSECTION 7	RUNOFF	.06	1.80	---	6.02	64	1066.7
STRUCTURE 73	ADDHYD	1.77	1.57	---	6.90	639	361.0
STRUCTURE 73	ADDHYD	3.65	2.19	---	6.41	2495	683.6
XSECTION 73	REACH	3.65	2.19	---	6.41	2495	683.6
XSECTION 73	RUNOFF	.08	2.81	---	6.06	149	1862.5
STRUCTURE 68	ADDHYD	3.73	2.21	---	6.39	2550	683.6
XSECTION 5	REACH	3.73	2.21	---	6.39	2550	683.6
XSECTION 86	RUNOFF	.33	2.21	---	6.23	336	1018.2
XSECTION 72	REACH	.33	2.21	---	6.40	316	957.6
XSECTION 72	RUNOFF	.24	2.91	---	6.11	425	1770.8
STRUCTURE 85	ADDHYD	.57	2.50	---	6.21	657	1152.6
XSECTION 20	REACH	.57	2.50	---	6.21	657	1152.6
XSECTION 20	RUNOFF	.06	3.50	---	6.03	153	2550.0
STRUCTURE 43	ADDHYD	.63	2.60	---	6.15	777	1233.3
XSECTION 6	REACH	.63	2.60	---	6.15	777	1233.3
XSECTION 5	RUNOFF	.05	3.80	---	6.05	138	2760.0
XSECTION 6	RUNOFF	.04	3.82	---	6.01	115	2875.0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
STRUCTURE 66	ADDHYD	3.78	2.23	---	6.36	2600	687.8
STRUCTURE 67	ADDHYD	.67	2.67	---	6.13	880	1313.4
STRUCTURE 67	ADDHYD	4.45	2.29	---	6.26	3336	749.7
XSECTION 8	REACH	4.45	2.29	---	6.26	3336	749.7
XSECTION 8	RUNOFF	.08	2.72	---	6.03	148	1850.0
STRUCTURE 65	ADDHYD	4.53	2.30	---	6.24	3444	760.3
STRUCTURE 97	RESVOR	4.53	2.30	12.34	7.17	1490	328.9
XSECTION 3	RUNOFF	.14	3.39	---	6.11	306	2185.7
XSECTION 4	REACH	.14	3.39	---	6.11	306	2185.7
STRUCTURE 41	ADDHYD	4.67	2.33	---	7.10	1518	325.1
XSECTION 57	REACH	4.67	2.33	---	7.10	1518	325.1
XSECTION 57	RUNOFF	.51	3.60	---	6.68	604	1184.3
STRUCTURE 41	ADDHYD	5.18	2.46	---	6.74	2092	403.9
XSECTION 56	REACH	5.18	2.46	---	6.74	2092	403.9
XSECTION 4	RUNOFF	.16	3.08	---	6.69	155	968.8
XSECTION 71	REACH	.16	3.08	---	6.69	155	968.8
XSECTION 71	RUNOFF	.09	3.60	---	6.68	107	1188.9
STRUCTURE 31	ADDHYD	.25	3.27	---	6.69	262	1048.0

RAINFALL OF 2.85 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 2							
XSECTION 80	RUNOFF	.08	1.20	---	6.06	55	687.5
XSECTION 79	REACH	.08	1.20	---	6.53	37	462.5
XSECTION 79	RUNOFF	.27	.44	---	6.57	25	92.6
STRUCTURE 38	ADDHYD	.35	.61	---	6.54	61	174.3
XSECTION 13	REACH	.35	.61	---	6.85	52	148.6
XSECTION 13	RUNOFF	.18	1.61	---	6.21	146	811.1
STRUCTURE 35	ADDHYD	.53	.95	---	6.25	159	300.0
XSECTION 78	RUNOFF	.31	1.61	---	6.44	189	609.7

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TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 51	REACH	.31	1.61	---	6.63	180	580.6
XSECTION 51	RUNOFF	.13	1.22	---	6.21	73	561.5
XSECTION 49	RUNOFF	.27	.59	---	6.28	50	185.2
XSECTION 49	REACH	.27	.59	---	6.42	48	177.8
STRUCTURE 88	ADDHYD	.44	1.49	---	6.54	221	502.3
STRUCTURE 35	ADDHYD	.80	.83	---	6.30	203	253.8
STRUCTURE 35	ADDHYD	1.24	1.06	---	6.41	406	327.4
XSECTION 50	REACH	1.24	1.06	---	6.52	406	327.4
XSECTION 50	RUNOFF	.19	1.22	---	6.96	53	278.9
STRUCTURE 34	ADDHYD	1.43	1.09	---	6.55	446	311.9
XSECTION 15	REACH	1.43	1.09	---	6.55	446	311.9
XSECTION 15	RUNOFF	.06	1.46	---	6.35	36	600.0
STRUCTURE 37	ADDHYD	1.49	1.10	---	6.53	478	320.8
XSECTION 16	REACH	1.49	1.10	---	6.65	477	320.1

XSECTION	16	RUNOFF	.12	1.39	---	6.40	63	525.0
XSECTION	48	RUNOFF	.56	.47	---	6.44	63	112.5
XSECTION	48	REACH	.56	.47	---	6.58	62	110.7
STRUCTURE	33	ADDHYD	1.61	1.12	---	6.62	530	329.2
STRUCTURE	89	ADDHYD	2.17	.95	20.22	6.61	593	273.3
XSECTION	47	REACH	2.17	.95	---	6.73	590	271.9
XSECTION	47	RUNOFF	.19	1.26	---	6.35	93	489.5
STRUCTURE	32	ADDHYD	2.36	.98	---	6.69	653	276.7
XSECTION	96	RUNOFF	.14	.44	---	6.38	15	107.1
XSECTION	81	REACH	.14	.44	---	6.92	11	78.6
XSECTION	81	RUNOFF	.35	.47	---	6.06	61	174.3
STRUCTURE	54	ADDHYD	.49	.46	---	6.07	63	128.6
XSECTION	77	REACH	.49	.46	---	6.27	54	110.2
XSECTION	76	RUNOFF	.14	1.61	---	6.46	84	600.0
XSECTION	11	REACH	.14	1.61	---	6.61	82	585.7
XSECTION	11	RUNOFF	.10	1.47	---	6.33	61	610.0

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TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID		STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM 2						
STRUCTURE	39	ADDHYD	.24	1.55	---	6.49	134	558.3
XSECTION	54	REACH	.24	1.55	---	6.66	130	541.7
XSECTION	54	RUNOFF	.15	1.85	---	6.35	121	806.7
STRUCTURE	36	ADDHYD	.39	1.66	---	6.50	232	594.9
XSECTION	77	RUNOFF	.19	1.46	---	6.55	92	484.2
STRUCTURE	70	ADDHYD	.68	.74	---	6.43	138	202.9
XSECTION	12	REACH	.68	.74	---	6.55	138	202.9
XSECTION	12	RUNOFF	.10	1.49	---	6.54	50	500.0
STRUCTURE	71	ADDHYD	.78	.84	---	6.54	187	239.7
XSECTION	53	REACH	.78	.84	---	6.73	182	233.3
XSECTION	53	RUNOFF	.15	1.47	---	6.42	83	553.3
STRUCTURE	87	ADDHYD	.93	.94	---	6.63	252	271.0
STRUCTURE	87	ADDHYD	1.32	1.15	---	6.57	479	362.9
XSECTION	55	REACH	1.32	1.15	---	6.68	478	362.1
XSECTION	55	RUNOFF	.22	1.63	---	6.71	107	486.4
STRUCTURE	30	ADDHYD	1.54	1.22	---	6.68	585	379.9
XSECTION	14	REACH	1.54	1.22	---	6.68	585	379.9
XSECTION	14	RUNOFF	.04	2.02	---	6.70	26	650.0
STRUCTURE	72	ADDHYD	1.58	1.24	---	6.68	610	386.1
XSECTION	52	REACH	1.58	1.24	---	6.84	600	379.7
XSECTION	52	RUNOFF	.27	1.85	---	6.70	154	570.4
STRUCTURE	90	ADDHYD	1.85	1.33	---	6.82	750	405.4
STRUCTURE	90	ADDHYD	4.21	1.13	---	6.76	1392	330.6
XSECTION	145	REACH	4.21	1.13	---	6.93	1367	324.7
XSECTION	45	RUNOFF	.32	1.68	---	6.27	248	775.0
STRUCTURE	29	ADDHYD	4.53	1.17	---	6.89	1455	321.2
XSECTION	98	RUNOFF	.14	.59	---	6.18	29	207.1
XSECTION	194	REACH	.14	.59	---	6.61	21	150.0
XSECTION	97	RUNOFF	.07	.59	---	6.17	15	214.3
XSECTION	94	REACH	.07	.59	---	6.74	10	142.9

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 SUMMARY, JOB NO. 1 PAGE 36

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.

A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 93	RUNOFF	.24	.59	---	6.34	41	170.8
XSECTION 94	RUNOFF	.43	.44	---	6.66	37	86.0
STRUCTURE 55	ADDHYD	.57	.48	---	6.63	58	101.8
STRUCTURE 55	ADDHYD	.31	.59	---	6.41	47	151.6
STRUCTURE 55	ADDHYD	.88	.52	---	6.53	102	115.9
XSECTION 83	REACH	.88	.52	---	6.87	90	102.3
XSECTION 83	RUNOFF	.35	.51	---	6.70	37	105.7
XSECTION 95	RUNOFF	.11	.44	---	6.45	11	100.0
XSECTION 82	REACH	.11	.44	---	6.96	8	72.7
XSECTION 82	RUNOFF	.24	.44	---	6.55	22	91.7
STRUCTURE 53	ADDHYD	1.23	.51	---	6.82	126	102.4
STRUCTURE 53	ADDHYD	.35	.44	---	6.63	29	82.9
STRUCTURE 53	ADDHYD	1.58	.50	---	6.79	154	97.5
XSECTION 75	REACH	1.58	.50	---	6.99	150	94.9
XSECTION 75	RUNOFF	.13	1.61	---	6.04	136	1046.2
STRUCTURE 69	ADDHYD	1.71	.58	---	6.95	163	95.3
XSECTION 7	REACH	1.71	.58	---	7.09	162	94.7
XSECTION 99	RUNOFF	.44	.59	---	6.55	63	143.2
XSECTION 92	RUNOFF	.42	1.33	---	6.24	249	592.9
XSECTION 84	REACH	.42	1.33	---	6.47	217	516.7
XSECTION 84	RUNOFF	.19	1.76	---	6.17	186	978.9
STRUCTURE 52	ADDHYD	.61	1.46	---	6.31	356	583.6
XSECTION 91	REACH	.44	.59	---	6.85	56	127.3
XSECTION 91	RUNOFF	.41	1.76	---	6.13	423	1031.7
STRUCTURE 52	ADDHYD	.85	1.16	---	6.14	437	514.1
XSECTION 85	REACH	.85	1.16	---	6.39	350	411.8
XSECTION 85	RUNOFF	.27	1.76	---	6.23	235	870.4
STRUCTURE 52	ADDHYD	1.12	1.30	---	6.32	569	508.0
STRUCTURE 52	ADDHYD	1.73	1.36	---	6.32	925	534.7
XSECTION 74	REACH	1.73	1.36	---	6.44	917	530.1

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 SUMMARY, JOB NO. 1 PAGE 37

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 74	RUNOFF	.15	1.85	---	6.02	195	1300.0
STRUCTURE 42	ADDHYD	1.88	1.40	---	6.41	962	511.7
XSECTION 107	REACH	1.88	1.40	---	6.41	962	511.7
XSECTION 7	RUNOFF	.06	.71	---	6.03	20	333.3
STRUCTURE 73	ADDHYD	1.77	.59	---	6.20	165	93.2
STRUCTURE 73	ADDHYD	3.65	1.00	---	6.39	1099	301.1
XSECTION 73	REACH	3.65	1.00	---	6.39	1099	301.1
XSECTION 73	RUNOFF	.08	1.39	---	6.06	68	850.0
STRUCTURE 68	ADDHYD	3.73	1.01	---	6.37	1127	302.1
XSECTION 5	REACH	3.73	1.01	---	6.37	1127	302.1
XSECTION 86	RUNOFF	.33	.97	---	6.23	128	387.9
XSECTION 72	REACH	.33	.97	---	6.43	117	354.5
XSECTION 72	RUNOFF	.24	1.46	---	6.11	197	820.8
STRUCTURE 85	ADDHYD	.57	1.17	---	6.20	277	486.0
XSECTION 20	REACH	.57	1.17	---	6.20	277	486.0

XSECTION	20	RUNOFF	.06	1.93	---	6.03	81	1350.0
STRUCTURE	43	ADDHYD	.63	1.25	---	6.14	345	547.6
XSECTION	6	REACH	.63	1.25	---	6.24	344	546.0
XSECTION	5	RUNOFF	.05	2.18	---	6.05	77	1540.0
XSECTION	6	RUNOFF	.04	2.20	---	6.01	65	1625.0
STRUCTURE	66	ADDHYD	3.78	1.03	---	6.34	1161	307.1
STRUCTURE	67	ADDHYD	.67	1.30	---	6.20	386	576.1
STRUCTURE	67	ADDHYD	4.45	1.07	---	6.28	1522	342.0
XSECTION	8	REACH	4.45	1.07	---	6.28	1522	342.0
XSECTION	8	RUNOFF	.08	1.33	---	6.03	65	812.5
STRUCTURE	65	ADDHYD	4.53	1.07	---	6.26	1558	343.9
STRUCTURE	97	RESVOR	4.53	1.07	7.73	6.79	1012	223.4
XSECTION	3	RUNOFF	.14	1.85	---	6.11	159	1135.7
XSECTION	4	REACH	.14	1.85	---	6.11	159	1135.7
STRUCTURE	41	ADDHYD	4.67	1.10	---	6.69	1044	223.6

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 SUMMARY, JOB NO. 1 PAGE 38

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 57	REACH	4.67	1.10	---	6.69	1044	223.6
XSECTION 57	RUNOFF	.51	2.02	---	6.69	328	643.1
STRUCTURE 41	ADDHYD	5.18	1.19	---	6.69	1372	264.9
XSECTION 56	REACH	5.18	1.19	---	6.69	1372	264.9
XSECTION 4	RUNOFF	.16	1.59	---	6.70	76	475.0
XSECTION 71	REACH	.16	1.59	---	6.70	76	475.0
XSECTION 71	RUNOFF	.09	2.02	---	6.69	58	644.4
STRUCTURE 31	ADDHYD	.25	1.75	---	6.70	134	536.0

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 1 STORM 1											
79	5691		129	6.1	93	6.4	1.70	1.25	.302	.724	.28
13	4849		190	6.4	172	6.7	1.10	1.40	.068	.904	.40
51	3804		384	6.4	376	6.6	.39	1.67	.023	.979	.66
49	1380		170	6.3	169	6.4	1.00	1.40	.017	.997	.88?
50	1361		1009	6.4	1009	6.4	.18	1.67	.004	1.000	1.00?
15	1185		1086	6.4	1086	6.4	1.10	1.40	.004	1.000	1.00?
16	2040		1162	6.4	1162	6.5	1.10	1.40	.010	1.000	1.00?
48	1466		248	6.4	247	6.5	1.10	1.40	.011	.997	.94?
47	2202		1542	6.5	1542	6.5	.20	1.70	.004	1.000	1.00?
81	5193		62	6.3	50	6.7	1.40	1.30	.141	.800	.26

77	3245	260	6.1	250	6.2	.39	1.67	.022	.959	.66
11	2203	172	6.4	171	6.6	.86	1.50	.020	.993	.76?
54	2420	283	6.5	280	6.6	.31	1.67	.016	.988	.74?
12	1479	404	6.3	404	6.3	.37	1.67	.004	1.000	1.00?
53	2579	494	6.3	487	6.5	.27	1.67	.011	.986	.78?
55	2276	1143	6.5	1143	6.5	.37	1.67	.004	1.000	1.00?
14	1058	1344	6.5	1344	6.5	.37	1.67	.001	1.000	1.00?
52	2987	1388	6.5	1375	6.6	.30	1.60	.012	.991	.81?
145	3325	3346	6.6	3331	6.7	.10	1.70	.010	.995	.80?
194	5914	100	6.2	79	6.5	1.80	1.30	.165	.785	.31
94	5914	51	6.2	36	6.6	1.70	1.27	.245	.707	.24
83	6124	389	6.5	354	6.7	1.90	1.30	.065	.912	.40
82	5808	46	6.4	35	6.8	1.40	1.30	.164	.773	.22
75	2699	608	6.7	602	6.8	.25	1.67	.008	.991	.78?
7	1618	632	6.8	632	6.9	.21	1.67	.003	1.000	.98?
84	5491	552	6.2	502	6.4	2.00	1.30	.089	.909	.48
91	5491	212	6.5	195	6.8	2.00	1.30	.065	.920	.40

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

			HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
			INFLOW		OUTFLOW		Q-A EQ.			PEAK	ATT-
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	LENGTH FACTOR (k*)	RATIO Q/I (Q*)	KIN COEFF (C)
ALTERNATE 1 STORM 1											
85	6178		877	6.1	749	6.4	1.40	1.30	.110	.855	.38
74	2793		1961	6.3	1960	6.4	.25	1.67	.008	.999	.99?
107	1455		2054	6.4	2054	6.4	.20	1.67	.003	1.000	1.00?
73	462		2494	6.4	2494	6.4	.80	1.50	.000	1.000	1.00?
5	717		2549	6.4	2549	6.4	.80	1.50	.001	1.000	1.00?
72	3305		335	6.2	316	6.4	1.70	1.30	.059	.945	.58
20	1187		657	6.2	657	6.2	.33	1.67	.004	1.000	1.00?
6	1461		769	6.2	769	6.2	1.70	1.30	.016	1.000	1.00?
8	507		3328	6.3	3328	6.3	2.90	1.40	.000	1.000	1.00?
4	1900		306	6.1	306	6.1	2.90	1.40	.014	1.000	1.00?
57	1614		1518	7.1	1518	7.1	2.90	1.40	.001	1.000	1.00?
56	2274		2090	6.7	2090	6.7	2.90	1.40	.001	1.000	1.00?
71	1302		155	6.7	155	6.7	2.90	1.40	.004	1.000	1.00?
ALTERNATE 1 STORM 2											
79	5691		54	6.1	37	6.5	1.70	1.25	.326	.672	.24
13	4849		61	6.5	51	6.9	1.10	1.40	.085	.843	.31
51	3804		187	6.4	179	6.6	.39	1.67	.034	.957	.54
49	1380		50	6.3	48	6.4	1.00	1.40	.020	.978	.72?
50	1361		406	6.4	405	6.5	.18	1.67	.006	.998	.94?
15	1185		445	6.6	445	6.6	1.10	1.40	.005	1.000	1.00?
16	2040		477	6.5	474	6.6	1.10	1.40	.011	.994	.87?
48	1466		63	6.4	62	6.6	1.10	1.40	.012	.991	.75?
47	2202		592	6.6	589	6.7	.20	1.70	.006	.994	.86?
81	5193		15	6.4	11	6.9	1.40	1.30	.143	.738	.20
77	3245		62	6.1	54	6.3	.39	1.67	.032	.869	.43

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1		STORM 2									
11	2203		84	6.5	82	6.6	.86	1.50	.027	.981	.65
54	2420		134	6.5	130	6.7	.31	1.67	.024	.967	.61
12	1479		138	6.4	137	6.5	.37	1.67	.005	.994	.89?
53	2579		186	6.5	182	6.7	.27	1.67	.016	.977	.60
55	2276		478	6.6	478	6.7	.37	1.67	.006	.999	.93?
14	1058		584	6.7	584	6.7	.37	1.67	.001	1.000	1.00?
52	2987		610	6.7	599	6.8	.30	1.60	.016	.981	.67?
145	3325		1388	6.8	1365	6.9	.10	1.70	.014	.983	.64
194	5914		29	6.2	21	6.6	1.80	1.30	.175	.721	.24
94	5914		15	6.2	9	6.7	1.70	1.27	.252	.643	.19
83	6124		102	6.5	90	6.9	1.90	1.30	.066	.883	.31
82	5808		11	6.4	8	7.0	1.40	1.30	.166	.716	.17
75	2699		154	6.8	150	7.0	.25	1.67	.012	.975	.54
7	1618		162	7.0	162	7.1	.21	1.67	.004	.997	.72?
84	5491		246	6.2	217	6.5	2.00	1.30	.101	.880	.41
91	5491		63	6.5	56	6.9	2.00	1.30	.069	.889	.32
85	6178		433	6.1	350	6.4	1.40	1.30	.142	.807	.33
74	2793		924	6.3	910	6.4	.25	1.67	.012	.986	.84?
107	1455		961	6.4	961	6.4	.20	1.67	.004	1.000	1.00?
73	462		1098	6.4	1098	6.4	.80	1.50	.001	1.000	1.00?
5	717		1125	6.4	1125	6.4	.80	1.50	.001	1.000	1.00?
72	3305		127	6.2	117	6.4	1.70	1.30	.066	.916	.49
20	1187		277	6.2	277	6.2	.33	1.67	.005	1.000	1.00?
6	1461		342	6.1	341	6.2	1.70	1.30	.019	.995	.96?
8	507		1521	6.3	1521	6.3	2.90	1.40	.000	1.000	1.00?

D

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1		STORM 2									
4	1900		159	6.1	159	6.1	2.90	1.40	.017	1.000	1.00?
57	1614		1044	6.7	1044	6.7	2.90	1.40	.001	1.000	1.00?
56	2274		1372	6.7	1372	6.7	2.90	1.40	.002	1.000	1.00?
71	1302		76	6.7	76	6.7	2.90	1.40	.005	1.000	1.00?

D

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 97	4.53		

ALTERNATE	1		1490	1012
STRUCTURE 90		4.21		
ALTERNATE	1		3357	1392
STRUCTURE 89		2.17		
ALTERNATE	1		1542	593
STRUCTURE 88		.44		
ALTERNATE	1		478	221
STRUCTURE 87		1.32		
ALTERNATE	1		1146	479
STRUCTURE 85		.57		
ALTERNATE	1		657	277
STRUCTURE 73		3.65		
ALTERNATE	1		2495	1099
STRUCTURE 72		1.58		
ALTERNATE	1		1388	610
STRUCTURE 71		.78		
ALTERNATE	1		496	187
STRUCTURE 70		.68		
ALTERNATE	1		404	138
STRUCTURE 69		1.71		
ALTERNATE	1		632	163
STRUCTURE 68		3.73		
ALTERNATE	1		2550	1127
STRUCTURE 67		4.45		
ALTERNATE	1		3336	1522
STRUCTURE 66		3.78		

0

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 66		3.78		
ALTERNATE	1		2600	1161
STRUCTURE 65		4.53		
ALTERNATE	1		3444	1558
STRUCTURE 55		.88		
ALTERNATE	1		389	102
STRUCTURE 54		.49		
ALTERNATE	1		262	63
STRUCTURE 53		1.58		

ALTERNATE	1	608	154
STRUCTURE 52	1.73		
ALTERNATE	1	1965	925
STRUCTURE 43	.63		
ALTERNATE	1	777	345
STRUCTURE 42	1.88		
ALTERNATE	1	2054	962
STRUCTURE 41	5.18		
ALTERNATE	1	2092	1372
STRUCTURE 39	.24		
ALTERNATE	1	284	134
STRUCTURE 38	.35		
ALTERNATE	1	192	61
STRUCTURE 37	1.49		
ALTERNATE	1	1163	478
STRUCTURE 36	.39		
ALTERNATE	1	483	232
STRUCTURE 35	1.24		
ALTERNATE	1	1009	406

D

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 34		1.43		
ALTERNATE	1		1088	446
STRUCTURE 33		1.61		
ALTERNATE	1		1295	530
STRUCTURE 32		2.36		
ALTERNATE	1		1737	653
STRUCTURE 31		.25		
ALTERNATE	1		262	134
STRUCTURE 30		1.54		
ALTERNATE	1		1344	585
STRUCTURE 29		4.53		
ALTERNATE	1		3619	1455
XSECTION 3		.14		
ALTERNATE	1		306	159
XSECTION 4		.16		
ALTERNATE	1		155	76
XSECTION 5		.05		

	ALTERNATE	1	138	77
XSECTION	6	.04		
	ALTERNATE	1	115	65
XSECTION	7	.06		
	ALTERNATE	1	64	20
XSECTION	8	.08		
	ALTERNATE	1	148	65
XSECTION	11	.10		
	ALTERNATE	1	130	61

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION	12	.10		
	ALTERNATE	1	106	50
XSECTION	13	.18		
	ALTERNATE	1	298	146
XSECTION	14	.04		
	ALTERNATE	1	47	26
XSECTION	15	.06		
	ALTERNATE	1	77	36
XSECTION	16	.12		
	ALTERNATE	1	138	63
XSECTION	20	.06		
	ALTERNATE	1	153	81
XSECTION	45	.32		
	ALTERNATE	1	499	248
XSECTION	47	.19		
	ALTERNATE	1	213	93
XSECTION	48	.56		
	ALTERNATE	1	248	62
XSECTION	49	.27		
	ALTERNATE	1	170	48
XSECTION	50	.19		
	ALTERNATE	1	123	53
XSECTION	51	.13		
	ALTERNATE	1	170	73
XSECTION	52	.27		
	ALTERNATE	1	296	154

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 SUMMARY, JOB NO. 1 PAGE 47

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 53		.15		
ALTERNATE	1		178	83
XSECTION 54		.15		
ALTERNATE	1		233	121
XSECTION 55		.22		
ALTERNATE	1		217	107
XSECTION 56		5.18		
ALTERNATE	1		2092	1372
XSECTION 57		.51		
ALTERNATE	1		604	328
XSECTION 71		.09		
ALTERNATE	1		107	58
XSECTION 72		.24		
ALTERNATE	1		425	197
XSECTION 73		.08		
ALTERNATE	1		149	68
XSECTION 74		.15		
ALTERNATE	1		374	195
XSECTION 75		.13		
ALTERNATE	1		280	136
XSECTION 76		.14		
ALTERNATE	1		173	84
XSECTION 77		.19		
ALTERNATE	1		198	92
XSECTION 78		.31		
ALTERNATE	1		386	189

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 SUMMARY, JOB NO. 1 PAGE 48

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 79	.27		

	ALTERNATE	1	101	25
XSECTION	80	.08		
	ALTERNATE	1	131	55
XSECTION	81	.35		
	ALTERNATE	1	249	61
XSECTION	82	.24		
	ALTERNATE	1	92	22
XSECTION	83	.35		
	ALTERNATE	1	135	37
XSECTION	84	.19		
	ALTERNATE	1	364	186
XSECTION	85	.27		
	ALTERNATE	1	463	235
XSECTION	86	.33		
	ALTERNATE	1	336	128
XSECTION	91	.41		
	ALTERNATE	1	832	423
XSECTION	92	.42		
	ALTERNATE	1	558	249
XSECTION	93	.24		
	ALTERNATE	1	141	41
XSECTION	94	.43		
	ALTERNATE	1	151	37
XSECTION	95	.11		
	ALTERNATE	1	46	11

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. -, CPH PROPERTIES VERSION
03/21/** 24 HR TYPE IIA CURVE 2.04TEST
14:44:13 SUMMARY, JOB NO. 1 PAGE 49

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION	96	.14		
	ALTERNATE	1	63	15
XSECTION	97	.07		
	ALTERNATE	1	52	15
XSECTION	98	.14		
	ALTERNATE	1	101	29
XSECTION	99	.44		
	ALTERNATE	1	213	63
XSECTION	107	1.88		
	ALTERNATE	1	2054	962
XSECTION	145	4.21		

```
 ----------------------------
    ALTERNATE    1              3331      1367

 XSECTION  194         .14
 ----------------------------
    ALTERNATE    1                79        21
```

```
TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
03/21/**                       24 HR TYPE IIA CURVE                        2.04TEST


END OF  1 JOBS IN THIS RUN
```

```
                    SCS  TR-20,  VERSION 2.04TEST
                                  FILES

     INPUT  = C:\TR20\BLRTR20\EFSCPR13.DAT            , GIVEN DATA FILE
     OUTPUT = C:\TR20\BLRTR20\EFSCPR13.OUT            , DATED 03/21/**,14:44:13

              FILES GENERATED - DATED 03/21/**,14:44:13

    FILE C:\TR20\BLRTR20\EFSCPR13.TRD CONTAINS READHD INFORMATION


          TOTAL NUMBER OF WARNINGS =  29,  MESSAGES =   2

                       JOB ENDED AT 14:44:13
                   *** TR-20 RUN COMPLETED ***
```

POND 89
INTERIM CONDITIONS INPUT

EFSCpr16.DAT

```
JOB TR-20                                                    NOPLOTS
TITLE 001 PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES  efscpr16.dat
TITLE     24 HR TYPE IIA CURVE
 5 RAINFL 1                  .50
 8              0.000       .0025       0.005       .0075       0.010
 8              0.015       0.020       0.025       0.030       0.050
 8              0.060       0.100       0.700       0.750       0.780
 8              0.798       0.820       0.830       0.840       0.850
 8              0.860       0.865       0.870       0.885       0.890
 8              0.900       0.905       0.910       0.915       0.921
 8              0.927       0.933       0.940       0.945       0.950
 8              0.955       0.960       0.965       0.970       0.975
 8              0.980       0.983       0.985       0.988       0.990
 8              0.993       0.995       0.998       1.000       1.000
 9 ENDTBL
 3 STRUCT      89
 8                          0.          0.          0.
 8                        10.21       142.        120.
 8                        15.21       185.        269.
 8                        18.01       200.        363.
 8                        18.41       215.        378.
 8                        18.71       245.        390.
 8                        19.21       330.        409.
 8                        20.21       590.        450.
 8                        21.21       930.        493.
 8                        22.21      1340.        539.
 8                        23.55      1943.        603.
 9 ENDTBL
 3 STRUCT      79
 8                          0.          0.          0.
 8                          2.          163.        35.
 8                          4.          461.        70.0
 8                          6.          826.       105.0
 8                          8.         1152.       140.
 8                         10.         1363.       175.
 8                         12.         1574.       210.
 8                         14.         1805.       245.
 8                         16.         1978.       280.
 8                         18.         2170.       315.
 8                         20.         2304.       350.
 9 ENDTBL
 3 STRUCT      77
 8                          0.          0.          0.
 8                          2.           92.        30.
 8                          4.          259.        60.0
 8                          6.          464.        90.0
 8                          8.          648.       120.
 8                         10.          767.       150.
 8                         12.          886.       180.
 8                         14.         1015.       210.
 8                         16.         1112.       240.
 8                         18.         1220.       270.
 8                         20.         1296.       300.
 9 ENDTBL
 3 STRUCT      98
 8                          0.          0.          0.
 8                       0.88          15.         26.
 8                       2.15          57.         66.
 8                       3.13          98.        109.
 8                       3.99         140.        142.
 8                       4.77         181.        172.
 8                       5.50         222.        200.
 8                       6.19         264.        228.
 8                       6.84         305.        253.
 8                       8.10         347.        304.
 8                       9.03         388.        342.
 8                       9.97         429.        382.
 9 ENDTBL
 3 STRUCT      97
 8                          0.          0.          0.
 8                       0.23           3.        0.01
 8                       1.23          30.        0.05
 8                       2.23          67.        0.19
 8                       3.23         115.        0.51
 8                       4.23         173.        1.78
 8                       5.23         238.        5.66
 8                       6.23         312.       13.96
 8                       7.23         390.       27.95
 8                       8.83         520.       61.55
 8                       9.23         565.       70.91
 8                       9.53         595.       83.57
 8                      10.13         650.       87.52
 8                      10.23         660.       96.22
 8                      11.23         760.      122.25
 8                      12.12         848.      148.71
 8                      13.23         910.       175.6
 8                      14.23         977.       203.8
 8                      15.23        1043.       232.0
```

```
9 ENDTBL
3 STRUCT       96
8                          0.          0.          0.
8                        1.0          5.         0.8
8                        2.0         13.          6.
8                        3.0         24.         22.
8                        4.0         38.         54.
8                        5.0         52.        101.
8                        6.0         69.        154.
8                        7.0         86.        206.
8                        8.0        106.        254.
8                        9.0        126.        298.
9 ENDTBL
3 STRUCT       95
8                          0.          0.          0.
8                       2.31         44.         3.5
8                       3.83         95.        11.7
8                       5.08        146.        21.0
8                       6.19        196.        29.7
8                       7.21        247.        37.9
8                       7.62        298.        41.2
8                       8.65        348.        49.7
9 ENDTBL
3 STRUCT       93
8                          0.          0.          0.
8                        0.6        0.01         0.2
8                        1.3        0.02         0.6
8                        1.9        0.03         1.6
8                       2.51        0.04         3.2
8                       3.21         8.8         5.5
8                       5.34        30.0         14.
8                        5.5         37.         15.
8                        6.4         45.         19.
8                        7.1         52.         22.
8                         8.         59.         26.
9 ENDTBL
6 RUNOFF 1  80       1          0.08        81.0        0.41          1
6 REACH  3  79   1   2        5690.7         1.7        1.25          1
6 RUNOFF 1  79       1          0.27        65.0        1.15          1
6 ADDHYD 4    38 1 2 3                                                1
6 REACH  3  13   3   1        4848.9         1.1         1.4          1
6 RUNOFF 1  13       2          0.18        87.0        0.67          1
6 ADDHYD 4    35 1 2 3                                                1
6 RUNOFF 1  78       1          0.31        87.0        1.06          1
6 REACH  3  51   1   2        3804.2        0.39        1.67          1
6 RUNOFF 1  51       1          0.13        81.4        0.67          1
6 RUNOFF 1  49       4          0.27        69.0        0.76          1
6 REACH  3  49   4   5        1380.0         1.0         1.4          1
6 ADDHYD 4    88 1 2 4                                                1
6 ADDHYD 4    35 3 5 6                                                1
6 ADDHYD 4    35 4 6 1                                                1
6 REACH  3  50   1   2        1361.3        0.18        1.67          1
6 RUNOFF 1  50       3          0.19        81.3        1.83          1
6 ADDHYD 4    34 2 3 4                                                1
6 REACH  3  15   4   1        1184.6         1.1         1.4          1
6 RUNOFF 1  15       2          0.06        85.0        0.91          1
6 ADDHYD 4    37 1 2 3                                        1       1
6 REACH  3  16   3   2        2040.3         1.1         1.4          1
6 RUNOFF 1  16       1          0.12        84.0        0.98          1
6 RUNOFF 1  48       3          0.56        66.0        0.98          1
6 REACH  3  48   3   4        1466.0         1.1         1.4          1
6 ADDHYD 4    33 1 2 3                                                1
6 ADDHYD 4    89 3 4 5                                                1
6 REACH  3  47   5   2        2201.7         0.2         1.7          1
6 RUNOFF 1  47       3          0.19        82.0        0.91          1
6 ADDHYD 4    32 2 3 1                                                1
6 RUNOFF 1  96       2          0.14        65.0        0.88          1
6 REACH  3  81   2   3        5193.0         1.4         1.3          1
6 RUNOFF 1  81       4          0.35        66.0        0.39          1
6 ADDHYD 4    54 3 4 2                                                1
6 REACH  3  77   2   5        3245.1        0.39        1.67          1
6 RUNOFF 1  76       6          0.14        87.0        1.08          1
6 REACH  3  11   6   2        2203.4        0.86         1.5          1
6 RUNOFF 1  11       3          0.10        85.1        0.88          1
6 ADDHYD 4    39 2 3 4                                                1
6 REACH  3  54   4   2        2419.5        0.31        1.67          1
6 RUNOFF 1  54       3          0.15        90.0        0.92          1
6 ADDHYD 4    36 2 3 6                                                1
6 RUNOFF 1  77       2          0.19        85.0        1.21          1
6 ADDHYD 4    70 2 5 4                                                1
6 REACH  3  12   4   3        1478.8        0.37        1.67          1
6 RUNOFF 1  12       4          0.10        85.4        1.21          1
6 ADDHYD 4    71 3 4 5                                                1
   1
6 REACH  3  53   5   3        2579.0        0.27        1.67          1
6 RUNOFF 1  53       2          0.15        85.1        1.02          1
6 ADDHYD 4    87 2 3 4                                                1
6 ADDHYD 4    87 4 6 3                                                1
```

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6 REACH   3  55    3    2        2276.1        0.37         1.67              1
6 RUNOFF  1  55         3          0.22        87.3         1.47              1
6 ADDHYD  4     30 2 3 4                                                       1
6 REACH   3  14    4    2        1057.7        0.37         1.67              1
6 RUNOFF  1  14         3          0.04        92.0         1.47              1
6 ADDHYD  4     72 2 3 5                                          1            1
6 REACH   3  52    5    3        2987.0         0.3          1.6              1
6 RUNOFF  1  52         2          0.27        90.0         1.47              1
6 ADDHYD  4     90 2 3 4                                                       1
6 ADDHYD  4     90 1 4 2                                          1            1
6 REACH   3 145    2    3        3325.0         0.1          1.7              1
6 RUNOFF  1  45         2          0.32        88.0         0.78              1
6 ADDHYD  4     29 3 2 1                                                       1
6 RUNOFF  1  98         2          0.14        65.0         0.60             1
6 REACH   3 194    2    3        5914.0         1.8          1.3              1
6 RUNOFF  1  97         2          0.07        65.0         0.58              1
6 REACH   3  94    2    4        5914.0         1.7          1.27             1
6 RUNOFF  1  93         2          0.24        65.0         0.86              1
6 RUNOFF  1  94         5          0.43        65.0         1.27              1
6 ADDHYD  4     55 3 5 6                                                       1
6 ADDHYD  4     55 2 4 3                                                       1
6 ADDHYD  4     55 3 6 2                                                       1
6 REACH   3  83    2    3        6124.0         1.9          1.3              1
6 RUNOFF  1  83         5          0.35        65.0         1.34              1
6 RUNOFF  1  95         2          0.11        65.0         0.98              1
6 REACH   3  82    2    4        5808.0         1.4          1.3              1
6 RUNOFF  1  82         2          0.24        65.0         1.12              1
6 ADDHYD  4     53 3 5 6                                                       1
6 ADDHYD  4     53 2 4 5                                                       1
6 ADDHYD  4     53 5 6 2                                                       1
6 REACH   3  75    2    3        2699.2        0.25         1.67              1
6 RUNOFF  1  75         4          0.13        65.0         0.37              1
6 ADDHYD  4     69 3 4 5                                                       1
6 REACH   3   7    5    2        1618.0        0.21         1.67              1
6 RUNOFF  1  99         6          0.44        65.0         1.15              1
6 RUNOFF  1  92         5          0.42        65.0         0.74              1
6 REACH   3  84    5    3        5491.0         2.0          1.3              1
6 RUNOFF  1  84         4          0.19        65.0         0.60              1
6 ADDHYD  4     52 3 4 5                                                       1
6 REACH   3  91    6    3        5491.0         2.0          1.3              1
6 RUNOFF  1  91         4          0.41        65.0         0.54              1
6 ADDHYD  4     52 3 4 6                                                       1
6 REACH   3  85    6    4        6178.0         1.4          1.3              1
6 RUNOFF  1  85         6          0.27        65.0         0.72              1
6 ADDHYD  4     52 4 6 3                                                       1
6 ADDHYD  4     52 3 5 4                                                       1
6 REACH   3  74    4    3        2793.4        0.25         1.67              1
6 RUNOFF  1  74         4          0.15        65.0         0.33              1
6 ADDHYD  4     42 3 4 5                                                       1
6 REACH   3 107    5    3        1455.4         0.2          1.67             1
6 RUNOFF  1   7         4          0.06        65.0         0.34              1
6 ADDHYD  4     73 2 4 5                                                       1
6 ADDHYD  4     73 3 5 4                                          1            1
6 REACH   3  73    4    2         462.3         0.8          1.5  1 1 1 1 1   1
6 RUNOFF  1  73         3          0.08        65.0         0.40              1
6 ADDHYD  4     68 2 3 4                                                       1
6 REACH   3   5    4    2         717.2         0.8          1.5              1
6 RUNOFF  1  86         3          0.33        65.0         0.71              1
6 REACH   3  72    3    4        3305.2         1.7          1.3              1
6 RUNOFF  1  72         3          0.24        71.0         0.51              1
6 ADDHYD  4     85 3 4 5                                                       1
6 REACH   3  20    5    3        1186.8        0.33         1.67              1
6 RUNOFF  1  20         4          0.06        91.0         0.35              1
6 ADDHYD  4     43 3 4 5                                                       1
6 REACH   3   6    5    3        1460.6         1.7          1.3              1
6 RUNOFF  1   5         4          0.05        65.0         0.39              1
6 RUNOFF  1   6         5          0.04        65.0         0.33              1
6 ADDHYD  4     66 2 4 6                                                       1
6 ADDHYD  4     67 3 5 4                                                       1
6 ADDHYD  4     67 4 6 2                                                       1
6 REACH   3   8    2    3         506.6         2.9          1.4              1
6 RUNOFF  1   8         2          0.08        65.0         0.35              1
6 ADDHYD  4     65 2 3 4                                          1            1
6 RESVOR  2     97 4    3        0000.0                         1            1
6 RUNOFF  1   3         5          0.14        90.0         0.50              1
6 REACH   3   4    5    6        1900.0         2.9          1.4              1
6 ADDHYD  4     41 6 3 4                                                       1
6 REACH   3  57    4    2        1614.2         2.9          1.4              1
6 RUNOFF  1  57         3          0.11        65.0         0.55              1
6 ADDHYD  4     41 2 3 4                                                       1
6 REACH   3  56    4    2        2274.1         2.9          1.4              1
6 RUNOFF  1   4         5          0.16        86.8         1.46              1
6 REACH   3  71    5    3        1302.0         2.9          1.4              1
6 RUNOFF  1  71         4          0.09        92.0         1.46              1
6 ADDHYD  4     31 3 4 5                                                       1
6 REACH   3   9    5    3        1253.3         2.9          1.4              1
6 RUNOFF  1   9         4          0.05        87.3         1.46              1
6 RUNOFF  1  56         5          0.15        85.0         1.13              1
```

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6 ADDHYD 4     40 3 4 6                                                  1
6 ADDHYD 4     86 2 5 4                                                  1
6 ADDHYD 4     86 4 6 2                                                  1
6 REACH  3  10    2.   3        711.1          .9          1.6           1
6 RUNOFF 1  10         2          0.18         91.0         1.54          1
6 ADDHYD 4     74 2 3 4                                                  1
6 REACH  3  44    4    2       6889.9          0.9          1.6           1
6 RUNOFF 1  44         3          0.29         86.0         0.27          1
6 ADDHYD 4     91 2 3 6                                                  1
6 ADDHYD 4     91 6 1 2                                      1           1
6 RESVOR 2     89 2    6       0000.0                        1           1
6 REACH  3  28    6    2       3168.0          0.2          1.6           1
6 RUNOFF 1  29         3          0.17         90.0         0.32          1
6 REACH  3 128    3    1       3131.0          0.5          1.5           1
6 RUNOFF 1  27         3          0.14         86.0         0.31          1
6 RUNOFF 1  28         4          0.33         90.0         0.34          1
6 ADDHYD 4     19 2 1 5                                                  1
6 ADDHYD 4     19 5 3 1                                                  1
6 ADDHYD 4     19 1 4 7                                  1 1   1         1
6 REACH  3  26    7    1       3221.0          0.2          1.6           1
6 RUNOFF 1  26         2          0.47         81.0         0.48          1
6 ADDHYD 4     18 1 2 3                                                  1
6 REACH  3  25    3    1       2323.0          0.2          1.6           1
6 RUNOFF 1  25         2          0.26         81.0         0.21          1
6 ADDHYD 4     17 1 2 3                                                  1
6 REACH  3  24    3    1       2524.0          0.2          1.6           1
6 RUNOFF 1  24         2          0.28         90.0         0.26          1
6 ADDHYD 4     12 1 2 3                                                  1
6 RUNOFF 1  41         1          0.16         80.0         0.32          1
6 REACH  3  31    1    2       3358.0          0.5          1.5           1
6 RUNOFF 1  31         1          0.24         86.0         0.19          1
6 ADDHYD 4     20 1 2 4                                                  1
6 REACH  3  30    4    1       2323.0          0.3          1.5           1
6 RUNOFF 1  30         2          0.10         83.0         0.13          1
6 ADDHYD 4     16 1 2 4                                                  1
6 REACH  3 124    4    1       4594.0          0.7          1.6           1
6 RUNOFF 1  32         2          0.15         82.0         0.39          1
6 REACH  3 198    2    4       5227.0          1.2          1.6           1
6 ADDHYD 4     12 1 4 2                                                  1
6 ADDHYD 4     12 2 3 1                                                  1
6 REACH  3  18    1    2       3696.0          0.2          1.7           1
6 RUNOFF 1  18         7          0.40         90.0         0.78          1
6 ADDHYD 4     57 2 7 1                                  1 1   1         1
6 RUNOFF 1  87         2          0.13         65.0         1.35          1
6 REACH  3  70    2    3       2742.7          1.2          1.3           1
6 RUNOFF 1  70         2          0.15         86.0         1.66          1
6 ADDHYD 4     63 2 3 4                                                  1
6 REACH  3  19    4    3       1059.6         0.21         1.67           1
6 RUNOFF 1  19         2          0.05         72.6         0.29          1
6 ADDHYD 4     62 2 3 4                                                  1
6 REACH  3   1    4    3       1515.0          1.9          1.3           1
6 RUNOFF 1   1         2          0.07         94.0         0.29          1
6 ADDHYD 4     61 2 3 4                                                  1
6 REACH  3   2    4    3       4301.1          1.9          1.3           1
6 RUNOFF 1   2         2          0.24         84.4         0.29          1
6 ADDHYD 4     43 2 3 4                                                  1
6 REACH  3  58    4    3       1291.6          1.9          1.3           1
6 RUNOFF 1  58         2          0.11         92.8         0.76          1
6 ADDHYD 4     28 2 3 4                                      1           1
6 REACH  3  43    4    3       4663.5          1.2          1.4           1
6 RUNOFF 1  43         2          0.16         86.0         0.73          1
6 ADDHYD 4     26 2 3 6                                                  1
  ENDATA
7 LIST
7 INCREM 6                    .100
7 COMPUT 7  80        31         0.0          4.5          1.01 2  01  01
  ENDCMP 1
7 COMPUT 7  80        31         0.0          2.85         1.01 2  01  02
  ENDCMP 1
  ENDJOB 2
```

POND 89

INTERUM CONDITIONS OUTPUT

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 1

EXECUTIVE CONTROL LIST 0. 0. 0.

LISTING OF CURRENT DATA

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	77			
		.00	.00	.00
		2.00	92.00	30.00
		4.00	259.00	60.00
		6.00	464.00	90.00
		8.00	648.00	120.00
		10.00	767.00	150.00
		12.00	886.00	180.00
		14.00	1015.00	210.00
		16.00	1112.00	240.00
		18.00	1220.00	270.00
		20.00	1296.00	300.00
ENDTBL				

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	79			
		.00	.00	.00
		2.00	163.00	35.00
		4.00	461.00	70.00
		6.00	826.00	105.00
		8.00	1152.00	140.00
		10.00	1363.00	175.00
		12.00	1574.00	210.00
		14.00	1805.00	245.00
		16.00	1978.00	280.00
		18.00	2170.00	315.00
		20.00	2304.00	350.00
ENDTBL				

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 2

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	89			
		.00	.00	.00
		10.21	142.00	120.00
		15.21	185.00	269.00
		18.01	200.00	363.00
		18.41	215.00	378.00
		18.71	245.00	390.00
		19.21	330.00	409.00
		20.21	590.00	450.00
		21.21	930.00	493.00
		22.21	1340.00	539.00
		23.55	1943.00	603.00
ENDTBL				

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE
STRUCT	93			
		.00	.00	.00
		.60	.01	.20
		1.30	.02	.60
		1.90	.03	1.60
		2.51	.04	3.20
		3.21	8.80	5.50
		5.34	30.00	14.00
		5.50	37.00	15.00
		6.40	45.00	19.00
		7.10	52.00	22.00
		8.00	59.00	26.00
ENDTBL				

	STRUCT NO.	ELEVATION	DISCHARGE	STORAGE

```
STRUCT         95

                                .00          .00          .00
                               2.31        44.00         3.50
                               3.83        95.00        11.70
                               5.08       146.00        21.00
                               6.19       196.00        29.70
                               7.21       247.00        37.90
                               7.62       298.00        41.20
                               8.65       348.00        49.70
ENDTBL
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/**                        24 HR TYPE IIA CURVE                      2.04TEST
13:30:12                      PASS   1   JOB NO.   1                      PAGE   3


              STRUCT NO.      ELEVATION    DISCHARGE      STORAGE
STRUCT          96

                                .00          .00          .00
                               1.00         5.00          .80
                               2.00        13.00         6.00
                               3.00        24.00        22.00
                               4.00        38.00        54.00
                               5.00        52.00       101.00
                               6.00        69.00       154.00
                               7.00        86.00       206.00
                               8.00       106.00       254.00
                               9.00       126.00       298.00
ENDTBL

              STRUCT NO.      ELEVATION    DISCHARGE      STORAGE
STRUCT          97

                                .00          .00          .00
                                .23         3.00          .01
                               1.23        30.00          .05
                               2.23        67.00          .19
                               3.23       115.00          .51
                               4.23       173.00         1.78
                               5.23       238.00         5.66
                               6.23       312.00        13.96
                               7.23       390.00        27.95
                               8.83       520.00        61.55
                               9.23       565.00        70.91
                               9.53       595.00        83.57
                              10.13       650.00        87.52
                              10.23       660.00        96.22
                              11.23       760.00       122.25
                              12.12       848.00       148.71
                              13.23       910.00       175.60
                              14.23       977.00       203.80
                              15.23      1043.00       232.00
ENDTBL
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/**                        24 HR TYPE IIA CURVE                      2.04TEST
13:30:12                      PASS   1   JOB NO.   1                      PAGE   4


              STRUCT NO.      ELEVATION    DISCHARGE      STORAGE
STRUCT          98

                                .00          .00          .00
                                .88        15.00        26.00
                               2.15        57.00        66.00
                               3.13        98.00       109.00
                               3.99       140.00       142.00
                               4.77       181.00       172.00
                               5.50       222.00       200.00
                               6.19       264.00       228.00
                               6.84       305.00       253.00
                               8.10       347.00       304.00
                               9.03       388.00       342.00
                               9.97       429.00       382.00
ENDTBL

                      COMPUTED TIME INCREMENT
DIMHYD                          .0200

                    .0000        .0300        .1000        .1900        .3100
                    .4700        .6600        .8200        .9300        .9900
                   1.0000        .9900        .9300        .8600        .7800
```

.6800	.5600	.4600	.3900	.3300
.2800	.2410	.2070	.1740	.1470
.1260	.1070	.0910	.0770	.0660
.0550	.0470	.0400	.0340	.0290
.0250	.0210	.0180	.0150	.0130
.0110	.0090	.0080	.0070	.0060
.0050	.0040	.0030	.0020	.0010
.0000	.0000	.0000	.0000	.0000

ENDTBL

COMPUTED PEAK RATE FACTOR = 484.000

0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 5

TABLE NO. TIME INCREMENT
RAINFL 1 .5000

.0000	.0025	.0050	.0075	.0100
.0150	.0200	.0250	.0300	.0500
.0600	.1000	.7000	.7500	.7800
.7980	.8200	.8300	.8400	.8500
.8600	.8650	.8700	.8850	.8900
.9000	.9050	.9100	.9150	.9210
.9270	.9330	.9400	.9450	.9500
.9550	.9600	.9650	.9700	.9750
.9800	.9830	.9850	.9880	.9900
.9930	.9950	.9980	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 6

TABLE NO. TIME INCREMENT
RAINFL 2 .1000

.0000	.0010	.0020	.0030	.0041
.0051	.0062	.0072	.0083	.0094
.0105	.0116	.0127	.0138	.0150
.0161	.0173	.0184	.0196	.0208
.0220	.0232	.0244	.0257	.0269
.0281	.0294	.0306	.0319	.0332
.0345	.0358	.0371	.0384	.0398
.0411	.0425	.0439	.0452	.0466
.0480	.0494	.0508	.0523	.0538
.0553	.0568	.0583	.0598	.0614
.0630	.0646	.0662	.0679	.0696
.0712	.0730	.0747	.0764	.0782
.0800	.0818	.0836	.0855	.0874
.0892	.0912	.0931	.0950	.0970
.0990	.1010	.1030	.1051	.1072
.1093	.1114	.1135	.1156	.1178
.1200	.1222	.1246	.1270	.1296
.1322	.1350	.1379	.1408	.1438
.1470	.1502	.1534	.1566	.1598
.1630	.1663	.1697	.1733	.1771
.1810	.1851	.1895	.1941	.1989
.2040	.2094	.2152	.2214	.2280
.2350	.2427	.2513	.2609	.2715
.2830	.3068	.3544	.4308	.5679
.6630	.6820	.6986	.7130	.7252
.7350	.7434	.7514	.7588	.7656
.7720	.7780	.7836	.7890	.7942
.7990	.8036	.8080	.8122	.8162
.8200	.8237	.8273	.8308	.8342
.8376	.8409	.8442	.8474	.8505
.8535	.8565	.8594	.8622	.8649
.8676	.8702	.8728	.8753	.8777
.8800	.8823	.8845	.8868	.8890
.8912	.8934	.8955	.8976	.8997
.9018	.9038	.9058	.9078	.9097
.9117	.9136	.9155	.9173	.9192
.9210	.9228	.9245	.9263	.9280
.9297	.9313	.9330	.9346	.9362
.9377	.9393	.9408	.9423	.9438
.9452	.9466	.9480	.9493	.9507
.9520	.9533	.9546	.9559	.9572
.9584	.9597	.9610	.9622	.9635
.9647	.9660	.9672	.9685	.9697

.9709	.9722	.9734	.9746	.9758
.9770	.9782	.9794	.9806	.9818
.9829	.9841	.9853	.9864	.9876
.9887	.9899	.9910	.9922	.9933
.9944	.9956	.9967	.9978	.9989
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 7

TABLE NO. TIME INCREMENT
RAINFL 3 .1000

.0000	.0022	.0043	.0063	.0082
.0100	.0118	.0137	.0157	.0178
.0200	.0228	.0257	.0287	.0318
.0350	.0380	.0410	.0439	.0470
.0500	.0531	.0563	.0595	.0628
.0660	.0692	.0724	.0756	.0788
.0820	.0851	.0883	.0915	.0947
.0980	.1015	.1050	.1086	.1123
.1160	.1197	.1234	.1272	.1311
.1350	.1390	.1431	.1473	.1516
.1560	.1606	.1653	.1701	.1750
.1800	.1849	.1900	.1952	.2005
.2060	.2120	.2181	.2243	.2306
.2370	.2429	.2488	.2549	.2613
.2680	.2752	.2829	.2912	.3002
.3100	.3314	.3547	.3788	.4026
.4250	.4394	.4517	.4623	.4716
.4800	.4890	.4975	.5055	.5130
.5200	.5266	.5329	.5389	.5446
.5500	.5556	.5612	.5666	.5718
.5770	.5820	.5868	.5916	.5964
.6010	.6058	.6104	.6150	.6196
.6240	.6284	.6326	.6368	.6410
.6450	.6489	.6527	.6565	.6603
.6640	.6677	.6715	.6753	.6791
.6830	.6866	.6903	.6939	.6974
.7010	.7047	.7084	.7120	.7155
.7190	.7225	.7259	.7293	.7326
.7360	.7394	.7428	.7461	.7495
.7528	.7561	.7594	.7627	.7660
.7692	.7725	.7757	.7789	.7821
.7853	.7885	.7916	.7947	.7979
.8010	.8041	.8071	.8102	.8132
.8163	.8193	.8223	.8252	.8282
.8312	.8341	.8370	.8399	.8428
.8457	.8486	.8514	.8542	.8570
.8598	.8626	.8654	.8681	.8709
.8736	.8763	.8790	.8817	.8844
.8870	.8896	.8923	.8949	.8974
.9000	.9026	.9051	.9076	.9101
.9126	.9151	.9176	.9200	.9225
.9249	.9273	.9297	.9321	.9344
.9368	.9391	.9414	.9437	.9460
.9482	.9505	.9527	.9550	.9572
.9594	.9615	.9637	.9658	.9680
.9701	.9722	.9743	.9764	.9784
.9804	.9825	.9845	.9865	.9884
.9904	.9924	.9943	.9962	.9981
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 8

TABLE NO. TIME INCREMENT
RAINFL 4 .1000

.0000	.0010	.0020	.0030	.0040
.0050	.0060	.0070	.0080	.0090
.0100	.0110	.0120	.0130	.0140
.0150	.0160	.0170	.0180	.0190
.0200	.0210	.0220	.0231	.0241
.0252	.0263	.0274	.0285	.0296
.0308	.0319	.0331	.0343	.0355
.0367	.0379	.0392	.0404	.0417
.0430	.0443	.0456	.0470	.0483

.0497	.0511	.0525	.0539	.0553
.0567	.0582	.0597	.0612	.0627
.0642	.0657	.0673	.0688	.0704
.0720	.0736	.0753	.0770	.0788
.0806	.0825	.0844	.0864	.0884
.0905	.0926	.0948	.0970	.0993
.1016	.1040	.1064	.1089	.1114
.1140	.1167	.1194	.1223	.1253
.1284	.1317	.1350	.1385	.1421
.1458	.1496	.1535	.1575	.1617
.1659	.1703	.1748	.1794	.1842
.1890	.1940	.1993	.2048	.2105
.2165	.2227	.2292	.2359	.2428
.2500	.2578	.2664	.2760	.2866
.2980	.3143	.3394	.3733	.4160
.5000	.5840	.6267	.6606	.6857
.7020	.7134	.7240	.7336	.7422
.7500	.7572	.7641	.7708	.7773
.7835	.7895	.7952	.8007	.8060
.8110	.8158	.8206	.8252	.8297
.8341	.8383	.8425	.8465	.8504
.8543	.8579	.8615	.8650	.8683
.8716	.8747	.8777	.8806	.8833
.8860	.8886	.8911	.8936	.8960
.8984	.9007	.9030	.9052	.9074
.9095	.9116	.9136	.9156	.9175
.9194	.9212	.9230	.9247	.9264
.9280	.9296	.9312	.9327	.9343
.9358	.9373	.9388	.9403	.9418
.9433	.9447	.9461	.9475	.9489
.9503	.9517	.9530	.9544	.9557
.9570	.9583	.9596	.9609	.9621
.9634	.9646	.9658	.9670	.9682
.9694	.9706	.9718	.9729	.9741
.9752	.9764	.9775	.9786	.9797
.9808	.9818	.9829	.9839	.9850
.9860	.9870	.9880	.9890	.9900
.9909	.9919	.9928	.9938	.9947
.9956	.9965	.9974	.9983	.9991
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 9

TABLE NO. TIME INCREMENT
RAINFL 5 .5000

.0000	.0020	.0050	.0080	.0110
.0140	.0170	.0200	.0230	.0260
.0290	.0320	.0350	.0380	.0410
.0440	.0470	.0510	.0550	.0590
.0630	.0670	.0710	.0750	.0790
.0840	.0890	.0940	.0990	.1040
.1090	.1140	.1200	.1260	.1330
.1400	.1470	.1540	.1620	.1710
.1810	.1920	.2040	.2170	.2330
.2520	.2770	.3180	.6380	.6980
.7290	.7520	.7700	.7850	.7980
.8090	.8190	.8290	.8380	.8460
.8540	.8610	.8680	.8740	.8800
.8860	.8920	.8970	.9020	.9070
.9120	.9170	.9210	.9250	.9290
.9330	.9370	.9410	.9450	.9490
.9530	.9570	.9600	.9630	.9660
.9690	.9720	.9750	.9780	.9810
.9840	.9870	.9900	.9930	.9960
.9980	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 10

TABLE NO. TIME INCREMENT
RAINFL 6 .0200

.0000	.0080	.0162	.0246	.0333
.0425	.0524	.0630	.0743	.0863
.0990	.1124	.1265	.1420	.1595
.1800	.2050	.2550	.3450	.4370

.5300	.6030	.6330	.6600	.6840
.7050	.7240	.7420	.7590	.7750
.7900	.8043	.8180	.8312	.8439
.8561	.8678	.8790	.8898	.9002
.9103	.9201	.9297	.9391	.9483
.9573	.9661	.9747	.9832	.9916
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

STANDARD CONTROL INSTRUCTIONS

RUNOFF	80		1	.0800	81.0000	.41000	0	0	0	0	1
REACH	79	1	2	5690.7000	1.7000	1.25000	0	0	0	0	1
RUNOFF	79		1	.2700	65.0000	1.15000	0	0	0	0	1
ADDHYD	38	1	2	3			0	0	0	0	1
REACH	13	3	1	4848.9000	1.1000	1.40000	0	0	0	0	1
RUNOFF	13		2	.1800	87.0000	.67000	0	0	0	0	1
ADDHYD	35	1	2	3			0	0	0	0	1
RUNOFF	78		1	.3100	87.0000	1.06000	0	0	0	0	1
REACH	51	1	2	3804.2000	.3900	1.67000	0	0	0	0	1
RUNOFF	51		1	.1300	81.4000	.67000	0	0	0	0	1
RUNOFF	49		4	.2700	69.0000	.76000	0	0	0	0	1
REACH	49	4	5	1380.0000	1.0000	1.40000	0	0	0	0	1
ADDHYD	88	1	2	4			0	0	0	0	1
ADDHYD	35	3	5	6			0	0	0	0	1
ADDHYD	35	4	6	1			0	0	0	0	1
REACH	50	1	2	1361.3000	.1800	1.67000	0	0	0	0	1
RUNOFF	50		3	.1900	81.3000	1.83000	0	0	0	0	1
ADDHYD	34	2	3	4			0	0	0	0	1
REACH	15	4	1	1184.6000	1.1000	1.40000	0	0	0	0	1
RUNOFF	15		2	.0600	85.0000	.91000	0	0	0	0	1
ADDHYD	37	1	2	3			0	1	0	0	1
REACH	16	3	2	2040.3000	1.1000	1.40000	0	0	0	0	1
RUNOFF	16		1	.1200	84.0000	.98000	0	0	0	0	1
RUNOFF	48		3	.5600	66.0000	.98000	0	0	0	0	1
REACH	48	3	4	1466.0000	1.1000	1.40000	0	0	0	0	1
ADDHYD	33	1	2	3			0	0	0	0	1
ADDHYD	89	3	4	5			0	0	0	0	1
REACH	47	5	2	2201.7000	.2000	1.70000	0	0	0	0	1
RUNOFF	47		3	.1900	82.0000	.91000	0	0	0	0	1
ADDHYD	32	2	3	1			0	0	0	0	1
RUNOFF	96		2	.1400	65.0000	.88000	0	0	0	0	1
REACH	81	2	3	5193.0000	1.4000	1.30000	0	0	0	0	1
RUNOFF	81		4	.3500	66.0000	.39000	0	0	0	0	1
ADDHYD	54	3	4	2			0	0	0	0	1
REACH	77	2	5	3245.1000	.3900	1.67000	0	0	0	0	1
RUNOFF	76		6	.1400	87.0000	1.08000	0	0	0	0	1
REACH	11	6	2	2203.4000	.8600	1.50000	0	0	0	0	1
RUNOFF	11		3	.1000	85.1000	.88000	0	0	0	0	1
ADDHYD	39	2	3	4			0	0	0	0	1
REACH	54	4	2	2419.5000	.3100	1.67000	0	0	0	0	1
RUNOFF	54		3	.1500	90.0000	.92000	0	0	0	0	1
ADDHYD	36	2	3	6			0	0	0	0	1
RUNOFF	77		2	.1900	85.0000	1.21000	0	0	0	0	1
ADDHYD	70	2	5	4			0	0	0	0	1
REACH	12	4	3	1478.8000	.3700	1.67000	0	0	0	0	1

0

RUNOFF	12		4	.1000	85.4000	1.21000	0	0	0	0	1
ADDHYD	71	3	4	5			0	0	0	0	1
REACH	53	5	3	2579.0000	.2700	1.67000	0	0	0	0	1
RUNOFF	53		2	.1500	85.1000	1.02000	0	0	0	0	1
ADDHYD	87	2	3	4			0	0	0	0	1
ADDHYD	87	4	6	3			0	0	0	0	1
REACH	55	3	2	2276.1000	.3700	1.67000	0	0	0	0	1
RUNOFF	55		3	.2200	87.3000	1.47000	0	0	0	0	1
ADDHYD	30	2	3	4			0	0	0	0	1
REACH	14	4	2	1057.7000	.3700	1.67000	0	0	0	0	1
RUNOFF	14		3	.0400	92.0000	1.47000	0	0	0	0	1
ADDHYD	72	2	3	5			0	1	0	0	1
REACH	52	5	3	2987.0000	.3000	1.60000	0	0	0	0	1
RUNOFF	52		2	.2700	90.0000	1.47000	0	0	0	0	1
ADDHYD	90	2	3	4			0	0	0	0	1
ADDHYD	90	1	4	2			0	1	0	0	1

```
REACH      145    2    3    3325.0000       .1000      1.70000 0 0 0 0 1
RUNOFF      45         2       .3200      88.0000       .78000 0 0 0 0 1
ADDHYD        29 3 2 1                                        0 0 0 0 0 1
RUNOFF      98         2       .1400      65.0000       .60000 0 0 0 0 1
REACH      194    2    3    5914.0000       1.8000      1.30000 0 0 0 0 1
RUNOFF      97         2       .0700      65.0000       .58000 0 0 0 0 1
REACH       94    2    4    5914.0000       1.7000      1.27000 0 0 0 0 1
RUNOFF      93         2       .2400      65.0000       .86000 0 0 0 0 1
RUNOFF      94         5       .4300      65.0000      1.27000 0 0 0 0 1
ADDHYD        55 3 5 6                                        0 0 0 0 0 1
ADDHYD        55 2 4 3                                        0 0 0 0 0 1
ADDHYD        55 3 6 2                                        0 0 0 0 0 1
REACH       83    2    3    6124.0000       1.9000      1.30000 0 0 0 0 1
RUNOFF      83         5       .3500      65.0000      1.34000 0 0 0 0 1
RUNOFF      95         2       .1100      65.0000       .98000 0 0 0 0 1
REACH       82    2    4    5808.0000       1.4000      1.30000 0 0 0 0 1
RUNOFF      82         2       .2400      65.0000      1.12000 0 0 0 0 1
ADDHYD        53 3 5 6                                        0 0 0 0 0 1
ADDHYD        53 2 4 5                                        0 0 0 0 0 1
ADDHYD        53 5 6 2                                        0 0 0 0 0 1
REACH       75    2    3    2699.2000       .2500      1.67000 0 0 0 0 1
RUNOFF      75         4       .1300      65.0000       .37000 0 0 0 0 1
ADDHYD        69 3 4 5                                        0 0 0 0 0 1
REACH        7    5    2    1618.0000       .2100      1.67000 0 0 0 0 1
RUNOFF      99         6       .4400      65.0000      1.15000 0 0 0 0 1
RUNOFF      92         5       .4200      65.0000       .74000 0 0 0 0 1
REACH       84    5    3    5491.0000       2.0000      1.30000 0 0 0 0 1
RUNOFF      84         4       .1900      65.0000       .60000 0 0 0 0 1
ADDHYD        52 3 4 5                                        0 0 0 0 0 1
REACH       91    6    3    5491.0000       2.0000      1.30000 0 0 0 0 1
RUNOFF      91         4       .4100      65.0000       .54000 0 0 0 0 1
ADDHYD        52 3 4 6                                        0 0 0 0 0 1
REACH       85    6    4    6178.0000       1.4000      1.30000 0 0 0 0 1
0
```

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TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/**                        24 HR TYPE IIA CURVE                    2.04TEST
13:30:12                      PASS   1   JOB NO.   1                    PAGE  13

RUNOFF      85         6       .2700      65.0000       .72000 0 0 0 0 1
ADDHYD        52 4 6 3                                        0 0 0 0 0 1
ADDHYD        52 3 5 4                                        0 0 0 0 0 1
REACH       74    4    3    2793.4000       .2500      1.67000 0 0 0 0 1
RUNOFF      74         4       .1500      65.0000       .33000 0 0 0 0 1
ADDHYD        42 3 4 5                                        0 0 0 0 0 1
REACH      107    5    3    1455.4000       .2000      1.67000 0 0 0 0 1
RUNOFF       7         4       .0600      65.0000       .34000 0 0 0 0 1
ADDHYD        73 2 4 5                                        0 0 0 0 0 1
ADDHYD        73 3 5 4                                        0 1 0 0 0 1
REACH       73    4    2     462.3000       .8000      1.50000 1 1 1 1 1
RUNOFF      73         3       .0800      65.0000       .40000 0 0 0 0 1
ADDHYD        68 2 3 4                                        0 0 0 0 0 1
REACH        5    4    2     717.2000       .8000      1.50000 0 0 0 0 1
RUNOFF      86         3       .3300      65.0000       .71000 0 0 0 0 1
REACH       72    3    4    3305.2000       1.7000      1.30000 0 0 0 0 1
RUNOFF      72         3       .2400      71.0000       .51000 0 0 0 0 1
ADDHYD        85 3 4 5                                        0 0 0 0 0 1
REACH       20    5    3    1186.8000       .3300      1.67000 0 0 0 0 1
RUNOFF      20         4       .0600      91.0000       .35000 0 0 0 0 1
ADDHYD        43 3 4 5                                        0 0 0 0 0 1
REACH        6    5    3    1460.6000       1.7000      1.30000 0 0 0 0 1
RUNOFF       5         4       .0500      65.0000       .39000 0 0 0 0 1
RUNOFF       6         5       .0400      65.0000       .33000 0 0 0 0 1
ADDHYD        66 2 4 6                                        0 0 0 0 0 1
ADDHYD        67 3 5 4                                        0 0 0 0 0 1
ADDHYD        67 4 6 2                                        0 0 0 0 0 1
REACH        8    2    3     506.6000       2.9000      1.40000 0 0 0 0 1
RUNOFF       8         2       .0800      65.0000       .35000 0 0 0 0 1
ADDHYD        65 2 3 4                                        0 1 0 0 0 1
RESVOR        97 4    3       .0000                       0 1 0 0 0 1
RUNOFF       3         5       .1400      90.0000       .50000 0 0 0 0 1
REACH        4    5    6    1900.0000       2.9000      1.40000 0 0 0 0 1
ADDHYD        41 6 3 4                                        0 0 0 0 0 1
REACH       57    4    2    1614.2000       2.9000      1.40000 0 0 0 0 1
RUNOFF      57         3       .1100      65.0000       .55000 0 0 0 0 1
ADDHYD        41 2 3 4                                        0 0 0 0 0 1
REACH       56    4    2    2274.1000       2.9000      1.40000 0 0 0 0 1
RUNOFF       4         5       .1600      86.8000      1.46000 0 0 0 0 1
REACH       71    5    3    1302.0000       2.9000      1.40000 0 0 0 0 1
RUNOFF      71         4       .0900      92.0000      1.46000 0 0 0 0 1
ADDHYD        31 3 4 5                                        0 0 0 0 0 1
REACH        9    5    3    1253.3000       2.9000      1.40000 0 0 0 0 1
RUNOFF       9         4       .0500      87.3000      1.46000 0 0 0 0 1
RUNOFF      56         5       .1500      85.0000      1.13000 0 0 0 0 1
ADDHYD        40 3 4 6                                        0 0 0 0 0 1
ADDHYD        86 2 5 4                                        0 0 0 0 0 1
ADDHYD        86 4 6 2                                        0 0 0 0 0 1
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REACH        10    2    3      711.1000        .9000      1.60000 0 0 0 0 1
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/**                          24 HR TYPE IIA CURVE                      2.04TEST
13:30:12                        PASS   1   JOB NO.   1                      PAGE  14

RUNOFF       10          2        .1800       91.0000      1.54000 0 0 0 0 1
ADDHYD         74 2 3 4                                          0 0 0 0 0 1
REACH        44    4    2     6889.9000         .9000      1.60000 0 0 0 0 1
RUNOFF       44          3        .2900       86.0000       .27000 0 0 0 0 1
ADDHYD         91 2 3 6                                          0 0 0 0 0 1
ADDHYD         91 6 1 2                                          0 1 0 0 0 1
RESVOR         89 2    6         .0000                          0 1 0 0 0 1
REACH        28    6    2     3168.0000         .2000      1.60000 0 0 0 0 1
RUNOFF       29          3        .1700       90.0000       .32000 0 0 0 0 1
REACH       128    3    1     3131.0000         .5000      1.50000 0 0 0 0 1
RUNOFF       27          3        .1400       86.0000       .31000 0 0 0 0 1
RUNOFF       28          4        .3300       90.0000       .34000 0 0 0 0 1
ADDHYD         19 2 1 5                                          0 0 0 0 0 1
ADDHYD         19 5 3 1                                          0 0 0 0 0 1
ADDHYD         19 1 4 7                                          1 1 0 1 0 1
REACH        26    7    1     3221.0000         .2000      1.60000 0 0 0 0 1
RUNOFF       26          2        .4700       81.0000       .48000 0 0 0 0 1
ADDHYD         18 1 2 3                                          0 0 0 0 0 1
REACH        25    3    1     2323.0000         .2000      1.60000 0 0 0 0 1
RUNOFF       25          2        .2600       81.0000       .21000 0 0 0 0 1
ADDHYD         17 1 2 3                                          0 0 0 0 0 1
REACH        24    3    1     2524.0000         .2000      1.60000 0 0 0 0 1
RUNOFF       24          2        .2800       90.0000       .26000 0 0 0 0 1
ADDHYD         12 1 2 3                                          0 0 0 0 0 1
RUNOFF       41          1        .1600       80.0000       .32000 0 0 0 0 1
REACH        31    1    2     3358.0000         .5000      1.50000 0 0 0 0 1
RUNOFF       31          1        .2400       86.0000       .19000 0 0 0 0 1
ADDHYD         20 1 2 4                                          0 0 0 0 0 1
REACH        30    4    1     2323.0000         .3000      1.50000 0 0 0 0 1
RUNOFF       30          2        .1000       83.0000       .13000 0 0 0 0 1
ADDHYD         16 1 2 4                                          0 0 0 0 0 1
REACH       124    4    1     4594.0000         .7000      1.60000 0 0 0 0 1
RUNOFF       32          2        .1500       82.0000       .39000 0 0 0 0 1
REACH       198    2    4     5227.0000        1.2000      1.60000 0 0 0 0 1
ADDHYD         12 1 4 2                                          0 0 0 0 0 1
ADDHYD         12 2 3 1                                          0 0 0 0 0 1
REACH        18    1    2     3696.0000         .2000      1.70000 0 0 0 0 1
RUNOFF       18          7        .4000       90.0000       .78000 0 0 0 0 1
ADDHYD         57 2 7 1                                          1 1 0 1 0 1
RUNOFF       87          2        .1300       65.0000      1.35000 0 0 0 0 1
REACH        70    2    3     2742.7000        1.2000      1.30000 0 0 0 0 1
RUNOFF       70          2        .1500       86.0000      1.66000 0 0 0 0 1
ADDHYD         63 2 3 4                                          0 0 0 0 0 1
REACH        19    4    3     1059.6000         .2100      1.67000 0 0 0 0 1
RUNOFF       19          2        .0500       72.6000       .29000 0 0 0 0 1
ADDHYD         62 2 3 4                                          0 0 0 0 0 1
REACH         1    4    3     1515.0000        1.9000      1.30000 0 0 0 0 1
RUNOFF        1          2        .0700       94.0000       .29000 0 0 0 0 1
ADDHYD         61 2 3 4                                          0 0 0 0 0 1
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/**                          24 HR TYPE IIA CURVE                      2.04TEST
13:30:12                        PASS   1   JOB NO.   1                      PAGE  15

REACH         2    4    3     4301.1000        1.9000      1.30000 0 0 0 0 1
RUNOFF        2          2        .2400       84.4000       .29000 0 0 0 0 1
ADDHYD         43 2 3 4                                          0 0 0 0 0 1
REACH        58    4    3     1291.6000        1.9000      1.30000 0 0 0 0 1
RUNOFF       58          2        .1100       92.8000       .76000 0 0 0 0 1
ADDHYD         28 2 3 4                                          0 1 0 0 0 1
REACH        43    4    3     4663.5000        1.2000      1.40000 0 0 0 0 1
RUNOFF       43          2        .1600       86.0000       .73000 0 0 0 0 1
ADDHYD         26 2 3 6                                          0 0 0 0 0 1
ENDATA


END OF LISTING
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/**                          24 HR TYPE IIA CURVE                      2.04TEST
13:30:12                        PASS   1   JOB NO.   1                      PAGE  16


EXECUTIVE CONTROL   INCREM     MAIN TIME INCREMENT =    .100 HOURS
```

```
EXECUTIVE CONTROL  COMPUT     FROM XSECTION  80  TO STRUCTURE 31
    STARTING TIME =    .00        RAIN DEPTH =  4.50        RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2         MAIN TIME INCREMENT =    .100 HOURS
    ALTERNATE NO. = 1             STORM NO. = 1             RAIN TABLE NO. = 1

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  50.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  15.       ***


OPERATION ADDHYD     STRUCTURE 37

                    HYDROGRAPH POINTS FOR   ALTERNATE = 1,   STORM = 1
     HRS       MAIN TIME INCREMENT =  .100 hr,       DRAINAGE AREA =   1.49 SQ.MI.
     5.20 CFS          0       1       2       4      22      79     198     377
     6.00 CFS        595     818    1003    1119    1162    1145    1086    1003
     6.80 CFS        909     812     718     631     554     487     428     376
     7.60 CFS        332     294     264     240     221     205     192     180
     8.40 CFS        167     154     142     131     121     113     105      98
     9.20 CFS      92.60   87.99   84.22   81.19   78.72   76.70   75.06   73.73
    10.00 CFS      72.64   71.54   70.09   67.98   65.21   61.96   58.48   55.05
    10.80 CFS      51.84   48.93   46.42   44.66   44.25   45.72   49.06   53.72
    11.60 CFS      58.79   63.04   65.40   65.77   64.47   62.19   59.82   58.08
    12.40 CFS      57.21   57.14   57.52   57.75   57.36   56.21   54.41   52.20
    13.20 CFS      49.87   47.60   45.51   43.64   42.02   40.64   39.50   38.56
    14.00 CFS      37.78   37.18   36.80   36.69   36.82   37.13   37.56   38.04
    14.80 CFS      38.51   38.95   39.35   39.70   40.00   40.25   40.46   40.63
    15.60 CFS      40.82   41.09   41.50   42.05   42.70   43.31   43.71   43.75
    16.40 CFS      43.40   42.76   41.91   41.00   40.10   39.25   38.49   37.83
    17.20 CFS      37.27   36.80   36.42   36.11   35.85   35.64   35.48   35.35
    18.00 CFS      35.25   35.16   35.10   35.05   35.01   34.98   34.96   34.94
    18.80 CFS      34.93   34.92   34.92   34.91   34.91   34.91   34.92   34.92
    19.60 CFS      34.93   34.93   34.94   34.94   34.95   34.87   34.58   33.96
    20.40 CFS      33.02   31.82   30.46   29.01   27.46   25.87   24.30   22.83
    21.20 CFS      21.60   20.70   20.13   19.83   19.69   19.58   19.38   19.04
    22.00 CFS      18.60   18.14   17.76   17.57   17.58   17.75   18.01   18.21
    22.80 CFS      18.26   18.14   17.87   17.54   17.27   17.16   17.24   17.48
    23.60 CFS      17.78   18.02   18.11   18.02   17.76   17.31   16.61   15.58
    24.40 CFS      14.24   12.70   11.07    9.48    8.02    6.71    5.56    4.58
    25.20 CFS       3.75    3.07    2.51    2.05    1.67    1.36    1.11     .91
    26.00 CFS        .75     .62     .50     .42

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =     .00 CFS)
                2.36 WATERSHED INCHES;     2265 CFS-HRS;     187.2 ACRE-FEET.
0

TR20 ------------------------------------------------------------------------ SCS -
          PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/**                        24 HR TYPE IIA CURVE                      2.04TEST
13:30:12                      PASS   1   JOB NO.   1                      PAGE  17


 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  47.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  12.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  55.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  14.       ***


OPERATION ADDHYD     STRUCTURE 72

                    HYDROGRAPH POINTS FOR   ALTERNATE = 1,   STORM = 1
     HRS       MAIN TIME INCREMENT =  .100 hr,       DRAINAGE AREA =   1.58 SQ.MI.
     5.10 CFS          0       1       1       3       5      16      49     125
     5.90 CFS        277     502     762    1016    1224    1351    1388    1356
     6.70 CFS       1281    1180    1063     941     824     716     621     540
     7.50 CFS        470     412     363     322     289     263     242     225
     8.30 CFS        210     195     179     164     150     138     127     118
     9.10 CFS        110     103      97      93      89      86      83      81
     9.90 CFS      79.96   78.71   77.57   76.36   74.73   72.17   68.69   64.79
    10.70 CFS      60.95   57.35   54.08   51.21   48.92   47.46   47.53   50.15
    11.50 CFS      55.17   61.30   67.16   71.59   73.35   72.38   69.80   66.78
    12.30 CFS      64.12   62.59   62.31   62.74   63.30   63.46   62.65   60.80
    13.10 CFS      58.37   55.81   53.31   50.93   48.74   46.79   45.09   43.65
    13.90 CFS      42.48   41.54   40.81   40.27   39.97   39.99   40.30   40.78
    14.70 CFS      41.32   41.85   42.36   42.82   43.23   43.59   43.90   44.15
    15.50 CFS      44.37   44.56   44.78   45.08   45.60   46.31   47.08   47.75
    16.30 CFS      48.13   47.97   47.30   46.35   45.31   44.29   43.32   42.44
    17.10 CFS      41.65   40.97   40.40   39.93   39.55   39.25   39.01   38.82
```

17.90 CFS	38.66	38.54	38.44	38.36	38.29	38.24	38.21	38.18
18.70 CFS	38.16	38.14	38.13	38.12	38.12	38.11	38.12	38.12
19.50 CFS	38.12	38.13	38.13	38.14	38.15	38.15	38.11	37.98
20.30 CFS	37.60	36.76	35.47	33.95	32.37	30.76	29.05	27.26
21.10 CFS	25.53	23.99	22.74	21.93	21.53	21.38	21.33	21.23
21.90 CFS	20.96	20.49	19.93	19.41	19.04	18.94	19.11	19.42
22.70 CFS	19.74	19.95	19.92	19.65	19.25	18.87	18.61	18.59
23.50 CFS	18.83	19.20	19.57	19.82	19.82	19.56	19.12	18.54
24.30 CFS	17.71	16.43	14.72	12.84	11.01	9.31	7.79	6.45
25.10 CFS	5.31	4.33	3.51	2.84	2.30	1.86	1.51	1.22
25.90 CFS	.99	.80	.64	.52	.42			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.55 WATERSHED INCHES; 2597 CFS-HRS; 214.6 ACRE-FEET.

OPERATION ADDHYD STRUCTURE 90
□

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 1 JOB NO. 1 PAGE 18

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 4.21 SQ.MI.			
5.10 CFS	0	1	2	3	7	21	78	224
5.90 CFS	510	961	1542	2163	2719	3124	3330	3346
6.70 CFS	3217	3002	2738	2455	2173	1908	1668	1455
7.50 CFS	1272	1114	981	868	776	702	643	596
8.30 CFS	555	518	481	444	408	374	344	318
9.10 CFS	296	277	261	247	237	228	221	215
9.90 CFS	210	207	203	200	196	191	183	174
10.70 CFS	164	155	145	137	130	126	124	127
11.50 CFS	136	149	163	177	185	188	184	178
12.30 CFS	171	165	161	161	162	163	162	160
13.10 CFS	155	148	142	135	129	124	119	115
13.90 CFS	112	109	107	105	104	103	104	105
14.70 CFS	106	107	109	110	111	112	113	114
15.50 CFS	114	115	115	116	117	119	120	122
16.30 CFS	124	124	123	121	119	116	114	111
17.10 CFS	109	107	105	104	103	102	101	101
17.90 CFS	100	100	100	99	99	99	99	99
18.70 CFS	98.80	98.75	98.71	98.69	98.68	98.67	98.67	98.68
19.50 CFS	98.69	98.70	98.72	98.74	98.76	98.77	98.73	98.47
20.30 CFS	97.73	96.21	93.72	90.35	86.41	82.21	77.84	73.34
21.10 CFS	68.85	64.65	61.06	58.30	56.53	55.63	55.27	55.04
21.90 CFS	54.62	53.81	52.63	51.31	50.18	49.48	49.39	49.85
22.70 CFS	50.58	51.25	51.56	51.33	50.62	49.68	48.85	48.41
23.50 CFS	48.52	49.15	50.01	50.79	51.20	51.04	50.30	48.98
24.30 CFS	47.05	44.32	40.68	36.29	31.58	26.95	22.68	18.87
25.10 CFS	15.58	12.78	10.42	8.47	6.87	5.58	4.53	3.68
25.90 CFS	2.99	2.43	1.98	1.61	1.31	1.07	.86	.70
26.70 CFS	.57	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.39 WATERSHED INCHES; 6499 CFS-HRS; 537.1 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION ADDHYD STRUCTURE 73

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 3.65 SQ.MI.			
5.50 CFS	0	14	70	164	277	412	557	691
6.30 CFS	807	912	998	1056	1083	1081	1056	1013
7.10 CFS	955	887	814	742	672	608	551	500
7.90 CFS	456	418	385	356	329	306	285	266
8.70 CFS	248	232	216	203	190	179	169	160
9.50 CFS	152	146	141	137	133	130	128	125
10.30 CFS	121	117	113	109	105	100	96	91
11.10 CFS	88	86	87	89	92	96	100	103
11.90 CFS	105	107	107	108	108	108	107	107
12.70 CFS	105	104	102	100	98	95	92	89

□

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
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13.50 CFS	86.21	83.18	80.27	77.57	75.12	72.98	71.21	69.93
14.30 CFS	69.08	68.54	68.30	68.32	68.58	69.02	69.57	70.18
15.10 CFS	70.83	71.48	72.09	72.66	73.17	73.69	74.36	75.14
15.90 CFS	75.98	76.87	77.70	78.19	78.37	78.36	78.14	77.66

16.70 CFS	76.92	75.97	74.89	73.73	72.54	71.39	70.31	69.33
17.50 CFS	68.47	67.73	67.11	66.60	66.19	65.85	65.58	65.36
18.30 CFS	65.20	65.07	64.97	64.90	64.86	64.83	64.81	64.81
19.10 CFS	64.81	64.82	64.84	64.86	64.89	64.92	64.95	64.99
19.90 CFS	65.02	65.05	64.95	64.44	63.57	62.50	61.23	59.67
20.70 CFS	57.70	55.43	53.01	50.52	48.05	45.81	43.83	42.09
21.50 CFS	40.62	39.42	38.32	37.33	36.47	35.69	35.00	34.52
22.30 CFS	34.21	34.00	33.91	33.88	33.78	33.62	33.46	33.25
23.10 CFS	33.04	32.95	32.96	33.02	33.13	33.27	33.31	33.25
23.90 CFS	33.18	33.04	32.68	31.79	30.46	28.86	27.02	24.94
24.70 CFS	22.66	20.28	17.90	15.59	13.40	11.39	9.58	7.98
25.50 CFS	6.60	5.42	4.43	3.61	2.94	2.38	1.92	1.55
26.30 CFS	1.25	1.00	.80	.64	.51	.40		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.33 WATERSHED INCHES; 3130 CFS-HRS; 258.7 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 73. ***

OPERATION REACH XSECTION 73

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 3.65 SQ.MI.

HRS								
5.50 CFS	0	14	70	164	277	412	557	691
6.30 CFS	807	912	998	1056	1083	1081	1056	1013
7.10 CFS	955	887	814	742	672	608	551	500
7.90 CFS	456	418	385	356	329	306	285	266
8.70 CFS	248	232	216	203	190	179	169	160
9.50 CFS	152	146	141	137	133	130	128	125
10.30 CFS	121	117	113	109	105	100	96	91
11.10 CFS	88	86	87	89	92	96	100	103
11.90 CFS	105	107	107	108	108	108	107	107
12.70 CFS	105	104	102	100	98	95	92	89
13.50 CFS	86.21	83.18	80.27	77.57	75.12	72.98	71.21	69.93
14.30 CFS	69.08	68.54	68.30	68.32	68.58	69.02	69.57	70.18
15.10 CFS	70.83	71.48	72.09	72.66	73.17	73.69	74.36	75.14
15.90 CFS	75.98	76.87	77.70	78.19	78.37	78.36	78.14	77.66
16.70 CFS	76.92	75.97	74.89	73.73	72.54	71.39	70.31	69.33
17.50 CFS	68.47	67.73	67.11	66.60	66.19	65.85	65.58	65.36
18.30 CFS	65.20	65.07	64.97	64.90	64.86	64.83	64.81	64.81
19.10 CFS	64.81	64.82	64.84	64.86	64.89	64.92	64.95	64.99
19.90 CFS	65.02	65.05	64.95	64.44	63.57	62.50	61.23	59.67
20.70 CFS	57.70	55.43	53.01	50.52	48.05	45.81	43.83	42.09
21.50 CFS	40.62	39.42	38.32	37.33	36.47	35.69	35.00	34.52
22.30 CFS	34.21	34.00	33.91	33.88	33.78	33.62	33.46	33.25

0

TR20 ---------- SCS -
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23.10 CFS	33.04	32.95	32.96	33.02	33.13	33.27	33.31	33.25
23.90 CFS	33.18	33.04	32.68	31.79	30.46	28.86	27.02	24.94
24.70 CFS	22.66	20.28	17.90	15.59	13.40	11.39	9.58	7.98
25.50 CFS	6.60	5.42	4.43	3.61	2.94	2.38	1.92	1.55
26.30 CFS	1.25	1.00	.80	.64	.51	.40		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.33 WATERSHED INCHES; 3130 CFS-HRS; 258.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	412	137	103	78	73	67	65	38

DURATION(HRS)	18	20	21
FLOW(CFS)	33	5	0

--- XSECTION 73, ALTERNATE 1, STORM 1, HYDROGRAPH ADDED TO READHD FILE ---

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 5. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 20. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 8. ***

OPERATION ADDHYD STRUCTURE 65

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 4.53 SQ.MI.

HRS								
5.10 CFS	0	1	1	2	3	30	154	377
5.90 CFS	637	893	1122	1273	1333	1357	1373	1374
6.70 CFS	1353	1309	1248	1178	1098	1012	923	837

7.50 CFS	757	685	623	569	524	485	451	419
8.30 CFS	387	358	333	310	289	270	253	237
9.10 CFS	224	212	201	192	184	178	173	168
9.90 CFS	165	162	159	155	149	143	137	131
10.70 CFS	125	120	114	109	105	106	111	118
11.50 CFS	125	132	136	136	136	135	133	133
12.30 CFS	134	134	135	135	133	130	126	123
13.10 CFS	119	115	111	108	104	101	97	94
13.90 CFS	91.89	89.64	87.86	86.80	86.39	86.34	86.52	86.90
14.70 CFS	87.45	88.13	88.87	89.64	90.40	91.14	91.82	92.44
15.50 CFS	93.00	93.61	94.58	95.85	97.22	98.56	99.63	99.89
16.30 CFS	99.39	98.59	97.65	96.56	95.31	93.96	92.54	91.13
17.10 CFS	89.77	88.49	87.32	86.28	85.38	84.61	83.98	83.46
17.90 CFS	83.04	82.71	82.44	82.23	82.07	81.95	81.86	81.80
18.70 CFS	81.76	81.74	81.74	81.74	81.75	81.77	81.80	81.83
19.50 CFS	81.87	81.91	81.95	81.99	82.04	82.07	81.85	80.79
20.30 CFS	78.98	76.89	74.72	72.36	69.51	66.28	62.96	59.74

21.10 CFS	56.75	54.33	52.48	50.98	49.76	48.72	47.54	46.24
21.90 CFS	45.01	43.90	42.99	42.55	42.52	42.66	42.89	43.08
22.70 CFS	42.93	42.50	41.97	41.44	41.02	40.98	41.28	41.69
23.50 CFS	42.12	42.48	42.48	42.15	41.72	41.26	40.47	38.79
24.30 CFS	36.30	33.49	30.62	27.71	24.75	21.84	19.03	16.39
25.10 CFS	13.97	11.79	9.86	8.18	6.73	5.52	4.50	3.66
25.90 CFS	2.97	2.40	1.94	1.56	1.25	1.00	.80	.64
26.70 CFS	.51	.40						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.38 WATERSHED INCHES; 4033 CFS-HRS; 333.3 ACRE-FEET.

*** MESSAGE - STRUCTURE 97, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE STARTS .00 FEET BELOW ASSUMED CREST ELEVATION AT .00. THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

*** WARNING - STRUCTURE 97, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE TIME INCREMENT OF .039 HOURS. ***

OPERATION RESVOR STRUCTURE 97

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 4.53 SQ.MI.

HRS								
4.20 CFS	.00	.01	.03	.04	.05	.06	.12	.19
5.00 CFS	.26	.30	.47	1.07	2.00	2.77	22.68	89.03
5.80 CFS	160	213	263	315	354	395	425	454
6.60 CFS	483	511	541	567	580	591	621	651
7.40 CFS	653	654	655	655	654	653	652	650
8.20 CFS	629	604	592	587	582	577	571	565
9.00 CFS	553	540	527	516	506	496	486	476
9.80 CFS	467	457	448	439	430	421	412	404
10.60 CFS	395	386	374	362	351	340	329	320
11.40 CFS	309	296	284	273	264	255	246	238
12.20 CFS	225	213	203	194	186	179	173	159
13.00 CFS	148	139	132	126	121	116	107	101
13.80 CFS	97.13	94.11	91.55	89.41	87.82	86.88	86.48	86.44
14.60 CFS	86.65	87.05	87.62	88.29	89.03	89.79	90.54	91.26
15.40 CFS	91.93	92.53	93.12	93.87	94.90	96.15	97.48	98.72
16.20 CFS	99.52	99.61	99.14	98.36	97.40	96.28	95.02	93.67
17.00 CFS	92.27	90.87	89.54	88.29	87.15	86.14	85.26	84.52
17.80 CFS	83.91	83.41	83.00	82.67	82.41	82.21	82.06	81.94
18.60 CFS	81.86	81.80	81.76	81.74	81.74	81.74	81.76	81.78
19.40 CFS	81.81	81.84	81.88	81.92	81.96	82.00	82.04	81.98
20.20 CFS	81.47	80.26	78.48	76.43	74.22	71.71	68.79	65.09
21.00 CFS	61.18	58.11	55.43	53.31	51.66	50.32	49.20	48.09
21.80 CFS	46.84	45.57	44.40	43.40	42.74	42.53	42.59	42.78
22.60 CFS	42.99	43.00	42.70	42.22	41.68	41.21	40.99	41.14
23.40 CFS	41.50	41.92	42.32	42.49	42.31	41.91	41.47	40.84
24.20 CFS	39.58	37.46	34.79	31.94	28.65	25.09	22.45	19.48
25.00 CFS	16.87	14.38	12.17	10.19	8.47	6.98	5.72	4.67

25.80 CFS	3.80	3.09	2.62	2.12	1.71	1.37	1.10	.88
26.60 CFS	.70	.56	.44	.35	.28	.22	.17	.13
27.40 CFS	.10	.08	.06	.04	.03	.01		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.38 WATERSHED INCHES; 4033 CFS-HRS; 333.2 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 4. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 57. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 56. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 71. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 80 TO STRUCTURE 31
STARTING TIME = .00 RAIN DEPTH = 2.85 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .100 HOURS
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 15. ***

OPERATION ADDHYD STRUCTURE 37

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 1.49 SQ.MI.			
5.50 CFS	0	1	10	36	90	166	255	345
6.30 CFS	417	461	477	474	456	429	396	361
7.10 CFS	324	289	257	228	202	179	159	142
7.90 CFS	129	118	109	102	96	90	83	77
8.70 CFS	71.75	66.49	61.75	57.52	53.77	50.51	47.73	45.41
9.50 CFS	43.51	41.96	40.70	39.69	38.87	38.20	37.64	37.06
10.30 CFS	36.31	35.23	33.83	32.21	30.50	28.82	27.23	25.78
11.10 CFS	24.53	23.66	23.49	24.28	25.99	28.28	30.70	32.65
11.90 CFS	33.72	33.86	33.28	32.29	31.30	30.64	30.34	30.34
12.70 CFS	30.46	30.46	30.15	29.49	28.57	27.48	26.36	25.26
13.50 CFS	24.23	23.28	22.43	21.69	21.06	20.54	20.11	19.78
14.30 CFS	19.57	19.51	19.56	19.71	19.91	20.14	20.37	20.59
15.10 CFS	20.80	20.99	21.15	21.29	21.42	21.52	21.64	21.79

0

TR20 ---------- SCS -
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15.90 CFS	22.03	22.32	22.66	22.96	23.16	23.16	22.98	22.66
16.70 CFS	22.26	21.83	21.39	20.97	20.59	20.24	19.94	19.69
17.50 CFS	19.48	19.30	19.16	19.05	18.96	18.89	18.83	18.78
18.30 CFS	18.75	18.72	18.70	18.69	18.68	18.67	18.67	18.67
19.10 CFS	18.66	18.67	18.67	18.67	18.68	18.68	18.69	18.70
19.90 CFS	18.70	18.71	18.70	18.65	18.49	18.16	17.66	17.05
20.70 CFS	16.36	15.62	14.82	13.99	13.17	12.41	11.77	11.29
21.50 CFS	10.97	10.78	10.67	10.57	10.42	10.22	9.99	9.75
22.30 CFS	9.57	9.48	9.50	9.58	9.69	9.77	9.78	9.70
23.10 CFS	9.56	9.41	9.29	9.26	9.32	9.43	9.57	9.68
23.90 CFS	9.70	9.64	9.51	9.28	8.91	8.37	7.67	6.88
24.70 CFS	6.04	5.22	4.46	3.77	3.16	2.62	2.16	1.77
25.50 CFS	1.45	1.19	.97	.79	.64	.52	.43	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.10 WATERSHED INCHES; 1058 CFS-HRS; 87.4 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 14. ***

OPERATION ADDHYD STRUCTURE 72

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA = 1.58 SQ.MI.			
5.50 CFS	0	1	8	23	56	111	192	290
6.30 CFS	395	490	562	602	610	593	558	512
7.10 CFS	460	409	360	316	277	244	215	191
7.90 CFS	170	153	139	128	119	111	104	97
8.70 CFS	90.16	83.24	76.67	70.68	65.43	60.92	57.07	53.83
9.50 CFS	51.16	48.98	47.19	45.74	44.56	43.59	42.77	42.04
10.30 CFS	41.33	40.52	39.47	38.08	36.36	34.42	32.43	30.54
11.10 CFS	28.86	27.53	26.67	26.43	27.01	28.56	30.92	33.68
11.90 CFS	36.27	38.15	38.93	38.62	37.54	36.16	34.90	34.07
12.70 CFS	33.74	33.76	33.86	33.81	33.39	32.54	31.36	30.03
13.50 CFS	28.66	27.38	26.22	25.21	24.35	23.63	23.06	22.60
14.30 CFS	22.27	22.04	21.94	21.96	22.11	22.35	22.63	22.91
15.10 CFS	23.18	23.42	23.64	23.82	23.97	24.11	24.23	24.37

15.90 CFS	24.53	24.75	25.03	25.37	25.70	25.96	26.07	25.97
16.70 CFS	25.65	25.18	24.64	24.08	23.57	23.10	22.70	22.35
17.50 CFS	22.07	21.84	21.65	21.50	21.38	21.28	21.20	21.14
18.30 CFS	21.09	21.05	21.01	20.99	20.97	20.95	20.94	20.94
19.10 CFS	20.93	20.93	20.93	20.93	20.94	20.94	20.95	20.95
19.90 CFS	20.96	20.96	20.96	20.93	20.85	20.69	20.39	19.91
20.70 CFS	19.24	18.44	17.56	16.64	15.71	14.79	13.93	13.17
21.50 CFS	12.57	12.16	11.92	11.80	11.73	11.64	11.49	11.27
22.30 CFS	11.02	10.78	10.62	10.56	10.61	10.73	10.84	10.92
23.10 CFS	10.90	10.79	10.63	10.47	10.36	10.36	10.45	10.59
23.90 CFS	10.74	10.84	10.83	10.68	10.40	9.98	9.43	8.70
24.70 CFS	7.82	6.86	5.89	4.97	4.16	3.46	2.85	2.34
25.50 CFS	1.92	1.57	1.29	1.06	.87	.71	.58	.47

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.24 WATERSHED INCHES; 1266 CFS-HRS; 104.6 ACRE-FEET.

OPERATION ADDHYD STRUCTURE 90

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
HRS MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 4.21 SQ.MI.

5.50 CFS	0	3	13	38	91	187	336	534
6.30 CFS	760	986	1180	1315	1383	1388	1345	1269
7.10 CFS	1170	1061	951	845	747	660	584	518
7.90 CFS	461	413	373	341	315	292	273	255
8.70 CFS	238	220	204	189	175	162	152	142
9.50 CFS	135	128	123	119	115	112	110	108
10.30 CFS	106	104	101	98	94	90	85	81
11.10 CFS	76.28	72.51	69.68	68.17	68.40	70.72	75.03	80.72
11.90 CFS	86.73	91.85	95.11	96.10	95.07	92.75	90.06	87.80
12.70 CFS	86.37	85.75	85.59	85.37	84.62	83.07	80.71	77.79
13.50 CFS	74.59	71.40	68.39	65.66	63.26	61.21	59.49	58.10
14.30 CFS	57.01	56.22	55.74	55.59	55.74	56.14	56.72	57.38
15.10 CFS	58.05	58.69	59.28	59.81	60.26	60.66	61.01	61.37
15.90 CFS	61.76	62.26	62.89	63.64	64.43	65.12	65.54	65.56
16.70 CFS	65.12	64.27	63.14	61.87	60.59	59.37	58.27	57.30
17.50 CFS	56.48	55.78	55.22	54.75	54.38	54.08	53.84	53.64
18.30 CFS	53.49	53.37	53.27	53.20	53.14	53.10	53.07	53.05
19.10 CFS	53.04	53.04	53.04	53.04	53.05	53.06	53.07	53.09
19.90 CFS	53.11	53.12	53.12	53.08	52.94	52.62	52.02	51.07
20.70 CFS	49.70	47.97	45.96	43.77	41.49	39.19	36.97	34.93
21.50 CFS	33.21	31.87	30.94	30.36	29.98	29.68	29.33	28.87
22.30 CFS	28.32	27.76	27.30	27.04	27.00	27.13	27.36	27.54
23.10 CFS	27.59	27.45	27.17	26.83	26.55	26.43	26.51	26.74
23.90 CFS	27.04	27.29	27.36	27.18	26.70	25.89	24.71	23.14
24.70 CFS	21.21	19.01	16.67	14.36	12.18	10.23	8.51	7.03
25.50 CFS	5.78	4.74	3.88	3.17	2.59	2.12	1.73	1.41
26.30 CFS	1.15	.93	.75	.61	.50			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.13 WATERSHED INCHES; 3080 CFS-HRS; 254.5 ACRE-FEET.

OPERATION ADDHYD STRUCTURE 73

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
HRS MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 3.65 SQ.MI.

5.50 CFS	0	1	6	20	38	58	80	104
6.30 CFS	128	153	180	205	226	241	249	253
7.10 CFS	252	248	240	229	218	206	195	183
7.90 CFS	172	162	152	143	135	127	120	113
8.70 CFS	107	101	96	90	85	80	76	72
9.50 CFS	68.40	65.29	62.59	60.27	58.28	56.59	55.12	53.71
10.30 CFS	52.18	50.67	49.24	47.82	46.31	44.67	42.95	41.18
11.10 CFS	39.50	38.25	37.75	37.74	37.97	38.50	39.22	39.87

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 PASS 2 JOB NO. 1 PAGE 25

11.90 CFS	40.63	41.61	42.56	43.35	43.99	44.34	44.35	44.16
12.70 CFS	43.81	43.25	42.68	42.19	41.70	41.09	40.30	39.35
13.50 CFS	38.29	37.16	36.01	34.88	33.81	32.81	31.91	31.15
14.30 CFS	30.56	30.09	29.73	29.46	29.31	29.27	29.32	29.44
15.10 CFS	29.61	29.81	30.03	30.25	30.47	30.68	30.93	31.23
15.90 CFS	31.56	31.89	32.21	32.48	32.65	32.76	32.86	32.92
16.70 CFS	32.87	32.71	32.45	32.11	31.72	31.31	30.89	30.49
17.50 CFS	30.11	29.76	29.45	29.18	28.94	28.74	28.57	28.43

18.30 CFS	28.31	28.22	28.14	28.08	28.04	28.01	27.98	27.97
19.10 CFS	27.97	27.97	27.97	27.98	28.00	28.01	28.03	28.05
19.90 CFS	28.08	28.10	28.11	28.04	27.81	27.51	27.18	26.78
20.70 CFS	26.25	25.54	24.72	23.83	22.90	21.98	21.12	20.29
21.50 CFS	19.51	18.80	18.16	17.56	17.04	16.61	16.24	15.94
22.30 CFS	15.71	15.52	15.34	15.18	15.05	14.91	14.79	14.71
23.10 CFS	14.65	14.60	14.60	14.60	14.58	14.57	14.55	14.50
23.90 CFS	14.47	14.46	14.42	14.27	13.92	13.44	12.90	12.29
24.70 CFS	11.56	10.73	9.83	8.89	7.95	7.03	6.16	5.35
25.50 CFS	4.62	3.96	3.37	2.86	2.42	2.03	1.70	1.42
26.30 CFS	1.18	.98	.81	.67	.55	.45		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.44 WATERSHED INCHES; 1033 CFS-HRS; 85.4 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 73. ***

OPERATION REACH XSECTION 73

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 3.65 SQ.MI.

HRS								
5.50 CFS	0	1	6	20	38	58	80	104
6.30 CFS	128	153	180	205	226	241	249	253
7.10 CFS	252	248	240	229	218	206	195	183
7.90 CFS	172	162	152	143	135	127	120	113
8.70 CFS	107	101	96	90	85	80	76	72
9.50 CFS	68.40	65.29	62.59	60.27	58.28	56.59	55.12	53.71
10.30 CFS	52.18	50.67	49.24	47.82	46.31	44.67	42.95	41.18
11.10 CFS	39.50	38.25	37.75	37.74	37.97	38.50	39.22	39.87
11.90 CFS	40.63	41.61	42.56	43.35	43.99	44.34	44.35	44.16
12.70 CFS	43.81	43.25	42.68	42.19	41.70	41.09	40.30	39.35
13.50 CFS	38.29	37.16	36.01	34.88	33.81	32.81	31.91	31.15
14.30 CFS	30.56	30.09	29.73	29.46	29.31	29.27	29.32	29.44
15.10 CFS	29.61	29.81	30.03	30.25	30.47	30.68	30.93	31.23
15.90 CFS	31.56	31.89	32.21	32.48	32.65	32.76	32.86	32.92
16.70 CFS	32.87	32.71	32.45	32.11	31.72	31.31	30.89	30.49
17.50 CFS	30.11	29.76	29.45	29.18	28.94	28.74	28.57	28.43
18.30 CFS	28.31	28.22	28.14	28.08	28.04	28.01	27.98	27.97
19.10 CFS	27.97	27.97	27.97	27.98	28.00	28.01	28.03	28.05
19.90 CFS	28.08	28.10	28.11	28.04	27.81	27.51	27.18	26.78
20.70 CFS	26.25	25.54	24.72	23.83	22.90	21.98	21.12	20.29

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TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
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21.50 CFS	19.51	18.80	18.16	17.56	17.04	16.61	16.24	15.94
22.30 CFS	15.71	15.52	15.34	15.18	15.05	14.91	14.79	14.71
23.10 CFS	14.65	14.60	14.60	14.60	14.58	14.57	14.55	14.50
23.90 CFS	14.47	14.46	14.42	14.27	13.92	13.44	12.90	12.29
24.70 CFS	11.56	10.73	9.83	8.89	7.95	7.03	6.16	5.35
25.50 CFS	4.62	3.96	3.37	2.86	2.42	2.03	1.70	1.42
26.30 CFS	1.18	.98	.81	.67	.55	.45		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.44 WATERSHED INCHES; 1033 CFS-HRS; 85.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	128	57	42	34	31	29	28	18

DURATION(HRS)	18	20	21
FLOW(CFS)	15	3	0

--- XSECTION 73, ALTERNATE 1, STORM 2, HYDROGRAPH ADDED TO READHD FILE ---

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 5. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 8. ***

OPERATION ADDHYD STRUCTURE 65

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 4.53 SQ.MI.

HRS								
5.50 CFS	0	4	27	76	136	194	244	280
6.30 CFS	294	299	306	316	323	325	324	319
7.10 CFS	312	301	287	272	256	241	227	214
7.90 CFS	202	191	181	171	160	151	142	134
8.70 CFS	126	119	113	106	101	95	91	86
9.50 CFS	82.67	79.44	76.66	74.29	72.28	70.57	68.97	67.10
10.30 CFS	64.81	62.47	60.25	58.10	55.95	53.78	51.61	49.47
11.10 CFS	47.74	47.25	48.16	49.73	51.49	53.22	54.29	54.47

11.90 CFS	54.45	54.57	54.75	55.19	55.89	56.47	56.74	56.73
12.70 CFS	56.20	55.14	53.97	52.90	51.84	50.71	49.48	48.15
13.50 CFS	46.77	45.38	44.03	42.75	41.56	40.48	39.55	38.84
14.30 CFS	38.39	38.08	37.88	37.77	37.76	37.84	37.99	38.20
15.10 CFS	38.44	38.70	38.97	39.23	39.48	39.75	40.12	40.61
15.90 CFS	41.13	41.65	42.09	42.31	42.27	42.14	42.00	41.81
16.70 CFS	41.54	41.18	40.76	40.28	39.78	39.28	38.80	38.35
17.50 CFS	37.94	37.57	37.24	36.96	36.73	36.52	36.35	36.21
18.30 CFS	36.10	36.01	35.94	35.89	35.85	35.83	35.81	35.80
19.10 CFS	35.81	35.81	35.83	35.85	35.87	35.89	35.92	35.95
19.90 CFS	35.98	36.01	35.96	35.68	35.12	34.45	33.77	33.02
20.70 CFS	32.08	30.96	29.73	28.50	27.30	26.23	25.33	24.52
21.50 CFS	23.79	23.11	22.43	21.73	21.08	20.53	20.08	19.77

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22.30 CFS	19.62	19.53	19.46	19.39	19.25	19.03	18.80	18.61
23.10 CFS	18.47	18.43	18.51	18.62	18.72	18.78	18.76	18.64
23.90 CFS	18.50	18.37	18.17	17.70	16.91	15.97	15.00	13.99
24.70 CFS	12.91	11.80	10.65	9.52	8.42	7.38	6.42	5.54
25.50 CFS	4.75	4.05	3.44	2.91	2.45	2.06	1.72	1.43
26.30 CFS	1.18	.98	.81	.67	.55	.45		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.47 WATERSHED INCHES; 1377 CFS-HRS; 113.8 ACRE-FEET.

*** MESSAGE - STRUCTURE 97, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS .00 FEET BELOW ASSUMED CREST ELEVATION AT .00.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

*** WARNING - STRUCTURE 97, MAIN TIME INCREMENT EXCEEDS MAXIMUM ALLOWABLE
TIME INCREMENT OF .039 HOURS. ***

OPERATION RESVOR STRUCTURE 97

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .100 hr,				DRAINAGE AREA =		4.53	SQ.MI.
5.10 CFS	.00	.02	.11	.26	.39	2.68	21.47	54.98
5.90 CFS	97	129	158	180	194	207	220	232
6.70 CFS	241	247	252	257	261	264	267	267
7.50 CFS	267	266	264	261	257	253	248	243
8.30 CFS	237	226	216	206	196	186	177	162
9.10 CFS	143	129	118	99	88	83	79	76
9.90 CFS	74.00	72.03	70.30	68.57	66.41	63.52	61.27	59.08
10.70 CFS	56.93	54.77	52.60	50.45	48.52	47.45	47.72	49.00
11.50 CFS	50.68	52.43	53.81	54.40	54.46	54.51	54.67	54.99
12.30 CFS	55.56	56.20	56.62	56.74	56.45	55.64	54.51	53.39
13.10 CFS	52.33	51.23	50.04	48.76	47.41	46.02	44.65	43.34
13.90 CFS	42.11	40.98	39.97	39.16	38.59	38.22	37.97	37.81
14.70 CFS	37.76	37.80	37.92	38.10	38.33	38.58	38.84	39.11
15.50 CFS	39.37	39.63	39.95	40.38	40.89	41.41	41.89	42.21
16.30 CFS	42.29	42.20	42.06	41.89	41.66	41.35	40.95	40.50
17.10 CFS	40.01	39.51	39.02	38.56	38.13	37.74	37.39	37.09
17.90 CFS	36.83	36.62	36.43	36.28	36.15	36.05	35.97	35.91
18.70 CFS	35.87	35.84	35.82	35.81	35.81	35.81	35.82	35.84
19.50 CFS	35.86	35.88	35.90	35.93	35.96	35.99	35.99	35.81
20.30 CFS	35.38	34.76	34.08	33.36	32.51	31.48	30.29	28.68
21.10 CFS	27.53	26.40	25.49	24.66	23.92	23.23	22.55	21.85
21.90 CFS	21.19	20.63	20.15	19.82	19.64	19.55	19.47	19.40
22.70 CFS	19.28	19.07	18.84	18.65	18.49	18.43	18.49	18.60
23.50 CFS	18.70	18.77	18.77	18.66	18.52	18.39	18.22	17.80
24.30 CFS	17.07	16.14	15.18	14.17	13.11	12.00	10.85	9.72
25.10 CFS	8.61	7.56	6.59	5.69	4.89	4.17	3.54	3.00
25.90 CFS	2.65	2.21	1.85	1.54	1.28	1.06	.88	.73
26.70 CFS	.60	.49	.40	.32	.26	.21	.17	.13
27.50 CFS	.10	.08	.06	.04	.03	.02	.01	

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RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.47 WATERSHED INCHES; 1376 CFS-HRS; 113.7 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 4. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 57. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 56. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 71. ***

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 4.50 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .100 HOURS							
ALTERNATE 1 STORM 1							
XSECTION 80	RUNOFF	.08	2.55	---	6.06	131	1637.5
XSECTION 79	REACH	.08	2.55	---	6.41	93	1162.5
XSECTION 79	RUNOFF	.27	1.33	---	6.53	101	374.1
STRUCTURE 38	ADDHYD	.35	1.61	---	6.45	192	548.6
XSECTION 13	REACH	.35	1.61	---	6.70	172	491.4
XSECTION 13	RUNOFF	.18	3.09	---	6.20	298	1655.6
STRUCTURE 35	ADDHYD	.53	2.11	---	6.31	378	713.2
XSECTION 78	RUNOFF	.31	3.10	---	6.44	386	1245.2
XSECTION 51	REACH	.31	3.10	---	6.59	376	1212.9
XSECTION 51	RUNOFF	.13	2.58	---	6.21	170	1307.7
XSECTION 49	RUNOFF	.27	1.60	---	6.26	171	633.3
XSECTION 49	REACH	.27	1.60	---	6.38	170	629.6
STRUCTURE 88	ADDHYD	.44	2.94	---	6.49	478	1086.4
STRUCTURE 35	ADDHYD	.80	1.94	---	6.34	547	683.8
STRUCTURE 35	ADDHYD	1.24	2.30	---	6.40	1009	813.7
XSECTION 50	REACH	1.24	2.30	---	6.40	1009	813.7
XSECTION 50	RUNOFF	.19	2.57	---	6.94	123	647.4
STRUCTURE 34	ADDHYD	1.43	2.33	---	6.43	1088	760.8
XSECTION 15	REACH	1.43	2.33	---	6.43	1088	760.8
XSECTION 15	RUNOFF	.06	2.91	---	6.35	77	1283.3
STRUCTURE 37	ADDHYD	1.49	2.36	---	6.42	1163	780.5
XSECTION 16	REACH	1.49	2.36	---	6.52	1163	780.5
XSECTION 16	RUNOFF	.12	2.82	---	6.40	138	1150.0
XSECTION 48	RUNOFF	.56	1.39	---	6.42	248	442.9
XSECTION 48	REACH	.56	1.39	---	6.52	248	442.9
STRUCTURE 33	ADDHYD	1.61	2.39	---	6.51	1295	804.3
STRUCTURE 89	ADDHYD	2.17	2.13	22.66	6.51	1542	710.6
XSECTION 47	REACH	2.17	2.13	---	6.51	1542	710.6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							

XSECTION	47	RUNOFF	.19	2.63	---	6.35	213	1121.1
STRUCTURE	32	ADDHYD	2.36	2.17	---	6.49	1737	736.0
XSECTION	96	RUNOFF	.14	1.33	---	6.35	63	450.0
XSECTION	81	REACH	.14	1.33	---	6.68	50	357.1
XSECTION	81	RUNOFF	.35	1.39	---	6.05	249	711.4
STRUCTURE	54	ADDHYD	.49	1.38	---	6.07	262	534.7
XSECTION	77	REACH	.49	1.37	---	6.21	250	510.2
XSECTION	76	RUNOFF	.14	3.10	---	6.45	173	1235.7
XSECTION	11	REACH	.14	3.10	---	6.58	171	1221.4
XSECTION	11	RUNOFF	.10	2.91	---	6.33	130	1300.0
STRUCTURE	39	ADDHYD	.24	3.02	---	6.47	284	1183.3
XSECTION	54	REACH	.24	3.02	---	6.61	280	1166.7
XSECTION	54	RUNOFF	.15	3.39	---	6.35	233	1553.3
STRUCTURE	36	ADDHYD	.39	3.16	---	6.49	483	1238.5
XSECTION	77	RUNOFF	.19	2.91	---	6.54	198	1042.1
STRUCTURE	70	ADDHYD	.68	1.80	---	6.30	404	594.1
XSECTION	12	REACH	.68	1.80	---	6.30	404	594.1
XSECTION	12	RUNOFF	.10	2.94	---	6.54	106	1060.0
STRUCTURE	71	ADDHYD	.78	1.95	---	6.33	496	635.9
XSECTION	53	REACH	.78	1.95	---	6.47	488	625.6
XSECTION	53	RUNOFF	.15	2.92	---	6.42	178	1186.7
STRUCTURE	87	ADDHYD	.93	2.11	---	6.45	664	714.0
STRUCTURE	87	ADDHYD	1.32	2.42	---	6.47	1146	868.2
XSECTION	55	REACH	1.32	2.42	---	6.47	1146	868.2
XSECTION	55	RUNOFF	.22	3.13	---	6.70	217	986.4
STRUCTURE	30	ADDHYD	1.54	2.52	---	6.50	1344	872.7
XSECTION	14	REACH	1.54	2.52	---	6.50	1344	872.7
XSECTION	14	RUNOFF	.04	3.61	---	6.69	47	1175.0
STRUCTURE	72	ADDHYD	1.58	2.55	---	6.50	1388	878.5
XSECTION	52	REACH	1.58	2.55	---	6.63	1378	872.2

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 52	RUNOFF	.27	3.40	---	6.69	296	1096.3
STRUCTURE 90	ADDHYD	1.85	2.67	---	6.64	1672	903.8
STRUCTURE 90	ADDHYD	4.21	2.39	---	6.56	3357	797.4
XSECTION 145	REACH	4.21	2.39	---	6.69	3331	791.2
XSECTION 45	RUNOFF	.32	3.19	---	6.27	499	1559.4
STRUCTURE 29	ADDHYD	4.53	2.45	---	6.65	3619	798.9
XSECTION 98	RUNOFF	.14	1.33	---	6.17	78	557.1
XSECTION 194	REACH	.14	1.33	---	6.55	60	428.6
XSECTION 97	RUNOFF	.07	1.33	---	6.16	40	571.4
XSECTION 94	REACH	.07	1.33	---	6.58	27	385.7
XSECTION 93	RUNOFF	.24	1.33	---	6.33	109	454.2
XSECTION 94	RUNOFF	.43	1.33	---	6.61	151	351.2
STRUCTURE 55	ADDHYD	.57	1.33	---	6.59	211	370.2
STRUCTURE 55	ADDHYD	.31	1.33	---	6.38	131	422.6
STRUCTURE 55	ADDHYD	.88	1.33	---	6.50	332	377.3
XSECTION 83	REACH	.88	1.33	---	6.77	303	344.3
XSECTION 83	RUNOFF	.35	1.33	---	6.66	119	340.0
XSECTION 95	RUNOFF	.11	1.33	---	6.42	46	418.2
XSECTION 82	REACH	.11	1.33	---	6.80	35	318.2
XSECTION 82	RUNOFF	.24	1.33	---	6.51	92	383.3
STRUCTURE 53	ADDHYD	1.23	1.33	---	6.74	420	341.5
STRUCTURE 53	ADDHYD	.35	1.33	---	6.58	122	348.6
STRUCTURE 53	ADDHYD	1.58	1.33	---	6.71	538	340.5
XSECTION 75	REACH	1.58	1.33	---	6.84	533	337.3
XSECTION 75	RUNOFF	.13	1.33	---	6.05	87	669.2

STRUCTURE	69	ADDHYD	1.71	1.33	---	6.83	548	320.5
XSECTION	7	REACH	1.71	1.33	---	6.93	547	319.9
XSECTION	99	RUNOFF	.44	1.33	---	6.53	165	375.0
XSECTION	92	RUNOFF	.42	1.33	---	6.25	208	495.2
XSECTION	84	REACH	.42	1.33	---	6.49	182	433.3

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 84	RUNOFF	.19	1.33	---	6.17	105	552.6
STRUCTURE 52	ADDHYD	.61	1.33	---	6.37	258	423.0
XSECTION 91	REACH	.44	1.33	---	6.79	151	343.2
XSECTION 91	RUNOFF	.41	1.33	---	6.13	240	585.4
STRUCTURE 52	ADDHYD	.85	1.33	---	6.22	291	342.4
XSECTION 85	REACH	.85	1.33	---	6.61	244	287.1
XSECTION 85	RUNOFF	.27	1.33	---	6.24	135	500.0
STRUCTURE 52	ADDHYD	1.12	1.33	---	6.41	352	314.3
STRUCTURE 52	ADDHYD	1.73	1.33	---	6.39	609	352.0
XSECTION 74	REACH	1.73	1.33	---	6.53	602	348.0
XSECTION 74	RUNOFF	.15	1.33	---	6.02	104	693.3
STRUCTURE 42	ADDHYD	1.88	1.33	---	6.51	629	334.6
XSECTION 107	REACH	1.88	1.33	---	6.51	629	334.6
XSECTION 7	RUNOFF	.06	1.33	---	6.03	41	683.3
STRUCTURE 73	ADDHYD	1.77	1.33	---	6.93	553	312.4
STRUCTURE 73	ADDHYD	3.65	1.33	---	6.74	1085	297.3
XSECTION 73	REACH	3.65	1.33	---	6.74	1085	297.3
XSECTION 73	RUNOFF	.08	1.33	---	6.06	53	662.5
STRUCTURE 68	ADDHYD	3.73	1.33	---	6.74	1097	294.1
XSECTION 5	REACH	3.73	1.33	---	6.74	1097	294.1
XSECTION 86	RUNOFF	.33	1.33	---	6.24	166	503.0
XSECTION 72	REACH	.33	1.33	---	6.43	154	466.7
XSECTION 72	RUNOFF	.24	1.74	---	6.11	212	883.3
STRUCTURE 85	ADDHYD	.57	1.50	---	6.22	321	563.2
XSECTION 20	REACH	.57	1.50	---	6.22	321	563.2
XSECTION 20	RUNOFF	.06	3.50	---	6.03	153	2550.0
STRUCTURE 43	ADDHYD	.63	1.69	---	6.12	451	715.9
XSECTION 6	REACH	.63	1.69	---	6.23	451	715.9
XSECTION 5	RUNOFF	.05	1.33	---	6.05	33	660.0
XSECTION 6	RUNOFF	.04	1.33	---	6.02	28	700.0

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
STRUCTURE 66	ADDHYD	3.78	1.33	---	6.73	1104	292.1

STRUCTURE 67	ADDHYD	.67	1.67	---	6.21	469	700.0
STRUCTURE 67	ADDHYD	4.45	1.38	---	6.57	1362	306.1
XSECTION 8	REACH	4.45	1.38	---	6.57	1362	306.1
XSECTION 8	RUNOFF	.08	1.33	---	6.03	54	675.0
STRUCTURE 65	ADDHYD	4.53	1.38	---	6.56	1376	303.8
STRUCTURE 97	RESVOR	4.53	1.38	10.18	7.65	655	144.6
XSECTION 3	RUNOFF	.14	3.39	---	6.11	306	2185.7
XSECTION 4	REACH	.14	3.39	---	6.11	306	2185.7
STRUCTURE 41	ADDHYD	4.67	1.44	---	7.35	675	144.5
XSECTION 57	REACH	4.67	1.44	---	7.35	675	144.5
XSECTION 57	RUNOFF	.11	1.33	---	6.14	64	581.8
STRUCTURE 41	ADDHYD	4.78	1.44	---	6.19	704	147.3
XSECTION 56	REACH	4.78	1.44	---	6.19	704	147.3
XSECTION 4	RUNOFF	.16	3.08	---	6.69	155	968.8
XSECTION 71	REACH	.16	3.08	---	6.69	155	968.8
XSECTION 71	RUNOFF	.09	3.60	---	6.68	107	1188.9
STRUCTURE 31	ADDHYD	.25	3.27	---	6.69	262	1048.0

RAINFALL OF 2.85 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 2

XSECTION 80	RUNOFF	.08	1.20	---	6.06	55	687.5
XSECTION 79	REACH	.08	1.20	---	6.53	37	462.5
XSECTION 79	RUNOFF	.27	.44	---	6.57	25	92.6
STRUCTURE 38	ADDHYD	.35	.61	---	6.54	61	174.3
XSECTION 13	REACH	.35	.61	---	6.85	52	148.6
XSECTION 13	RUNOFF	.18	1.61	---	6.21	146	811.1
STRUCTURE 35	ADDHYD	.53	.95	---	6.25	159	300.0
XSECTION 78	RUNOFF	.31	1.61	---	6.44	189	609.7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)

ALTERNATE 1 STORM 2

XSECTION 51	REACH	.31	1.61	---	6.63	180	580.6
XSECTION 51	RUNOFF	.13	1.22	---	6.21	73	561.5
XSECTION 49	RUNOFF	.27	.59	---	6.28	50	185.2
XSECTION 49	REACH	.27	.59	---	6.42	48	177.8
STRUCTURE 88	ADDHYD	.44	1.49	---	6.54	221	502.3
STRUCTURE 35	ADDHYD	.80	.83	---	6.30	203	253.8
STRUCTURE 35	ADDHYD	1.24	1.06	---	6.41	406	327.4
XSECTION 50	REACH	1.24	1.06	---	6.52	406	327.4
XSECTION 50	RUNOFF	.19	1.22	---	6.96	53	278.9
STRUCTURE 34	ADDHYD	1.43	1.09	---	6.55	446	311.9
XSECTION 15	REACH	1.43	1.09	---	6.55	446	311.9
XSECTION 15	RUNOFF	.06	1.46	---	6.35	36	600.0
STRUCTURE 37	ADDHYD	1.49	1.10	---	6.53	478	320.8
XSECTION 16	REACH	1.49	1.10	---	6.65	477	320.1
XSECTION 16	RUNOFF	.12	1.39	---	6.40	63	525.0
XSECTION 48	RUNOFF	.56	.47	---	6.44	63	112.5
XSECTION 48	REACH	.56	.47	---	6.58	62	110.7
STRUCTURE 33	ADDHYD	1.61	1.12	---	6.62	530	329.2
STRUCTURE 89	ADDHYD	2.17	.95	20.22	6.61	593	273.3
XSECTION 47	REACH	2.17	.95	---	6.73	590	271.9
XSECTION 47	RUNOFF	.19	1.26	---	6.35	93	489.5
STRUCTURE 32	ADDHYD	2.36	.98	---	6.69	653	276.7
XSECTION 96	RUNOFF	.14	.44	---	6.38	15	107.1
XSECTION 81	REACH	.14	.44	---	6.92	11	78.6
XSECTION 81	RUNOFF	.35	.47	---	6.06	61	174.3
STRUCTURE 54	ADDHYD	.49	.46	---	6.07	63	128.6

XSECTION	77	REACH	.49	.46	---	6.27	54	110.2
XSECTION	76	RUNOFF	.14	1.61	---	6.46	84	600.0
XSECTION	11	REACH	.14	1.61	---	6.61	82	585.7
XSECTION	11	RUNOFF	.10	1.47	---	6.33	61	610.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
STRUCTURE 39	ADDHYD	.24	1.55	---	6.49	134	558.3
XSECTION 54	REACH	.24	1.55	---	6.66	130	541.7
XSECTION 54	RUNOFF	.15	1.85	---	6.35	121	806.7
STRUCTURE 36	ADDHYD	.39	1.66	---	6.50	232	594.9
XSECTION 77	RUNOFF	.19	1.46	---	6.55	92	484.2
STRUCTURE 70	ADDHYD	.68	.74	---	6.43	138	202.9
XSECTION 12	REACH	.68	.74	---	6.55	138	202.9
XSECTION 12	RUNOFF	.10	1.49	---	6.54	50	500.0
STRUCTURE 71	ADDHYD	.78	.84	---	6.54	187	239.7
XSECTION 53	REACH	.78	.84	---	6.73	182	233.3
XSECTION 53	RUNOFF	.15	1.47	---	6.42	83	553.3
STRUCTURE 87	ADDHYD	.93	.94	---	6.63	252	271.0
STRUCTURE 87	ADDHYD	1.32	1.15	---	6.57	479	362.9
XSECTION 55	REACH	1.32	1.15	---	6.68	478	362.1
XSECTION 55	RUNOFF	.22	1.63	---	6.71	107	486.4
STRUCTURE 30	ADDHYD	1.54	1.22	---	6.68	585	379.9
XSECTION 14	REACH	1.54	1.22	---	6.68	585	379.9
XSECTION 14	RUNOFF	.04	2.02	---	6.70	26	650.0
STRUCTURE 72	ADDHYD	1.58	1.24	---	6.68	610	386.1
XSECTION 52	REACH	1.58	1.24	---	6.84	600	379.7
XSECTION 52	RUNOFF	.27	1.85	---	6.70	154	570.4
STRUCTURE 90	ADDHYD	1.85	1.33	---	6.82	750	405.4
STRUCTURE 90	ADDHYD	4.21	1.13	---	6.76	1392	330.6
XSECTION 145	REACH	4.21	1.13	---	6.93	1367	324.7
XSECTION 45	RUNOFF	.32	1.68	---	6.27	248	775.0
STRUCTURE 29	ADDHYD	4.53	1.17	---	6.89	1455	321.2
XSECTION 98	RUNOFF	.14	.44	---	6.19	18	128.6
XSECTION 194	REACH	.14	.44	---	6.65	13	92.9
XSECTION 97	RUNOFF	.07	.44	---	6.17	9	128.6
XSECTION 94	REACH	.07	.44	---	6.80	6	85.7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 93	RUNOFF	.24	.44	---	6.36	26	108.3
XSECTION 94	RUNOFF	.43	.44	---	6.66	37	86.0
STRUCTURE 55	ADDHYD	.57	.44	---	6.66	50	87.7

STRUCTURE	55	ADDHYD	.31	.44	---	6.43	30	96.8
STRUCTURE	55	ADDHYD	.88	.44	---	6.58	78	88.6
XSECTION	83	REACH	.88	.44	---	6.93	69	78.4
XSECTION	83	RUNOFF	.35	.44	---	6.71	29	82.9
XSECTION	95	RUNOFF	.11	.44	---	6.45	11	100.0
XSECTION	82	REACH	.11	.44	---	6.96	8	72.7
XSECTION	82	RUNOFF	.24	.44	---	6.55	22	91.7
STRUCTURE	53	ADDHYD	1.23	.44	---	6.86	97	78.9
STRUCTURE	53	ADDHYD	.35	.44	---	6.63	29	82.9
STRUCTURE	53	ADDHYD	1.58	.44	---	6.82	124	78.5
XSECTION	75	REACH	1.58	.44	---	7.03	120	75.9
XSECTION	75	RUNOFF	.13	.44	---	6.05	20	153.8
STRUCTURE	69	ADDHYD	1.71	.44	---	7.02	125	73.1
XSECTION	7	REACH	1.71	.44	---	7.17	124	72.5
XSECTION	99	RUNOFF	.44	.44	---	6.57	40	90.9
XSECTION	92	RUNOFF	.42	.44	---	6.27	49	116.7
XSECTION	84	REACH	.42	.44	---	6.58	40	95.2
XSECTION	84	RUNOFF	.19	.44	---	6.19	25	131.6
STRUCTURE	52	ADDHYD	.61	.44	---	6.44	58	95.1
XSECTION	91	REACH	.44	.44	---	6.91	35	79.5
XSECTION	91	RUNOFF	.41	.44	---	6.15	56	136.6
STRUCTURE	52	ADDHYD	.85	.44	---	6.23	67	78.8
XSECTION	85	REACH	.85	.44	---	6.94	55	64.7
XSECTION	85	RUNOFF	.27	.44	---	6.26	32	118.5
STRUCTURE	52	ADDHYD	1.12	.44	---	6.49	76	67.9
STRUCTURE	52	ADDHYD	1.73	.44	---	6.46	134	77.5
XSECTION	74	REACH	1.73	.44	---	6.70	129	74.6

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 74	RUNOFF	.15	.44	---	6.02	24	160.0
STRUCTURE 42	ADDHYD	1.88	.44	---	6.67	136	72.3
XSECTION 107	REACH	1.88	.44	---	6.82	135	71.8
XSECTION 7	RUNOFF	.06	.44	---	6.03	10	166.7
STRUCTURE 73	ADDHYD	1.77	.44	---	7.16	126	71.2
STRUCTURE 73	ADDHYD	3.65	.44	---	7.03	253	69.3
XSECTION 73	REACH	3.65	.44	---	7.03	253	69.3
XSECTION 73	RUNOFF	.08	.44	---	6.07	12	150.0
STRUCTURE 68	ADDHYD	3.73	.44	---	7.03	256	68.6
XSECTION 5	REACH	3.73	.44	---	7.03	256	68.6
XSECTION 86	RUNOFF	.33	.44	---	6.25	39	118.2
XSECTION 72	REACH	.33	.44	---	6.50	35	106.1
XSECTION 72	RUNOFF	.24	.67	---	6.12	66	275.0
STRUCTURE 85	ADDHYD	.57	.54	---	6.20	88	154.4
XSECTION 20	REACH	.57	.54	---	6.32	87	152.6
XSECTION 20	RUNOFF	.06	1.93	---	6.03	81	1350.0
STRUCTURE 43	ADDHYD	.63	.67	---	6.13	147	233.3
XSECTION 6	REACH	.63	.67	---	6.24	145	230.2
XSECTION 5	RUNOFF	.05	.44	---	6.06	8	160.0
XSECTION 6	RUNOFF	.04	.44	---	6.02	6	150.0
STRUCTURE 66	ADDHYD	3.78	.44	---	7.03	258	68.3
STRUCTURE 67	ADDHYD	.67	.66	---	6.23	150	223.9
STRUCTURE 67	ADDHYD	4.45	.47	---	6.83	322	72.4
XSECTION 8	REACH	4.45	.47	---	6.83	322	72.4
XSECTION 8	RUNOFF	.08	.44	---	6.04	13	162.5
STRUCTURE 65	ADDHYD	4.53	.47	---	6.82	325	71.7
STRUCTURE 97	RESVOR	4.53	.47	5.63	7.43	268	59.2
XSECTION 3	RUNOFF	.14	1.85	---	6.11	159	1135.7

XSECTION	4	REACH	.14	1.85	---	6.11	159	1135.7
STRUCTURE	41	ADDHYD	4.67	.51	---	6.20	330	70.7

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 57	REACH	4.67	.51	---	6.20	330	70.7
XSECTION 57	RUNOFF	.11	.44	---	6.15	15	136.4
STRUCTURE 41	ADDHYD	4.78	.51	---	6.19	345	72.2
XSECTION 56	REACH	4.78	.51	---	6.19	345	72.2
XSECTION 4	RUNOFF	.16	1.59	---	6.70	76	475.0
XSECTION 71	REACH	.16	1.59	---	6.70	76	475.0
XSECTION 71	RUNOFF	.09	2.02	---	6.69	58	644.4
STRUCTURE 31	ADDHYD	.25	1.75	---	6.70	134	536.0

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 1 STORM 1											
79	5691		129	6.1	93	6.4	1.70	1.25	.302	.724	.28
13	4849		190	6.4	172	6.7	1.10	1.40	.068	.904	.40
51	3804		384	6.4	376	6.6	.39	1.67	.023	.979	.66
49	1380		170	6.3	169	6.4	1.00	1.40	.017	.997	.88?
50	1361		1009	6.4	1009	6.4	.18	1.67	.004	1.000	1.00?
15	1185		1086	6.4	1086	6.4	1.10	1.40	.004	1.000	1.00?
16	2040		1162	6.4	1162	6.5	1.10	1.40	.010	1.000	1.00?
48	1466		248	6.4	247	6.5	1.10	1.40	.011	.997	.94?
47	2202		1542	6.5	1542	6.5	.20	1.70	.004	1.000	1.00?
81	5193		62	6.3	50	6.7	1.40	1.30	.141	.800	.26
77	3245		260	6.1	250	6.2	.39	1.67	.022	.959	.66
11	2203		172	6.4	171	6.6	.86	1.50	.020	.993	.76?
54	2420		283	6.5	280	6.6	.31	1.67	.016	.988	.74?
12	1479		404	6.3	404	6.3	.37	1.67	.004	1.000	1.00?
53	2579		494	6.3	487	6.5	.27	1.67	.011	.986	.78?
55	2276		1143	6.5	1143	6.5	.37	1.67	.004	1.000	1.00?
14	1058		1344	6.5	1344	6.5	.37	1.67	.001	1.000	1.00?
52	2987		1388	6.5	1375	6.6	.30	1.60	.012	.991	.81?
145	3325		3346	6.6	3331	6.7	.10	1.70	.010	.995	.80?
194	5914		77	6.2	59	6.5	1.80	1.30	.162	.769	.29
94	5914		39	6.2	27	6.6	1.70	1.27	.239	.696	.23
83	6124		332	6.5	303	6.8	1.90	1.30	.063	.911	.39
82	5808		46	6.4	35	6.8	1.40	1.30	.164	.773	.22

75	2699	538	6.7	531	6.8	.25	1.67	.008	.988	.75?
7	1618	547	6.8	546	6.9	.21	1.67	.004	.999	.96?
84	5491	206	6.3	182	6.5	2.00	1.30	.085	.882	.40
91	5491	164	6.5	151	6.8	2.00	1.30	.064	.917	.38

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 SUMMARY, JOB NO. 1 PAGE 40

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 1											
85	6178		290	6.2	244	6.6	1.40	1.30	.080	.839	.31
74	2793		609	6.4	601	6.5	.25	1.67	.008	.986	.76?
107	1455		629	6.5	629	6.5	.20	1.67	.003	1.000	1.00?
73	462		1083	6.7	1083	6.7	.80	1.50	.000	1.000	1.00?
5	717		1095	6.7	1095	6.7	.80	1.50	.001	1.000	1.00?
72	3305		165	6.2	153	6.4	1.70	1.30	.057	.927	.51
20	1187		320	6.2	320	6.2	.33	1.67	.004	1.000	1.00?
6	1461		449	6.1	448	6.2	1.70	1.30	.017	.999	.99?
8	507		1361	6.6	1361	6.6	2.90	1.40	.000	1.000	1.00?
4	1900		306	6.1	306	6.1	2.90	1.40	.014	1.000	1.00?
57	1614		672	7.3	672	7.3	2.90	1.40	.001	1.000	1.00?
56	2274		704	6.2	704	6.2	2.90	1.40	.001	1.000	1.00?
71	1302		155	6.7	155	6.7	2.90	1.40	.004	1.000	1.00?
ALTERNATE 1 STORM 2											
79	5691		54	6.1	37	6.5	1.70	1.25	.326	.672	.24
13	4849		61	6.5	51	6.9	1.10	1.40	.085	.843	.31
51	3804		187	6.4	179	6.6	.39	1.67	.034	.957	.54
49	1380		50	6.3	48	6.4	1.00	1.40	.020	.978	.72?
50	1361		406	6.4	405	6.5	.18	1.67	.006	.998	.94?
15	1185		445	6.6	445	6.6	1.10	1.40	.005	1.000	1.00?
16	2040		477	6.5	474	6.6	1.10	1.40	.011	.994	.87?
48	1466		63	6.4	62	6.6	1.10	1.40	.012	.991	.75?
47	2202		592	6.6	589	6.7	.20	1.70	.006	.994	.86?
81	5193		15	6.4	11	6.9	1.40	1.30	.143	.738	.20
77	3245		62	6.1	54	6.3	.39	1.67	.032	.869	.43

TR20 ---------- SCS -
PROPOSED CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
06/05/** 24 HR TYPE IIA CURVE 2.04TEST
13:30:12 SUMMARY, JOB NO. 1 PAGE 41

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 2											
11	2203		84	6.5	82	6.6	.86	1.50	.027	.981	.65
54	2420		134	6.5	130	6.7	.31	1.67	.024	.967	.61
12	1479		138	6.4	137	6.5	.37	1.67	.005	.994	.89?
53	2579		186	6.5	182	6.7	.27	1.67	.016	.977	.60

55	2276	478	6.6	478	6.7	.37	1.67	.006	.999	.93?
14	1058	584	6.7	584	6.7	.37	1.67	.001	1.000	1.00?
52	2987	610	6.7	599	6.8	.30	1.60	.016	.981	.67?
145	3325	1388	6.8	1365	6.9	.10	1.70	.014	.983	.64
194	5914	18	6.2	13	6.6	1.80	1.30	.161	.698	.22
94	5914	9	6.2	6	6.8	1.70	1.27	.230	.627	.17
83	6124	77	6.6	69	6.9	1.90	1.30	.062	.885	.29
82	5808	11	6.4	8	7.0	1.40	1.30	.166	.716	.17
75	2699	124	6.8	120	7.0	.25	1.67	.011	.972	.50
7	1618	125	7.0	124	7.2	.21	1.67	.005	.991	.67?
84	5491	49	6.3	40	6.6	2.00	1.30	.085	.822	.30
91	5491	40	6.6	35	6.9	2.00	1.30	.066	.879	.29
85	6178	66	6.2	55	6.9	1.40	1.30	.077	.834	.23
74	2793	133	6.5	129	6.7	.25	1.67	.011	.967	.50
107	1455	136	6.7	135	6.8	.20	1.67	.004	.993	.72?
73	462	253	7.0	253	7.0	.80	1.50	.000	1.000	1.00?
5	717	256	7.0	256	7.0	.80	1.50	.001	1.000	1.00?
72	3305	39	6.3	35	6.5	1.70	1.30	.056	.890	.40
20	1187	88	6.2	87	6.3	.33	1.67	.006	.992	.88?
6	1461	147	6.1	144	6.2	1.70	1.30	.018	.981	.86?
8	507	322	6.8	322	6.8	2.90	1.40	.000	1.000	1.00?

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	HYDROGRAPH INFLOW TIME (HR)	HYDROGRAPH OUTFLOW PEAK (CFS)	HYDROGRAPH OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1		STORM 2									
4	1900		159	6.1	159	6.1	2.90	1.40	.017	1.000	1.00?
57	1614		330	6.2	330	6.2	2.90	1.40	.001	1.000	1.00?
56	2274		345	6.2	345	6.2	2.90	1.40	.002	1.000	1.00?
71	1302		76	6.7	76	6.7	2.90	1.40	.005	1.000	1.00?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 97	4.53		
ALTERNATE 1		655	268
STRUCTURE 90	4.21		
ALTERNATE 1		3357	1392
STRUCTURE 89	2.17		
ALTERNATE 1		1542	593
STRUCTURE 88	.44		
ALTERNATE 1		478	221
STRUCTURE 87	1.32		

ALTERNATE	1	1146	479
STRUCTURE 85	.57		
ALTERNATE	1	321	88
STRUCTURE 73	3.65		
ALTERNATE	1	1085	253
STRUCTURE 72	1.58		
ALTERNATE	1	1388	610
STRUCTURE 71	.78		
ALTERNATE	1	496	187
STRUCTURE 70	.68		
ALTERNATE	1	404	138
STRUCTURE 69	1.71		
ALTERNATE	1	548	125
STRUCTURE 68	3.73		
ALTERNATE	1	1097	256
STRUCTURE 67	4.45		
ALTERNATE	1	1362	322
STRUCTURE 66	3.78		

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 66	3.78		
ALTERNATE 1		1104	258
STRUCTURE 65	4.53		
ALTERNATE 1		1376	325
STRUCTURE 55	.88		
ALTERNATE 1		332	78
STRUCTURE 54	.49		
ALTERNATE 1		262	63
STRUCTURE 53	1.58		
ALTERNATE 1		538	124
STRUCTURE 52	1.73		
ALTERNATE 1		609	134
STRUCTURE 43	.63		
ALTERNATE 1		451	147
STRUCTURE 42	1.88		
ALTERNATE 1		629	136
STRUCTURE 41	4.78		

ALTERNATE	1	704	345
STRUCTURE 39	.24		
ALTERNATE	1	284	134
STRUCTURE 38	.35		
ALTERNATE	1	192	61
STRUCTURE 37	1.49		
ALTERNATE	1	1163	478
STRUCTURE 36	.39		
ALTERNATE	1	483	232
STRUCTURE 35	1.24		
ALTERNATE	1	1009	406

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 34	1.43		
ALTERNATE	1	1088	446
STRUCTURE 33	1.61		
ALTERNATE	1	1295	530
STRUCTURE 32	2.36		
ALTERNATE	1	1737	653
STRUCTURE 31	.25		
ALTERNATE	1	262	134
STRUCTURE 30	1.54		
ALTERNATE	1	1344	585
STRUCTURE 29	4.53		
ALTERNATE	1	3619	1455
XSECTION 3	.14		
ALTERNATE	1	306	159
XSECTION 4	.16		
ALTERNATE	1	155	76
XSECTION 5	.05		
ALTERNATE	1	33	8
XSECTION 6	.04		
ALTERNATE	1	28	6
XSECTION 7	.06		
ALTERNATE	1	41	10
XSECTION 8	.08		
ALTERNATE	1	54	13

XSECTION 11	.10		
ALTERNATE 1		130	61

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 12	.10		
ALTERNATE 1		106	50
XSECTION 13	.18		
ALTERNATE 1		298	146
XSECTION 14	.04		
ALTERNATE 1		47	26
XSECTION 15	.06		
ALTERNATE 1		77	36
XSECTION 16	.12		
ALTERNATE 1		138	63
XSECTION 20	.06		
ALTERNATE 1		153	81
XSECTION 45	.32		
ALTERNATE 1		499	248
XSECTION 47	.19		
ALTERNATE 1		213	93
XSECTION 48	.56		
ALTERNATE 1		248	62
XSECTION 49	.27		
ALTERNATE 1		170	48
XSECTION 50	.19		
ALTERNATE 1		123	53
XSECTION 51	.13		
ALTERNATE 1		170	73
XSECTION 52	.27		
ALTERNATE 1		296	154

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2

XSECTION	53	.15		
ALTERNATE	1		178	83
XSECTION	54	.15		
ALTERNATE	1		233	121
XSECTION	55	.22		
ALTERNATE	1		217	107
XSECTION	56	4.78		
ALTERNATE	1		704	345
XSECTION	57	.11		
ALTERNATE	1		64	15
XSECTION	71	.09		
ALTERNATE	1		107	58
XSECTION	72	.24		
ALTERNATE	1		212	66
XSECTION	73	.08		
ALTERNATE	1		53	12
XSECTION	74	.15		
ALTERNATE	1		104	24
XSECTION	75	.13		
ALTERNATE	1		87	20
XSECTION	76	.14		
ALTERNATE	1		173	84
XSECTION	77	.19		
ALTERNATE	1		198	92
XSECTION	78	.31		
ALTERNATE	1		386	189

0

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION	79	.27		
ALTERNATE	1		101	25
XSECTION	80	.08		
ALTERNATE	1		131	55
XSECTION	81	.35		
ALTERNATE	1		249	61
XSECTION	82	.24		
ALTERNATE	1		92	22
XSECTION	83	.35		

	ALTERNATE	1	119	29
XSECTION	84	.19		
	ALTERNATE	1	105	25
XSECTION	85	.27		
	ALTERNATE	1	135	32
XSECTION	86	.33		
	ALTERNATE	1	166	39
XSECTION	91	.41		
	ALTERNATE	1	240	56
XSECTION	92	.42		
	ALTERNATE	1	208	49
XSECTION	93	.24		
	ALTERNATE	1	109	26
XSECTION	94	.43		
	ALTERNATE	1	151	37
XSECTION	95	.11		
	ALTERNATE	1	46	11

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION	96	.14		
	ALTERNATE	1	63	15
XSECTION	97	.07		
	ALTERNATE	1	40	9
XSECTION	98	.14		
	ALTERNATE	1	78	18
XSECTION	99	.44		
	ALTERNATE	1	165	40
XSECTION	107	1.88		
	ALTERNATE	1	629	135
XSECTION	145	4.21		
	ALTERNATE	1	3331	1367
XSECTION	194	.14		
	ALTERNATE	1	60	13

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST

FILES

```
INPUT  = C:\TR20\BLRTR20\EFSCPR16.DAT          , GIVEN DATA FILE
OUTPUT = C:\TR20\BLRTR20\EFSCPR16.OUT          , DATED 06/05/**,13:30:12

         FILES GENERATED - DATED 06/05/**,13:30:12

FILE C:\TR20\BLRTR20\EFSCPR16.TRD CONTAINS READHD INFORMATION


       TOTAL NUMBER OF WARNINGS =  26,  MESSAGES =   2

                  JOB ENDED AT 13:30:13
              *** TR-20 RUN COMPLETED ***
```

4-4-07

POND 96

PROPOSED CONDITIONS INPUT & OUTPUT

1

**********80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY**********

```
JOB TR-20                                                        NOPLOTS
TITLE     PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpnd96.dat
TITLE     24 HR TYPE IIA CURVE
 5 RAINFL 1                .50
 8              0.0000    0.0015    0.0045    0.0080    0.0120
 8              0.0165    0.0210    0.0255    0.0320    0.0460
 8              0.0600    0.1000    0.7000    0.7500    0.7800
 8              0.8000    0.8200    0.8300    0.8400    0.8500
 8              0.8600    0.8675    0.8750    0.8825    0.8900
 8              0.8975    0.9013    0.9050    0.9115    0.9180
 8              0.9240    0.9300    0.9350    0.9400    0.9450
 8              0.9500    0.9550    0.9600    0.9650    0.9700
 8              0.9750    0.9800    0.9825    0.9875    0.9900
 8              0.9925    0.9950    0.9975    0.9989    1.0000
 9 ENDTBL
 2 XSECTN   61          1.0         2.5
 8                      0.0          0.        0.0
 8                      0.5          6.        0.8
 8                      1.0         25.        2.3
 8                      1.5         54.        3.9
 8                      2.0         88.        5.7
 8                      2.5        122.        7.4
 9 ENDTBL
 2 XSECTN   62          1.0         4.0
 8                      0.0          0.        0.0
 8                      1.0         24.        3.0
 8                      2.0         95.        7.8
 8                      3.0        194.       13.3
 8                      4.0        295.       18.5
 9 ENDTBL
 2 XSECTN   67          1.0         5.0
 8                      0.0          0.        0.
 8                      1.0         32.        3.
 8                      2.0        124.        8.
 8                      3.0        250.       13.
 8                      4.0        384.       18.
 8                      5.0        460.       23.
 9 ENDTBL
 3 STRUCT      96
 8                    6625.        0.0        0.
 8                    6626.        24.        .1
 8                    6628.        54.       2.5
 8                    6630.        74.      10.0
 8                    6632.        89.      25.5
 8                    6634.       102.      50.8
 8                    6636.       113.      82.0
 8                    6638.       124.     118.4
 8                    6638.6      127.     130.4
 8                    6639.       168.     137.8
 8                    6640.       388.     157.2
```

1

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
 8                    6642.       742.     197.6
 8                    6644.       791.     239.4
 8                    6646.       837.     282.8
 9 ENDTBL
 3 STRUCT      95
 8                    796.3         0.        0.
 8                    797.0         2.0       0.02
 8                    798.0         4.0       0.6
 8                    799.0         5.5       3.0
 8                    800.0         6.7       8.4
 8                    801.0         7.4      17.1
 8                    802.0        11.6      29.0
 8                    803.0        14.1      41.5
 8                    804.0       178.0      54.3
 8                    805.0       271.0      67.6
 8                    806.0       298.0      81.4
 8                    807.0       323.0      95.8
 9 ENDTBL
 3 STRUCT      93
 8                    798.7         0.        0.
 8                    801.0         .01       0.1
 8                    802.0        16.0       3.0
 8                    803.0        21.8       6.2
 8                    803.7        24.1       8.5
 8                    804.0        38.7       9.6
 8                    805.0        53.0      13.1
```

```
 8                      806.0         59.1        16.7
 8                      807.0         64.1        20.4
 9 ENDTBL
 2 XSECTN   121         1.0          6.0
 8                      1.0           0.          0.
 8                      2.0           1.          1.
 8                      3.0          10.         10.
 8                      4.0          20.         20.
 8                      5.0          30.         30.
 8                      6.0          39.         39.
 9 ENDTBL
 2 XSECTN   122         1.0          6.0
 8                      1.0          0.           0.
 8                      2.0          .5           0.5
 8                      3.0           5.          5.0
 8                      4.0          10.         10.
 8                      5.0          15.         15.
 8                      6.0          20.         20.
 9 ENDTBL
 2 XSECTN   141         1.0          6.0
 8                      1.0           0.          0.
 8                      2.0          44.         45.
 8                      3.0          88.         90.
 8                      4.0         176.        180.
1
```

```
**********80-80 LIST OF INPUT DATA (CONTINUED)**********

 8                      5.0         264.        270.
 8                      6.0         352.        360.
 9 ENDTBL
 2 XSECTN   142         1.0          6.0
 8                      1.0           0.          0.
 8                      2.0           6.          5.
 8                      3.0          12.         10.
 8                      4.0          24.         20.
 8                      5.0          36.         30.
 8                      6.0          48.         40.
 9 ENDTBL
 6 RUNOFF 1  87       2          0.13         85.0         0.87         1
 6 REACH  3  70   2   3          3000.        1.12         1.44         1
 6 RUNOFF 1  70       2          0.15         78.0         0.51         1
 6 ADDHYD 4    63 2 3 4                                                 1
 6 REACH  3  19   4   3          1100.        1.12         1.45         1
 6 RUNOFF 1  19       2          0.053        76.0         0.32         1
 6 ADDHYD 4    62 2 3 4                                                 1
 6 REACH  3   1   4   3          1250.        1.12         1.44         1
 6 RUNOFF 1   1       2          0.08         88.0         0.22         1
 6 ADDHYD 4    61 2 3 4                                                 1
 6 REACH  3   2   4   3          5400.        0.92         1.47         1
 6 RUNOFF 1   2       2          0.28         86.0         0.38         1
 6 ADDHYD 4    43 2 3 5                                                 1
 6 RUNOFF 1  58       2          0.11         88.0         0.38         1
 6 ADDHYD 4    28 2 5 4                                                 1
 6 REACH  3  43   4   3          4000.        0.51         1.56         1
 6 RUNOFF 1  43       2          0.320        87.0         0.41         1
 6 ADDHYD 4    26 2 3 6                                                 1
 6 RUNOFF 1  90       2          0.08         88.0         0.28         1
 6 REACH  3  88   2   3          5600.0       1.04         1.62         1
 6 RUNOFF 1  88       2          0.28         65.0         0.80         1
 6 ADDHYD 4    60 2 3 4                                                 1
 6 REACH  3  72   4   3          2000.        0.96         1.48         1
 6 RUNOFF 1  72       2          0.11         76.0         0.47         1
 6 ADDHYD 4    49 2 3 4                                                 1
 6 RUNOFF 1  89       2          0.09         65.0         0.49         1
 6 REACH  3  89   2   3          1500.        1.06         1.46         1
 6 ADDHYD 4    49 3 4 5                                                 1
 6 REACH  3  68   5   2          1200.        0.82         1.49         1
 6 RUNOFF 1  68       3          0.035        79.0         0.36         1
 6 ADDHYD 4    51 2 3 4                                                 1
 6 REACH  3   4   4   5          900.         0.82         1.50         1
 6 RUNOFF 1  73       2          0.067        94.0         0.24         1
 6 REACH  3  67   2   3          1600.                                   1
 6 RUNOFF 1  67       2          0.093        81.0         0.39         1
 6 ADDHYD 4    52 2 3 4                                                 1
 6 REACH  3   5   4   3          1100.        0.99         1.46         1
 6 ADDHYD 4    53 3 5 2                                                 1
 6 RUNOFF 1   4       4          0.051        77.0         0.33         1
1
```

```
**********80-80 LIST OF INPUT DATA (CONTINUED)**********

 6 ADDHYD 4    53 2 4 5                                                 1
 6 REACH  3  66   5   3          1100.        0.90         1.51         1
```

```
  6 RUNOFF 1  66        4        0.088        80.0        0.33          1
  6 ADDHYD 4    54 4 3 2                                               1
  6 RUNOFF 1  69        4        0.061        80.0        0.32          1
  6 REACH  3  69   4    5        1200.        6.40        1.40          1
  6 ADDHYD 4    54 2 5 3                                               1
  6 RUNOFF 1  17        4        0.030        77.0        0.38          1
  6 ADDHYD 4    55 3 4 5                                               1
  6 RUNOFF 1  18        2        0.092        80.0        0.29          1
  6 ADDHYD 4    55 2 5 4                                               1
  6 RUNOFF 1   3        5        0.063        83.0        0.31          1
  6 ADDHYD 4    55 4 5 2                                               1
  6 RESVOR 2    95 2    3      796.30                                   1
  6 REACH  3  57   3    2        2800.        0.65        1.47          1
  6 RUNOFF 1  57        3        0.168        84.0        0.37          1
  6 ADDHYD 4    57 2 3 4                                               1
  6 REACH  3  56   4    2        1800.        0.47        1.53          1
  6 RUNOFF 1  56        3        0.151        85.0        0.38          1
  6 ADDHYD 4    44 2 3 4                                               1
  6 REACH  3  55   4    2        1600.        0.41        1.55          1
  6 RUNOFF 1  55        3        0.085        83.0        0.39          1
  6 ADDHYD 4    25 2 3 4                                               1
  6 REACH  3  42   4    2        3100.        0.38        1.58          1
  6 RUNOFF 1  42        3        0.085        79.0        0.39          1
  6 ADDHYD 4    27 2 3 5                                               1
  6 RUNOFF 1  65        4        0.076        82.0        0.27          1
  6 RUNOFF 1  64        3        0.083        82.0        0.34          1
  6 ADDHYD 4    46 4 3 2                                               1
  6 RUNOFF 1  21        4        0.018        87.0        0.23          1
  6 DIVERT 6 121   4 3 7                      .65        122.          1
  6 ADDHYD 4    46 2 3 4                                               1
  6 RESVOR 2    93 4    2        801.0                                  1
  6 ADDHYD 4    47 7 2 3                                               1
  6 RUNOFF 1  63        2        0.104        78.0        0.39          1
  6 ADDHYD 4    47 2 3 7                                               1
  6 REACH  3  62   7    3        2000.                                  1
  6 RUNOFF 1  62        2        0.156        85.0        0.34          1
  6 ADDHYD 4    45 2 3 4                                               1
  6 REACH  3  60   4    3        2400.        0.44        1.54          1
  6 RUNOFF 1  60        2        0.270        85.0        0.35          1
  6 ADDHYD 4    42 3 2 4                                               1
  6 RUNOFF 1  61        7        0.030        86.0        0.33          1
  6 REACH  3  61   7    2        2600.                                  1
  6 ADDHYD 4    41 2 4 3                                               1
  6 REACH  3  59   3    2        1600.        0.26        1.60          1
  6 RUNOFF 1  59        3        0.181        88.0        0.41          1
  6 ADDHYD 4    24 2 3 4                                               1
  6 REACH  3  40   4    2      2218.1        0.24        1.62          1
  6 RUNOFF 1  40        3       0.143        82.0        0.37          1
1
```

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
  6 ADDHYD 4    83 2 3 4                                               1
  6 ADDHYD 4    83 4 5 2                                               1
  6 REACH  3  46   2    3        1200.        0.41        1.55          1
  6 RUNOFF 1  46        2        0.04         80.0        0.30          1
  6 ADDHYD 4    84 2 3 4                                               1
  6 ADDHYD 4    85 4 6 3                                               1
  6 RUNOFF 1  39        2        0.158        84.0        0.35          1
  6 ADDHYD 4    85 3 2 4                                               1
  6 RUNOFF 1  41        2        0.21         81.0        0.40          1
  6 DIVERT 6 141   2 6 7                      .88        142.          1
  6 ADDHYD 4    86 6 4 3                                     1     1 1
  6 RESVOR 2    96 3    2       6825.0                        1     1 1
  6 ADDHYD 4    86 2 7 4                                               1
  6 REACH  3 101   4    2       1150.0         .31         1.6          1
  6 RUNOFF 1  54        3        0.197        85.0        0.35          1
  6 ADDHYD 4     1 2 3 4                                               1
  6 REACH  3 102   4    2        500.0         .31         1.6          1
  6 RUNOFF 1  53        1        0.059        82.0        0.33          1
  6 ADDHYD 4     2 2 1 3                                               1
    ENDATA
  7 LIST
  7 INCREM 6                     .050
  7 COMPUT 7  87        2         0.0         4.5         1.01 2  01  01
    ENDCMP 1
  7 COMPUT 7  87        2         0.0        2.85         1.01 2  01  02
    ENDCMP 1
    ENDJOB 2
```

**********END OF 80-80 LIST**********

1

EXECUTIVE CONTROL LIST 0. 0. 0.

LISTING OF CURRENT DATA

	XSECTN NO.	DRAINAGE AREA	BANKFULL	ZERO DAMAGE	LOW GROUND
2 XSECTN	61	1.0000	2.5000	.0000	.0000

	ELEVATION	DISCHARGE	END AREA
8	.00	.00	.00
8	.50	6.00	.80
8	1.00	25.00	2.30
8	1.50	54.00	3.90
8	2.00	88.00	5.70
8	2.50	122.00	7.40
9 ENDTBL			

	XSECTN NO.	DRAINAGE AREA	BANKFULL	ZERO DAMAGE	LOW GROUND
2 XSECTN	62	1.0000	4.0000	.0000	.0000

	ELEVATION	DISCHARGE	END AREA
8	.00	.00	.00
8	1.00	24.00	3.00
8	2.00	96.00	7.80
8	3.00	194.00	13.30
8	4.00	295.00	18.50
9 ENDTBL			

	XSECTN NO.	DRAINAGE AREA	BANKFULL	ZERO DAMAGE	LOW GROUND
2 XSECTN	67	1.0000	5.0000	.0000	.0000

	ELEVATION	DISCHARGE	END AREA
8	.00	.00	.00
8	1.00	32.00	3.00
8	2.00	124.00	8.00
8	3.00	250.00	13.00
8	4.00	384.00	18.00
8	5.00	460.00	23.00
9 ENDTBL			

1

TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpa VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
09:30:29 PASS 1 JOB NO. 1 PAGE 2

	XSECTN NO.	DRAINAGE AREA	BANKFULL	ZERO DAMAGE	LOW GROUND
2 XSECTN	121	1.0000	6.0000	.0000	.0000

	ELEVATION	DISCHARGE	END AREA
8	1.00	.00	.00
8	2.00	1.00	1.00
8	3.00	10.00	10.00
8	4.00	20.00	20.00
8	5.00	30.00	30.00
8	6.00	39.00	39.00
9 ENDTBL			

	XSECTN NO.	DRAINAGE AREA	BANKFULL	ZERO DAMAGE	LOW GROUND
2 XSECTN	122	1.0000	6.0000	.0000	.0000

	ELEVATION	DISCHARGE	END AREA
8	1.00	.00	.00
8	2.00	.50	.50
8	3.00	5.00	5.00
8	4.00	10.00	10.00
8	5.00	15.00	15.00
8	6.00	20.00	20.00
9 ENDTBL			

	XSECTN NO.	DRAINAGE AREA	BANKFULL	ZERO DAMAGE	LOW GROUND

```
2 XSECTN    141          1.0000       6.0000        .0000        .0000

                        ELEVATION   DISCHARGE    END AREA
8                           1.00         .00         .00
8                           2.00       44.00       45.00
8                           3.00       88.00       90.00
8                           4.00      176.00      180.00
8                           5.00      264.00      270.00
8                           6.00      352.00      360.00
9 ENDTBL
1
TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/**                    24 HR TYPE IIA CURVE                      2.04TEST
09:30:29                    PASS   1   JOB NO.   1                    PAGE   3


          XSECTN       DRAINAGE    BANKFULL        ZERO         LOW
            NO.          AREA                     DAMAGE      GROUND
2 XSECTN    142          1.0000       6.0000        .0000        .0000

                        ELEVATION   DISCHARGE    END AREA
8                           1.00         .00         .00
8                           2.00        6.00        5.00
8                           3.00       12.00       10.00
8                           4.00       24.00       20.00
8                           5.00       36.00       30.00
8                           6.00       48.00       40.00
9 ENDTBL

          STRUCT NO.     ELEVATION   DISCHARGE     STORAGE
3 STRUCT     93

8                          798.70         .00         .00
8                          801.00         .01         .10
8                          802.00       18.00        3.00
8                          803.00       21.80        6.20
8                          803.70       24.10        8.50
8                          804.00       38.70        9.60
8                          805.00       53.00       13.10
8                          806.00       59.10       16.70
8                          807.00       64.10       20.40
9 ENDTBL

          STRUCT NO.     ELEVATION   DISCHARGE     STORAGE
3 STRUCT     95

8                          796.30         .00         .00
8                          797.00        2.00         .02
8                          798.00        4.00         .60
8                          799.00        5.50        3.00
8                          800.00        6.70        8.40
8                          801.00        7.40       17.10
8                          802.00       11.60       29.00
8                          803.00       14.10       41.50
8                          804.00      178.00       54.30
8                          805.00      271.00       67.80
8                          806.00      298.00       81.40
8                          807.00      323.00       95.80
9 ENDTBL
1
TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/**                    24 HR TYPE IIA CURVE                      2.04TEST
09:30:29                    PASS   1   JOB NO.   1                    PAGE   4


          STRUCT NO.     ELEVATION   DISCHARGE     STORAGE
3 STRUCT     96

8                         6625.00         .00         .00
8                         6626.00       24.00         .10
8                         6628.00       54.00        2.50
8                         6630.00       74.00       10.00
8                         6632.00       89.00       25.50
8                         6634.00      102.00       50.80
8                         6636.00      113.00       82.00
8                         6638.00      124.00      118.40
8                         6638.60      127.00      130.40
8                         6639.00      168.00      137.80
8                         6640.00      388.00      157.20
8                         6642.00      742.00      197.60
8                         6644.00      791.00      239.40
8                         6646.00      837.00      282.80
9 ENDTBL

                    COMPUTED TIME INCREMENT
```

```
 4 DIMHYD                    .0200

 8                .0000      .0300      .1000      .1900      .3100
 8                .4700      .6600      .8200      .9300      .9900
 8               1.0000      .9900      .9300      .8600      .7800
 8                .6800      .5600      .4600      .3800      .3300
 8                .2800      .2410      .2070      .1740      .1470
 8                .1260      .1070      .0910      .0770      .0660
 8                .0550      .0470      .0400      .0340      .0290
 8                .0250      .0210      .0180      .0150      .0130
 8                .0110      .0090      .0080      .0070      .0060
 8                .0050      .0040      .0030      .0020      .0010
 8                .0000      .0000      .0000      .0000      .0000
 9 ENDTBL

   COMPUTED PEAK RATE FACTOR =  484.000

1
 TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                  24 HR TYPE IIA CURVE                      2.04TEST
 09:30:29                 PASS   1   JOB NO.   1                     PAGE   5


     TABLE NO.       TIME INCREMENT
 5 RAINFL 1                  .5000

 8                .0000      .0015      .0045      .0080      .0120
 8                .0165      .0210      .0255      .0320      .0460
 8                .0600      .1000      .7000      .7500      .7800
 8                .8000      .8200      .8300      .8400      .8500
 8                .8600      .8675      .8750      .8825      .8900
 8                .8975      .9013      .9050      .9115      .9180
 8                .9240      .9300      .9350      .9400      .9450
 8                .9500      .9550      .9600      .9650      .9700
 8                .9750      .9800      .9825      .9875      .9900
 8                .9925      .9950      .9975      .9999     1.0000
 9 ENDTBL
1
 TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E..FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                  24 HR TYPE IIA CURVE                      2.04TEST
 09:30:29                 PASS   1   JOB NO.   1                     PAGE   6


     TABLE NO.       TIME INCREMENT
 5 RAINFL 2                  .1000

 8                .0000      .0010      .0020      .0030      .0041
 8                .0051      .0062      .0072      .0083      .0094
 8                .0105      .0116      .0127      .0138      .0150
 8                .0161      .0173      .0184      .0196      .0208
 8                .0220      .0232      .0244      .0257      .0269
 8                .0281      .0294      .0306      .0319      .0332
 8                .0345      .0358      .0371      .0384      .0398
 8                .0411      .0426      .0439      .0452      .0466
 8                .0480      .0494      .0508      .0523      .0538
 8                .0553      .0568      .0583      .0598      .0614
 8                .0630      .0646      .0662      .0679      .0696
 8                .0712      .0730      .0747      .0764      .0782
 8                .0800      .0818      .0836      .0855      .0874
 8                .0892      .0912      .0931      .0950      .0970
 8                .0990      .1010      .1030      .1051      .1072
 8                .1093      .1114      .1135      .1156      .1178
 8                .1200      .1222      .1246      .1270      .1296
 8                .1322      .1350      .1379      .1408      .1438
 8                .1470      .1502      .1534      .1566      .1598
 8                .1630      .1663      .1697      .1733      .1771
 8                .1810      .1851      .1895      .1941      .1989
 8                .2040      .2094      .2152      .2214      .2280
 8                .2350      .2427      .2513      .2609      .2715
 8                .2830      .3068      .3544      .4308      .5679
 8                .6630      .6820      .6986      .7130      .7252
 8                .7350      .7434      .7514      .7588      .7656
 8                .7720      .7780      .7836      .7890      .7942
 8                .7990      .8036      .8080      .8122      .8162
 8                .8200      .8237      .8273      .8308      .8342
 8                .8376      .8409      .8442      .8474      .8505
 8                .8535      .8565      .8594      .8622      .8649
 8                .8676      .8702      .8728      .8753      .8777
 8                .8800      .8823      .8845      .8868      .8890
 8                .8912      .8934      .8955      .8976      .8997
 8                .9018      .9038      .9058      .9078      .9097
 8                .9117      .9136      .9155      .9173      .9192
 8                .9210      .9228      .9245      .9263      .9280
 8                .9297      .9313      .9330      .9346      .9362
 8                .9377      .9393      .9408      .9423      .9438
 8                .9452      .9466      .9480      .9493      .9507
```

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 8                .9520       .9533       .9546       .9559       .9572
 8                .9584       .9597       .9610       .9622       .9635
 8                .9647       .9660       .9672       .9685       .9697
 8                .9709       .9722       .9734       .9746       .9758
 8                .9770       .9782       .9794       .9806       .9818
 8                .9829       .9841       .9853       .9864       .9876
 8                .9887       .9899       .9910       .9922       .9933
 8                .9944       .9956       .9967       .9978       .9989
 8               1.0000      1.0000      1.0000      1.0000      1.0000
 9 ENDTBL
1
 TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                    24 HR TYPE IIA CURVE                      2.04TEST
 09:30:29                   PASS   1   JOB NO.   1                     PAGE   7


     TABLE NO.       TIME INCREMENT
 5 RAINFL 3                  .1000

 8                .0000       .0022       .0043       .0063       .0082
 8                .0100       .0118       .0137       .0157       .0178
 8                .0200       .0228       .0257       .0287       .0318
 8                .0350       .0380       .0410       .0439       .0470
 8                .0500       .0531       .0563       .0595       .0628
 8                .0660       .0692       .0724       .0756       .0788
 8                .0820       .0851       .0883       .0915       .0947
 8                .0980       .1015       .1050       .1086       .1123
 8                .1160       .1197       .1234       .1272       .1311
 8                .1350       .1390       .1431       .1473       .1516
 8                .1560       .1606       .1653       .1701       .1750
 8                .1800       .1849       .1900       .1952       .2005
 8                .2060       .2120       .2181       .2243       .2306
 8                .2370       .2429       .2488       .2549       .2613
 8                .2680       .2752       .2829       .2912       .3002
 8                .3100       .3314       .3547       .3788       .4026
 8                .4250       .4394       .4517       .4623       .4716
 8                .4800       .4890       .4975       .5055       .5130
 8                .5200       .5266       .5329       .5389       .5446
 8                .5500       .5556       .5612       .5666       .5718
 8                .5770       .5820       .5868       .5916       .5964
 8                .6010       .6058       .6104       .6150       .6196
 8                .6240       .6284       .6326       .6368       .6410
 8                .6450       .6489       .6527       .6565       .6603
 8                .6640       .6677       .6715       .6753       .6791
 8                .6830       .6866       .6903       .6939       .6974
 8                .7010       .7047       .7084       .7120       .7155
 8                .7190       .7225       .7259       .7293       .7326
 8                .7360       .7394       .7428       .7461       .7495
 8                .7528       .7561       .7594       .7627       .7660
 8                .7692       .7725       .7757       .7789       .7821
 8                .7853       .7885       .7916       .7947       .7979
 8                .8010       .8041       .8071       .8102       .8132
 8                .8163       .8193       .8223       .8252       .8282
 8                .8312       .8341       .8370       .8399       .8428
 8                .8457       .8486       .8514       .8542       .8570
 8                .8598       .8626       .8654       .8681       .8709
 8                .8736       .8763       .8790       .8817       .8844
 8                .8870       .8896       .8923       .8949       .8974
 8                .9000       .9026       .9051       .9076       .9101
 8                .9126       .9151       .9176       .9200       .9225
 8                .9249       .9273       .9297       .9321       .9344
 8                .9368       .9391       .9414       .9437       .9460
 8                .9482       .9505       .9527       .9550       .9572
 8                .9594       .9615       .9637       .9658       .9680
 8                .9701       .9722       .9743       .9764       .9784
 8                .9804       .9825       .9845       .9865       .9884
 8                .9904       .9924       .9943       .9962       .9981
 8               1.0000      1.0000      1.0000      1.0000      1.0000
 9 ENDTBL
1
 TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                    24 HR TYPE IIA CURVE                      2.04TEST
 09:30:29                   PASS   1   JOB NO.   1                     PAGE   8


     TABLE NO.       TIME INCREMENT
 5 RAINFL 4                  .1000

 8                .0000       .0010       .0020       .0030       .0040
 8                .0050       .0060       .0070       .0080       .0090
 8                .0100       .0110       .0120       .0130       .0140
 8                .0150       .0160       .0170       .0180       .0190
 8                .0200       .0210       .0220       .0231       .0241
 8                .0252       .0263       .0274       .0285       .0296
 8                .0308       .0319       .0331       .0343       .0355
 8                .0367       .0379       .0392       .0404       .0417
```

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 8                .0430       .0443       .0456       .0470       .0483
 8                .0497       .0511       .0525       .0539       .0553
 8                .0567       .0582       .0597       .0612       .0627
 8                .0642       .0657       .0673       .0688       .0704
 8                .0720       .0736       .0753       .0770       .0788
 8                .0806       .0825       .0844       .0864       .0884
 8                .0905       .0926       .0948       .0970       .0993
 8                .1016       .1040       .1064       .1089       .1114
 8                .1140       .1167       .1194       .1223       .1253
 8                .1284       .1317       .1350       .1386       .1421
 8                .1458       .1496       .1535       .1575       .1617
 8                .1659       .1703       .1748       .1794       .1842
 8                .1890       .1940       .1993       .2048       .2105
 8                .2165       .2227       .2292       .2359       .2428
 8                .2500       .2578       .2664       .2760       .2866
 8                .2980       .3143       .3394       .3733       .4160
 8                .5000       .5840       .6267       .6606       .6857
 8                .7020       .7134       .7240       .7336       .7422
 8                .7500       .7572       .7641       .7708       .7773
 8                .7835       .7895       .7952       .8007       .8060
 8                .8110       .8158       .8206       .8252       .8297
 8                .8341       .8383       .8425       .8465       .8504
 8                .8543       .8579       .8615       .8650       .8683
 8                .8716       .8747       .8777       .8806       .8833
 8                .8860       .8886       .8911       .8936       .8960
 8                .8984       .9007       .9030       .9052       .9074
 8                .9095       .9116       .9136       .9156       .9175
 8                .9194       .9212       .9230       .9247       .9264
 8                .9280       .9296       .9312       .9327       .9343
 8                .9358       .9373       .9388       .9403       .9418
 8                .9433       .9447       .9461       .9475       .9489
 8                .9503       .9517       .9530       .9544       .9557
 8                .9570       .9583       .9596       .9609       .9621
 8                .9634       .9646       .9658       .9670       .9682
 8                .9694       .9706       .9718       .9729       .9741
 8                .9752       .9764       .9775       .9786       .9797
 8                .9808       .9818       .9829       .9839       .9850
 8                .9860       .9870       .9880       .9890       .9900
 8                .9909       .9919       .9928       .9938       .9947
 8                .9956       .9965       .9974       .9983       .9991
 8               1.0000      1.0000      1.0000      1.0000      1.0000
 9 ENDTBL
1
TR20 ------------------------------------------------------------------------ SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/**                    24 HR TYPE IIA CURVE                      2.04TEST
09:30:29                   PASS   1   JOB NO.   1                     PAGE   9


     TABLE NO.       TIME INCREMENT
 5 RAINFL 5                  .5000

 8                .0000       .0020       .0050       .0080       .0110
 8                .0140       .0170       .0200       .0230       .0260
 8                .0290       .0320       .0350       .0380       .0410
 8                .0440       .0470       .0510       .0560       .0590
 8                .0630       .0670       .0710       .0750       .0790
 8                .0840       .0890       .0940       .0990       .1040
 8                .1090       .1140       .1200       .1260       .1330
 8                .1400       .1470       .1540       .1620       .1710
 8                .1810       .1920       .2040       .2170       .2330
 8                .2520       .2770       .3180       .8380       .6980
 8                .7290       .7520       .7700       .7850       .7980
 8                .8090       .8190       .8290       .8380       .8460
 8                .8540       .8610       .8680       .8740       .8800
 8                .8860       .8920       .8970       .9020       .9070
 8                .9120       .9170       .9210       .9250       .9290
 8                .9330       .9370       .9410       .9450       .9490
 8                .9530       .9570       .9600       .9630       .9660
 8                .9690       .9720       .9750       .9780       .9810
 8                .9840       .9870       .9900       .9930       .9960
 8                .9980      1.0000      1.0000      1.0000      1.0000
 9 ENDTBL
1
TR20 ------------------------------------------------------------------------ SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/**                    24 HR TYPE IIA CURVE                      2.04TEST
09:30:29                   PASS   1   JOB NO.   1                     PAGE  10


     TABLE NO.       TIME INCREMENT
 5 RAINFL 6                  .0200

 8                .0000       .0060       .0162       .0246       .0333
 8                .0425       .0524       .0630       .0743       .0863
 8                .0990       .1124       .1265       .1420       .1595
 8                .1800       .2050       .2550       .3450       .4370
 8                .5300       .6030       .6330       .6600       .6840
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 8                .7050       .7240       .7420       .7590       .7750
 8                .7900       .8043       .8180       .8312       .8439
 8                .8561       .8678       .8790       .8898       .9002
 8                .9103       .9201       .9297       .9391       .9483
 8                .9573       .9661       .9747       .9832       .9916
 8               1.0000      1.0000      1.0000      1.0000      1.0000
 9 ENDTBL
1
 TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                    24 HR TYPE IIA CURVE                    2.04TEST
 09:30:29                    PASS   1   JOB NO.   1                  PAGE  11


                  STANDARD CONTROL INSTRUCTIONS


 6 RUNOFF 1  87       2       .1300      65.0000       .87000 0 0 0 0 1
 6 REACH  3  70   2   3    3000.0000       1.1200      1.44000 0 0 0 0 1
 6 RUNOFF 1  70       2       .1500      78.0000       .51000 0 0 0 0 1
 6 ADDHYD 4    63 2 3 4                                    0 0 0 0 0 1
 6 REACH  3  19   4   3    1100.0000       1.1200      1.45000 0 0 0 0 1
 6 RUNOFF 1  19       2       .0530      76.0000       .32000 0 0 0 0 1
 6 ADDHYD 4    62 2 3 4                                    0 0 0 0 0 1
 6 REACH  3   1   4   3    1250.0000       1.1200      1.44000 0 0 0 0 1
 6 RUNOFF 1   1       2       .0800      88.0000       .22000 0 0 0 0 1
 6 ADDHYD 4    61 2 3 4                                    0 0 0 0 0 1
 6 REACH  3   2   4   3    5400.0000       .9200       1.47000 0 0 0 0 1
 6 RUNOFF 1   2       2       .2800      86.0000       .38000 0 0 0 0 1
 6 ADDHYD 4    43 2 3 5                                    0 0 0 0 0 1
 6 RUNOFF 1  58       2       .1100      88.0000       .38000 0 0 0 0 1
 6 ADDHYD 4    28 2 5 4                                    0 0 0 0 0 1
 6 REACH  3  43   4   3    4000.0000       .5100       1.56000 0 0 0 0 1
 6 RUNOFF 1  43       2       .3200      87.0000       .41000 0 0 0 0 1
 6 ADDHYD 4    26 2 3 6                                    0 0 0 0 0 1
 6 RUNOFF 1  90       2       .0800      86.0000       .28000 0 0 0 0 1
 6 REACH  3  88   2   3    5600.0000       1.0400      1.52000 0 0 0 0 1
 6 RUNOFF 1  88       2       .2800      65.0000       .60000 0 0 0 0 1
 6 ADDHYD 4    50 2 3 4                                    0 0 0 0 0 1
 6 REACH  3  72   4   3    2000.0000       .9600       1.48000 0 0 0 0 1
 6 RUNOFF 1  72       2       .1100      76.0000       .47000 0 0 0 0 1
 6 ADDHYD 4    49 2 3 4                                    0 0 0 0 0 1
 6 RUNOFF 1  89       2       .0900      65.0000       .49000 0 0 0 0 1
 6 REACH  3  89   2   3    1500.0000       1.0600      1.46000 0 0 0 0 1
 6 ADDHYD 4    49 3 4 5                                    0 0 0 0 0 1
 6 REACH  3  66  .5   2    1200.0000       .8200       1.49000 0 0 0 0 1
 6 RUNOFF 1  66       3       .0350      79.0000       .36000 0 0 0 0 1
 6 ADDHYD 4    51 2 3 4                                    0 0 0 0 0 1
 6 REACH  3   4   4   5     900.0000       .8200       1.50000 0 0 0 0 1
 6 RUNOFF 1  73       2       .0670      94.0000       .24000 0 0 0 0 1
 6 REACH  3  67   2   3    1600.0000       .0000       .00000 0 0 0 0 1
 6 RUNOFF 1  67       2       .0930      81.0000       .39000 0 0 0 0 1
 6 ADDHYD 4    52 2 3 4                                    0 0 0 0 0 1
 6 REACH  3   5   4   3    1100.0000       .9900       1.46000 0 0 0 0 1
 6 ADDHYD 4    53 3 5 2                                    0 0 0 0 0 1
 6 RUNOFF 1   4       4       .0510      77.0000       .33000 0 0 0 0 1
 6 ADDHYD 4    53 2 4 5                                    0 0 0 0 0 1
 6 REACH  3  66   5   3    1100.0000       .9000       1.51000 0 0 0 0 1
 6 RUNOFF 1  66       4       .0880      80.0000       .33000 0 0 0 0 1
 6 ADDHYD 4    54 4 3 2                                    0 0 0 0 0 1
 6 RUNOFF 1  69       4       .0610      80.0000       .32000 0 0 0 0 1
 6 REACH  3  69   4   5    1200.0000       6.4000      1.40000 0 0 0 0 1
1
 TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                    24 HR TYPE IIA CURVE                    2.04TEST
 09:30:29                    PASS   1   JOB NO.   1                  PAGE  12

 6 ADDHYD 4    54 2 5 3                                    0 0 0 0 0 1
 6 RUNOFF 1  17       4       .0300      77.0000       .38000 0 0 0 0 1
 6 ADDHYD 4    55 3 4 5                                    0 0 0 0 0 1
 6 RUNOFF 1  18       2       .0920      80.0000       .29000 0 0 0 0 1
 6 ADDHYD 4    55 2 5 4                                    0 0 0 0 0 1
 6 RUNOFF 1   3       5       .0630      83.0000       .31000 0 0 0 0 1
 6 ADDHYD 4    56 4 5 2                                    0 0 0 0 0 1
 6 RESVOR 2    95 2   3     796.3000                      0 0 0 0 0 1
 6 REACH  3  57   3   2    2800.0000       .6500       1.47000 0 0 0 0 1
 6 RUNOFF 1  57       3       .1680      84.0000       .37000 0 0 0 0 1
 6 ADDHYD 4    57 2 3 4                                    0 0 0 0 0 1
 6 REACH  3  56   4   2    1800.0000       .4700       1.53000 0 0 0 0 1
 6 RUNOFF 1  58       3       .1510      85.0000       .36000 0 0 0 0 1
 6 ADDHYD 4    44 2 3 4                                    0 0 0 0 0 1
 6 REACH  3  55   4   2    1600.0000       .4100       1.55000 0 0 0 0 1
 6 RUNOFF 1  55       3       .0850      83.0000       .39000 0 0 0 0 1
 6 ADDHYD 4    25 2 3 4                                    0 0 0 0 0 1
 6 REACH  3  42   4   2    3100.0000       .3800       1.58000 0 0 0 0 1
 6 RUNOFF 1  42       3       .0850      79.0000       .39000 0 0 0 0 1
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 6 ADDHYD 4    27 2 3 5                                          0 0 0 0 0 1
 6 RUNOFF 1  65       4        .0760      82.0000       .27000 0 0 0 0 1
 6 RUNOFF 1  64       3        .0830      82.0000       .34000 0 0 0 0 1
 6 ADDHYD 4    46 4 3 2                                          0 0 0 0 0 1
 6 RUNOFF 1  21       4        .0180      87.0000       .23000 0 0 0 0 1
 6 DIVERT 6 121    4 3 7        .0000       .6500    122.00000 0 0 0 0 1
 6 ADDHYD 4    46 2 3 4                                          0 0 0 0 0 1
 6 RESVOR 2    93 4   2     801.0000                             0 0 0 0 0 1
 6 ADDHYD 4    47 7 2 3                                          0 0 0 0 0 1
 6 RUNOFF 1  63       2        .1040      78.0000       .39000 0 0 0 0 1
 6 ADDHYD 4    47 2 3 7                                          0 0 0 0 0 1
 6 REACH  3  62   7   3    2000.0000       .0000       .00000 0 0 0 0 1
 6 RUNOFF 1  62       2        .1560      85.0000       .84000 0 0 0 0 1
 6 ADDHYD 4    45 2 3 4                                          0 0 0 0 0 1
 6 REACH  3  60   4   3    2400.0000       .4400      1.54000 0 0 0 0 1
 6 RUNOFF 1  60       2        .2700      85.0000       .35000 0 0 0 0 1
 6 ADDHYD 4    42 3 2 4                                          0 0 0 0 0 1
 6 RUNOFF 1  61       7        .0300      88.0000       .33000 0 0 0 0 1
 6 REACH  3  61   7   2    2600.0000       .0000       .00000 0 0 0 0 1
 6 ADDHYD 4    41 2 4 3                                          0 0 0 0 0 1
 6 REACH  3  59   3   2    1600.0000       .2600      1.60000 0 0 0 0 1
 6 RUNOFF 1  59       3        .1810      88.0000       .41000 0 0 0 0 1
 6 ADDHYD 4    24 2 3 4                                          0 0 0 0 0 1
 6 REACH  3  40   4   2    2218.1000       .2400      1.62000 0 0 0 0 1
 6 RUNOFF 1  40       3        .1430      82.0000       .37000 0 0 0 0 1
 6 ADDHYD 4    83 2 3 4                                          0 0 0 0 0 1
 6 ADDHYD 4    83 4 5 2                                          0 0 0 0 0 1
 6 REACH  3  46   2   3    1200.0000       .4100      1.55000 0 0 0 0 1
 6 RUNOFF 1  46       2        .0400      80.0000       .30000 0 0 0 0 1
 6 ADDHYD 4    84 2 3 4                                          0 0 0 0 0 1
1
 TR20 ------------------------------------------------------------------------ SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                    24 HR TYPE IIA CURVE                          2.04TEST
 09:30:29                    PASS   1   JOB NO.   1                        PAGE  13

 6 ADDHYD 4    85 4 6 3                                          0 0 0 0 0 1
 6 RUNOFF 1  39       2        .1580      84.0000       .35000 0 0 0 0 1
 6 ADDHYD 4    85 3 2 4                                          0 0 0 0 0 1
 6 RUNOFF 1  41       2        .2100      81.0000       .40000 0 0 0 0 1
 6 DIVERT 6 141    2 6 7        .0000       .8800    142.00000 0 0 0 0 1
 6 ADDHYD 4    85 6 4 3                                          0 1 0 0 1 1
 6 RESVOR 2    96 3   2    6625.0000                            0 1 0 0 1 1
 6 ADDHYD 4    86 2 7 4                                          0 0 0 0 0 1
 6 REACH  3 101    4   2    1150.0000       .3100      1.60000 0 0 0 0 1
 6 RUNOFF 1  54       3        .1970      85.0000       .35000 0 0 0 0 1
 6 ADDHYD 4     1 2 3 4                                          0 0 0 0 0 1
 6 REACH  3 102    4   2     500.0000       .3100      1.60000 0 0 0 0 1
 6 RUNOFF 1  53       1        .0590      82.0000       .33000 0 0 0 0 1
 6 ADDHYD 4     2 2 1 3                                          0 0 0 0 0 1
   ENDATA


 END OF LISTING
1
 TR20 ------------------------------------------------------------------------ SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
 04/04/**                    24 HR TYPE IIA CURVE                          2.04TEST
 09:30:29                    PASS   1   JOB NO.   1                        PAGE  14


 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .050 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION  87  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  4.50       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .050 HOURS
    ALTERNATE NO. = 1           STORM NO. = 1            RAIN TABLE NO. = 1


 OPERATION ADDHYD   STRUCTURE 85

                  HYDROGRAPH POINTS FOR   ALTERNATE = 1,   STORM = 1
     HRS      MAIN TIME INCREMENT =  .050 hr,      DRAINAGE AREA =   4.20 SQ.MI.
     4.85 CFS       .47      .52      .58      .64      .80     1.21     2.13     3.72
     5.25 CFS         6        9       12       15       17       22       56      159
     5.65 CFS       389      762     1255     1831     2442     3034     3573     4036
     6.05 CFS      4396     4623     4681     4559     4283     3900     3463     3024
     6.45 CFS      2624     2281     1998     1769     1584     1433     1308     1205
     6.85 CFS      1119     1048      989      941      902      868      837      807
     7.25 CFS       779      751      726      702      681      662      646      632
     7.65 CFS       619      608      599      591      583      578      570      564
     8.05 CFS       557      550      539      526      610      493      474      456
     8.45 CFS       440      424      411      399      388      378      369      360
     8.85 CFS       352      344      337      330      323      317      312      307
     9.25 CFS       302      297      293      289      285      281      278      275
     9.65 CFS       272      269      266      263      261      258      256      254
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10.05 CFS	252	249	246	242	237	232	227	223
10.45 CFS	218	214	210	207	204	202	200	198
10.85 CFS	196	194	193	191	190	189	188	186
11.25 CFS	185	184	183	182	182	181	180	179
11.65 CFS	178	178	177	177	176	175	175	174
12.05 CFS	174	173	173	173	172	172	171	171
12.45 CFS	171	170	170	169	166	163	158	153
12.85 CFS	147	142	137	133	129	126	123	120
13.25 CFS	118	116	115	113	112	110	109	109
13.65 CFS	109	111	113	116	119	122	124	126
14.05 CFS	128	130	131	132	132	133	133	134
14.45 CFS	134	134	134	134	134	134	133	133
14.85 CFS	132	132	131	131	130	130	130	129
15.25 CFS	129	129	129	129	128	128	128	128
15.65 CFS	127	126	125	123	122	120	119	118
16.05 CFS	116	116	115	114	113	113	112	112
16.45 CFS	112	111	111	111	110	110	110	110
16.85 CFS	109	109	109	109	108	108	108	108
17.25 CFS	108	107	107	107	107	107	107	107
17.65 CFS	107	106	106	106	106	106	106	106
18.05 CFS	106	106	106	106	106	105	105	105
18.45 CFS	105	105	105	105	105	105	105	105
18.85 CFS	105	105	105	105	105	105	105	105

1

TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
09:30:29 PASS 1 JOB NO. 1 PAGE 15

19.25 CFS	105	105	105	105	105	105	105	105
19.65 CFS	105	105	105	105	105	104	104	104
20.05 CFS	104	104	104	104	104	104	104	104
20.45 CFS	104	104	104	103	102	100	97	93
20.85 CFS	89.70	86.12	82.84	79.98	77.71	76.26	75.87	76.58
21.25 CFS	78.24	80.56	83.26	85.96	88.42	90.53	92.09	92.88
21.65 CFS	92.63	91.31	89.09	86.22	83.06	79.89	76.97	74.41
22.05 CFS	72.22	70.38	68.85	67.57	66.49	65.58	64.78	64.08
22.45 CFS	63.45	62.87	62.33	61.83	61.36	60.91	60.49	60.09
22.85 CFS	59.71	59.35	59.00	58.68	58.36	58.07	57.79	57.53
23.25 CFS	57.27	57.03	56.81	56.59				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.39 WATERSHED INCHES; 6475 CFS-HRS; 535.1 ACRE-FEET.

--- STRUCTURE 95, ALTERNATE 1, STORM 1, HYDROGRAPH ADDED TO READHD FILE ---

OPERATION RESVOR STRUCTURE 96

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1

HRS	MAIN TIME INCREMENT = .050 hr,				DRAINAGE AREA =		4.20 SQ.MI.	
4.30 CFS	.00	.01	.02	.03	.05	.07	.11	.16
4.70 CFS	.22	.28	.34	.41	.46	.52	.58	.67
5.10 CFS	.90	1.41	2.41	4.04	6.24	8.87	11.67	14.39
5.50 CFS	17.82	24.59	28.77	41.13	57.05	67.48	77.52	85.73
5.90 CFS	93	100	106	112	117	123	147	321
6.30 CFS	470	584	679	744	752	759	764	769
6.70 CFS	772	775	777	779	781	782	783	783
7.10 CFS	784	784	784	784	784	784	784	783
7.50 CFS	783	782	782	781	780	779	778	777
7.90 CFS	776	775	774	773	772	771	770	769
8.30 CFS	767	766	765	763	762	760	758	756
8.70 CFS	756	753	751	749	747	745	743	735
9.10 CFS	720	706	692	678	664	651	639	628
9.50 CFS	614	602	590	579	568	557	547	537
9.90 CFS	527	517	508	499	490	481	473	465
10.30 CFS	457	448	441	433	425	417	410	403
10.70 CFS	396	389	380	372	364	356	348	341
11.10 CFS	334	328	321	315	309	303	298	292
11.50 CFS	287	282	278	273	269	265	261	257
11.90 CFS	253	250	246	243	240	237	234	231
12.30 CFS	228	226	223	221	218	216	214	212
12.70 CFS	210	208	206	203	200	197	194	191
13.10 CFS	188	186	183	180	177	174	171	169
13.50 CFS	167	166	164	163	162	161	160	159
13.90 CFS	158	157	156	156	155	155	154	154
14.30 CFS	153	153	152	152	151	151	151	150
14.70 CFS	150	150	149	149	148	148	148	147
15.10 CFS	147	146	146	146	145	145	145	144
15.50 CFS	144	143	143	143	142	142	142	141

1

TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
09:30:29 PASS 1 JOB NO. 1 PAGE 16

15.90 CFS	141	140	140	139	139	138	138	137
16.30 CFS	137	136	135	135	134	134	133	133

16.70 CFS	132	132	131	131	130	130	129	129
17.10 CFS	128	128	128	127	127	127	127	127
17.50 CFS	127	127	127	127	127	127	127	127
17.90 CFS	127	127	127	127	127	127	127	127
18.30 CFS	127	127	127	126	126	126	126	126
18.70 CFS	126	126	126	126	126	126	126	126
19.10 CFS	126	126	126	126	126	126	126	126
19.50 CFS	126	126	126	126	126	126	126	126
19.90 CFS	126	126	126	126	126	126	126	126
20.30 CFS	126	126	126	126	126	126	126	126
20.70 CFS	125	125	125	125	125	125	125	125
21.10 CFS	125	125	125	125	125	125	125	125
21.50 CFS	125	125	125	125	125	125	125	125
21.90 CFS	125	124	124	124	124	124	124	124
22.30 CFS	124	124	124	124	124	124	124	124
22.70 CFS	123	123	123	123	123	123	123	123
23.10 CFS	123	123	123	123	123	122	122	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.89 WATERSHED INCHES; 5107 CFS-HRS; 422.1 ACRE-FEET.

--- STRUCTURE 96, ALTERNATE 1, STORM 1, HYDROGRAPH ADDED TO READHD FILE ---

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 87 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 2.85 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .050 HOURS
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

OPERATION ADDHYD STRUCTURE 85

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .050 hr,				DRAINAGE AREA =		4.20	SQ.MI.
5.50 CFS	0	11	48	130	264	442	653	884
5.90 CFS	1120	1348	1560	1743	1881	1956	1964	1914
6.30 CFS	1817	1688	1540	1388	1239	1100	975	863
6.70 CFS	765	681	608	547	495	451	415	385
7.10 CFS	360	338	318	300	285	271	258	247
7.50 CFS	238	230	222	217	212	208	204	202
7.90 CFS	199	198	196	194	192	189	185	179
8.30 CFS	173	166	159	153	147	141	136	132
8.70 CFS	128	125	123	121	119	118	117	116
9.10 CFS	115	114	114	113	113	113	112	112

1
TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
09:30:29 PASS 2 JOB NO. 1 PAGE 17

9.50 CFS	112	112	112	111	111	111	111	111
9.90 CFS	110	110	110	109	109	108	107	105
10.30 CFS	103	102	100	98	96	95	93	92
10.70 CFS	90.78	89.83	89.02	88.32	87.71	87.19	86.73	86.33
11.10 CFS	85.97	85.66	85.37	85.11	84.88	84.66	84.46	84.26
11.50 CFS	84.08	83.91	83.74	83.59	83.44	83.31	83.17	83.05
11.90 CFS	82.92	82.81	82.69	82.58	82.47	82.37	82.27	82.18
12.30 CFS	82.09	82.01	81.93	81.85	81.76	81.56	81.07	80.09
12.70 CFS	78.55	76.56	74.24	71.72	69.15	66.67	64.34	62.21
13.10 CFS	60.30	58.62	57.16	55.91	54.84	53.92	53.15	52.50
13.50 CFS	51.96	51.58	51.50	51.84	52.65	53.86	55.34	57.00
13.90 CFS	58.71	60.39	61.96	63.40	64.68	65.78	66.72	67.50
14.30 CFS	68.14	68.67	69.09	69.43	69.70	69.90	70.01	70.03
14.70 CFS	69.95	69.78	69.55	69.28	68.99	68.70	68.42	68.17
15.10 CFS	67.94	67.74	67.58	67.44	67.32	67.22	67.14	67.08
15.50 CFS	67.02	66.94	66.78	66.50	66.08	65.53	64.90	64.21
15.90 CFS	63.51	62.84	62.21	61.63	61.12	60.67	60.29	59.97
16.30 CFS	59.70	59.48	59.29	59.13	59.01	58.90	58.81	58.73
16.70 CFS	58.67	58.61	58.57	58.53	58.49	58.46	58.43	58.40
17.10 CFS	58.38	58.36	58.34	58.32	58.31	58.29	58.28	58.26
17.50 CFS	58.25	58.24	58.23	58.22	58.21	58.20	58.19	58.19
17.90 CFS	58.18	58.18	58.17	58.17	58.16	58.16	58.15	58.15
18.30 CFS	58.15	58.15	58.14	58.14	58.14	58.14	58.14	58.13
18.70 CFS	58.13	58.13	58.13	58.13	58.13	58.13	58.13	58.13
19.10 CFS	58.13	58.13	58.13	58.14	58.14	58.14	58.14	58.15
19.50 CFS	58.14	58.15	58.15	58.15	58.15	58.15	58.16	58.16
19.90 CFS	58.17	58.17	58.17	58.17	58.17	58.18	58.18	58.18
20.30 CFS	58.19	58.19	58.20	58.20	58.19	58.10	57.81	57.19
20.70 CFS	56.18	54.84	53.28	51.58	49.86	48.18	46.62	45.29
21.10 CFS	44.31	43.82	43.88	44.41	45.31	46.46	47.74	49.04
21.50 CFS	50.30	51.38	52.15	52.44	52.23	51.57	50.56	49.32
21.90 CFS	47.96	46.58	45.25	44.01	42.89	41.90	41.06	40.35
22.30 CFS	39.75	39.25	38.84	38.51	38.23	38.00	37.81	37.65
22.70 CFS	37.52	37.40	37.31	37.23	37.15	37.09	37.03	38.98
23.10 CFS	36.93	36.89	36.85	36.81	36.78	36.74	36.71	36.68

23.50 CFS	36.65	36.62	36.59	36.54	36.48	36.40	36.32	36.23
23.90 CFS	36.14	36.06	35.96	35.79	35.48			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.07 WATERSHED INCHES; 2906 CFS-HRS; 240.2 ACRE-FEET.

--- STRUCTURE 85, ALTERNATE 1, STORM 2, HYDROGRAPH ADDED TO READHD FILE ---

OPERATION RESVOR STRUCTURE 96

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2

HRS	MAIN TIME INCREMENT = .050 hr,			DRAINAGE AREA =			4.20 SQ.MI.	
5.40 CFS	.00	.01	.02	3.60	20.57	27.18	35.73	51.70
5.80 CFS	58.93	66.71	75.08	79.70	85.19	90.30	93.95	97.82
6.20 CFS	102	105	107	109	112	114	115	116

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PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
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6.60 CFS	118	119	119	120	121	121	122	122
7.00 CFS	123	123	123	124	124	124	124	124
7.40 CFS	125	125	125	125	125	125	125	125
7.80 CFS	125	125	126	126	126	126	126	126
8.20 CFS	126	126	126	126	126	126	126	126
8.60 CFS	126	126	126	126	126	126	126	126
9.00 CFS	126	126	126	126	126	126	126	126
9.40 CFS	126	126	126	126	126	126	126	126
9.80 CFS	126	126	126	126	126	126	126	126
10.20 CFS	126	126	126	126	126	126	126	126
10.60 CFS	126	126	126	126	126	125	125	125
11.00 CFS	125	126	125	125	125	125	125	125
11.40 CFS	125	125	125	125	125	125	126	125
11.80 CFS	125	125	125	125	125	124	124	124
12.20 CFS	124	124	124	124	124	124	124	124
12.60 CFS	124	124	124	124	124	124	124	124
13.00 CFS	123	123	123	123	123	123	123	123
13.40 CFS	123	123	123	123	122	122	122	122
13.80 CFS	122	122	122	122	122	122	122	122
14.20 CFS	122	121	121	121	121	121	121	121
14.60 CFS	121	121	121	121	121	121	121	121
15.00 CFS	121	120	120	120	120	120	120	120
15.40 CFS	120	120	120	120	120	120	120	120
15.80 CFS	119	119	119	119	119	119	119	119
16.20 CFS	119	119	119	119	119	119	118	118
16.60 CFS	118	118	118	118	118	118	118	118
17.00 CFS	118	118	118	117	117	117	117	117
17.40 CFS	117	117	117	117	117	117	117	117
17.80 CFS	117	116	116	116	116	116	116	116
18.20 CFS	116	116	116	116	116	116	116	115
18.60 CFS	115	115	115	115	115	115	115	115
19.00 CFS	115	115	115	115	115	114	114	114
19.40 CFS	114	114	114	114	114	114	114	114
19.80 CFS	114	114	114	113	113	113	113	113
20.20 CFS	113	113	113	113	113	113	113	113
20.60 CFS	113	112	112	112	112	112	112	112
21.00 CFS	112	112	112	112	111	111	111	111
21.40 CFS	111	111	111	111	111	111	111	110
21.80 CFS	110	110	110	110	110	110	110	110
22.20 CFS	110	109	109	109	109	109	109	109
22.60 CFS	109	109	109	108	108	108	108	108
23.00 CFS	108	108	108	108	108	107	107	107
23.40 CFS	107	107	107	107	107	107	107	106
23.80 CFS	106	106	106	106	106	106	106	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.80 WATERSHED INCHES; 2165 CFS-HRS; 178.9 ACRE-FEET.

--- STRUCTURE 96, ALTERNATE 1, STORM 2, HYDROGRAPH ADDED TO READHD FILE ---

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 4.50 inches AND 24.50 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 1, ARC 2							
MAIN TIME INCREMENT .050 HOURS							
ALTERNATE 1 STORM 1							
XSECTION 87	RUNOFF	.13	1.33	---	6.33	61	469.2
XSECTION 70	REACH	.13	1.33	---	6.51	56	430.8
XSECTION 70	RUNOFF	.15	2.29	---	6.12	196	1306.7
STRUCTURE 63	ADDHYD	.28	1.84	---	6.15	226	807.1
XSECTION 19	REACH	.28	1.84	---	6.21	225	803.6
XSECTION 19	RUNOFF	.05	2.13	---	6.03	72	1440.0
STRUCTURE 62	ADDHYD	.33	1.89	---	6.15	278	842.4
XSECTION 1	REACH	.33	1.89	---	6.21	277	839.4
XSECTION 1	RUNOFF	.08	3.19	---	5.98	198	2475.0
STRUCTURE 61	ADDHYD	.41	2.14	---	6.06	419	1022.0
XSECTION 2	REACH	.41	2.14	---	6.21	363	885.4
XSECTION 2	RUNOFF	.28	3.00	---	6.05	578	2064.3
STRUCTURE 43	ADDHYD	.69	2.49	---	6.10	897	1300.0
XSECTION 58	RUNOFF	.11	3.19	---	6.05	246	2236.4
STRUCTURE 28	ADDHYD	.80	2.58	---	6.09	1139	1423.8
XSECTION 43	REACH	.80	2.58	---	6.19	1088	1360.0
XSECTION 43	RUNOFF	.32	3.10	---	6.06	672	2100.0
STRUCTURE 26	ADDHYD	1.12	2.73	---	6.13	1708	1525.0
XSECTION 90	RUNOFF	.08	3.19	---	6.00	192	2400.0
XSECTION 88	REACH	.08	3.19	---	6.14	168	2100.0
XSECTION 88	RUNOFF	.28	1.33	---	6.17	159	567.9
STRUCTURE 60	ADDHYD	.36	1.74	---	6.15	327	908.3
XSECTION 72	REACH	.36	1.74	---	6.23	320	888.9
XSECTION 72	RUNOFF	.11	2.13	---	6.09	133	1209.1
STRUCTURE 49	ADDHYD	.47	1.83	---	6.18	440	936.2
XSECTION 89	RUNOFF	.09	1.33	---	6.11	55	611.1
XSECTION 89	REACH	.09	1.33	---	6.21	54	600.0
STRUCTURE 49	ADDHYD	.56	1.75	---	6.19	493	880.4

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TR20 ---------- SCS -
PROPOSED COND.-E, FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 68	REACH	.56	1.75	---	6.25	492	878.6
XSECTION 68	RUNOFF	.04	2.37	---	6.04	53	1325.0
STRUCTURE 51	ADDHYD	.60	1.79	---	6.23	527	878.3
XSECTION 4	REACH	.60	1.79	---	6.23	527	878.3
XSECTION 73	RUNOFF	.07	3.79	---	5.99	203	2900.0
XSECTION 67	REACH	.07	3.79	2.63	5.99	203	2900.0
XSECTION 67	RUNOFF	.09	2.54	---	6.05	153	1700.0
STRUCTURE 52	ADDHYD	.16	3.06	---	6.01	352	2200.0
XSECTION 5	REACH	.16	3.06	---	6.07	351	2193.8
STRUCTURE 53	ADDHYD	.76	2.04	---	6.14	832	1094.7
XSECTION 4	RUNOFF	.05	2.21	---	6.03	72	1440.0
STRUCTURE 53	ADDHYD	.81	2.05	---	6.13	896	1106.2
XSECTION 66	REACH	.81	2.05	---	6.13	896	1106.2
XSECTION 66	RUNOFF	.09	2.46	---	6.03	144	1600.0
STRUCTURE 54	ADDHYD	.89	2.09	---	6.11	1028	1155.1

XSECTION	69	RUNOFF	.06	2.46	---	6.03	101	1683.3
XSECTION	69	REACH	.06	2.46	---	6.03	101	1683.3
STRUCTURE	54	ADDHYD	.96	2.11	---	6.10	1122	1168.8
XSECTION	17	RUNOFF	.03	2.21	---	6.05	41	1366.7
STRUCTURE	55	ADDHYD	.99	2.12	---	6.10	1163	1174.7
XSECTION	18	RUNOFF	.09	2.46	---	6.01	155	1722.2
STRUCTURE	55	ADDHYD	1.08	2.14	---	6.09	1307	1210.2
XSECTION	3	RUNOFF	.06	2.72	---	6.02	120	2000.0
STRUCTURE	55	ADDHYD	1.14	2.17	---	6.08	1422	1247.4
STRUCTURE	95	RESVOR	1.14	1.49	804.94	6.80	265	232.5
XSECTION	57	REACH	1.14	1.49	---	6.88	262	229.8
XSECTION	57	RUNOFF	.17	2.81	---	6.04	321	1888.2
STRUCTURE	57	ADDHYD	1.31	1.66	---	6.05	329	251.1
XSECTION	56	REACH	1.31	1.65	---	6.13	320	244.3
XSECTION	56	RUNOFF	.16	2.91	---	6.05	299	1993.3

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PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
STRUCTURE 44	ADDHYD	1.46	1.78	---	6.09	610	417.8
XSECTION 55	REACH	1.46	1.78	---	6.16	600	411.0
XSECTION 55	RUNOFF	.09	2.72	---	6.05	153	1700.0
STRUCTURE 25	ADDHYD	1.54	1.83	---	6.14	741	481.2
XSECTION 42	REACH	1.54	1.83	---	6.24	707	459.1
XSECTION 42	RUNOFF	.09	2.37	---	6.05	127	1411.1
STRUCTURE 27	ADDHYD	1.63	1.86	---	6.21	802	492.0
XSECTION 65	RUNOFF	.08	2.63	---	6.00	142	1775.0
XSECTION 64	RUNOFF	.08	2.63	---	6.03	149	1862.5
STRUCTURE 46	ADDHYD	.16	2.63	---	6.02	290	1812.5
XSECTION 21	RUNOFF	.02	3.10	---	5.98	43	2150.0
XSECTION 121	DIVERT	.01	3.18	4.83	5.98	28	2800.0
XSECTION 122	DIVERT	.01	2.95	4.83	5.98	14	1400.0
STRUCTURE 46	ADDHYD	.17	2.67	---	6.01	318	1870.6
STRUCTURE 93	RESVOR	.17	2.64	804.83	6.55	51	300.0
STRUCTURE 47	ADDHYD	.18	2.65	---	6.48	52	288.9
XSECTION 63	RUNOFF	.10	2.29	---	6.05	148	1480.0
STRUCTURE 47	ADDHYD	.28	2.52	---	6.10	194	692.9
XSECTION 62	REACH	.28	2.51	2.98	6.15	193	689.3
XSECTION 62	RUNOFF	.16	2.91	---	6.03	320	2000.0
STRUCTURE 45	ADDHYD	.44	2.65	---	6.05	500	1136.4
XSECTION 60	REACH	.44	2.65	---	6.15	480	1090.9
XSECTION 60	RUNOFF	.27	2.90	---	6.03	547	2025.9
STRUCTURE 42	ADDHYD	.71	2.75	---	6.08	1000	1408.5
XSECTION 61	RUNOFF	.03	3.00	---	6.03	64	2133.3
XSECTION 61	REACH	.03	3.00	1.65	6.09	64	2133.3
STRUCTURE 41	ADDHYD	.74	2.76	---	6.08	1064	1437.8
XSECTION 59	REACH	.74	2.76	---	6.15	1051	1420.3
XSECTION 59	RUNOFF	.18	3.19	---	6.06	396	2200.0
STRUCTURE 24	ADDHYD	.92	2.84	---	6.12	1428	1552.2

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PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 40	REACH	.92	2.84	---	6.20	1402	1523.9
XSECTION 40	RUNOFF	.14	2.63	---	6.04	250	1785.7
STRUCTURE 83	ADDHYD	1.06	2.82	---	6.17	1604	1513.2
STRUCTURE 83	ADDHYD	2.69	2.23	---	6.19	2400	892.2
XSECTION 46	REACH	2.69	2.23	---	6.19	2400	892.2
XSECTION 46	RUNOFF	.04	2.46	---	6.01	67	1675.0
STRUCTURE 84	ADDHYD	2.73	2.23	---	6.18	2446	896.0
STRUCTURE 85	ADDHYD	3.85	2.37	---	6.16	4138	1074.8
XSECTION 39	RUNOFF	.16	2.81	---	6.03	307	1918.8
STRUCTURE 85	ADDHYD	4.01	2.39	---	6.15	4402	1097.8
XSECTION 41	RUNOFF	.21	2.54	---	6.06	342	1628.6
XSECTION 141	DIVERT	.18	2.54	5.42	6.06	301	1672.2
XSECTION 142	DIVERT	.03	2.54	5.42	6.06	41	1368.7
STRUCTURE 85	ADDHYD	4.20	2.39	---	6.14	4683	1115.0
STRUCTURE 96	RESVOR	4.20	1.89	6643.73	7.24T	784T	186.7
STRUCTURE 86	ADDHYD	4.22	1.89	---	7.17T	788T	186.7
XSECTION 101	REACH	4.22	1.89	---	7.23T	788T	186.7
XSECTION 54	RUNOFF	.20	2.90	---	6.03	399	1995.0
STRUCTURE 1	ADDHYD	4.42	1.93	---	6.57T	833T	188.5
XSECTION 102	REACH	4.42	1.93	---	6.57T	833T	188.5
XSECTION 53	RUNOFF	.06	2.64	---	6.03	106	1766.7
STRUCTURE 2	ADDHYD	4.48	1.94	---	6.55T	851T	190.0

RAINFALL OF 2.85 inches AND 24.50 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 1 STORM 2							
XSECTION 87	RUNOFF	.13	.44	---	6.35	14	107.7
XSECTION 70	REACH	.13	.44	---	6.61	12	92.3
XSECTION 70	RUNOFF	.15	1.02	---	6.12	76	506.7
STRUCTURE 63	ADDHYD	.28	.75	---	6.14	82	292.9

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 19	REACH	.28	.75	---	6.21	81	289.3
XSECTION 19	RUNOFF	.05	.91	---	6.03	26	520.0
STRUCTURE 62	ADDHYD	.33	.78	---	6.15	101	306.1
XSECTION 1	REACH	.33	.78	---	6.23	99	300.0
XSECTION 1	RUNOFF	.08	1.68	---	5.98	98	1225.0
STRUCTURE 61	ADDHYD	.41	.95	---	6.05	174	424.4
XSECTION 2	REACH	.41	.95	---	6.27	141	343.9
XSECTION 2	RUNOFF	.28	1.53	---	6.05	275	982.1
STRUCTURE 43	ADDHYD	.69	1.19	---	6.10	385	558.0
XSECTION 68	RUNOFF	.11	1.68	---	6.05	122	1109.1
STRUCTURE 28	ADDHYD	.80	1.25	---	6.09	505	631.3
XSECTION 43	REACH	.80	1.25	---	6.21	467	583.8
XSECTION 43	RUNOFF	.32	1.61	---	6.07	328	1025.0
STRUCTURE 26	ADDHYD	1.12	1.35	---	6.14	783	681.3
XSECTION 90	RUNOFF	.08	1.68	---	6.00	95	1187.5
XSECTION 88	REACH	.08	1.68	---	6.20	79	987.5
XSECTION 88	RUNOFF	.28	.44	---	6.18	37	132.1
STRUCTURE 50	ADDHYD	.36	.72	---	6.20	116	322.2
XSECTION 72	REACH	.36	.72	---	6.30	111	308.3

XSECTION	72	RUNOFF	.11	.91	---	6.10	49	445.5
STRUCTURE	49	ADDHYD	.47	.76	---	6.24	150	319.1
XSECTION	89	RUNOFF	.09	.44	---	6.12	13	144.4
XSECTION	89	REACH	.09	.44	---	6.25	12	133.3
STRUCTURE	49	ADDHYD	.56	.71	---	6.24	162	289.3
XSECTION	68	REACH	.56	.71	---	6.31	161	287.5
XSECTION	68	RUNOFF	.04	1.08	---	6.04	21	525.0
STRUCTURE	51	ADDHYD	.60	.73	---	6.20	172	286.7
XSECTION	4	REACH	.60	.73	---	6.35	171	285.0
XSECTION	73	RUNOFF	.07	2.20	---	5.99	115	1642.9
XSECTION	67	REACH	.07	2.20	1.91	5.99	115	1642.9

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
XSECTION 67	RUNOFF	.09	1.20	---	6.05	64	711.1
STRUCTURE 52	ADDHYD	.16	1.61	---	6.01	178	1112.5
XSECTION 6	REACH	.16	1.61	---	6.07	177	1106.3
STRUCTURE 53	ADDHYD	.76	.91	---	6.14	304	400.0
XSECTION 4	RUNOFF	.05	.97	---	6.03	27	540.0
STRUCTURE 53	ADDHYD	.81	.92	---	6.13	328	404.9
XSECTION 66	REACH	.81	.92	---	6.19	327	403.7
XSECTION 66	RUNOFF	.09	1.14	---	6.03	59	655.6
STRUCTURE 54	ADDHYD	.89	.94	---	6.16	373	419.1
XSECTION 69	RUNOFF	.06	1.14	---	6.03	41	683.3
XSECTION 69	REACH	.06	1.14	---	6.03	41	683.3
STRUCTURE 54	ADDHYD	.96	.95	---	6.15	407	424.0
XSECTION 17	RUNOFF	.03	.97	---	6.05	16	533.3
STRUCTURE 55	ADDHYD	.99	.95	---	6.14	421	425.3
XSECTION 18	RUNOFF	.09	1.14	---	6.01	64	711.1
STRUCTURE 55	ADDHYD	1.08	.97	---	6.12	474	438.9
XSECTION 3	RUNOFF	.06	1.33	---	6.02	53	883.3
STRUCTURE 55	ADDHYD	1.14	.99	---	6.11	522	457.9
STRUCTURE 95	RESVOR	1.14	.34	802.97	12.95F	14F	12.3
XSECTION 57	REACH	1.14	.33	---	13.40F	14F	12.3
XSECTION 57	RUNOFF	.17	1.39	---	6.05	146	858.8
STRUCTURE 57	ADDHYD	1.31	.47	---	6.05T	148T	113.0
XSECTION 56	REACH	1.31	.46	---	6.15T	141T	107.6
XSECTION 56	RUNOFF	.15	1.48	---	6.05	139	926.7
STRUCTURE 44	ADDHYD	1.46	.57	---	6.10	274	187.7
XSECTION 55	REACH	1.46	.56	---	6.18	266	182.2
XSECTION 55	RUNOFF	.09	1.32	---	6.05	68	755.6
STRUCTURE 25	ADDHYD	1.54	.61	---	6.15	326	211.7
XSECTION 42	REACH	1.54	.60	---	6.28	300	194.8
XSECTION 42	RUNOFF	.09	1.08	---	6.05	51	566.7

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 1 STORM 2							
STRUCTURE 27	ADDHYD	1.63	.63	---	6.25	334	204.9
XSECTION 65	RUNOFF	.08	1.26	---	6.00	61	762.5
XSECTION 64	RUNOFF	.08	1.26	---	6.03	64	800.0
STRUCTURE 46	ADDHYD	.16	1.26	---	6.02	125	781.3
XSECTION 21	RUNOFF	.02	1.61	---	5.98	21	1050.0
XSECTION 121	DIVERT	.01	1.65	3.38	5.98	14	1400.0
XSECTION 122	DIVERT	.01	1.53	3.38	5.98	7	700.0
STRUCTURE 46	ADDHYD	.17	1.29	---	6.01	139	817.6
STRUCTURE 93	RESVOR	.17	1.27	802.78	6.65	21	123.5
STRUCTURE 47	ADDHYD	.18	1.28	---	6.05	25	138.9
XSECTION 63	RUNOFF	.10	1.02	---	6.05	58	580.0
STRUCTURE 47	ADDHYD	.28	1.19	---	6.05	83	296.4
XSECTION 62	REACH	.28	1.19	1.83	6.11	83	296.4
XSECTION 62	RUNOFF	.16	1.46	---	6.03	148	925.0
STRUCTURE 45	ADDHYD	.44	1.28	---	6.06	228	518.2
XSECTION 60	REACH	.44	1.28	---	6.17	212	481.8
XSECTION 60	RUNOFF	.27	1.46	---	6.04	254	940.7
STRUCTURE 42	ADDHYD	.71	1.35	---	6.09	448	631.0
XSECTION 61	RUNOFF	.03	1.53	---	6.03	31	1033.3
XSECTION 61	REACH	.03	1.53	1.09	6.09	30	1000.0
STRUCTURE 41	ADDHYD	.74	1.36	---	6.09	479	647.3
XSECTION 59	REACH	.74	1.36	---	6.17	466	629.7
XSECTION 59	RUNOFF	.18	1.58	---	6.06	197	1094.4
STRUCTURE 24	ADDHYD	.92	1.42	---	6.14	650	706.5
XSECTION 40	REACH	.92	1.42	---	6.23	627	681.5
XSECTION 40	RUNOFF	.14	1.28	---	6.05	108	771.4
STRUCTURE 83	ADDHYD	1.06	1.40	---	6.20	707	667.0
STRUCTURE 83	ADDHYD	2.69	.93	---	6.22	1037	385.5
XSECTION 46	REACH	2.69	.93	---	6.27	1034	384.4
XSECTION 46	RUNOFF	.04	1.14	---	6.01	27	675.0

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 2							
STRUCTURE 84	ADDHYD	2.73	.93	---	6.27	1046	383.2
STRUCTURE 85	ADDHYD	3.85	1.06	---	6.21	1757	456.4
XSECTION 39	RUNOFF	.16	1.39	---	6.04	139	868.8
STRUCTURE 85	ADDHYD	4.01	1.07	---	6.19	1859	463.6
XSECTION 41	RUNOFF	.21	1.20	---	6.06	144	685.7
XSECTION 141	DIVERT	.18	1.20	3.44	6.06	127	705.6
XSECTION 142	DIVERT	.03	1.20	3.44	6.06	17	566.7
STRUCTURE 85	ADDHYD	4.20	1.07	---	6.18	1968	468.6
STRUCTURE 98	RESVOR	4.20	.80	6638.45	8.74T	126T	30.0
STRUCTURE 86	ADDHYD	4.22	.80	---	8.15T	127T	30.1
XSECTION 101	REACH	4.22	.80	---	8.25T	127T	30.1
XSECTION 54	RUNOFF	.20	1.46	---	6.04	185	925.0
STRUCTURE 1	ADDHYD	4.42	.83	---	6.07T	282T	63.8
XSECTION 102	REACH	4.42	.83	---	6.07T	282T	63.8
XSECTION 53	RUNOFF	.08	1.26	---	6.03	48	766.7
STRUCTURE 2	ADDHYD	4.48	.83	---	6.07T	327T	73.0

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	HYDROGRAPH INFLOW TIME (HR)	HYDROGRAPH OUTFLOW PEAK (CFS)	HYDROGRAPH OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 1 STORM 1											
70	3000		61	6.3	56	6.5	1.12	1.44	.047	.920	.28
19	1100		226	6.2	224	6.2	1.12	1.45	.008	.994	.827
1	1250		278	6.2	276	6.2	1.12	1.44	.009	.993	.777
2	5400		418	6.1	383	6.2	.92	1.47	.073	.868	.28
43	4000		1138	6.1	1086	6.2	.51	1.56	.035	.955	.44
88	5600		192	6.0	188	6.2	1.04	1.52	.154	.875	.26
72	2000		327	6.2	319	6.3	.96	1.48	.020	.976	.60
89	1500		55	6.1	54	6.2	1.06	1.46	.026	.967	.49
68	1200		493	6.2	492	6.3	.82	1.49	.008	.997	.867
4	900		525	6.3	525	6.3	.82	1.50	.004	1.000	1.007
67	1600		203	6.0	203	6.0	6.80	1.40	.007	1.000	1.007
5	1100		352	6.0	350	6.1	.99	1.46	.014	.995	.867
66	1100		892	6.2	892	6.2	.90	1.51	.004	1.000	1.007
69	1200		100	6.1	100	6.1	6.40	1.40	.006	1.000	1.007
57	2800		265	6.8	262	7.0	.65	1.47	.010	.988	.35
56	1800		329	6.1	319	6.2	.47	1.53	.004	.970	.52
55	1600		609	6.1	600	6.2	.41	1.55	.004	.985	.65
42	3100		740	6.2	706	6.3	.38	1.58	.011	.954	.44
62	2000		194	6.1	193	6.2	5.34	1.39	.003	.998	.957
60	2400		500	6.1	480	6.2	.44	1.54	.023	.960	.46
61	2600		64	6.1	64	6.1	8.01	1.39	.018	.998	.827
59	1600		1060	6.1	1051	6.2	.26	1.60	.011	.992	.697
40	2218		1422	6.1	1402	6.2	.24	1.62	.016	.986	.61
46	1200		2397	6.2	2397	6.2	.41	1.55	.003	1.000	1.007
101	1150		788	7.2	788	7.3	.31	1.60	.000	1.000	.857
102	500		832	6.6	832	6.6	.31	1.60	.000	1.000	1.007

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	HYDROGRAPH INFLOW TIME (HR)	HYDROGRAPH OUTFLOW PEAK (CFS)	HYDROGRAPH OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 2											
70	3000		14	6.3	12	6.6	1.12	1.44	.065	.863	.19
19	1100		82	6.2	81	6.2	1.12	1.45	.011	.988	.677
1	1250		101	6.2	99	6.3	1.12	1.44	.012	.982	.63
2	5400		174	6.1	140	6.3	.92	1.47	.100	.807	.22
43	4000		604	6.1	467	6.2	.51	1.56	.048	.926	.35
88	5600		95	6.0	79	6.2	1.04	1.52	.203	.823	.21
72	2000		116	6.2	111	6.3	.96	1.48	.026	.961	.46
89	1500		13	6.1	12	6.3	1.06	1.46	.030	.928	.34
68	1200		162	6.3	161	6.3	.82	1.49	.010	.990	.697
4	900		172	6.3	171	6.3	.82	1.50	.006	.998	.847
67	1600		115	6.0	115	6.0	7.02	1.38	.010	1.000	1.007
5	1100		178	6.0	176	6.1	.99	1.46	.018	.991	.767
66	1100		327	6.2	326	6.2	.90	1.51	.005	.998	.907
69	1200		41	6.1	41	6.1	8.40	1.40	.007	1.000	1.007

57	2800	14	16.0	14	16.4	.65	1.47	.005	1.000	.16
56	1800	148	6.1	141	6.2	.47	1.53	.012	.950	.42
55	1800	274	6.1	265	6.2	.41	1.55	.011	.969	.53
42	3100	326	6.2	300	6.3	.38	1.58	.027	.921	.34
62	2000	83	6.1	83	6.1	4.93	1.44	.003	.998	.867
60	2400	228	6.1	211	6.2	.44	1.54	.032	.925	.37
61	2600	30	6.1	30	6.1	8.12	1.37	.023	.995	.717
59	1600	478	6.1	465	6.2	.26	1.60	.016	.972	.56
40	2216	649	6.2	625	6.3	.24	1.62	.023	.963	.49
46	1200	1035	6.2	1030	6.3	.41	1.55	.005	.995	.877

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE K* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

			HYDROGRAPH INFORMATION				ROUTING PARAMETERS				
			INFLOW		OUTFLOW		Q-A EQ.			PEAK	ATT-
XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	PEAK (CFS)	TIME (HR)	PEAK (CFS)	TIME (HR)	COEFF (X)	POWER (M)	LENGTH FACTOR (k*)	RATIO Q/I (Q*)	KIN COEFF (C)
ALTERNATE 1 STORM 2											
101	1150		127	6.1	127	6.3	.31	1.60	.000	1.000	.54
102	500		281	6.1	281	6.1	.31	1.60	.000	1.000	1.007

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 96	4.20		
ALTERNATE 1		784	126
STRUCTURE 95	1.14		
ALTERNATE 1		265	14
STRUCTURE 93	.17		
ALTERNATE 1		51	21
STRUCTURE 88	4.22		
ALTERNATE 1		788	127
STRUCTURE 85	4.20		
ALTERNATE 1		4683	1968
STRUCTURE 84	2.73		
ALTERNATE 1		2446	1046
STRUCTURE 83	2.69		
ALTERNATE 1		2400	1037
STRUCTURE 63	.28		
ALTERNATE 1		226	82
STRUCTURE 62	.33		

ALTERNATE	1	278	101

STRUCTURE 61 .41

ALTERNATE	1	419	174

STRUCTURE 57 1.31

ALTERNATE	1	329	148

STRUCTURE 55 1.14

ALTERNATE	1	1422	522

STRUCTURE 54 .96

ALTERNATE	1	1122	407

STRUCTURE 53 .81

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
09:30:29 SUMMARY, JOB NO. 1 PAGE 32

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 53	.81		
ALTERNATE	1	896	328
STRUCTURE 52	.16		
ALTERNATE	1	352	178
STRUCTURE 51	.60		
ALTERNATE	1	527	172
STRUCTURE 50	.36		
ALTERNATE	1	327	116
STRUCTURE 49	.56		
ALTERNATE	1	493	162
STRUCTURE 47	.28		
ALTERNATE	1	194	83
STRUCTURE 46	.17		
ALTERNATE	1	318	139
STRUCTURE 45	.44		
ALTERNATE	1	500	228
STRUCTURE 44	1.46		
ALTERNATE	1	610	274
STRUCTURE 43	.69		
ALTERNATE	1	897	385
STRUCTURE 42	.71		
ALTERNATE	1	1000	448
STRUCTURE 41	.74		
ALTERNATE	1	1064	479
STRUCTURE 28	.80		
ALTERNATE	1	1139	505

```
STRUCTURE  27         1.63
----------------------------
   ALTERNATE    1                 802       334
1
TR20 ---------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/**                        24 HR TYPE IIA CURVE                    2.04TEST
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                           SUMMARY TABLE 3
                           ---------------
     STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
     QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/          DRAINAGE
STRUCTURE            AREA       STORM NUMBERS.....
  ID               (SQ MI)          1         2


STRUCTURE  26         1.12
----------------------------
   ALTERNATE    1                1708       763

STRUCTURE  25         1.54
----------------------------
   ALTERNATE    1                 741       326

STRUCTURE  24          .92
----------------------------
   ALTERNATE    1                1428       650

STRUCTURE   2         4.48
----------------------------
   ALTERNATE    1                 851       327

STRUCTURE   1         4.42
----------------------------
   ALTERNATE    1                 833       282

XSECTION    1          .08
----------------------------
   ALTERNATE    1                 198        98

XSECTION    2          .28
----------------------------
   ALTERNATE    1                 578       275

XSECTION    3          .06
----------------------------
   ALTERNATE    1                 120        53

XSECTION    4          .05
----------------------------
   ALTERNATE    1                  72        27

XSECTION    5          .16
----------------------------
   ALTERNATE    1                 351       177

XSECTION   17          .03
----------------------------
   ALTERNATE    1                  41        16

XSECTION   18          .09
----------------------------
   ALTERNATE    1                 155        64

XSECTION   19          .05
----------------------------
   ALTERNATE    1                  72        26
1
TR20 ---------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/**                        24 HR TYPE IIA CURVE                    2.04TEST
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                           SUMMARY TABLE 3
                           ---------------
     STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
     QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/          DRAINAGE
STRUCTURE            AREA       STORM NUMBERS.....
  ID               (SQ MI)          1         2
```

XSECTION 21	.02		
ALTERNATE	1	43	21
XSECTION 39	.16		
ALTERNATE	1	307	139
XSECTION 40	.14		
ALTERNATE	1	250	108
XSECTION 41	.21		
ALTERNATE	1	342	144
XSECTION 42	.09		
ALTERNATE	1	127	51
XSECTION 43	.32		
ALTERNATE	1	672	328
XSECTION 46	.04		
ALTERNATE	1	67	27
XSECTION 53	.06		
ALTERNATE	1	106	46
XSECTION 54	.20		
ALTERNATE	1	399	185
XSECTION 55	.09		
ALTERNATE	1	153	68
XSECTION 56	.15		
ALTERNATE	1	299	139
XSECTION 57	.17		
ALTERNATE	1	321	146
XSECTION 58	.11		
ALTERNATE	1	246	122

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TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 59	.18		
ALTERNATE	1	396	197
XSECTION 60	.27		
ALTERNATE	1	547	254
XSECTION 61	.03		
ALTERNATE	1	64	30
XSECTION 62	.16		
ALTERNATE	1	320	148
XSECTION 63	.10		
ALTERNATE	1	148	68

XSECTION 64	.08		
ALTERNATE 1		149	64
XSECTION 65	.08		
ALTERNATE 1		142	61
XSECTION 66	.09		
ALTERNATE 1		144	59
XSECTION 67	.09		
ALTERNATE 1		153	64
XSECTION 68	.04		
ALTERNATE 1		53	21
XSECTION 69	.06		
ALTERNATE 1		101	41
XSECTION 70	.15		
ALTERNATE 1		196	76
XSECTION 72	.11		
ALTERNATE 1		133	49

1

TR20 ---------- SCS -
PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED sopn VERSION
04/04/** 24 HR TYPE IIA CURVE 2.04TEST
09:30:29 SUMMARY, JOB NO. 1 PAGE 36

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 73	.07		
ALTERNATE 1		203	115
XSECTION 87	.13		
ALTERNATE 1		61	14
XSECTION 88	.28		
ALTERNATE 1		159	37
XSECTION 89	.09		
ALTERNATE 1		54	12
XSECTION 90	.08		
ALTERNATE 1		192	95
XSECTION 101	4.22		
ALTERNATE 1		788	127
XSECTION 102	4.42		
ALTERNATE 1		833	282
XSECTION 121	.01		
ALTERNATE 1		28	14
XSECTION 122	.01		
ALTERNATE 1		14	7
XSECTION 141	.18		
ALTERNATE 1		301	127

```
XSECTION  142          .03
---------------------------
   ALTERNATE    1                  41        17
1
TR20 ------------------------------------------------------------------- SCS -
        PROPOSED COND.-E. FORK SAND CREEK TRIB.-POND 96 WATERSHED scpn VERSION
04/04/**                      24 HR TYPE IIA CURVE                        2.04TEST


END OF  1 JOBS IN THIS RUN




                  SCS  TR-20,  VERSION 2.04TEST
                                FILES

    INPUT  = scpnd96.dat                          , GIVEN DATA FILE
    OUTPUT = scpnd96.OUT                          , DATED 04/04/**,09:30:29

            FILES GENERATED - DATED 04/04/**,09:30:29

   FILE scpnd96.TRD CONTAINS READHD INFORMATION

   FILE scpnd96.TMG CONTAINS MESSAGE + WARNING INFORMATION


         TOTAL NUMBER OF WARNINGS =  25,  MESSAGES =   4

                  *** TR-20 RUN COMPLETED ***
```

EXISTING CONDITIONS INPUT

```
                                                    EFSCEX24.DAT
JOB TR-20                                                NOPLOTS
TITLE 001 EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES  efscex24.dat
TITLE     24 HR TYPE IIA CURVE
 5 RAINFL 1                    .50
 8                  0.000       .0025       0.005       .0075       0.010
 8                  0.015       0.020       0.025       0.030       0.050
 8                  0.060       0.100       0.700       0.750       0.780
 8                  0.798       0.820       0.830       0.840       0.850
 8                  0.860       0.865       0.870       0.885       0.890
 8                  0.900       0.905       0.910       0.915       0.921
 8                  0.927       0.933       0.940       0.945       0.950
 8                  0.955       0.960       0.965       0.970       0.975
 8                  0.980       0.983       0.985       0.988       0.990
 8                  0.993       0.995       0.998       1.000       1.000
 9 ENDTBL
 6 RUNOFF 1  80        1         0.08        55.0        0.41           1
 6 REACH  3  79   1    2       5597.0         1.7        1.25
 6 RUNOFF 1  79        1         0.27        55.0        1.15           1
 6 ADDHYD 4    38 1 2 3                                                 1
 6 REACH  3 150   3    1       6574.0         1.1         1.4
 6 RUNOFF 1  78        2         0.29        55.0        1.06           1
 6 REACH  3  51   2    3       1531.0         1.0         1.4
 6 RUNOFF 1  51        4         0.14        55.0        0.67           1
 6 ADDHYD 4    37 3 4 2                                                 1
 6 REACH  3  50   2    3       3000.0         1.1         1.4
 6 RUNOFF 1  50        2         0.51        60.0        1.83           1
 6 RUNOFF 1  49        4         0.27        56.0        0.76           1
 6 REACH  3 152   4    5       2682.0         1.0         1.4
 6 ADDHYD 4    33 2 5 6
 6 ADDHYD 4    33 6 1 5
 6 ADDHYD 4    33 5 3 1
 6 REACH  3  47   1    2       4678.0         0.2         1.7
 6 RUNOFF 1  48        1         0.56        60.0        0.98           1
 6 REACH  3 147   1    3       6040.0         1.1         1.4
 6 RUNOFF 1  47        1         0.23        60.0        0.91           1
 6 ADDHYD 4    32 1 3 4
 6 ADDHYD 4    32 4 2 3
 6 RUNOFF 1  81        1         0.35        60.0        0.39           1
 6 RUNOFF 1  96        2         0.14        60.0        0.88           1
 6 REACH  3  81   2    4       6389.0         1.4         1.3
 6 ADDHYD 4    54 4 1 2                                                 1
 6 REACH  3  76   2    1       5702.0         1.9         1.3
 6 RUNOFF 1  76        2         0.19        60.0        1.08           1
 6 ADDHYD 4    39 1 2 4                                                 1
 6 REACH  3  53   4    1       3453.0         1.1         1.4
 6 RUNOFF 1  53        2         0.18        60.0        1.02           1
 6 RUNOFF 1  77        4         0.30        60.0        1.21           1
 6 REACH  3 153   4    5       3379.0          .7         1.4
 6 ADDHYD 4    36 1 2 4
 6 ADDHYD 4    36 4 5 1                                                 1
 6 REACH  3  52   1    2       1584.0         0.3         1.6
 6 RUNOFF 1  52        1         0.45        60.0        1.47           1
 6 ADDHYD 4    34 2 1 4                                                 1
 6 REACH  3  46   4    1       3770.0         0.3         1.6
 6 RUNOFF 1  46        2         0.04        60.0        0.50           1
 6 ADDHYD 4    31 1 2 4
 6 ADDHYD 4    29 4 3 2                                      1 1   1    1
 6 REACH  3 145   2    1         3600         0.2         1.7           1
 6 RUNOFF 1  45        3        0.320        60.0        0.78           1
 6 ADDHYD 4    29 1 3 2                                                 1
 6 RUNOFF 1  93        1         0.24        62.0        1.12           1
 6 RUNOFF 1  94        3         0.43        62.0        0.30           1
 6 RUNOFF 1  98        4         0.14        63.0        0.43           1
 6 REACH  3 194   4    5       5914.0         1.8         1.3
 6 RUNOFF 1  97        4         0.07        60.0        0.43           1
 6 REACH  3  94   4    6       5914.0         1.7         1.3
 6 ADDHYD 4    55 1 3 7
 6 ADDHYD 4    55 7 5 1
 6 ADDHYD 4    55 1 6 3                                                 1
 6 REACH  3  83   3    1       6124.0         1.9         1.3
 6 RUNOFF 1  83        3         0.35        60.0        1.52           1
 6 RUNOFF 1  95        4         0.11        60.0        1.38           1
 6 REACH  3  82   4    5       5808.0         1.4         1.3
 6 RUNOFF 1  82        4         0.24        60.0        0.31           1
 6 ADDHYD 4    53 1 3 6
 6 ADDHYD 4    53 6 5 1
 6 ADDHYD 4    53 1 4 3                                                 1
 6 REACH  3  75   3    1       4013.0         1.9         1.3
 6 RUNOFF 1  75        3         0.17        60.0        0.88           1
 6 ADDHYD 4    41 1 3 4                                                 1
 6 REACH  3  73   4    1       1610.0         0.8         1.5
 6 RUNOFF 1  73        3         0.15        60.0        1.42           1
 6 ADDHYD 4    40 1 3 4                                                 1
 6 RUNOFF 1  99        1         0.51        60.0        1.14           1
 6 REACH  3  92   1    3       5650.0         2.1         1.3
 6 RUNOFF 1  92        5         0.38        60.0        0.28           1
 6 ADDHYD 4    56 3 5 1                                                 1
 6 REACH  3  84   1    3       5491.0         2.0         1.3
```

```
6 RUNOFF 1  84        5        0.19        60.0        0.97          1
6 ADDHYD 4    52 3 5 1                                              1
6 RUNOFF 1  91        3        0.37        60.0        1.14          1
6 REACH  3  85   3    5     6178.0         1.4         1.3
6 ADDHYD 4    52 1 5 3                                              1
6 RUNOFF 1  85        1        0.27        60.0        1.12          1
6 ADDHYD 4    52 1 3 5                                              1
6 REACH  3  74   5    6     4066.0         1.9         1.3
6 RUNOFF 1  74        1        0.19        60.0        0.82          1
6 ADDHYD 4    42 1 6 5                                              1
6 REACH  3  73   5    1     1610.0         0.8         1.5
6 ADDHYD 4    40 1 4 3
6 RUNOFF 1  86        1        0.33        60.0        1.48          1
6 REACH  3  72   1    4     3500.0         1.7         1.3
6 RUNOFF 1  72        1        0.44        60.0        1.49          1
6 ADDHYD 4    43 1 4 5                                              1
6 REACH  3 173   5    1     1864.0         2.0         1.3
6 ADDHYD 4    40 1 3 4                                              1
6 RUNOFF 1  71        1        0.72        60.0        1.46          1
6 RUNOFF 1  54        5        0.24        62.0        0.92          1
6 REACH  3  54   4    6     4974.0         0.5         1.6
6 ADDHYD 4    35 6 1 4
6 ADDHYD 4    35 4 5 3                                              1
6 REACH  3  44   3    1     5016.0         0.5         1.6
6 RUNOFF 1  56        3        0.06        62.0        1.13          1
6 REACH  3 144   3    4     4419.0          .9         1.6
6 RUNOFF 1  43        5        0.40        57.0        1.13          1
6 REACH  3 146   5    3     1200            1.9         1.3
6 RUNOFF 1  44        5        0.59        60.0        0.44          1
6 ADDHYD 4    30 3 4 6
6 ADDHYD 4    30 6 1 3
6 ADDHYD 4    30 3 5 1                                        1 1   1   1
6 REACH  3  45   1    3     2893.0         0.1         1.7
6 ADDHYD 4    29 2 3 1                                        1 1   1   1
6 REACH  3  28   1    2     3168.0         0.1         1.7
6 RUNOFF 1  29        3        0.17        62.0        0.73          1
6 REACH  3 128   3    1     3131.0         0.5         1.5
6 RUNOFF 1  27        3        0.15        60.0        0.28          1
6 RUNOFF 1  28        4        0.32        60.0        0.37          1
6 ADDHYD 4    19 2 1 5
6 ADDHYD 4    19 5 3 1
6 ADDHYD 4    19 1 4 2                                        1 1   1   1
6 REACH  3  26   2    1     3221.0         0.2         1.7
6 RUNOFF 1  26        2        0.47        50.0        0.90          1
6 ADDHYD 4    18 1 2 3                                              1
6 REACH  3  25   3    1     2323.0         0.2         1.7
6 RUNOFF 1  25        2        0.26        60.0        0.29          1
6 ADDHYD 4    17 1 2 3                                              1
6 REACH  3  24   3    1     2524.0         0.2         1.7
6 RUNOFF 1  24        2        0.28        56.0        0.16          1
6 ADDHYD 4    12 1 2 3
6 RUNOFF 1  41        1        0.16        57.0        0.75          1
6 REACH  3  31   1    2     3358.0         1.1         1.5
6 RUNOFF 1  31        1        0.24        61.0        0.18          1
6 ADDHYD 4    20 1 2 4                                              1
6 REACH  3  30   4    1     2323.0         1.6         1.6
6 RUNOFF 1  30        2        0.10        62.0        0.08          1
6 ADDHYD 4    16 1 2 4                                              1
6 REACH  3 124   4    1     4594.0         0.7         1.6
6 RUNOFF 1  32        2        0.15        52.0        0.91          1
6 REACH  3 198   2    4     5227.0         1.2         1.6
6 ADDHYD 4    12 1 4 2
6 ADDHYD 4    12 2 3 1                                              1
6 REACH  3  18   1    2     3696.0         0.2         1.7
6 RUNOFF 1  18        7        0.40        57.0        0.78          1
6 ADDHYD 4    57 2 7 1                                        1 1   1   1
6 RUNOFF 1  87        2        0.13        60.0        1.35          1
6 REACH  3  70   2    3     5613.0         1.2         1.3
6 RUNOFF 1  70        2        0.43        60.0        1.66          1
6 ADDHYD 4    47 2 3 4                                              1
6 REACH  3  58   4    2     5016.0         1.6         1.3
6 RUNOFF 1  58        3        0.10        60.0        0.76          1
6 ADDHYD 4    28 2 3 4                                              1
6 REACH  3  42   4    2     2746.0         1.2         1.4
6 RUNOFF 1  42        3        0.10        54.0        0.80          1
6 ADDHYD 4    27 2 3 4                                              1
6 REACH  3  40   4    2     2218.0         1.2         1.4
6 RUNOFF 1  40        3        0.16        60.0        0.85          1
6 ADDHYD 4    26 2 3 4                                              1
6 REACH  3 199   4    2      216.0          .3         1.6
6 RUNOFF 1  90        3        0.08        60.0        0.63          1
6 REACH  3  88   3    4     5597.0         1.9         1.3
6 RUNOFF 1  88        3        0.28        60.0        0.29          1
6 ADDHYD 4    50 3 4 5                                              1
6 REACH  3  68   5    3     3643.0         1.7         1.3
6 RUNOFF 1  89        4        0.09        60.0        0.46          1
6 REACH  3  68   4    5     3643.0         1.7         1.3
6 RUNOFF 1  67        6        0.19        60.0        0.80          1
```

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6 RUNOFF 1  68        4          0.11        60.0         0.79          1
6 ADDHYD 4    49 3 5 7
6 ADDHYD 4    49 7 6 3
6 ADDHYD 4    49 3 4 5                                                  1
6 REACH  3  66   5    3       2531.0         1.3          1.5
6 RUNOFF 1  66        4          0.09        60.0         0.87          1
6 RUNOFF 1  69        5          0.22        60.0         1.11          1
6 ADDHYD 4    48 3 4 6
6 ADDHYD 4    48 6 5 3                                                  1
6 REACH  3  59   3    4       5158.0         0.6          1.6           1
6 RUNOFF 1  59        3          0.30        55.0         0.95
6 ADDHYD 4    44 3 4 5                                                  1
6 REACH  3  60   5    3       1373.0         0.8          1.5           1
6 RUNOFF 1  60        4          0.08        62.0         0.53          1
6 ADDHYD 4    25 3 4 5                                                  1
6 REACH  3  39   5    3       4963.0         0.3          1.7
6 RUNOFF 1  39        4          0.15        60.0         0.68          1
6 ADDHYD 4    21 3 4 5
6 ADDHYD 4    21 5 2 3                                                  1
6 RUNOFF 1  63        2          0.07        60.0          .70          1
6 REACH  3  62   2    4       3432.0         1.5          1.3           1
6 RUNOFF 1  64        2          0.15        60.0         0.75          1
6 REACH  3  62   2    5       3432.0         1.5          1.3           1
6 RUNOFF 1  65        2          0.08        60.0         0.62          1
6 REACH  3 162   2    6       2445.0         1.9          1.2
6 RUNOFF 1  62        2          0.26        60.0         0.87          1
6 ADDHYD 4    45 4 5 7
6 ADDHYD 4    45 7 2 4                                                  1
6 ADDHYD 4    45 4 6 5
6 REACH  3  61   5    2       3152.0         1.7          1.3
6 RUNOFF 1  61        4          0.37        61.0         0.80          1
6 ADDHYD 4    24 2 4 5                                                  1
6 REACH  3 139   5    2       4488.0         1.1          1.4
6 ADDHYD 4    21 2 3 4                                                  1
6 REACH  3  33   4    2       7445.0         0.1          1.7
6 RUNOFF 1  33        3          0.50        59.0         1.37          1
6 RUNOFF 1  34        4          0.23        62.0         0.59          1
6 ADDHYD 4    15 2 3 5
6 ADDHYD 4    15 5 4 2                                                  1
6 RUNOFF 1  37        3          0.18        74.0         0.78          1
6 RUNOFF 1  38        4          0.89        62.0         0.38          1
6 ADDHYD 4    23 3 4 5                                                  1
6 REACH  3  35   5    3       3252.0         1.7          1.2
6 RUNOFF 1  35        4          0.26        62.0         0.87          1
6 ADDHYD 4    22 3 4 5                                                  1
6 REACH  3  34   5    3       1816.0         1.0          1.4
6 ADDHYD 4    15 2 3 4                                      1 1   1     1
6 REACH  3  22   4    2       3062.0          .6          1.6
6 RUNOFF 1  21        3          0.10        62.0         0.53          1
6 REACH  3 122   3    4       2503.0         1.1          1.4
6 RUNOFF 1  22        3          0.13        62.0         0.07          1
6 RUNOFF 1  23        5          0.20        58.0         0.91          1
6 ADDHYD 4    13 2 4 6
6 ADDHYD 4    13 6 3 2
6 ADDHYD 4    13 2 5 3                                                  1
6 REACH  3  19   3    2       3802.0         0.1          1.7
6 RUNOFF 1  19        6          0.29        60.0         0.51          1
6 ADDHYD 4    11 2 6 7                                                  1
6 REACH  3  15   7    2       2571.0         0.3          1.6
6 RUNOFF 1  16        3          0.38        60.0         0.89          1
6 REACH  3  17   3    4       3274.0         1.4          1.3
6 RUNOFF 1  17        3          0.13        60.0         0.22          1
6 ADDHYD 4    10 3 4 5                                                  1
6 REACH  3 115   5    3       2820.0         1.2          1.4
6 RUNOFF 1  15        4          0.25        60.0         0.21          1
6 REACH  3 116   1    5       2260.0         0.2          1.6
6 ADDHYD 4     9 2 3 1
6 ADDHYD 4     9 1 5 2
6 ADDHYD 4     9 2 4 1                                       1 1   1     1
6 REACH  3  14   1    2       3448.0         0.2          1.7
6 RUNOFF 1  14        1          0.35        60.0         0.44          1
6 ADDHYD 4     7 1 2 3                                       1 1   1     1
6 REACH  3   5   3    1       4910.0         0.2          1.6
6 RUNOFF 1   5        2          0.18        60.0         0.14          1
6 RUNOFF 1  36        3          0.39        62.0         0.96          1
6 REACH  3  20   3    4       3960.0          .4          1.5
6 RUNOFF 1  20        3          0.30        52.0         0.30          1
6 ADDHYD 4    14 3 4 5                                                  1
6 REACH  3  12   5    3       3221.0         1.3          1.5
6 RUNOFF 1  10        4          0.13        64.0         0.18          1
6 REACH  3 112   4    5       2250.0         0.8          1.6
6 RUNOFF 1  11        4          0.10        67.0         0.22          1
6 REACH  3 195   4    6       2788.0         1.4          1.5
6 RUNOFF 1  12        4          0.22        60.0         0.14          1
6 ADDHYD 4     8 5 6 7
6 ADDHYD 4     8 7 4 5
6 ADDHYD 4     8 5 3 4                                                   1
6 REACH  3   6   4    3       8976.0         0.6          1.6
```

```
6 RUNOFF 1   6         4          0.29        51.0        0.23          1
6 RUNOFF 1  13         5          0.13        60.0        0.20          1
6 REACH  3   6    5    6        8976.0         0.6         1.6
6 ADDHYD 4        5 1 2 5
6 ADDHYD 4        5 5 3 1
6 ADDHYD 4        5 1 6 2
6 ADDHYD 4        5 2 4 1                                              1
6 REACH  3   4    1    2        2851.0         0.2         1.6
6 RUNOFF 1   9         1          0.14        69.0        0.17          1
6 REACH  3   8    1    3        3907.0         6.0         1.4
6 RUNOFF 1   8         1          0.19        61.0        0.07          1
6 RUNOFF 1   7         4          0.38        60.0        0.15          1
6 ADDHYD 4        6 3 1 5
6 ADDHYD 4        6 5 4 1                                              1
6 REACH  3 104    1    3        4066.0         0.8         1.5
6 RUNOFF 1   4         1          0.59        60.0        0.32          1
6 ADDHYD 4        4 3 1 4
6 ADDHYD 4        4 4 2 1                                              1
6 REACH  3   3    1    2        2482.0         0.1         1.7
6 RUNOFF 1   3         1          0.16        54.0        0.03          1
6 ADDHYD 4        3 1 2 3                                              1
6 REACH  3   2    3    1        3432.0         0.2         1.7
6 RUNOFF 1   2         2          0.36        53.0         .50          1
6 ADDHYD 4        2 1 2 3                                              1
6 REACH  3   1    3    1        7234.0         0.3         1.7
6 RUNOFF 1   1         2          0.48        59.0        0.59          1
6 ADDHYD 4        1 1 2 3                                  1 1   1     1
  ENDATA
7 LIST
7 INCREM 6                      .100
7 COMPUT 7  80         1           0.0         4.5        1.01 2  01  01
  ENDCMP 1
7 COMPUT 7  80         1           0.0         3.0        1.01 2  01  02
  ENDCMP 1
  ENDJOB 2
```

EXISTING CONDITIONS OUTPUT

```
0
TR20 ------------------------------------------------------------------------ SCS -
        EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                      24 HR TYPE IIA CURVE                      2.04TEST
15:13:35                    PASS   1   JOB NO.   1                      PAGE   1


EXECUTIVE CONTROL  LIST           0.          0.          0.

          LISTING OF CURRENT DATA


                    COMPUTED TIME INCREMENT
DIMHYD                          .0200

                   .0000       .0300       .1000       .1900       .3100
                   .4700       .6600       .8200       .9300       .9900
                  1.0000       .9900       .9300       .8600       .7800
                   .6800       .5600       .4600       .3900       .3300
                   .2800       .2410       .2070       .1740       .1470
                   .1260       .1070       .0910       .0770       .0660
                   .0550       .0470       .0400       .0340       .0290
                   .0250       .0210       .0180       .0150       .0130
                   .0110       .0090       .0080       .0070       .0060
                   .0050       .0040       .0030       .0020       .0010
                   .0000       .0000       .0000       .0000       .0000
ENDTBL

   COMPUTED PEAK RATE FACTOR =  484.000

0
TR20 ------------------------------------------------------------------------ SCS -
        EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                      24 HR TYPE IIA CURVE                      2.04TEST
15:13:35                    PASS   1   JOB NO.   1                      PAGE   2


      TABLE NO.       TIME INCREMENT
RAINFL    1                     .5000

                   .0000       .0025       .0050       .0075       .0100
                   .0150       .0200       .0250       .0300       .0500
                   .0600       .1000       .7000       .7500       .7800
                   .7980       .8200       .8300       .8400       .8500
                   .8600       .8650       .8700       .8850       .8900
                   .9000       .9050       .9100       .9150       .9210
                   .9270       .9330       .9400       .9450       .9500
                   .9550       .9600       .9650       .9700       .9750
                   .9800       .9830       .9850       .9880       .9900
                   .9930       .9950       .9980      1.0000      1.0000
ENDTBL
0
TR20 ------------------------------------------------------------------------ SCS -
        EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                      24 HR TYPE IIA CURVE                      2.04TEST
15:13:35                    PASS   1   JOB NO.   1                      PAGE   3


      TABLE NO.       TIME INCREMENT
RAINFL    2                     .1000

                   .0000       .0010       .0020       .0030       .0041
                   .0051       .0062       .0072       .0083       .0094
                   .0105       .0116       .0127       .0138       .0150
                   .0161       .0173       .0184       .0196       .0208
                   .0220       .0232       .0244       .0257       .0269
                   .0281       .0294       .0306       .0319       .0332
                   .0345       .0358       .0371       .0384       .0398
                   .0411       .0425       .0439       .0452       .0466
                   .0480       .0494       .0508       .0523       .0538
                   .0553       .0568       .0583       .0598       .0614
                   .0630       .0646       .0662       .0679       .0696
                   .0712       .0730       .0747       .0764       .0782
                   .0800       .0818       .0836       .0855       .0874
                   .0892       .0912       .0931       .0950       .0970
                   .0990       .1010       .1030       .1051       .1072
                   .1093       .1114       .1135       .1156       .1178
                   .1200       .1222       .1246       .1270       .1296
                   .1322       .1350       .1379       .1408       .1438
                   .1470       .1502       .1534       .1566       .1598
                   .1630       .1663       .1697       .1733       .1771
                   .1810       .1851       .1895       .1941       .1989
```

.2040	.2094	.2152	.2214	.2280
.2350	.2427	.2513	.2609	.2715
.2830	.3068	.3544	.4308	.5679
.6630	.6820	.6986	.7130	.7252
.7350	.7434	.7514	.7588	.7656
.7720	.7780	.7836	.7890	.7942
.7990	.8036	.8080	.8122	.8162
.8200	.8237	.8273	.8308	.8342
.8376	.8409	.8442	.8474	.8505
.8535	.8565	.8594	.8622	.8649
.8676	.8702	.8728	.8753	.8777
.8800	.8823	.8845	.8868	.8890
.8912	.8934	.8955	.8976	.8997
.9018	.9038	.9058	.9078	.9097
.9117	.9136	.9155	.9173	.9192
.9210	.9228	.9245	.9263	.9280
.9297	.9313	.9330	.9346	.9362
.9377	.9393	.9408	.9423	.9438
.9452	.9466	.9480	.9493	.9507
.9520	.9533	.9546	.9559	.9572
.9584	.9597	.9610	.9622	.9635
.9647	.9660	.9672	.9685	.9697
.9709	.9722	.9734	.9746	.9758
.9770	.9782	.9794	.9806	.9818
.9829	.9841	.9853	.9864	.9876
.9887	.9899	.9910	.9922	.9933
.9944	.9956	.9967	.9978	.9989
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
□

TABLE NO. TIME INCREMENT
RAINFL 3 .1000

.0000	.0022	.0043	.0063	.0082
.0100	.0118	.0137	.0157	.0178
.0200	.0228	.0257	.0287	.0318
.0350	.0380	.0410	.0439	.0470
.0500	.0531	.0563	.0595	.0628
.0660	.0692	.0724	.0756	.0788
.0820	.0851	.0883	.0915	.0947
.0980	.1015	.1050	.1086	.1123
.1160	.1197	.1234	.1272	.1311
.1350	.1390	.1431	.1473	.1516
.1560	.1606	.1653	.1701	.1750
.1800	.1849	.1900	.1952	.2005
.2060	.2120	.2181	.2243	.2306
.2370	.2429	.2488	.2549	.2613
.2680	.2752	.2829	.2912	.3002
.3100	.3314	.3547	.3788	.4026
.4250	.4394	.4517	.4623	.4716
.4800	.4890	.4975	.5055	.5130
.5200	.5266	.5329	.5389	.5446
.5500	.5556	.5612	.5666	.5718
.5770	.5820	.5868	.5916	.5964
.6010	.6058	.6104	.6150	.6196
.6240	.6284	.6326	.6368	.6410
.6450	.6489	.6527	.6565	.6603
.6640	.6677	.6715	.6753	.6791
.6830	.6866	.6903	.6939	.6974
.7010	.7047	.7084	.7120	.7155
.7190	.7225	.7259	.7293	.7326
.7360	.7394	.7428	.7461	.7495
.7528	.7561	.7594	.7627	.7660
.7692	.7725	.7757	.7789	.7821
.7853	.7885	.7916	.7947	.7979
.8010	.8041	.8071	.8102	.8132
.8163	.8193	.8223	.8252	.8282
.8312	.8341	.8370	.8399	.8428
.8457	.8486	.8514	.8542	.8570
.8598	.8626	.8654	.8681	.8709
.8736	.8763	.8790	.8817	.8844
.8870	.8896	.8923	.8949	.8974
.9000	.9026	.9051	.9076	.9101
.9126	.9151	.9176	.9200	.9225
.9249	.9273	.9297	.9321	.9344
.9368	.9391	.9414	.9437	.9460
.9482	.9505	.9527	.9550	.9572
.9594	.9615	.9637	.9658	.9680
.9701	.9722	.9743	.9764	.9784
.9804	.9825	.9845	.9865	.9884
.9904	.9924	.9943	.9962	.9981

1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 5

TABLE NO. TIME INCREMENT
RAINFL 4 .1000

.0000	.0010	.0020	.0030	.0040
.0050	.0060	.0070	.0080	.0090
.0100	.0110	.0120	.0130	.0140
.0150	.0160	.0170	.0180	.0190
.0200	.0210	.0220	.0231	.0241
.0252	.0263	.0274	.0285	.0296
.0308	.0319	.0331	.0343	.0355
.0367	.0379	.0392	.0404	.0417
.0430	.0443	.0456	.0470	.0483
.0497	.0511	.0525	.0539	.0553
.0567	.0582	.0597	.0612	.0627
.0642	.0657	.0673	.0688	.0704
.0720	.0736	.0753	.0770	.0788
.0806	.0825	.0844	.0864	.0884
.0905	.0926	.0948	.0970	.0993
.1016	.1040	.1064	.1089	.1114
.1140	.1167	.1194	.1223	.1253
.1284	.1317	.1350	.1385	.1421
.1458	.1496	.1535	.1575	.1617
.1659	.1703	.1748	.1794	.1842
.1890	.1940	.1993	.2048	.2105
.2165	.2227	.2292	.2359	.2428
.2500	.2578	.2664	.2760	.2866
.2980	.3143	.3394	.3733	.4160
.5000	.5840	.6267	.6606	.6857
.7020	.7134	.7240	.7336	.7422
.7500	.7572	.7641	.7708	.7773
.7835	.7895	.7952	.8007	.8060
.8110	.8158	.8206	.8252	.8297
.8341	.8383	.8425	.8465	.8504
.8543	.8579	.8615	.8650	.8683
.8716	.8747	.8777	.8806	.8833
.8860	.8886	.8911	.8936	.8960
.8984	.9007	.9030	.9052	.9074
.9095	.9116	.9136	.9156	.9175
.9194	.9212	.9230	.9247	.9264
.9280	.9296	.9312	.9327	.9343
.9358	.9373	.9388	.9403	.9418
.9433	.9447	.9461	.9475	.9489
.9503	.9517	.9530	.9544	.9557
.9570	.9583	.9596	.9609	.9621
.9634	.9646	.9658	.9670	.9682
.9694	.9706	.9718	.9729	.9741
.9752	.9764	.9775	.9786	.9797
.9808	.9818	.9829	.9839	.9850
.9860	.9870	.9880	.9890	.9900
.9909	.9919	.9928	.9938	.9947
.9956	.9965	.9974	.9983	.9991
1.0000	1.0000	1.0000	1.0000	1.0000

ENDTBL
0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 6

TABLE NO. TIME INCREMENT
RAINFL 5 .5000

.0000	.0020	.0050	.0080	.0110
.0140	.0170	.0200	.0230	.0260
.0290	.0320	.0350	.0380	.0410
.0440	.0470	.0510	.0550	.0590
.0630	.0670	.0710	.0750	.0790
.0840	.0890	.0940	.0990	.1040
.1090	.1140	.1200	.1260	.1330
.1400	.1470	.1540	.1620	.1710
.1810	.1920	.2040	.2170	.2330
.2520	.2770	.3180	.6380	.6980
.7290	.7520	.7700	.7850	.7980
.8090	.8190	.8290	.8380	.8460
.8540	.8610	.8680	.8740	.8800
.8860	.8920	.8970	.9020	.9070

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                .9120       .9170       .9210       .9250       .9290
                .9330       .9370       .9410       .9450       .9490
                .9530       .9570       .9600       .9630       .9660
                .9690       .9720       .9750       .9780       .9810
                .9840       .9870       .9900       .9930       .9960
                .9980      1.0000      1.0000      1.0000      1.0000
ENDTBL
0

TR20 ------------------------------------------------------------------------ SCS -
        EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                        24 HR TYPE IIA CURVE                    2.04TEST
15:13:35                      PASS   1   JOB NO.   1                    PAGE   7

      TABLE NO.       TIME INCREMENT
RAINFL    6                .0200

                .0000       .0080       .0162       .0246       .0333
                .0425       .0524       .0630       .0743       .0863
                .0990       .1124       .1265       .1420       .1595
                .1800       .2050       .2550       .3450       .4370
                .5300       .6030       .6330       .6600       .6840
                .7050       .7240       .7420       .7590       .7750
                .7900       .8043       .8180       .8312       .8439
                .8561       .8678       .8790       .8898       .9002
                .9103       .9201       .9297       .9391       .9483
                .9573       .9661       .9747       .9832       .9916
               1.0000      1.0000      1.0000      1.0000      1.0000
ENDTBL
0

TR20 ------------------------------------------------------------------------ SCS -
        EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                        24 HR TYPE IIA CURVE                    2.04TEST
15:13:35                      PASS   1   JOB NO.   1                    PAGE   8

                STANDARD CONTROL INSTRUCTIONS

RUNOFF      80         1        .0800      55.0000       .41000 0 0 0 0 1
REACH       79    1    2     5597.0000       1.7000      1.25000 0 0 0 0 0
RUNOFF      79         1        .2700      55.0000      1.15000 0 0 0 0 1
ADDHYD        38 1 2 3                                          0 0 0 0 0 1
REACH      150    3    1     6574.0000       1.1000      1.40000 0 0 0 0 0
RUNOFF      78         2        .2900      55.0000      1.06000 0 0 0 0 1
REACH       51    2    3     1531.0000       1.0000      1.40000 0 0 0 0 0
RUNOFF      51         4        .1400      55.0000       .67000 0 0 0 0 1
ADDHYD        37 3 4 2                                          0 0 0 0 0 1
REACH       50    2    3     3000.0000       1.1000      1.40000 0 0 0 0 0
RUNOFF      50         2        .5100      60.0000      1.83000 0 0 0 0 1
RUNOFF      49         4        .2700      56.0000       .76000 0 0 0 0 1
REACH      152    4    5     2682.0000       1.0000      1.40000 0 0 0 0 0
ADDHYD        33 2 5 6                                          0 0 0 0 0 0
ADDHYD        33 6 1 5                                          0 0 0 0 0 0
ADDHYD        33 5 3 1                                          0 0 0 0 0 0
REACH       47    1    2     4678.0000       .2000      1.70000 0 0 0 0 0
RUNOFF      48         1        .5600      60.0000       .98000 0 0 0 0 1
REACH      147    1    3     6040.0000       1.1000      1.40000 0 0 0 0 0
RUNOFF      47         1        .2300      60.0000       .91000 0 0 0 0 1
ADDHYD        32 1 3 4                                          0 0 0 0 0 0
ADDHYD        32 4 2 3                                          0 0 0 0 0 0
RUNOFF      81         1        .3500      60.0000       .39000 0 0 0 0 1
RUNOFF      96         2        .1400      60.0000       .88000 0 0 0 0 1
REACH       81    2    4     6389.0000       1.4000      1.30000 0 0 0 0 0
ADDHYD        54 4 1 2                                          0 0 0 0 0 1
REACH       76    2    1     5702.0000       1.9000      1.30000 0 0 0 0 0
RUNOFF      76         2        .1900      60.0000      1.08000 0 0 0 0 1
ADDHYD        39 1 2 4                                          0 0 0 0 0 1
REACH       53    4    1     3453.0000       1.1000      1.40000 0 0 0 0 0
RUNOFF      53         2        .1800      60.0000      1.02000 0 0 0 0 1
RUNOFF      77         4        .3000      60.0000      1.21000 0 0 0 0 1
REACH      153    4    5     3379.0000        .7000      1.40000 0 0 0 0 0
ADDHYD        36 1 2 4                                          0 0 0 0 0 0
ADDHYD        36 4 5 1                                          0 0 0 0 0 1
REACH       52    1    2     1584.0000        .3000      1.60000 0 0 0 0 0
RUNOFF      52         1        .4500      60.0000      1.47000 0 0 0 0 1
ADDHYD        34 2 1 4                                          0 0 0 0 0 1
REACH       46    4    1     3770.0000        .3000      1.60000 0 0 0 0 0
RUNOFF      46         2        .0400      60.0000       .50000 0 0 0 0 1
ADDHYD        31 1 2 4                                          0 0 0 0 0 0
ADDHYD        29 4 3 2                                          1 1 0 1 0 1
REACH      145    2    1     3600.0000        .2000      1.70000 0 0 0 0 1
RUNOFF      45         3        .3200      60.0000       .78000 0 0 0 0 1
ADDHYD        29 1 3 2                                          0 0 0 0 0 1
0
```

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TR20 ------------------------------------------------------------------------ SCS -
        EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                        24 HR TYPE IIA CURVE                      2.04TEST
15:13:35                      PASS   1   JOB NO.   1                      PAGE   9

RUNOFF      93        1        .2400      62.0000      1.12000 0 0 0 0 1
RUNOFF      94        3        .4300      62.0000       .30000 0 0 0 0 1
RUNOFF      98        4        .1400      63.0000       .43000 0 0 0 0 1
REACH      194   4    5     5914.0000       1.8000      1.30000 0 0 0 0 0
RUNOFF      97        4        .0700      60.0000       .43000 0 0 0 0 1
REACH       94   4    6     5914.0000       1.7000      1.30000 0 0 0 0 0
ADDHYD        55 1 3 7                                          0 0 0 0 0 0
ADDHYD        55 7 5 1                                          0 0 0 0 0 0
ADDHYD        55 1 6 3                                          0 0 0 0 0 1
REACH       83   3    1     6124.0000       1.9000      1.30000 0 0 0 0 0
RUNOFF      83        3        .3500      60.0000      1.52000 0 0 0 0 1
RUNOFF      95        4        .1100      60.0000      1.38000 0 0 0 0 1
REACH       82   4    5     5808.0000       1.4000      1.30000 0 0 0 0 0
RUNOFF      82        4        .2400      60.0000       .31000 0 0 0 0 1
ADDHYD        53 1 3 6                                          0 0 0 0 0 0
ADDHYD        53 6 5 1                                          0 0 0 0 0 0
ADDHYD        53 1 4 3                                          0 0 0 0 0 1
REACH       75   3    1     4013.0000       1.9000      1.30000 0 0 0 0 0
RUNOFF      75        3        .1700      60.0000       .88000 0 0 0 0 1
ADDHYD        41 1 3 4                                          0 0 0 0 0 1
REACH       73   4    1     1610.0000        .8000      1.50000 0 0 0 0 0
RUNOFF      73        3        .1500      60.0000      1.42000 0 0 0 0 1
ADDHYD        40 1 3 4                                          0 0 0 0 0 1
RUNOFF      99        1        .5100      60.0000      1.14000 0 0 0 0 1
REACH       92   1    3     5650.0000       2.1000      1.30000 0 0 0 0 0
RUNOFF      92        5        .3800      60.0000       .28000 0 0 0 0 1
ADDHYD        56 3 5 1                                          0 0 0 0 0 1
REACH       84   1    3     5491.0000       2.0000      1.30000 0 0 0 0 0
RUNOFF      84        5        .1900      60.0000       .97000 0 0 0 0 1
ADDHYD        52 3 5 1                                          0 0 0 0 0 1
RUNOFF      91        3        .3700      60.0000      1.14000 0 0 0 0 1
REACH       85   3    5     6178.0000       1.4000      1.30000 0 0 0 0 0
ADDHYD        52 1 5 3                                          0 0 0 0 0 1
RUNOFF      85        1        .2700      60.0000      1.12000 0 0 0 0 1
ADDHYD        52 1 3 5                                          0 0 0 0 0 1
REACH       74   5    6     4066.0000       1.9000      1.30000 0 0 0 0 0
RUNOFF      74        1        .1900      60.0000       .82000 0 0 0 0 1
ADDHYD        42 1 6 5                                          0 0 0 0 0 1
REACH       73   5    1     1610.0000        .8000      1.50000 0 0 0 0 0
ADDHYD        40 1 4 3                                          0 0 0 0 0 0
RUNOFF      86        1        .3300      60.0000      1.48000 0 0 0 0 1
REACH       72   1    4     3500.0000       1.7000      1.30000 0 0 0 0 0
RUNOFF      72        1        .4400      60.0000      1.49000 0 0 0 0 1
ADDHYD        43 1 4 5                                          0 0 0 0 0 1
REACH      173   5    1     1864.0000       2.0000      1.30000 0 0 0 0 0
ADDHYD        40 1 3 4                                          0 0 0 0 0 1
RUNOFF      71        1        .7200      60.0000      1.46000 0 0 0 0 1
RUNOFF      54        5        .2400      62.0000       .92000 0 0 0 0 1
REACH       54   4    6     4974.0000        .5000      1.60000 0 0 0 0 0
0

TR20 ------------------------------------------------------------------------ SCS -
        EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                        24 HR TYPE IIA CURVE                      2.04TEST
15:13:35                      PASS   1   JOB NO.   1                      PAGE  10

ADDHYD        35 6 1 4                                          0 0 0 0 0 0
ADDHYD        35 4 5 3                                          0 0 0 0 0 1
REACH       44   3    1     5016.0000        .5000      1.60000 0 0 0 0 0
RUNOFF      56        3        .0600      62.0000      1.13000 0 0 0 0 1
REACH      144   3    4     4419.0000        .9000      1.60000 0 0 0 0 0
RUNOFF      43        5        .4000      57.0000      1.13000 0 0 0 0 1
REACH      146   5    3     1200.0000       1.9000      1.30000 0 0 0 0 0
RUNOFF      44        5        .5900      60.0000       .44000 0 0 0 0 1
ADDHYD        30 3 4 6                                          0 0 0 0 0 0
ADDHYD        30 6 1 3                                          0 0 0 0 0 0
ADDHYD        30 3 5 1                                          1 1 0 1 0 1
REACH       45   1    3     2893.0000        .1000      1.70000 0 0 0 0 0
ADDHYD        29 2 3 1                                          1 1 0 1 0 1
REACH       28   1    2     3168.0000        .1000      1.70000 0 0 0 0 0
RUNOFF      29        3        .1700      62.0000       .73000 0 0 0 0 1
REACH      128   3    1     3131.0000        .5000      1.50000 0 0 0 0 0
RUNOFF      27        3        .1500      60.0000       .28000 0 0 0 0 1
RUNOFF      28        4        .3200      60.0000       .37000 0 0 0 0 1
ADDHYD        19 2 1 5                                          0 0 0 0 0 0
ADDHYD        19 5 3 1                                          0 0 0 0 0 0
ADDHYD        19 1 4 2                                          1 1 0 1 0 1
REACH       26   2    1     3221.0000        .2000      1.70000 0 0 0 0 0
RUNOFF      26        2        .4700      50.0000       .90000 0 0 0 0 1
ADDHYD        18 1 2 3                                          0 0 0 0 0 1
REACH       25   3    1     2323.0000        .2000      1.70000 0 0 0 0 0
RUNOFF      25        2        .2600      60.0000       .29000 0 0 0 0 1
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ADDHYD        17 1 2 3                                          0 0 0 0 0 1
REACH      24   3   1    2524.0000       .2000       1.70000 0 0 0 0 0
RUNOFF     24       2       .2800      56.0000        .16000 0 0 0 0 1
ADDHYD        12 1 2 3                                          0 0 0 0 0 0
RUNOFF     41       1       .1600      57.0000        .75000 0 0 0 0 1
REACH      31   1   2    3358.0000       1.1000       1.50000 0 0 0 0 0
RUNOFF     31       1       .2400      61.0000        .18000 0 0 0 0 1
ADDHYD        20 1 2 4                                          0 0 0 0 0 1
REACH      30   4   1    2323.0000       1.6000       1.60000 0 0 0 0 0
RUNOFF     30       2       .1000      62.0000        .08000 0 0 0 0 1
ADDHYD        16 1 2 4                                          0 0 0 0 0 1
REACH     124   4   1    4594.0000       .7000       1.60000 0 0 0 0 0
RUNOFF     32       2       .1500      52.0000        .91000 0 0 0 0 1
REACH     198   2   4    5227.0000       1.2000       1.60000 0 0 0 0 0
ADDHYD        12 1 4 2                                          0 0 0 0 0 0
ADDHYD        12 2 3 1                                          0 0 0 0 0 1
REACH      18   1   2    3696.0000       .2000       1.70000 0 0 0 0 0
RUNOFF     18       7       .4000      57.0000        .78000 0 0 0 0 1
ADDHYD        57 2 7 1                                          1 1 0 1 0 1
RUNOFF     87       2       .1300      60.0000       1.35000 0 0 0 0 1
REACH      70   2   3    5613.0000       1.2000       1.30000 0 0 0 0 0
RUNOFF     70       2       .4300      60.0000       1.66000 0 0 0 0 1
ADDHYD        47 2 3 4                                          0 0 0 0 0 1
0
```



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REACH      58   4   2    5016.0000       1.6000       1.30000 0 0 0 0 0
RUNOFF     58       3       .1000      60.0000        .76000 0 0 0 0 1
ADDHYD        28 2 3 4                                          0 0 0 0 0 1
REACH      42   4   2    2746.0000       1.2000       1.40000 0 0 0 0 0
RUNOFF     42       3       .1000      54.0000        .80000 0 0 0 0 1
ADDHYD        27 2 3 4                                          0 0 0 0 0 1
REACH      40   4   2    2218.0000       1.2000       1.40000 0 0 0 0 0
RUNOFF     40       3       .1600      60.0000        .85000 0 0 0 0 1
ADDHYD        26 2 3 4                                          0 0 0 0 0 1
REACH     199   4   2     216.0000       .3000       1.60000 0 0 0 0 0
RUNOFF     90       3       .0800      60.0000        .63000 0 0 0 0 1
REACH      88   3   4    5597.0000       1.9000       1.30000 0 0 0 0 0
RUNOFF     88       3       .2800      60.0000        .29000 0 0 0 0 1
ADDHYD        50 3 4 5                                          0 0 0 0 0 1
REACH      68   5   3    3643.0000       1.7000       1.30000 0 0 0 0 0
RUNOFF     89       4       .0900      60.0000        .46000 0 0 0 0 1
REACH      68   4   5    3643.0000       1.7000       1.30000 0 0 0 0 0
RUNOFF     67       6       .1900      60.0000        .80000 0 0 0 0 1
RUNOFF     68       4       .1100      60.0000        .79000 0 0 0 0 1
ADDHYD        49 3 5 7                                          0 0 0 0 0 0
ADDHYD        49 7 6 3                                          0 0 0 0 0 0
ADDHYD        49 3 4 5                                          0 0 0 0 0 1
REACH      66   5   3    2531.0000       1.3000       1.50000 0 0 0 0 0
RUNOFF     66       4       .0900      60.0000        .87000 0 0 0 0 1
RUNOFF     69       5       .2200      60.0000       1.11000 0 0 0 0 1
ADDHYD        48 3 4 6                                          0 0 0 0 0 0
ADDHYD        48 6 5 3                                          0 0 0 0 0 1
REACH      59   3   4    5158.0000       .6000       1.60000 0 0 0 0 1
RUNOFF     59       3       .3000      55.0000        .95000 0 0 0 0 0
ADDHYD        44 3 4 5                                          0 0 0 0 0 1
REACH      60   5   3    1373.0000       .8000       1.50000 0 0 0 0 1
RUNOFF     60       4       .0800      62.0000        .53000 0 0 0 0 1
ADDHYD        25 3 4 5                                          0 0 0 0 0 1
REACH      39   5   3    4963.0000       .3000       1.70000 0 0 0 0 0
RUNOFF     39       4       .1500      60.0000        .68000 0 0 0 0 1
ADDHYD        21 3 4 5                                          0 0 0 0 0 0
ADDHYD        21 5 2 3                                          0 0 0 0 0 1
RUNOFF     63       2       .0700      60.0000        .70000 0 0 0 0 1
REACH      62   2   4    3432.0000       1.5000       1.30000 0 0 0 0 1
RUNOFF     64       2       .1500      60.0000        .75000 0 0 0 0 1
REACH      62   2   5    3432.0000       1.5000       1.30000 0 0 0 0 1
RUNOFF     65       2       .0800      60.0000        .62000 0 0 0 0 1
REACH     162   2   6    2445.0000       1.9000       1.20000 0 0 0 0 0
RUNOFF     62       2       .2600      60.0000        .87000 0 0 0 0 1
ADDHYD        45 4 5 7                                          0 0 0 0 0 0
ADDHYD        45 7 2 4                                          0 0 0 0 0 1
ADDHYD        45 4 6 5                                          0 0 0 0 0 0
REACH      61   5   2    3152.0000       1.7000       1.30000 0 0 0 0 0
RUNOFF     61       4       .3700      61.0000        .80000 0 0 0 0 1
0
```



```
ADDHYD        24 2 4 5                                          0 0 0 0 0 1
REACH     139   5   2    4488.0000       1.1000       1.40000 0 0 0 0 0
```

```
ADDHYD        21  2  3  4                                          0  0  0  0  0  1
REACH         33     4     2     7445.0000        .1000        1.70000  0  0  0  0  0
RUNOFF        33           3         .5000      59.0000        1.37000  0  0  0  0  1
RUNOFF        34           4         .2300      62.0000         .59000  0  0  0  0  1
ADDHYD        15  2  3  5                                          0  0  0  0  0  0
ADDHYD        15  5  4  2                                          0  0  0  0  0  1
RUNOFF        37           3         .1800      74.0000         .78000  0  0  0  0  1
RUNOFF        38           4         .8900      62.0000         .38000  0  0  0  0  1
ADDHYD        23  3  4  5                                          0  0  0  0  0  1
REACH         35     5     3     3252.0000       1.7000        1.20000  0  0  0  0  0
RUNOFF        35           4         .2600      62.0000         .87000  0  0  0  0  1
ADDHYD        22  3  4  5                                          0  0  0  0  0  1
REACH         34     5     3     1816.0000       1.0000        1.40000  0  0  0  0  0
ADDHYD        15  2  3  4                                          1  1  0  1  0  1
REACH         22     4     2     3062.0000        .6000        1.60000  0  0  0  0  0
RUNOFF        21           3         .1000      62.0000         .53000  0  0  0  0  1
REACH        122     3     4     2503.0000       1.1000        1.40000  0  0  0  0  0
RUNOFF        22           3         .1300      62.0000         .07000  0  0  0  0  1
RUNOFF        23           5         .2000      58.0000         .91000  0  0  0  0  1
ADDHYD        13  2  4  6                                          0  0  0  0  0  0
ADDHYD        13  6  3  2                                          0  0  0  0  0  0
ADDHYD        13  2  5  3                                          0  0  0  0  0  1
REACH         19     3     2     3802.0000        .1000        1.70000  0  0  0  0  0
RUNOFF        19           6         .2900      60.0000         .51000  0  0  0  0  1
ADDHYD        11  2  6  7                                          0  0  0  0  0  1
REACH         15     7     2     2571.0000        .3000        1.60000  0  0  0  0  0
RUNOFF        16           3         .3800      60.0000         .89000  0  0  0  0  1
REACH         17     3     4     3274.0000       1.4000        1.30000  0  0  0  0  0
RUNOFF        17           3         .1300      60.0000         .22000  0  0  0  0  1
ADDHYD        10  3  4  5                                          0  0  0  0  0  1
REACH        115     5     3     2820.0000       1.2000        1.40000  0  0  0  0  0
RUNOFF        15           4         .2500      60.0000         .21000  0  0  0  0  1
REACH        116     1     5     2260.0000        .2000        1.60000  0  0  0  0  0
ADDHYD         9  2  3  1                                          0  0  0  0  0  0
ADDHYD         9  1  5  2                                          0  0  0  0  0  0
ADDHYD         9  2  4  1                                          1  1  0  1  0  1
REACH         14     1     2     3448.0000        .2000        1.70000  0  0  0  0  0
RUNOFF        14           1         .3500      60.0000         .44000  0  0  0  0  1
ADDHYD         7  1  2  3                                          1  1  0  1  0  1
REACH          5     3     1     4910.0000        .2000        1.60000  0  0  0  0  0
RUNOFF         5           2         .1800      60.0000         .14000  0  0  0  0  1
RUNOFF        36           3         .3900      62.0000         .96000  0  0  0  0  1
REACH         20     3     4     3960.0000        .4000        1.50000  0  0  0  0  0
RUNOFF        20           3         .3000      52.0000         .30000  0  0  0  0  1
ADDHYD        14  3  4  5                                          0  0  0  0  0  1
REACH         12     5     3     3221.0000       1.3000        1.50000  0  0  0  0  0
RUNOFF        10           4         .1300      64.0000         .18000  0  0  0  0  1
0
```



```
REACH        112     4     5     2250.0000        .8000        1.60000  0  0  0  0  0
RUNOFF        11           4         .1000      67.0000         .22000  0  0  0  0  1
REACH        195     4     6     2788.0000       1.4000        1.50000  0  0  0  0  0
RUNOFF        12           4         .2200      60.0000         .14000  0  0  0  0  1
ADDHYD         8  5  6  7                                          0  0  0  0  0  0
ADDHYD         8  7  4  5                                          0  0  0  0  0  0
ADDHYD         8  5  3  4                                          0  0  0  0  0  1
REACH          6     4     3     8976.0000        .6000        1.60000  0  0  0  0  0
RUNOFF         6           4         .2900      51.0000         .23000  0  0  0  0  1
RUNOFF        13           5         .1300      60.0000         .20000  0  0  0  0  1
REACH          6     5     6     8976.0000        .6000        1.60000  0  0  0  0  0
ADDHYD         5  1  2  5                                          0  0  0  0  0  0
ADDHYD         5  5  3  1                                          0  0  0  0  0  0
ADDHYD         5  1  6  2                                          0  0  0  0  0  0
ADDHYD         5  2  4  1                                          0  0  0  0  0  1
REACH          4     1     2     2851.0000        .2000        1.60000  0  0  0  0  0
RUNOFF         9           1         .1400      69.0000         .17000  0  0  0  0  1
REACH          8     1     3     3907.0000       6.0000        1.40000  0  0  0  0  0
RUNOFF         8           1         .1900      61.0000         .07000  0  0  0  0  1
RUNOFF         7           4         .3800      60.0000         .15000  0  0  0  0  1
ADDHYD         6  3  1  5                                          0  0  0  0  0  0
ADDHYD         6  5  4  1                                          0  0  0  0  0  1
REACH        104     1     3     4066.0000        .8000        1.50000  0  0  0  0  0
RUNOFF         4           1         .5900      60.0000         .32000  0  0  0  0  1
ADDHYD         4  3  1  4                                          0  0  0  0  0  0
ADDHYD         4  4  2  1                                          0  0  0  0  0  1
REACH          3     1     2     2482.0000        .1000        1.70000  0  0  0  0  0
RUNOFF         3           1         .1600      54.0000         .03000  0  0  0  0  1
ADDHYD         3  1  2  3                                          0  0  0  0  0  1
REACH          2     3     1     3432.0000        .2000        1.70000  0  0  0  0  0
RUNOFF         2           2         .3600      53.0000         .50000  0  0  0  0  1
ADDHYD         2  1  2  3                                          0  0  0  0  0  1
REACH          1     3     1     7234.0000        .3000        1.70000  0  0  0  0  0
RUNOFF         1           2         .4800      59.0000         .59000  0  0  0  0  1
```

```
ADDHYD          1 1 2 3                                   1 1 0 1 0 1
ENDATA


END OF LISTING
0

TR20 ------------------------------------------------------------------------ SCS -
          EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                        24 HR TYPE IIA CURVE                        2.04TEST
15:13:35                      PASS   1   JOB NO.   1                       PAGE  14


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =    .100 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION  80  TO STRUCTURE  1
    STARTING TIME =    .00       RAIN DEPTH =  4.50       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2        MAIN TIME INCREMENT =    .100 HOURS
    ALTERNATE NO. = 1            STORM NO. = 1            RAIN TABLE NO. = 1


OPERATION ADDHYD    STRUCTURE 29

    PEAK TIME(HRS)          PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       6.92                        750.5                       (NULL)
      12.29                         97.0                       (NULL)
      16.60                         70.2                       (NULL)
      20.07                         58.5                       (NULL)
      23.00                         30.7                       (NULL)
      24.07                         30.2                       (NULL)

                HYDROGRAPH POINTS FOR   ALTERNATE = 1,   STORM = 1
     HRS      MAIN TIME INCREMENT =  .100 hr,      DRAINAGE AREA =   4.00 SQ.MI.
   5.50 CFS        0       2       9      26      55     100     165     249
   6.30 CFS      348     453     553     639     701     738     750     744
   7.10 CFS      723     691     653     611     568     526     485     447
   7.90 CFS      412     380     352     328     307     289     273     257
   8.70 CFS      242     228     214     200     188     176     165     156
   9.50 CFS      148     141     135     129     125     121     118     116
  10.30 CFS      113     111     108     105     102      98      93      89
  11.10 CFS    84.86   81.21   78.38   76.62   76.18   77.22   79.76   83.42
  11.90 CFS    87.63   91.65   94.78   96.59   97.03   96.39   95.17   93.83
  12.70 CFS    92.73   91.94   91.39   90.85   90.03   88.69   86.78   84.39
  13.50 CFS    81.70   78.88   76.07   73.38   70.89   68.63   66.64   64.95
  14.30 CFS    63.55   62.46   61.66   61.17   60.98   61.05   61.33   61.76
  15.10 CFS    62.26   62.81   63.36   63.89   64.39   64.86   65.32   65.79
  15.90 CFS    66.30   66.87   67.51   68.20   68.91   69.54   69.99   70.18
  16.70 CFS    70.03   69.53   68.75   67.80   66.74   65.66   64.62   63.64
  17.50 CFS    62.76   61.97   61.29   60.71   60.22   59.80   59.47   59.19
  18.30 CFS    58.97   58.79   58.65   58.54   58.46   58.39   58.35   58.33
  19.10 CFS    58.31   58.31   58.32   58.33   58.35   58.38   58.41   58.44
  19.90 CFS    58.48   58.52   58.53   58.48   58.31   57.97   57.43   56.61
  20.70 CFS    55.44   53.92   52.11   50.09   47.94   45.72   43.51   41.43
  21.50 CFS    39.54   37.94   36.63   35.61   34.81   34.14   33.54   32.94
  22.30 CFS    32.34   31.77   31.28   30.91   30.71   30.63   30.64   30.67
  23.10 CFS    30.65   30.54   30.36   30.13   29.93   29.81   29.80   29.89
  23.90 CFS    30.05   30.19   30.23   30.06   29.62   28.89   27.85   26.48
  24.70 CFS    24.78   22.79   20.62   18.38   16.17   14.07   12.13   10.38
  25.50 CFS     8.82    7.46    6.28    5.28    4.42    3.69    3.09    2.58
  26.30 CFS     2.15    1.78    1.48    1.24    1.03     .85     .70     .58
  27.10 CFS      .48
0

TR20 ------------------------------------------------------------------------ SCS -
          EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/**                        24 HR TYPE IIA CURVE                        2.04TEST
15:13:35                      PASS   1   JOB NO.   1                       PAGE  15


    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                .95 WATERSHED INCHES;    2451 CFS-HRS;     202.6 ACRE-FEET.

    DURATION(HRS)  2     4     6     8     10    12    14    16
    FLOW(CFS)    307   118    91    70    65    60    58    35

    DURATION(HRS) 18    20    22
    FLOW(CFS)     30     6     0

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  73.       ***

 *** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
               CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION  73.       ***

OPERATION ADDHYD    STRUCTURE 30
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
6.90	1261.5	(NULL)
12.31	163.8	(NULL)
16.54	120.3	(NULL)
19.98	101.3	(NULL)
23.96	52.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 6.59 SQ.MI.

HRS								
5.50	CFS	0	14	67	150	240	340	463	598
6.30	CFS	739	889	1034	1148	1219	1253	1262	1252
7.10	CFS	1226	1185	1133	1073	1008	941	874	809
7.90	CFS	748	692	642	595	553	517	484	453
8.70	CFS	424	396	370	346	325	306	288	273
9.50	CFS	259	247	237	227	220	213	207	201
10.30	CFS	195	189	184	178	172	165	158	151
11.10	CFS	145	142	141	141	142	144	147	150
11.90	CFS	154	158	161	163	164	163	162	162
12.70	CFS	160	159	158	157	155	151	147	143
13.50	CFS	139	134	130	126	123	119	116	114
14.30	CFS	112	110	109	108	107	107	108	108
15.10	CFS	109	110	110	111	112	113	114	115
15.90	CFS	116	117	118	119	119	120	120	120
16.70	CFS	120	119	117	116	114	113	112	110
17.50	CFS	109	108	106	105	105	104	103	103
18.30	CFS	102	102	102	101	101	101	101	101
19.10	CFS	101	101	101	101	101	101	101	101
19.90	CFS	101	101	101	101	100	99	97	96
20.70	CFS	93.35	90.43	87.27	84.01	80.68	77.46	74.38	71.42
21.50	CFS	68.66	66.23	64.06	62.13	60.52	59.13	57.86	56.79
22.30	CFS	55.88	55.05	54.34	53.84	53.45	53.14	52.94	52.79
23.10	CFS	52.58	52.41	52.25	52.07	51.91	51.86	51.85	51.84

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 16

23.90	CFS	51.90	51.95	51.65	50.61	49.03	47.24	45.26	42.87
24.70	CFS	39.99	36.77	33.39	30.00	26.70	23.56	20.61	17.89
25.50	CFS	15.40	13.16	11.17	9.43	7.91	6.62	5.51	4.58
26.30	CFS	3.80	3.14	2.59	2.13	1.75	1.43	1.18	.96
27.10	CFS	.78	.64	.52	.42				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.03 WATERSHED INCHES; 4381 CFS-HRS; 362.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	595	220	158	126	113	105	101	64

DURATION(HRS)	18	20	22
FLOW(CFS)	52	13	0

OPERATION ADDHYD STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.05	2037.0	(NULL)
12.47	267.2	(NULL)
16.68	195.6	(NULL)
20.08	164.7	(NULL)
24.06	84.4	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 10.91 SQ.MI.

HRS								
5.50	CFS	0	2	20	79	182	312	464	647
6.30	CFS	854	1076	1313	1547	1751	1900	1992	2032
7.10	CFS	2031	1997	1934	1851	1753	1647	1538	1429
7.90	CFS	1324	1225	1134	1051	976	908	848	794
8.70	CFS	745	699	655	613	574	539	506	477
9.50	CFS	450	427	406	388	373	360	349	339
10.30	CFS	329	320	311	302	293	283	272	261
11.10	CFS	250	240	233	229	227	227	230	234
11.90	CFS	240	247	254	260	264	267	267	266
12.70	CFS	264	262	259	257	255	252	248	242
13.50	CFS	236	229	222	215	208	201	195	190
14.30	CFS	186	182	179	177	175	174	174	174
15.10	CFS	175	176	177	179	180	181	183	184
15.90	CFS	186	187	189	191	192	194	195	195
16.70	CFS	196	195	194	192	190	187	185	182
17.50	CFS	180	177	175	173	172	170	169	168
18.30	CFS	167	166	166	165	165	165	165	164
19.10	CFS	164	164	164	164	164	164	164	164
19.90	CFS	165	165	165	165	164	163	161	159
20.70	CFS	157	154	149	144	139	134	128	123
21.50	CFS	118	113	109	105	102	99	97	95

22.30 CFS	92.92	91.39	90.02	88.83	87.88	87.14	86.57	86.19
23.10 CFS	85.92	85.66	85.42	85.18	84.90	84.63	84.46	84.35
23.90 CFS	84.30	84.35	84.38	84.08	82.97	81.02	78.46	75.39

D

24.70 CFS	71.69	67.29	62.26	56.83	51.22	45.64	40.28	35.22
25.50 CFS	30.54	26.29	22.47	19.08	16.12	13.56	11.36	9.49
26.30 CFS	7.91	6.58	5.46	4.52	3.74	3.08	2.54	2.09
27.10 CFS	1.72	1.41	1.15	.94	.76	.62	.50	.40

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.00 WATERSHED INCHES; 7042 CFS-HRS; 582.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	908	349	255	201	183	172	164	102

DURATION(HRS)	18	20	22	22
FLOW(CFS)	84	20	1	0

OPERATION ADDHYD STRUCTURE 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.17	2085.5	(NULL)
12.58	283.6	(NULL)
16.79	205.6	(NULL)
19.98	174.5	(NULL)
23.34	91.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 11.55 SQ.MI.

HRS								
5.50 CFS	0	20	89	174	266	382	505	614
6.30 CFS	747	920	1123	1343	1563	1762	1919	2024
7.10 CFS	2077	2084	2055	1999	1921	1827	1724	1617
7.90 CFS	1508	1402	1299	1201	1111	1030	957	893
8.70 CFS	836	784	736	690	648	608	571	537
9.50 CFS	506	478	454	432	413	397	382	368
10.30 CFS	356	345	335	325	316	307	297	286
11.10 CFS	276	269	262	257	253	250	247	246
11.90 CFS	247	251	257	266	274	279	283	284
12.70 CFS	281	278	275	272	269	267	263	259
13.50 CFS	254	248	241	234	227	220	214	208
14.30 CFS	203	198	194	191	189	187	186	185
15.10 CFS	186	186	187	188	190	191	193	195
15.90 CFS	196	198	200	201	202	203	204	205
16.70 CFS	205	206	205	204	203	200	198	196
17.50 CFS	193	191	188	186	184	182	181	179
18.30 CFS	178	177	177	176	176	175	175	175
19.10 CFS	174	174	174	174	174	174	174	174
19.90 CFS	174	174	174	174	173	172	170	169
20.70 CFS	166	163	160	156	151	146	141	136
21.50 CFS	131	125	120	115	111	108	105	103
22.30 CFS	101	99	98	96	95	93	92	91
23.10 CFS	90.92	90.95	91.04	91.03	90.91	90.61	90.00	89.42
23.90 CFS	89.06	88.85	88.53	87.65	86.49	85.00	82.96	80.36
24.70 CFS	77.27	73.62	69.32	64.41	59.06	53.47	47.86	42.40

D

25.50 CFS	37.22	32.39	27.97	23.97	20.42	17.30	14.58	12.23
26.30 CFS	10.23	8.54	7.11	5.91	4.90	4.05	3.35	2.76
27.10 CFS	2.27	1.87	1.53	1.25	1.02	.83	.68	.55
27.90 CFS	.44							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.00 WATERSHED INCHES; 7476 CFS-HRS; 617.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	957	382	269	227	196	184	174	115

DURATION(HRS)	18	20	22	22
FLOW(CFS)	89	28	1	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 25. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 24. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.16) FOR SUBWATERSHED XSECTION 24.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -2.8%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.18) FOR SUBWATERSHED XSECTION 31.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -2.5%. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 30. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.08) FOR SUBWATERSHED XSECTION 30.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

OPERATION ADDHYD STRUCTURE 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.36	2214.3	(NULL)
12.71	325.7	(NULL)
16.29	232.0	(NULL)
16.95	233.4	(NULL)
20.06	201.7	(NULL)
23.61	106.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 13.61 SQ.MI.

HRS									
5.50	CFS	0	2	56	215	411	586	740	860
6.30	CFS	911	950	1031	1167	1338	1527	1723	1908
7.10	CFS	2059	2161	2208	2211	2180	2122	2043	1952

0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 19

7.90	CFS	1850	1743	1634	1522	1409	1301	1202	1114
8.70	CFS	1036	967	905	850	799	752	708	666
9.50	CFS	628	593	561	533	508	485	465	447
10.30	CFS	427	409	394	380	368	357	347	337
11.10	CFS	326	319	317	317	316	314	309	301
11.90	CFS	292	286	284	287	296	306	315	323
12.70	CFS	326	323	318	313	308	304	300	296
13.50	CFS	293	288	282	276	269	262	255	248
14.30	CFS	242	237	232	228	225	222	219	217
15.10	CFS	216	216	216	217	218	219	221	223
15.90	CFS	226	228	230	232	232	232	232	232
16.70	CFS	233	233	233	233	233	232	230	228
17.50	CFS	226	223	220	218	216	213	211	210
18.30	CFS	208	207	206	205	204	203	203	202
19.10	CFS	202	202	202	201	201	201	201	201
19.90	CFS	202	202	202	201	199	197	194	192
20.70	CFS	190	187	183	179	175	171	167	162
21.50	CFS	158	153	147	141	135	130	125	121
22.30	CFS	119	117	116	115	113	111	108	107
23.10	CFS	105	104	105	105	106	106	106	105
23.90	CFS	104	103	102	100	98	95	93	90
24.70	CFS	87.23	84.00	80.40	76.36	71.79	66.69	61.18	55.46
25.50	CFS	49.70	44.09	38.75	33.77	29.20	25.06	21.37	18.11
26.30	CFS	15.27	12.83	10.74	8.96	7.46	6.20	5.15	4.26
27.10	CFS	3.52	2.90	2.39	1.97	1.62	1.32	1.08	.88
27.90	CFS	.72	.58	.47					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 8546 CFS-HRS; 706.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1114	485	316	269	228	216	201	141

DURATION(HRS)	18	20	22	23
FLOW(CFS)	104	39	1	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 199. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 60. ***

OPERATION ADDHYD STRUCTURE 15
0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
6.64	1105.3	(NULL)
11.92	142.9	(NULL)
12.74	137.2	(NULL)
16.36	103.0	(NULL)
20.04	85.7	(NULL)
22.74	46.1	(NULL)
23.82	44.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 5.50 SQ.MI.

HRS								
5.50	CFS	0	5	21	71	191	374	582	780
6.30	CFS	944	1048	1092	1104	1103	1091	1065	1027
7.10	CFS	981	931	878	822	766	712	661	615
7.90	CFS	574	539	507	479	452	425	397	370
8.70	CFS	346	324	303	285	268	253	239	227
9.50	CFS	217	208	200	193	187	182	178	174
10.30	CFS	169	164	157	150	143	137	131	125
11.10	CFS	120	116	114	116	121	128	135	141
11.90	CFS	143	142	139	137	135	134	135	136
12.70	CFS	137	137	135	132	128	125	121	117
13.50	CFS	114	110	107	104	101	99	96	94
14.30	CFS	92.86	91.96	91.61	91.59	91.73	91.99	92.37	92.82
15.10	CFS	93.33	93.87	94.41	94.94	95.45	95.96	96.50	97.19
15.90	CFS	98	100	101	102	103	103	102	101
16.70	CFS	100	99	98	96	95	94	93	92
17.50	CFS	90.86	90.00	89.24	88.58	88.01	87.52	87.11	86.75
18.30	CFS	86.46	86.21	86.02	85.86	85.73	85.63	85.56	85.51
19.10	CFS	85.48	85.47	85.46	85.47	85.49	85.52	85.55	85.58
19.90	CFS	85.62	85.67	85.66	85.51	84.98	83.70	81.72	79.40
20.70	CFS	77.01	74.48	71.61	68.45	65.25	62.25	59.59	57.50
21.50	CFS	55.96	54.75	53.69	52.62	51.36	49.93	48.51	47.28
22.30	CFS	46.35	45.86	45.80	45.93	46.06	46.04	45.72	45.11
23.10	CFS	44.41	43.79	43.40	43.37	43.71	44.18	44.60	44.84
23.90	CFS	44.73	44.29	43.64	42.84	41.66	39.70	37.01	34.01
24.70	CFS	31.03	28.12	25.30	22.60	20.03	17.63	15.42	13.42
25.50	CFS	11.63	10.03	8.64	7.41	6.35	5.42	4.62	3.93
26.30	CFS	3.34	2.82	2.40	2.03	1.72	1.45	1.22	1.03
27.10	CFS	.87	.74	.62	.52	.44			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.06 WATERSHED INCHES; 3759 CFS-HRS; 310.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	507	187	135	103	95	88	85	53

DURATION(HRS)	18	20	22
FLOW(CFS)	44	9	0

D

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 21

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.07) FOR SUBWATERSHED XSECTION 22.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD STRUCTURE 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.35	3372.1	(NULL)
12.78	493.5	(NULL)
16.75	359.7	(NULL)
19.98	309.8	(NULL)
23.57	161.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 20.59 SQ.MI.

HRS								
5.50	CFS	0	30	105	248	479	744	980	1203
6.30	CFS	1426	1637	1854	2099	2356	2598	2815	3013
7.10	CFS	3182	3304	3365	3364	3314	3227	3111	2975
7.90	CFS	2825	2668	2507	2346	2187	2032	1887	1754
8.70	CFS	1634	1524	1424	1333	1251	1176	1106	1042
9.50	CFS	983	928	879	835	795	760	728	699
10.30	CFS	672	645	621	599	579	560	541	523
11.10	CFS	507	493	484	480	478	474	470	466
11.90	CFS	460	456	456	459	464	472	481	488
12.70	CFS	492	493	491	485	479	473	466	458
13.50	CFS	450	442	433	424	413	403	392	382
14.30	CFS	373	365	358	352	346	342	339	336
15.10	CFS	335	334	334	335	336	338	340	343
15.90	CFS	346	350	353	355	357	358	359	359

16.70 CFS	360	360	359	358	357	355	353	350
17.50 CFS	346	343	339	335	332	328	325	323
18.30 CFS	320	318	316	315	314	313	312	311
19.10 CFS	311	310	310	310	310	310	310	310
19.90 CFS	310	310	310	309	307	304	301	298
20.70 CFS	294	289	283	276	270	263	255	248
21.50 CFS	241	233	225	217	209	202	195	189
22.30 CFS	185	181	178	176	173	171	168	166
23.10 CFS	164	162	162	162	162	162	162	161
23.90 CFS	160	159	158	156	153	149	145	141
24.70 CFS	136	130	124	117	110	102	94	85
25.50 CFS	76.79	68.51	60.58	53.13	46.25	40.00	34.37	29.37
26.30 CFS	24.98	21.14	17.83	14.99	12.56	10.51	8.78	7.33
27.10 CFS	6.11	5.08	4.22	3.50	2.91	2.41	1.99	1.64
27.90 CFS	1.35	1.12	.92	.75	.61	.49		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.00 WATERSHED INCHES; 13281 CFS-HRS; 1097.6 ACRE-FEET.

0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 22

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1854	744	480	413	352	332	310	217

DURATION(HRS)	18	20	22	23
FLOW(CFS)	161	61	2	0

OPERATION ADDHYD STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.45	3390.2	(NULL)
12.85	500.4	(NULL)
16.84	365.0	(NULL)
20.05	315.1	(NULL)
23.62	164.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 20.94 SQ.MI.

HRS								
5.50 CFS	0	8	68	186	367	620	891	1113
6.30 CFS	1307	1504	1697	1904	2141	2391	2628	2842
7.10 CFS	3038	3205	3324	3383	3382	3332	3245	3131
7.90 CFS	2995	2846	2689	2526	2363	2202	2045	1899
8.70 CFS	1766	1645	1535	1434	1343	1261	1186	1117
9.50 CFS	1052	993	939	889	845	805	770	737
10.30 CFS	707	679	651	627	605	584	565	546
11.10 CFS	528	514	503	496	493	491	486	480
11.90 CFS	474	467	462	463	466	473	481	490
12.70 CFS	497	500	500	496	491	485	478	471
13.50 CFS	463	455	447	438	429	419	408	398
14.30 CFS	388	379	371	364	358	352	348	345
15.10 CFS	343	341	340	340	341	342	344	347
15.90 CFS	350	353	357	360	362	363	364	364
16.70 CFS	365	365	365	364	363	362	360	358
17.50 CFS	355	351	348	344	340	337	334	331
18.30 CFS	328	326	324	322	320	319	318	317
19.10 CFS	316	316	316	315	315	315	315	315
19.90 CFS	315	315	315	314	313	311	308	304
20.70 CFS	301	297	292	285	279	272	266	259
21.50 CFS	251	244	236	228	220	212	204	198
22.30 CFS	192	188	184	181	179	176	173	171
23.10 CFS	168	166	165	165	165	165	165	164
23.90 CFS	164	162	161	160	157	154	150	145
24.70 CFS	141	136	130	124	117	110	102	94
25.50 CFS	85.35	76.90	68.61	60.67	53.22	46.34	40.07	34.44
26.30 CFS	29.44	25.03	21.19	17.87	15.02	12.59	10.53	8.80
27.10 CFS	7.35	6.12	5.09	4.23	3.51	2.91	2.41	1.99
27.90 CFS	1.64	1.35	1.12	.92	.75	.61	.49	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.00 WATERSHED INCHES; 13511 CFS-HRS; 1116.6 ACRE-FEET.

0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 23

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1899	770	491	419	358	340	315	220

DURATION(HRS)	18	20	22	23

FLOW(CFS) 164 68 3 0

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.14) FOR SUBWATERSHED XSECTION 5.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.18) FOR SUBWATERSHED XSECTION 10.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -2.7%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.14) FOR SUBWATERSHED XSECTION 12.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.17) FOR SUBWATERSHED XSECTION 9.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.3%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.07) FOR SUBWATERSHED XSECTION 8.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.4%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.15) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -4.4%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.03) FOR SUBWATERSHED XSECTION 3.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 2. ***

OPERATION ADDHYD STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.96	3612.9	(NULL)
12.89	565.2	(NULL)
13.23	565.8	(NULL)
17.26	424.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 1
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 24.98 SQ.MI.

HRS								
5.50 CFS	0	6	60	133	378	703	990	1210
6.30 CFS	1409	1504	1561	1643	1752	1885	2020	2166

D

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 1 JOB NO. 1 PAGE 24

7.10 CFS	2342	2546	2761	2962	3146	3313	3454	3553
7.90 CFS	3606	3608	3565	3480	3364	3215	3047	2874
8.70 CFS	2700	2528	2360	2200	2050	1913	1787	1673
9.50 CFS	1569	1474	1389	1310	1238	1172	1111	1054
10.30 CFS	1001	948	898	854	815	781	749	720
11.10 CFS	694	674	657	650	650	647	639	630
11.90 CFS	614	594	578	567	558	555	557	559
12.70 CFS	561	565	565	564	565	566	566	563
13.50 CFS	559	553	546	539	531	523	515	507
14.30 CFS	498	490	481	473	463	454	446	438
15.10 CFS	432	425	420	416	413	411	410	409
15.90 CFS	411	414	417	419	421	422	422	422
16.70 CFS	423	423	424	424	424	424	424	424
17.50 CFS	424	423	421	419	417	414	410	407
18.30 CFS	403	399	396	393	390	387	385	383
19.10 CFS	381	379	378	377	376	376	375	375
19.90 CFS	374	374	374	373	372	369	365	361
20.70 CFS	358	354	349	343	338	333	328	323
21.50 CFS	319	313	307	300	292	283	274	265
22.30 CFS	257	250	244	238	232	226	220	215
23.10 CFS	210	207	204	202	201	201	199	198
23.90 CFS	197	195	193	191	189	184	179	174
24.70 CFS	169	165	160	155	150	145	140	133
25.50 CFS	127	120	112	104	96	87	79	70
26.30 CFS	62.39	54.86	47.88	41.50	35.74	30.61	26.08	22.12
27.10 CFS	18.68	15.73	13.20	11.06	9.25	7.72	6.43	5.35
27.90 CFS	4.44	3.69	3.06	2.54	2.10	1.73	1.43	1.18
28.70 CFS	.97	.79	.64	.52	.42			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.99 WATERSHED INCHES; 15997 CFS-HRS; 1322.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2166	1054	594	523	423	410	374	292

DURATION(HRS)	18	20	22	24
FLOW(CFS)	197	104	6	0

EXECUTIVE CONTROL ENDCMP   COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT   FROM XSECTION 80 TO STRUCTURE 1
STARTING TIME = .00 RAIN DEPTH = 3.00 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .100 HOURS
ALTERNATE NO. = 1 STORM NO. = 2 RAIN TABLE NO. = 1

D

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 2 JOB NO. 1 PAGE 25

OPERATION ADDHYD STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.33	140.9	(NULL)
12.62	37.2	(NULL)
16.75	28.5	(NULL)
20.10	24.8	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 4.00 SQ.MI.

HRS								
5.60	CFS	.39	1.75	4.71	9.56	16.31	24.92	35.17	46.93
6.40	CFS	60	73	87	100	112	122	130	136
7.20	CFS	139	141	140	139	136	132	128	124
8.00	CFS	119	114	110	106	101	97	93	90
8.80	CFS	86.03	82.37	78.74	75.17	71.70	68.36	65.21	62.27
9.60	CFS	59.57	57.12	54.92	52.97	51.26	49.73	48.35	47.06
10.40	CFS	45.83	44.63	43.43	42.20	40.91	39.56	38.17	36.79
11.20	CFS	35.54	34.48	33.69	33.21	33.03	33.13	33.47	34.00
12.00	CFS	34.65	35.33	35.97	36.50	36.88	37.12	37.20	37.16
12.80	CFS	37.02	36.81	36.56	36.26	35.89	35.42	34.85	34.18
13.60	CFS	33.43	32.62	31.77	30.91	30.07	29.28	28.54	27.89
14.40	CFS	27.32	26.84	26.46	26.16	25.96	25.84	25.80	25.81
15.20	CFS	25.87	25.97	26.10	26.24	26.40	26.57	26.76	26.97
16.00	CFS	27.19	27.43	27.67	27.90	28.10	28.28	28.41	28.47
16.80	CFS	28.47	28.40	28.25	28.05	27.80	27.52	27.23	26.93
17.60	CFS	26.64	26.37	26.12	25.89	25.68	25.50	25.35	25.21
18.40	CFS	25.10	25.00	24.92	24.86	24.81	24.77	24.74	24.72
19.20	CFS	24.71	24.70	24.70	24.71	24.72	24.73	24.75	24.77
20.00	CFS	24.79	24.80	24.79	24.73	24.63	24.47	24.24	23.93
20.80	CFS	23.53	23.03	22.44	21.78	21.08	20.35	19.62	18.91
21.60	CFS	18.24	17.61	17.03	16.50	16.04	15.62	15.25	14.92
22.40	CFS	14.63	14.38	14.16	13.97	13.81	13.68	13.56	13.46
23.20	CFS	13.38	13.30	13.24	13.18	13.13	13.09	13.06	13.04
24.00	CFS	13.02	12.99	12.92	12.79	12.57	12.28	11.90	11.42
24.80	CFS	10.85	10.21	9.51	8.76	8.00	7.25	6.51	5.80
25.60	CFS	5.14	4.53	3.98	3.48	3.03	2.64	2.28	1.98
26.40	CFS	1.71	1.47	1.27	1.09	.93	.80	.68	.58
27.20	CFS	.49							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.30 WATERSHED INCHES; 770 CFS-HRS; 63.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	90	47	36	29	27	25	25	16

DURATION(HRS)	18	20	22
FLOW(CFS)	13	4	0

D

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
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OPERATION ADDHYD STRUCTURE 30

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.37	270.8	(NULL)
12.55	67.2	(NULL)
16.80	50.6	(NULL)
20.00	44.3	(NULL)
23.34	23.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 6.59 SQ.MI.

HRS								
5.50	CFS	.00	2.87	13.44	29.63	45.68	59.22	71.56	82.96

6.30 CFS	96	114	138	165	190	213	232	247
7.10 CFS	259	267	270	271	269	265	260	254
7.90 CFS	246	237	228	218	208	198	189	181
8.70 CFS	173	165	157	150	142	135	129	123
9.50 CFS	117	112	107	102	99	95	92	89
10.30 CFS	85.41	82.52	80.02	77.77	75.55	73.28	70.91	68.48
11.10 CFS	66.35	65.07	64.53	64.07	63.47	62.75	61.63	60.64
11.90 CFS	60.35	60.96	62.20	63.82	65.44	66.59	67.13	67.13
12.70 CFS	66.54	65.73	65.04	64.62	64.32	63.91	63.28	62.40
13.50 CFS	61.30	60.02	58.64	57.22	55.79	54.37	53.05	51.88
14.30 CFS	50.86	49.93	49.07	48.31	47.69	47.23	46.91	46.73
15.10 CFS	46.66	46.69	46.80	46.95	47.15	47.41	47.78	48.23
15.90 CFS	48.68	49.11	49.45	49.64	49.74	49.89	50.14	50.39
16.70 CFS	50.58	50.64	50.57	50.36	50.05	49.67	49.25	48.80
17.50 CFS	48.33	47.86	47.41	46.99	46.58	46.21	45.88	45.57
18.30 CFS	45.31	45.08	44.88	44.71	44.58	44.47	44.38	44.31
19.10 CFS	44.26	44.22	44.20	44.20	44.20	44.20	44.22	44.25
19.90 CFS	44.28	44.31	44.28	44.03	43.65	43.26	42.93	42.56
20.70 CFS	41.99	41.22	40.33	39.34	38.31	37.30	36.28	35.20
21.50 CFS	34.06	32.88	31.68	30.51	29.47	28.58	27.86	27.30
22.30 CFS	26.85	26.41	25.95	25.48	24.98	24.50	24.12	23.87
23.10 CFS	23.72	23.70	23.73	23.73	23.66	23.53	23.33	23.11
23.90 CFS	22.96	22.89	22.80	22.48	21.98	21.42	20.87	20.27
24.70 CFS	19.54	18.67	17.66	16.53	15.33	14.08	12.84	11.62
25.50 CFS	10.44	9.32	8.27	7.30	6.40	5.58	4.85	4.19
26.30 CFS	3.61	3.09	2.64	2.25	1.91	1.61	1.35	1.14
27.10 CFS	.95	.80	.66	.55	.45			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.34 WATERSHED INCHES; 1443 CFS-HRS; 119.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	173	85	65	54	49	46	44	30

DURATION(HRS)	18	20	22
FLOW(CFS)	23	8	0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 2 JOB NO. 1 PAGE 27

OPERATION ADDHYD STRUCTURE 29

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.61	411.5	(NULL)
12.77	106.7	(NULL)
16.97	81.0	(NULL)
20.10	71.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 10.91 SQ.MI.

HRS								
5.60 CFS	0	3	12	28	48	70	91	112
6.40 CFS	134	159	188	221	256	290	322	350
7.20 CFS	373	390	402	409	411	410	405	398
8.00 CFS	389	378	366	352	338	324	310	296
8.80 CFS	284	271	260	248	237	226	215	205
9.60 CFS	196	187	179	171	164	158	153	147
10.40 CFS	142	137	133	129	125	121	118	114
11.20 CFS	110	107	105	104	103	102	101	99
12.00 CFS	99	98	99	101	102	104	106	107
12.80 CFS	107	106	105	105	104	103	102	101
13.60 CFS	99.49	97.79	95.88	93.82	91.66	89.47	87.32	85.30
14.40 CFS	83.45	81.78	80.27	78.93	77.78	76.84	76.11	75.60
15.20 CFS	75.29	75.15	75.16	75.28	75.51	75.83	76.27	76.83
16.00 CFS	77.47	78.12	78.73	79.22	79.58	79.89	80.21	80.53
16.80 CFS	80.81	80.99	81.03	80.90	80.60	80.17	79.62	78.99
17.60 CFS	78.30	77.58	76.87	76.17	75.49	74.86	74.28	73.75
18.40 CFS	73.28	72.87	72.50	72.19	71.92	71.70	71.52	71.38
19.20 CFS	71.26	71.18	71.12	71.09	71.07	71.07	71.08	71.11
20.00 CFS	71.15	71.18	71.15	70.97	70.62	70.16	69.63	69.02
20.80 CFS	68.25	67.28	66.08	64.71	63.20	61.63	60.00	58.33
21.60 CFS	56.59	54.80	52.97	51.14	49.40	47.81	46.40	45.22
22.40 CFS	44.24	43.39	42.61	41.87	41.13	40.40	39.74	39.19
23.20 CFS	38.76	38.49	38.35	38.27	38.18	38.05	37.86	37.60
24.00 CFS	37.36	37.15	36.93	36.57	36.02	35.32	34.51	33.59
24.80 CFS	32.53	31.30	29.88	28.29	26.54	24.68	22.76	20.82
25.60 CFS	18.90	17.04	15.26	13.59	12.02	10.59	9.29	8.10
26.40 CFS	7.04	6.10	5.26	4.53	3.88	3.32	2.82	2.40
27.20 CFS	2.03	1.72	1.45	1.22	1.02	.85	.71	.59
28.00 CFS	.49							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.32 WATERSHED INCHES; 2282 CFS-HRS; 188.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	271	137	104	87	78	74	71	48

DURATION(HRS)	18	20	22	22
FLOW(CFS)	37	14	1	0

D

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 2 JOB NO. 1 PAGE 28

OPERATION ADDHYD STRUCTURE 19

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.84	422.1	(NULL)
12.93	111.0	(NULL)
17.15	85.3	(NULL)
19.96	75.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 11.55 SQ.MI.

HRS								
5.50 CFS	.00	4.06	17.91	33.37	46.86	61.51	77.06	89.80
6.30 CFS	104	122	142	164	188	215	245	276
7.10 CFS	307	335	360	381	398	410	418	422
7.90 CFS	421	418	411	401	389	377	363	349
8.70 CFS	335	321	308	295	282	270	258	247
9.50 CFS	236	225	215	205	197	188	180	173
10.30 CFS	166	159	154	148	143	139	134	130
11.10 CFS	127	124	122	120	118	115	113	110
11.90 CFS	108	106	105	105	106	107	108	110
12.70 CFS	110	111	111	111	111	110	109	108
13.50 CFS	108	106	105	104	102	100	98	96
14.30 CFS	94.34	92.37	90.45	88.66	87.01	85.51	84.18	83.04
15.10 CFS	82.11	81.38	80.85	80.51	80.33	80.35	80.61	81.00
15.90 CFS	81.42	81.91	82.37	82.66	82.95	83.31	83.69	84.03
16.70 CFS	84.35	84.65	84.93	85.15	85.27	85.27	85.14	84.86
17.50 CFS	84.45	83.93	83.34	82.69	82.01	81.32	80.64	79.99
18.30 CFS	79.37	78.79	78.26	77.79	77.37	77.00	76.68	76.41
19.10 CFS	76.18	76.00	75.85	75.73	75.64	75.58	75.54	75.53
19.90 CFS	75.52	75.53	75.45	75.12	74.76	74.45	74.12	73.66
20.70 CFS	73.00	72.24	71.45	70.55	69.54	68.50	67.30	65.93
21.50 CFS	64.42	62.77	60.94	59.04	57.16	55.30	53.56	52.02
22.30 CFS	50.63	49.34	48.18	47.11	46.03	45.02	44.13	43.32
23.10 CFS	42.64	42.16	41.78	41.47	41.22	41.00	40.69	40.38
23.90 CFS	40.12	39.87	39.51	38.90	38.28	37.75	37.19	36.55
24.70 CFS	35.80	34.94	33.96	32.84	31.57	30.13	28.54	26.81
25.50 CFS	24.98	23.10	21.19	19.30	17.46	15.69	14.02	12.45
26.30 CFS	11.00	9.68	8.47	7.38	6.41	5.54	4.78	4.11
27.10 CFS	3.52	3.01	2.56	2.17	1.84	1.56	1.31	1.10
27.90 CFS	.92	.77	.64	.53	.44			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.33 WATERSHED INCHES; 2426 CFS-HRS; 200.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	282	148	110	94	83	80	75	55

DURATION(HRS)	18	20	22	23
FLOW(CFS)	40	19	2	0

D

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 2 JOB NO. 1 PAGE 29

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION (.16) FOR SUBWATERSHED XSECTION 24. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .2%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION (.18) FOR SUBWATERSHED XSECTION 31. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.5%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE TIME OF CONCENTRATION (.08) FOR SUBWATERSHED XSECTION 30. THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

*** WARNING - XSECTION 32, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK (1.65) EXCEEDS ADJACENT COORDINATE (1.30) BY 27 %. ***

OPERATION ADDHYD STRUCTURE 57

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.42	443.8	(NULL)
13.35	122.1	(NULL)
17.71	95.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 13.61 SQ.MI.

HRS								
5.60 CFS	.32	4.02	11.67	24.21	40.12	59.10	78.58	96.13
6.40 CFS	110	120	130	138	148	160	174	191
7.20 CFS	210	232	257	283	310	337	362	386
8.00 CFS	406	422	434	441	444	442	438	430
8.80 CFS	420	408	396	382	368	354	341	327
9.60 CFS	314	301	289	277	265	254	243	233
10.40 CFS	222	212	203	194	186	179	172	166
11.20 CFS	160	157	153	151	149	146	144	140
12.00 CFS	137	133	130	127	125	124	123	122
12.80 CFS	122	122	122	122	122	122	122	122
13.60 CFS	122	121	120	120	119	118	116	115
14.40 CFS	114	112	111	109	107	106	104	102
15.20 CFS	100	99	98	96	95	94	94	94
16.00 CFS	93.41	93.48	93.57	93.63	93.70	93.77	93.84	93.91
16.80 CFS	94.03	94.19	94.39	94.61	94.84	95.08	95.31	95.51
17.60 CFS	95.64	95.70	95.66	95.50	95.23	94.85	94.37	93.82
18.40 CFS	93.22	92.59	91.94	91.30	90.68	90.09	89.54	89.03
19.20 CFS	88.57	88.17	87.81	87.50	87.24	87.02	86.84	86.70
20.00 CFS	86.59	86.50	86.27	85.91	85.48	85.00	84.45	83.78
20.80 CFS	83.04	82.27	81.48	80.65	79.85	79.09	78.33	77.55
21.60 CFS	76.71	75.70	74.49	73.10	71.55	69.85	68.11	66.39
22.40 CFS	64.67	63.00	61.38	59.78	58.19	56.66	55.21	53.84
23.20 CFS	52.64	51.62	50.75	50.01	49.39	48.81	48.24	47.70
24.00 CFS	47.20	46.71	46.08	45.32	44.50	43.65	42.74	41.80
24.80 CFS	40.89	40.02	39.18	38.33	37.45	36.51	35.50	34.38

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
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25.60 CFS	33.16	31.80	30.30	28.69	26.96	25.15	23.30	21.43
26.40 CFS	19.57	17.75	16.00	14.34	12.77	11.32	9.98	8.77
27.20 CFS	7.66	6.67	5.79	5.00	4.31	3.70	3.17	2.70
28.00 CFS	2.30	1.95	1.65	1.39	1.17	.98	.82	.68
28.80 CFS	.57	.47						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.31 WATERSHED INCHES; 2732 CFS-HRS; 225.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	310	172	123	112	95	93	86	68

DURATION(HRS)	18	20	22	23
FLOW(CFS)	47	27	4	0

*** WARNING - XSECTION 42, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1.88) EXCEEDS ADJACENT COORDINATE (.64) BY192 %. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 199. ***

OPERATION ADDHYD STRUCTURE 15

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
6.60	228.5	(NULL)
11.86	62.8	(NULL)
12.82	57.3	(NULL)
16.36	43.9	(NULL)
20.00	38.0	(NULL)
23.80	20.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 5.50 SQ.MI.

HRS								
5.50 CFS	0	1	5	15	37	73	115	157
6.30 CFS	192	215	226	229	226	222	217	211
7.10 CFS	206	202	198	194	190	186	182	178
7.90 CFS	175	172	170	167	164	159	154	147
8.70 CFS	140	134	128	123	118	114	109	105
9.50 CFS	102	98	95	92	89	87	84	82
10.30 CFS	79.69	76.89	73.71	70.40	67.23	64.29	61.62	59.22
11.10 CFS	57.16	55.55	54.72	55.13	56.78	59.05	61.19	62.58
11.90 CFS	62.67	61.43	59.46	57.48	55.97	55.28	55.44	56.11
12.70 CFS	56.83	57.26	57.06	56.17	54.86	53.45	52.10	50.84
13.50 CFS	49.71	48.70	47.77	46.90	46.09	45.31	44.58	43.90
14.30 CFS	43.31	42.88	42.59	42.41	42.26	42.13	42.01	41.91
15.10 CFS	41.81	41.74	41.68	41.65	41.64	41.67	41.75	41.92
15.90 CFS	42.22	42.65	43.14	43.58	43.87	43.88	43.62	43.20
16.70 CFS	42.75	42.33	41.96	41.64	41.37	41.12	40.89	40.67

17.50 CFS	40.46	40.26	40.05	39.85	39.65	39.46	39.28	39.11
18.30 CFS	38.95	38.80	38.67	38.55	38.44	38.35	38.26	38.20

0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 2 JOB NO. 1 PAGE 31

19.10 CFS	38.14	38.09	38.05	38.02	38.00	37.99	37.98	37.98
19.90 CFS	37.99	38.00	37.99	37.92	37.72	37.26	36.54	35.67
20.70 CFS	34.76	33.84	32.86	31.80	30.75	29.76	28.90	28.23
21.50 CFS	27.75	27.37	27.00	26.57	26.01	25.32	24.57	23.86
22.30 CFS	23.26	22.85	22.63	22.53	22.44	22.31	22.04	21.65
23.10 CFS	21.19	20.77	20.45	20.30	20.33	20.46	20.60	20.66
23.90 CFS	20.59	20.35	20.01	19.59	19.05	18.27	17.26	16.13
24.70 CFS	15.02	13.99	13.03	12.15	11.33	10.56	9.82	9.12
25.50 CFS	8.45	7.80	7.17	6.57	6.00	5.46	4.95	4.47
26.30 CFS	4.01	3.61	3.23	2.89	2.58	2.29	2.04	1.81
27.10 CFS	1.60	1.41	1.24	1.10	.96	.84	.74	.65
27.90 CFS	.57	.50						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.36 WATERSHED INCHES; 1270 CFS-HRS; 104.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	164	84	57	45	42	39	38	26

DURATION(HRS)	18	20	22	22
FLOW(CFS)	20	7	1	0

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.07) FOR SUBWATERSHED XSECTION 22.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.4%. ***

OPERATION ADDHYD STRUCTURE 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.46	644.4	(NULL)
16.88	147.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 20.59 SQ.MI.

HRS								
5.50 CFS	0	6	20	36	56	79	102	127
6.30 CFS	157	194	234	275	314	349	380	405
7.10 CFS	427	446	463	480	498	518	540	562
7.90 CFS	583	602	618	631	639	644	644	641
8.70 CFS	634	623	609	593	575	556	536	516
9.50 CFS	496	477	459	441	424	408	392	376
10.30 CFS	361	347	333	319	306	294	282	271
11.10 CFS	261	253	245	239	234	230	225	221
11.90 CFS	218	215	212	210	208	205	202	200
12.70 CFS	197	194	193	192	191	191	190	190
13.50 CFS	189	188	186	185	183	181	179	177
14.30 CFS	175	173	171	169	167	165	163	161
15.10 CFS	159	157	155	153	151	150	149	148
15.90 CFS	148	147	147	147	147	147	147	148
16.70 CFS	148	148	148	148	148	148	147	147
17.50 CFS	147	147	147	147	146	146	146	145

0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 2 JOB NO. 1 PAGE 32

18.30 CFS	144	144	143	142	141	141	140	139
19.10 CFS	138	138	137	137	136	136	136	135
19.90 CFS	135	135	135	134	133	133	132	131
20.70 CFS	130	129	128	126	124	123	121	119
21.50 CFS	117	116	114	112	110	108	106	104
22.30 CFS	101	99	97	95	92	90	88	86
23.10 CFS	84.03	82.48	81.06	79.75	78.55	77.39	76.26	75.26
23.90 CFS	74.39	73.64	72.83	71.86	70.80	69.60	68.26	66.82
24.70 CFS	65.26	63.54	61.71	59.78	57.82	55.84	53.85	51.86
25.50 CFS	49.87	47.84	45.77	43.63	41.41	39.10	36.72	34.28
26.30 CFS	31.81	29.34	26.90	24.51	22.21	20.01	17.95	16.02
27.10 CFS	14.23	12.60	11.10	9.75	8.53	7.44	6.47	5.62
27.90 CFS	4.86	4.19	3.61	3.10	2.66	2.27	1.94	1.65
28.70 CFS	1.40	1.19	1.01	.85	.71	.60	.49	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.33 WATERSHED INCHES; 4322 CFS-HRS; 357.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	496	306	202	173	148	144	133	104

DURATION(HRS)	18	20	22	24
FLOW(CFS)	74	41	6	0

OPERATION ADDHYD STRUCTURE 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.61	646.9	(NULL)
17.03	150.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 20.94 SQ.MI.

HRS								
5.50 CFS	0	2	12	31	54	76	99	120
6.30 CFS	139	163	195	231	269	307	342	374
7.10 CFS	401	424	443	461	478	496	515	536
7.90 CFS	558	579	599	616	629	639	645	647
8.70 CFS	645	640	631	619	604	587	569	550
9.50 CFS	530	510	491	472	454	437	420	404
10.30 CFS	388	372	357	342	328	315	302	290
11.10 CFS	279	269	261	254	248	243	237	231
11.90 CFS	226	222	219	216	214	212	210	208
12.70 CFS	205	201	198	196	195	194	193	193
13.50 CFS	192	192	191	189	188	186	184	182
14.30 CFS	180	179	177	175	173	171	169	166
15.10 CFS	164	162	160	158	157	155	154	153
15.90 CFS	152	151	151	150	150	150	150	150
16.70 CFS	150	150	150	150	150	150	150	150
17.50 CFS	150	150	149	149	149	149	149	148
18.30 CFS	148	147	146	146	145	144	143	143
19.10 CFS	142	141	140	140	139	139	138	138

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19.90 CFS	138	137	137	137	136	135	135	134
20.70 CFS	133	132	131	129	128	126	125	123
21.50 CFS	121	120	118	116	114	112	110	108
22.30 CFS	106	104	102	99	97	95	92	90
23.10 CFS	87.90	86.09	84.54	83.14	81.82	80.58	79.32	78.06
23.90 CFS	76.92	75.92	75.03	74.03	72.87	71.64	70.36	69.02
24.70 CFS	67.59	66.06	64.40	62.62	60.75	58.81	56.84	54.87
25.50 CFS	52.88	50.89	48.88	46.82	44.71	42.53	40.26	37.92
26.30 CFS	35.51	33.06	30.60	28.15	25.75	23.41	21.16	19.03
27.10 CFS	17.04	15.18	13.47	11.90	10.48	9.19	8.03	7.00
27.90 CFS	6.09	5.27	4.56	3.93	3.38	2.90	2.49	2.12
28.70 CFS	1.81	1.54	1.31	1.11	.94	.79	.66	.55
29.50 CFS	.46							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.33 WATERSHED INCHES; 4397 CFS-HRS; 363.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	496	307	208	177	150	147	136	108

DURATION(HRS)	18	20	22	24
FLOW(CFS)	76	45	8	0

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.14) FOR SUBWATERSHED XSECTION 5.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.9%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.18) FOR SUBWATERSHED XSECTION 10.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.8%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.14) FOR SUBWATERSHED XSECTION 12.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.9%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.17) FOR SUBWATERSHED XSECTION 9.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -2.8%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.07) FOR SUBWATERSHED XSECTION 8.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.6%. ***

*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.15) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.2%. ***

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*** WARNING - MAIN TIME INCREMENT (.100) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.03) FOR SUBWATERSHED XSECTION 3.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -9.0%. ***

OPERATION ADDHYD STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	685.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 1, STORM = 2
MAIN TIME INCREMENT = .100 hr, DRAINAGE AREA = 24.98 SQ.MI.

HRS								
5.50	CFS	.00	1.12	4.79	12.76	23.30	37.97	59.66	87.07
6.30	CFS	118	151	182	207	226	239	249	259
7.10	CFS	270	285	303	324	349	375	402	428
7.90	CFS	453	477	499	520	540	558	576	593
8.70	CFS	609	625	639	652	663	672	679	684
9.50	CFS	685	683	678	671	660	647	632	616
10.30	CFS	598	579	559	539	519	499	480	461
11.10	CFS	443	426	411	397	384	372	361	351
11.90	CFS	340	330	320	310	300	291	283	277
12.70	CFS	272	267	263	259	255	251	247	242
13.50	CFS	238	235	231	228	226	224	222	221
14.30	CFS	219	218	217	216	215	214	213	211
15.10	CFS	210	208	206	205	203	201	199	197
15.90	CFS	195	194	192	191	189	187	186	184
16.70	CFS	183	181	180	178	177	177	176	176
17.50	CFS	176	175	175	175	175	175	175	175
18.30	CFS	175	175	175	174	174	174	174	173
19.10	CFS	173	172	172	171	171	170	169	169
19.90	CFS	168	167	167	166	165	164	163	162
20.70	CFS	161	159	158	156	155	153	152	151
21.50	CFS	149	148	147	146	144	143	141	139
22.30	CFS	137	136	134	132	130	128	126	124
23.10	CFS	122	120	118	115	113	111	109	107
23.90	CFS	105	103	101	99	96	94	92	90
24.70	CFS	87.33	85.06	82.91	80.90	79.02	77.24	75.53	73.85
25.50	CFS	72.16	70.43	68.64	66.79	64.88	62.91	60.90	58.85
26.30	CFS	56.79	54.69	52.58	50.43	48.25	46.02	43.75	41.43
27.10	CFS	39.07	36.67	34.26	31.84	29.45	27.09	24.80	22.59
27.90	CFS	20.48	18.47	16.59	14.84	13.21	11.72	10.35	9.12
28.70	CFS	8.00	7.00	6.10	5.31	4.61	3.98	3.44	2.96
29.50	CFS	2.54	2.18	1.86	1.59	1.35	1.15	.97	.82
30.30	CFS	.69	.57	.47					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.32 WATERSHED INCHES; 5192 CFS-HRS; 429.1 ACRE-FEET.

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TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 PASS 2 JOB NO. 1 PAGE 35

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	461	259	201	175	151	96	39	2

DURATION(HRS)	25
FLOW(CFS)	0

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2
0

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 SUMMARY, JOB NO. 1 PAGE 36

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)

RAINFALL OF 4.50 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 1, ARC 2
MAIN TIME INCREMENT .100 HOURS

ALTERNATE 1 STORM 1

XSECTION	80	RUNOFF	.08	.74	---	6.07	22	275.0
XSECTION	79	RUNOFF	.27	.74	---	6.57	43	159.3
STRUCTURE	38	ADDHYD	.35	.74	---	6.57	57	162.9
XSECTION	78	RUNOFF	.29	.74	---	6.50	49	169.0
XSECTION	51	RUNOFF	.14	.74	---	6.23	31	221.4
STRUCTURE	37	ADDHYD	.43	.74	---	6.51	69	160.5
XSECTION	50	RUNOFF	.51	1.02	---	7.02	96	188.2
XSECTION	49	RUNOFF	.27	.79	---	6.28	61	225.9
XSECTION	48	RUNOFF	.56	1.02	---	6.43	159	283.9
XSECTION	47	RUNOFF	.23	1.02	---	6.37	69	300.0
XSECTION	81	RUNOFF	.35	1.02	---	6.06	157	448.6
XSECTION	96	RUNOFF	.14	1.02	---	6.35	43	307.1
STRUCTURE	54	ADDHYD	.49	1.02	---	6.07	161	328.6
XSECTION	76	RUNOFF	.19	1.02	---	6.49	51	268.4
STRUCTURE	39	ADDHYD	.68	1.02	---	6.33	177	260.3
XSECTION	53	RUNOFF	.18	1.02	---	6.45	50	277.8
XSECTION	77	RUNOFF	.30	1.02	---	6.58	75	250.0
STRUCTURE	36	ADDHYD	1.16	1.02	---	6.59	269	231.9
XSECTION	52	RUNOFF	.45	1.02	---	6.77	98	217.8
STRUCTURE	34	ADDHYD	1.61	1.02	---	6.73	366	227.3
XSECTION	46	RUNOFF	.04	1.02	---	6.11	16	400.0
STRUCTURE	29	ADDHYD	4.00	.95	---	6.92	750	187.5
XSECTION	145	REACH	4.00	.95	---	7.07	743	185.8
XSECTION	45	RUNOFF	.32	1.02	---	6.29	104	325.0
STRUCTURE	29	ADDHYD	4.32	.95	---	7.04	783	181.3
XSECTION	93	RUNOFF	.24	1.14	---	6.51	74	308.3
XSECTION	94	RUNOFF	.43	1.14	---	6.00	242	562.8
XSECTION	98	RUNOFF	.14	1.20	---	6.07	78	557.1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 97	RUNOFF	.07	1.02	---	6.08	30	428.6
STRUCTURE 55	ADDHYD	.88	1.14	---	6.08	311	353.4
XSECTION 83	RUNOFF	.35	1.02	---	6.80	75	214.3
XSECTION 95	RUNOFF	.11	1.02	---	6.70	25	227.3
XSECTION 82	RUNOFF	.24	1.02	---	6.01	114	475.0
STRUCTURE 53	ADDHYD	1.58	1.09	---	6.23	371	234.8
XSECTION 75	RUNOFF	.17	1.02	---	6.35	52	305.9
STRUCTURE 41	ADDHYD	1.75	1.08	---	6.44	405	231.4
XSECTION 73	RUNOFF	.15	1.02	---	6.73	34	226.7
STRUCTURE 40	ADDHYD	1.90	1.07	---	6.49	434	228.4
XSECTION 99	RUNOFF	.51	1.02	---	6.54	132	258.8
XSECTION 92	RUNOFF	.38	1.02	---	5.99	183	481.6
STRUCTURE 56	ADDHYD	.89	1.02	---	6.04	200	224.7
XSECTION 84	RUNOFF	.19	1.02	---	6.42	54	284.2
STRUCTURE 52	ADDHYD	1.08	1.02	---	6.27	219	202.8
XSECTION 91	RUNOFF	.37	1.02	---	6.54	96	259.5
STRUCTURE 52	ADDHYD	1.45	1.02	---	6.76	270	186.2
XSECTION 85	RUNOFF	.27	1.02	---	6.52	71	263.0
STRUCTURE 52	ADDHYD	1.72	1.02	---	6.66	335	194.8
XSECTION 74	RUNOFF	.19	1.02	---	6.32	60	315.8
STRUCTURE 42	ADDHYD	1.91	1.02	---	6.71	367	192.1
XSECTION 86	RUNOFF	.33	1.02	---	6.78	72	218.2
XSECTION 72	RUNOFF	.44	1.02	---	6.78	95	215.9
STRUCTURE 43	ADDHYD	.77	1.02	---	6.89	161	209.1
STRUCTURE 40	ADDHYD	4.58	1.04	---	6.73	927	202.4

XSECTION	71	RUNOFF	.72	1.02	---	6.76	158	219.4
XSECTION	54	RUNOFF	.24	1.14	---	6.38	84	350.0
STRUCTURE	35	ADDHYD	5.54	1.04	---	6.81	1130	204.0
XSECTION	56	RUNOFF	.06	1.14	---	6.52	18	300.0
XSECTION	43	RUNOFF	.40	.85	---	6.54	79	197.5

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 44	RUNOFF	.59	1.02	---	6.08	254	430.5
STRUCTURE 30	ADDHYD	6.59	1.03	---	6.90	1262	191.5
STRUCTURE 29	ADDHYD	10.91	1.00	---	7.05	2037	186.7
XSECTION 29	RUNOFF	.17	1.14	---	6.25	68	400.0
XSECTION 27	RUNOFF	.15	1.02	---	5.99	72	480.0
XSECTION 28	RUNOFF	.32	1.02	---	6.05	145	453.1
STRUCTURE 19	ADDHYD	11.55	1.00	---	7.17	2085	180.5
XSECTION 26	RUNOFF	.47	.50	---	6.42	46	97.9
STRUCTURE 18	ADDHYD	12.02	.98	---	7.27	2108	175.4
XSECTION 25	RUNOFF	.26	1.02	---	6.00	125	480.8
STRUCTURE 17	ADDHYD	12.28	.98	---	7.27	2122	172.8
XSECTION 24	RUNOFF	.28	.79	---	5.95	98	350.0
XSECTION 41	RUNOFF	.16	.85	---	6.27	41	256.3
XSECTION 31	RUNOFF	.24	1.08	---	5.95	134	558.3
STRUCTURE 20	ADDHYD	.40	.99	---	5.97	143	357.5
XSECTION 30	RUNOFF	.10	1.12	---	5.85	59	590.0
STRUCTURE 16	ADDHYD	.50	1.01	---	5.96	207	414.0
XSECTION 32	RUNOFF	.15	.59	---	6.40	19	126.7
STRUCTURE 12	ADDHYD	13.21	.98	---	7.25	2190	165.8
XSECTION 18	RUNOFF	.40	.85	---	6.30	98	245.0
STRUCTURE 57	ADDHYD	13.61	.97	---	7.36	2214	162.7
XSECTION 87	RUNOFF	.13	1.02	---	6.68	30	230.8
XSECTION 70	RUNOFF	.43	1.02	---	6.90	87	202.3
STRUCTURE 47	ADDHYD	.56	1.02	---	6.99	108	192.9
XSECTION 58	RUNOFF	.10	1.02	---	6.27	33	330.0
STRUCTURE 28	ADDHYD	.66	1.02	---	7.23	111	168.2
XSECTION 42	RUNOFF	.10	.69	---	6.32	17	170.0
STRUCTURE 27	ADDHYD	.76	.98	---	7.37	116	152.6
XSECTION 40	RUNOFF	.16	1.02	---	6.34	50	312.5
STRUCTURE 26	ADDHYD	.92	.98	---	7.43	129	140.2

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 90	RUNOFF	.08	1.02	---	6.19	29	362.5

XSECTION	88	RUNOFF	.28	1.02	---	6.00	135	482.1
STRUCTURE	50	ADDHYD	.36	1.02	---	6.01	138	383.3
XSECTION	89	RUNOFF	.09	1.02	---	6.09	38	422.2
XSECTION	67	RUNOFF	.19	1.02	---	6.31	60	315.8
XSECTION	68	RUNOFF	.11	1.02	---	6.30	35	318.2
STRUCTURE	49	ADDHYD	.75	1.02	---	6.23	246	328.0
XSECTION	66	RUNOFF	.09	1.02	---	6.35	28	311.1
XSECTION	69	RUNOFF	.22	1.02	---	6.51	58	263.6
STRUCTURE	48	ADDHYD	1.06	1.02	---	6.37	324	305.7
XSECTION	59	REACH	1.06	1.02	---	6.56	302	284.9
STRUCTURE	44	ADDHYD	1.36	.96	---	6.54	355	261.0
XSECTION	60	REACH	1.36	.96	---	6.54	355	261.0
XSECTION	60	RUNOFF	.08	1.14	---	6.13	38	475.0
STRUCTURE	25	ADDHYD	1.44	.97	---	6.53	373	259.0
XSECTION	39	RUNOFF	.15	1.02	---	6.22	53	353.3
STRUCTURE	21	ADDHYD	2.51	.98	---	6.71	491	195.6
XSECTION	63	RUNOFF	.07	1.02	---	6.24	24	342.9
XSECTION	62	REACH	.07	1.02	---	6.51	20	285.7
XSECTION	64	RUNOFF	.15	1.02	---	6.26	50	333.3
XSECTION	62	REACH	.15	1.02	---	6.52	44	293.3
XSECTION	65	RUNOFF	.08	1.02	---	6.19	30	375.0
XSECTION	62	RUNOFF	.26	1.02	---	6.35	80	307.7
STRUCTURE	45	ADDHYD	.48	1.02	---	6.42	140	291.7
XSECTION	61	RUNOFF	.37	1.08	---	6.30	128	345.9
STRUCTURE	24	ADDHYD	.93	1.04	---	6.49	263	282.8
STRUCTURE	21	ADDHYD	3.44	.99	---	6.71	739	214.8
XSECTION	33	RUNOFF	.50	.96	---	6.70	106	212.0
XSECTION	34	RUNOFF	.23	1.14	---	6.17	103	447.8
STRUCTURE	15	ADDHYD	4.17	1.00	---	7.01	762	182.7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID		STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	1	STORM 1						
XSECTION	37	RUNOFF	.18	1.97	---	6.27	148	822.2
XSECTION	38	RUNOFF	.89	1.14	---	6.05	478	537.1
STRUCTURE	23	ADDHYD	1.07	1.28	---	6.08	596	557.0
XSECTION	35	RUNOFF	.26	1.14	---	6.34	94	361.5
STRUCTURE	22	ADDHYD	1.33	1.25	---	6.28	615	462.4
STRUCTURE	15	ADDHYD	5.50	1.06	---	6.64	1105	200.9
XSECTION	21	RUNOFF	.10	1.14	---	6.13	47	470.0
XSECTION	22	RUNOFF	.13	1.12	---	5.85	77	592.3
XSECTION	23	RUNOFF	.20	.90	---	6.38	50	250.0
STRUCTURE	13	ADDHYD	5.93	1.06	---	6.67	1179	198.8
XSECTION	19	RUNOFF	.29	1.02	---	6.12	118	406.9
STRUCTURE	11	ADDHYD	6.22	1.06	---	6.89	1191	191.5
XSECTION	16	RUNOFF	.38	1.02	---	6.36	115	302.6
XSECTION	17	RUNOFF	.13	1.02	---	5.96	65	500.0
STRUCTURE	10	ADDHYD	.51	1.02	---	6.56	119	233.3
XSECTION	15	RUNOFF	.25	1.02	---	5.96	126	504.0
STRUCTURE	9	ADDHYD	20.59	1.00	---	7.35	3372	163.8
XSECTION	14	RUNOFF	.35	1.02	---	6.08	151	431.4
STRUCTURE	7	ADDHYD	20.94	1.00	---	7.45	3390	161.9
XSECTION	5	RUNOFF	.18	1.02	---	5.95	90	500.0
XSECTION	36	RUNOFF	.39	1.14	---	6.41	132	338.5
XSECTION	20	RUNOFF	.30	.59	---	6.01	59	196.7
STRUCTURE	14	ADDHYD	.69	.90	---	6.64	133	192.8
XSECTION	10	RUNOFF	.13	1.26	---	5.95	92	707.7
XSECTION	11	RUNOFF	.10	1.47	---	5.96	86	860.0
XSECTION	12	RUNOFF	.22	1.02	---	5.95	110	500.0

STRUCTURE	8	ADDHYD	1.14	1.01	---	6.01	331	290.4
XSECTION	6	RUNOFF	.29	.55	---	5.97	52	179.3
XSECTION	13	RUNOFF	.13	1.02	---	5.96	66	507.7
STRUCTURE	5	ADDHYD	22.68	.99	---	7.60	3516	155.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 1							
XSECTION 9	RUNOFF	.14	1.60	---	5.95	140	1000.0
XSECTION 8	RUNOFF	.19	1.06	---	5.85	104	547.4
XSECTION 7	RUNOFF	.38	1.02	---	5.95	199	523.7
STRUCTURE 6	ADDHYD	.71	1.14	---	5.95	443	623.9
XSECTION 4	RUNOFF	.59	1.02	---	6.02	277	469.5
STRUCTURE 4	ADDHYD	23.98	1.00	---	7.72	3580	149.3
XSECTION 3	RUNOFF	.16	.68	---	5.75	44	275.0
STRUCTURE 3	ADDHYD	24.14	1.00	---	7.82	3586	148.6
XSECTION 2	RUNOFF	.36	.64	---	6.12	71	197.2
STRUCTURE 2	ADDHYD	24.50	.99	---	7.82	3599	146.9
XSECTION 1	RUNOFF	.48	.96	---	6.17	167	347.9
STRUCTURE 1	ADDHYD	24.98	.99	---	7.96	3613	144.6
RAINFALL OF 3.00 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 1 STORM 2							
XSECTION 80	RUNOFF	.08	.19	---	6.12T	2T	25.0
XSECTION 79	RUNOFF	.27	.19	---	6.83	6	22.2
STRUCTURE 38	ADDHYD	.35	.19	---	6.84	7	20.0
XSECTION 78	RUNOFF	.29	.19	---	6.75	6	20.7
XSECTION 51	RUNOFF	.14	.19	---	6.37T	4T	28.6
STRUCTURE 37	ADDHYD	.43	.19	---	6.86	9	20.9
XSECTION 50	RUNOFF	.51	.33	---	7.16	23	45.1
XSECTION 49	RUNOFF	.27	.22	---	6.39	8	29.6
XSECTION 48	RUNOFF	.56	.33	---	6.49	34	60.7
XSECTION 47	RUNOFF	.23	.33	---	6.42	15	65.2
XSECTION 81	RUNOFF	.35	.33	---	6.07	32	91.4
XSECTION 96	RUNOFF	.14	.33	---	6.40	9	64.3
STRUCTURE 54	ADDHYD	.49	.33	---	6.08	33	67.3
XSECTION 76	RUNOFF	.19	.33	---	6.55	11	57.9

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
STRUCTURE 39	ADDHYD	.68	.33	---	6.51	35	51.5
XSECTION 53	RUNOFF	.18	.33	---	6.51	11	61.1
XSECTION 77	RUNOFF	.30	.33	---	6.66	17	56.7

STRUCTURE 36	ADDHYD	1.16	.33	---	6.87	55	47.4
XSECTION 52	RUNOFF	.45	.33	---	6.87	22	48.9
STRUCTURE 34	ADDHYD	1.61	.33	---	7.01	76	47.2
XSECTION 46	RUNOFF	.04	.33	---	6.13T	3T	75.0
STRUCTURE 29	ADDHYD	4.00	.30	---	7.33	141	35.3
XSECTION 145	REACH	4.00	.30	---	7.60	138	34.5
XSECTION 45	RUNOFF	.32	.33	---	6.33	22	68.8
STRUCTURE 29	ADDHYD	4.32	.30	---	7.56	145	33.6
XSECTION 93	RUNOFF	.24	.40	---	6.56	19	79.2
XSECTION 94	RUNOFF	.43	.40	---	6.01	57	132.6
XSECTION 98	RUNOFF	.14	.43	---	6.08	20	142.9
XSECTION 97	RUNOFF	.07	.33	---	6.09	6	85.7
STRUCTURE 55	ADDHYD	.88	.40	---	6.09	72	81.8
XSECTION 83	RUNOFF	.35	.33	---	6.91	17	48.6
XSECTION 95	RUNOFF	.11	.33	---	6.80	6	54.5
XSECTION 82	RUNOFF	.24	.33	---	6.02	23	95.8
STRUCTURE 53	ADDHYD	1.58	.37	---	6.64	84	53.2
XSECTION 75	RUNOFF	.17	.33	---	6.40	11	64.7
STRUCTURE 41	ADDHYD	1.75	.37	---	6.81	91	52.0
XSECTION 73	RUNOFF	.15	.33	---	6.83	8	53.3
STRUCTURE 40	ADDHYD	1.90	.36	---	6.92	98	51.6
XSECTION 99	RUNOFF	.51	.33	---	6.61	29	56.9
XSECTION 92	RUNOFF	.38	.33	---	6.00	37	97.4
STRUCTURE 56	ADDHYD	.89	.33	---	6.05	40	44.9
XSECTION 84	RUNOFF	.19	.33	---	6.48	12	63.2
STRUCTURE 52	ADDHYD	1.08	.33	---	6.78	44	40.7
XSECTION 91	RUNOFF	.37	.33	---	6.61	21	56.8

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
STRUCTURE 52	ADDHYD	1.45	.33	---	7.02	60	41.4
XSECTION 85	RUNOFF	.27	.33	---	6.59	16	59.3
STRUCTURE 52	ADDHYD	1.72	.33	---	6.84	73	42.4
XSECTION 74	RUNOFF	.19	.33	---	6.36	13	68.4
STRUCTURE 42	ADDHYD	1.91	.33	---	7.03	79	41.4
XSECTION 86	RUNOFF	.33	.33	---	6.88	16	48.5
XSECTION 72	RUNOFF	.44	.33	---	6.89	22	50.0
STRUCTURE 43	ADDHYD	.77	.33	---	7.02	36	46.8
STRUCTURE 40	ADDHYD	4.58	.35	---	7.06	211	46.1
XSECTION 71	RUNOFF	.72	.33	---	6.86	36	50.0
XSECTION 54	RUNOFF	.24	.40	---	6.41	21	87.5
STRUCTURE 35	ADDHYD	5.54	.35	---	7.21	249	44.9
XSECTION 56	RUNOFF	.06	.40	---	6.57T	5T	83.3
XSECTION 43	RUNOFF	.40	.25	---	6.68	13	32.5
XSECTION 44	RUNOFF	.59	.33	---	6.10	52	88.1
STRUCTURE 30	ADDHYD	6.59	.34	---	7.37	271	41.1
STRUCTURE 29	ADDHYD	10.91	.32	---	7.61	411	37.7
XSECTION 29	RUNOFF	.17	.40	---	6.28	16	94.1
XSECTION 27	RUNOFF	.15	.33	---	6.00	15	100.0
XSECTION 28	RUNOFF	.32	.33	---	6.06	30	93.8
STRUCTURE 19	ADDHYD	11.55	.33	---	7.84	422	36.5
XSECTION 26	RUNOFF	.47	.09	---	8.21T	3T	6.4
STRUCTURE 18	ADDHYD	12.02	.32	---	8.02	423	35.2
XSECTION 25	RUNOFF	.26	.33	---	6.00	25	96.2
STRUCTURE 17	ADDHYD	12.28	.32	---	8.12	427	34.8
XSECTION 24	RUNOFF	.28	.22	---	5.95	12	42.9
XSECTION 41	RUNOFF	.16	.25	---	6.34	6	37.5
XSECTION 31	RUNOFF	.24	.36	---	5.95	29	120.8

STRUCTURE	20	ADDHYD	.40	.32	---	5.96	30	75.0
XSECTION	30	RUNOFF	.10	.39	---	5.85	14	140.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
STRUCTURE 16	ADDHYD	.50	.33	---	5.98	42	84.0
XSECTION 32	RUNOFF	.15	.13	---	7.00T	2T	13.3
STRUCTURE 12	ADDHYD	13.21	.31	---	8.24	441	33.4
XSECTION 18	RUNOFF	.40	.25	---	6.38	16	40.0
STRUCTURE 57	ADDHYD	13.61	.31	---	8.42	444	32.6
XSECTION 87	RUNOFF	.13	.33	---	6.77	7	53.8
XSECTION 70	RUNOFF	.43	.33	---	7.03	20	46.5
STRUCTURE 47	ADDHYD	.56	.33	---	7.11	25	44.6
XSECTION 58	RUNOFF	.10	.33	---	6.31	7	70.0
STRUCTURE 28	ADDHYD	.66	.33	---	7.45	25	37.9
XSECTION 42	RUNOFF	.10	.17	---	6.70T	2T	20.0
STRUCTURE 27	ADDHYD	.76	.31	---	7.69	26	34.2
XSECTION 40	RUNOFF	.16	.33	---	6.38	11	68.8
STRUCTURE 26	ADDHYD	.92	.32	---	7.86	29	31.5
XSECTION 90	RUNOFF	.08	.33	---	6.22	6	75.0
XSECTION 88	RUNOFF	.28	.33	---	6.00	27	96.4
STRUCTURE 50	ADDHYD	.36	.33	---	6.03	29	80.6
XSECTION 89	RUNOFF	.09	.33	---	6.11	8	88.9
XSECTION 67	RUNOFF	.19	.33	---	6.34	13	68.4
XSECTION 68	RUNOFF	.11	.33	---	6.34	7	63.6
STRUCTURE 49	ADDHYD	.75	.33	---	6.35	49	65.3
XSECTION 66	RUNOFF	.09	.33	---	6.40	6	66.7
XSECTION 69	RUNOFF	.22	.33	---	6.58	13	59.1
STRUCTURE 48	ADDHYD	1.06	.33	---	6.52	66	62.3
XSECTION 59	REACH	1.06	.33	---	6.85	58	54.7
STRUCTURE 44	ADDHYD	1.36	.30	---	6.84	65	47.8
XSECTION 60	REACH	1.36	.30	---	6.97	64	47.1
XSECTION 60	RUNOFF	.08	.40	---	6.15	9	112.5
STRUCTURE 25	ADDHYD	1.44	.31	---	6.95	68	47.2
XSECTION 39	RUNOFF	.15	.33	---	6.25	11	73.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 1 STORM 2							
STRUCTURE 21	ADDHYD	2.51	.31	---	7.36	93	37.1
XSECTION 63	RUNOFF	.07	.33	---	6.27	5	71.4
XSECTION 62	REACH	.07	.33	---	6.67T	4T	57.1
XSECTION 64	RUNOFF	.15	.33	---	6.30	11	73.3
XSECTION 62	REACH	.15	.33	---	6.66	9	60.0

XSECTION	65	RUNOFF	.08	.33	---	6.21	6	75.0
XSECTION	62	RUNOFF	.26	.33	---	6.40	17	65.4
STRUCTURE	45	ADDHYD	.48	.33	---	6.51	29	60.4
XSECTION	61	RUNOFF	.37	.36	---	6.34	29	78.4
STRUCTURE	24	ADDHYD	.93	.35	---	6.58	55	59.1
STRUCTURE	21	ADDHYD	3.44	.32	---	7.21	138	40.1
XSECTION	33	RUNOFF	.50	.30	---	6.81	22	44.0
XSECTION	34	RUNOFF	.23	.40	---	6.19	25	108.7
STRUCTURE	15	ADDHYD	4.17	.32	---	7.80	135	32.4
XSECTION	37	RUNOFF	.18	.91	---	6.28	59	327.8
XSECTION	38	RUNOFF	.89	.40	---	6.06	114	128.1
STRUCTURE	23	ADDHYD	1.07	.48	---	6.11	162	151.4
XSECTION	35	RUNOFF	.26	.40	---	6.38	23	88.5
STRUCTURE	22	ADDHYD	1.33	.47	---	6.35	162	121.8
STRUCTURE	15	ADDHYD	5.50	.36	---	6.60	229	41.6
XSECTION	21	RUNOFF	.10	.40	---	6.15	11	110.0
XSECTION	22	RUNOFF	.13	.39	---	5.85	18	138.5
XSECTION	23	RUNOFF	.20	.27	---	6.45	9	45.0
STRUCTURE	13	ADDHYD	5.93	.36	---	6.74	246	41.5
XSECTION	19	RUNOFF	.29	.33	---	6.14	24	82.8
STRUCTURE	11	ADDHYD	6.22	.36	---	7.10	239	38.4
XSECTION	16	RUNOFF	.38	.33	---	6.41	25	65.8
XSECTION	17	RUNOFF	.13	.33	---	5.97	13	100.0
STRUCTURE	10	ADDHYD	.51	.33	---	6.63	26	51.0
XSECTION	15	RUNOFF	.25	.33	---	5.96	26	104.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 1 STORM 2							
STRUCTURE 9	ADDHYD	20.59	.33	---	8.46	644	31.3
XSECTION 14	RUNOFF	.35	.33	---	6.10	31	88.6
STRUCTURE 7	ADDHYD	20.94	.33	---	8.61	647	30.9
XSECTION 5	RUNOFF	.18	.33	---	5.95	18	100.0
XSECTION 36	RUNOFF	.39	.40	---	6.44	33	84.6
XSECTION 20	RUNOFF	.30	.13	---	6.51T	4T	13.3
STRUCTURE 14	ADDHYD	.69	.28	---	6.87	29	42.0
XSECTION 10	RUNOFF	.13	.47	---	5.95	25	192.3
XSECTION 11	RUNOFF	.10	.59	---	5.96	27	270.0
XSECTION 12	RUNOFF	.22	.33	---	5.95	22	100.0
STRUCTURE 8	ADDHYD	1.14	.34	---	6.04	69	60.5
XSECTION 6	RUNOFF	.29	.11	---	6.49T	3T	10.3
XSECTION 13	RUNOFF	.13	.33	---	5.96	13	100.0
STRUCTURE 5	ADDHYD	22.68	.32	---	8.82	670	29.5
XSECTION 9	RUNOFF	.14	.67	---	5.95	47	335.7
XSECTION 8	RUNOFF	.19	.36	---	5.85	23	121.1
XSECTION 7	RUNOFF	.38	.33	---	5.95	40	105.3
STRUCTURE 6	ADDHYD	.71	.41	---	5.96	108	152.1
XSECTION 4	RUNOFF	.59	.33	---	6.03	56	94.9
STRUCTURE 4	ADDHYD	23.98	.33	---	8.98	683	28.5
XSECTION 3	RUNOFF	.16	.17	---	5.70F	4F	25.0
STRUCTURE 3	ADDHYD	24.14	.33	---	9.14	683	28.3
XSECTION 2	RUNOFF	.36	.15	---	6.58	6	16.7
STRUCTURE 2	ADDHYD	24.50	.32	---	9.29	684	27.9
XSECTION 1	RUNOFF	.48	.30	---	6.20	32	66.7
STRUCTURE 1	ADDHYD	24.98	.32	---	9.49	685	27.4

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 1 STORM 1											
79	5597		22	6.1	14	6.6	1.70	1.25	.231	.636	.20
150	6574		57	6.6	46	7.0	1.10	1.40	.092	.816	.23
51	1531		49	6.5	48	6.6	1.00	1.40	.015	.975	.67?
50	3000		69	6.5	66	6.7	1.10	1.40	.028	.954	.46
152	2682		61	6.3	56	6.5	1.00	1.40	.041	.916	.47
47	4678		246	6.8	235	7.1	.20	1.70	.020	.954	.39
147	6040		158	6.4	137	6.7	1.10	1.40	.076	.866	.32
81	6389		42	6.4	31	6.9	1.40	1.30	.178	.733	.20
76	5702		159	6.1	130	6.3	1.90	1.30	.084	.818	.36
53	3453		177	6.3	165	6.5	1.10	1.40	.030	.935	.51
153	3379		75	6.6	67	6.9	.70	1.40	.060	.899	.33
52	1584		269	6.6	267	6.7	.30	1.60	.006	.994	.82?
46	3770		365	6.7	351	6.9	.30	1.60	.019	.960	.50
145	3600		750	6.9	742	7.1	.20	1.70	.006	.989	.67?
194	5914		77	6.1	58	6.4	1.80	1.30	.185	.747	.29
94	5914		30	6.1	20	6.5	1.70	1.30	.234	.673	.23
83	6124		310	6.1	260	6.3	1.90	1.30	.072	.838	.38
82	5808		25	6.7	20	7.2	1.40	1.30	.128	.807	.20
75	4013		370	6.2	354	6.5	1.90	1.30	.025	.959	.54
73	1610		403	6.4	403	6.4	.80	1.50	.004	1.000	1.00?
92	5650		131	6.5	120	6.8	2.10	1.30	.059	.914	.37
84	5491		199	6.0	171	6.2	2.00	1.30	.043	.860	.40
85	6178		95	6.5	79	6.9	1.40	1.30	.109	.831	.25
74	4066		335	6.7	331	6.8	1.90	1.30	.022	.989	.53
73	1610		367	6.7	367	6.7	.80	1.50	.003	1.000	1.00?
72	3500		72	6.8	69	7.0	1.70	1.30	.037	.957	.42
173	1864		161	6.9	160	7.0	2.00	1.30	.010	.996	.82?

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 1											
54	4974		927	6.7	921	6.9	.50	1.60	.008	.994	.65
44	5016		1130	6.8	1122	7.0	.50	1.60	.007	.993	.68?
144	4419		18	6.5	16	6.8	.90	1.60	.066	.873	.31
146	1200		79	6.5	79	6.6	1.90	1.30	.009	.997	.93?
45	2893		1262	6.9	1252	7.1	.10	1.70	.006	.992	.68?
28	3168		2032	7.0	2026	7.2	.10	1.70	.005	.997	.73?
128	3131		67	6.2	58	6.5	.50	1.50	.078	.862	.36
26	3221		2084	7.2	2083	7.3	.20	1.70	.002	1.000	.92?

25	2323	2107	7.3	2107	7.3	.20	1.70	.001	1.000	1.00?
24	2524	2120	7.3	2120	7.3	.20	1.70	.001	1.000	1.00?
31	3358	41	6.3	37	6.5	1.10	1.50	.041	.909	.46
30	2323	142	6.0	142	6.0	1.60	1.60	.006	1.000	1.00?
124	4594	201	6.0	189	6.1	.70	1.60	.040	.939	.54
198	5227	19	6.4	17	6.7	1.20	1.60	.045	.863	.32
18	3696	2185	7.2	2183	7.4	.20	1.70	.002	.999	.86?
70	5613	30	6.7	24	7.2	1.20	1.30	.138	.794	.19
58	5016	108	7.0	102	7.3	1.60	1.30	.048	.938	.33
42	2746	111	7.2	110	7.4	1.20	1.40	.013	.990	.57
40	2218	116	7.4	115	7.5	1.20	1.40	.009	.995	.67?
199	216	129	7.4	129	7.4	.30	1.60	.000	1.000	1.00?
88	5597	29	6.2	22	6.6	1.90	1.30	.159	.747	.26
68	3643	138	6.0	123	6.2	1.70	1.30	.068	.892	.46
68	3643	38	6.1	31	6.3	1.70	1.30	.113	.818	.37
66	2531	244	6.2	240	6.3	1.30	1.50	.010	.985	.89?
59	5158	323	6.4	301	6.6	.60	1.60	.027	.932	.52

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFLOW PEAK (CFS)	HYDROGRAPH INFLOW TIME (HR)	HYDROGRAPH OUTFLOW PEAK (CFS)	HYDROGRAPH OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 1											
60	1373		352	6.5	352	6.5	.80	1.50	.004	1.000	1.00?
39	4963		372	6.5	353	6.7	.30	1.70	.020	.949	.52
62	3432		24	6.2	20	6.5	1.50	1.30	.104	.829	.32
62	3432		50	6.3	43	6.5	1.50	1.30	.080	.867	.37
162	2445		30	6.2	26	6.4	1.90	1.20	.084	.875	.42
61	3152		165	6.4	157	6.6	1.70	1.30	.038	.949	.53
139	4488		263	6.5	247	6.7	1.10	1.40	.040	.940	.46
33	7445		738	6.7	646	7.1	.10	1.70	.053	.876	.28
35	3252		595	6.1	521	6.3	1.70	1.20	.090	.876	.46
34	1816		614	6.3	612	6.4	1.00	1.40	.013	.997	.93?
22	3062		1104	6.6	1104	6.7	.60	1.60	.003	1.000	.97?
122	2503		47	6.1	42	6.3	1.10	1.40	.063	.905	.49
19	3802		1178	6.7	1160	6.9	.10	1.70	.010	.985	.55
15	2571		1191	6.9	1189	7.0	.30	1.60	.004	.999	.86?
17	3274		114	6.4	105	6.6	1.40	1.30	.055	.917	.43
115	2820		119	6.6	116	6.7	1.20	1.40	.020	.975	.57
116	2260		2211	7.4	2211	7.5	.20	1.60	.003	1.000	.91?
14	3448		3365	7.3	3364	7.5	.20	1.70	.002	1.000	.99?
5	4910		3383	7.4	3362	7.6	.20	1.60	.007	.994	.62
20	3960		132	6.4	113	6.7	.40	1.50	.078	.858	.32
12	3221		132	6.6	131	6.8	1.30	1.50	.011	.988	.67?
112	2250		90	6.0	89	6.1	.80	1.60	.030	.991	.75?
195	2788		84	6.0	82	6.1	1.40	1.50	.045	.976	.69?
6	8976		331	6.0	260	6.3	.60	1.60	.060	.785	.34
6	8976		65	6.0	40	6.5	.60	1.60	.377	.622	.20

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 1											
4	2851		3515	7.6	3511	7.7	.20	1.60	.003	.999	.88?
8	3907		135	6.0	135	6.1	6.00	1.40	.024	1.000	.97?
104	4066		428	6.0	412	6.1	.80	1.50	.054	.964	.60
3	2482		3579	7.7	3578	7.8	.10	1.70	.001	1.000	.96?
2	3432		3585	7.8	3585	7.8	.20	1.70	.001	1.000	1.00?
1	7234		3598	7.8	3584	8.0	.30	1.70	.003	.996	.76?
ALTERNATE 1 STORM 2											
79	5597		2	6.1	2	6.9	1.70	1.25	.133	.661	.14
150	6574		7	6.8	6	7.6	1.10	1.40	.079	.798	.14
51	1531		6	6.7	6	7.0	1.00	1.40	.013	.972	.44
50	3000		9	6.9	9	7.3	1.10	1.40	.024	.938	.29
152	2682		8	6.4	8	6.8	1.00	1.40	.034	.887	.29
47	4678		43	7.2	39	7.7	.20	1.70	.029	.904	.21
147	6040		34	6.5	28	6.9	1.10	1.40	.079	.806	.22
81	6389		9	6.4	6	7.1	1.40	1.30	.164	.681	.15
76	5702		33	6.1	24	6.5	1.90	1.30	.073	.739	.26
53	3453		35	6.5	32	6.9	1.10	1.40	.028	.912	.36
153	3379		17	6.7	14	7.1	.70	1.40	.064	.850	.23
52	1584		55	6.9	54	7.1	.30	1.60	.007	.984	.55
46	3770		76	7.0	70	7.4	.30	1.60	.024	.932	.31
145	3600		141	7.3	138	7.6	.20	1.70	.009	.977	.40
194	5914		20	6.1	13	6.5	1.80	1.30	.178	.671	.22
94	5914		6	6.1	4	6.7	1.70	1.30	.206	.596	.17
83	6124		72	6.1	57	6.6	1.90	1.30	.066	.795	.29
82	5808		6	6.8	4	7.5	1.40	1.30	.124	.762	.14

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1 STORM 2											
75	4013		84	6.6	82	6.9	1.90	1.30	.023	.977	.42
73	1610		91	6.8	90	6.9	.80	1.50	.004	.997	.79?
92	5650		29	6.6	26	7.0	2.10	1.30	.055	.878	.28
84	5491		40	6.1	35	7.1	2.00	1.30	.037	.890	.29
85	6178		21	6.6	17	7.1	1.40	1.30	.103	.784	.18
74	4066		73	6.8	72	7.1	1.90	1.30	.021	.980	.41
73	1610		79	7.0	79	7.2	.80	1.50	.004	.998	.77?
72	3500		16	6.9	15	7.2	1.70	1.30	.036	.934	.32
173	1864		36	7.0	36	7.2	2.00	1.30	.010	.991	.66
54	4974		211	7.1	207	7.3	.50	1.60	.011	.981	.44
44	5016		249	7.2	244	7.4	.50	1.60	.010	.982	.46
144	4419		5	6.6	4	7.1	.90	1.60	.089	.790	.20
146	1200		13	6.7	13	6.8	1.90	1.30	.008	.993	.74?
45	2893		271	7.4	266	7.6	.10	1.70	.008	.983	.43
28	3168		411	7.6	406	7.8	.10	1.70	.006	.986	.46
128	3131		16	6.3	13	6.7	.50	1.50	.093	.769	.24
26	3221		422	7.8	420	8.0	.20	1.70	.003	.996	.62
25	2323		423	8.0	422	8.1	.20	1.70	.002	.997	.76?
24	2524		427	8.1	426	8.3	.20	1.70	.002	.997	.73?
31	3358		6	6.3	5	6.8	1.10	1.50	.041	.848	.27

30	2323	30	6.0	30	6.1	1.60	1.60	.008	.985	.75?
124	4594	42	6.0	33	6.3	.70	1.60	.050	.771	.34
198	5227	2	7.0	1	7.7	1.20	1.60	.045	.810	.14
18	3696	440	8.2	438	8.4	.20	1.70	.003	.994	.57
70	5613	7	6.8	5	7.5	1.20	1.30	.133	.749	.14

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1		STORM 2									
58	5016		25	7.1	22	7.5	1.60	1.30	.047	.912	.25
42	2746		25	7.4	24	7.7	1.20	1.40	.014	.982	.42
40	2218		26	7.7	25	7.9	1.20	1.40	.010	.991	.49
199	216		29	7.9	29	7.9	.30	1.60	.000	1.000	1.00?
88	5597		6	6.2	4	6.7	1.90	1.30	.142	.687	.19
68	3643		28	6.0	23	6.3	1.70	1.30	.060	.811	.35
68	3643		8	6.1	6	6.4	1.70	1.30	.100	.747	.27
66	2531		49	6.3	48	6.5	1.30	1.50	.011	.974	.63
59	5158		66	6.5	58	6.9	.60	1.60	.033	.877	.33
60	1373		65	6.8	64	7.0	.80	1.50	.004	.996	.81?
39	4963		68	7.0	62	7.3	.30	1.70	.026	.915	.29
62	3432		5	6.3	4	6.7	1.50	1.30	.093	.774	.24
62	3432		11	6.3	9	6.7	1.50	1.30	.073	.813	.28
162	2445		6	6.2	5	6.5	1.90	1.20	.067	.842	.34
61	3152		34	6.5	31	6.8	1.70	1.30	.033	.930	.40
139	4488		55	6.6	50	6.9	1.10	1.40	.039	.913	.32
33	7445		138	7.2	117	7.9	.10	1.70	.067	.845	.15
35	3252		162	6.1	138	6.3	1.70	1.20	.079	.848	.39
34	1816		160	6.3	158	6.5	1.00	1.40	.014	.988	.74?
22	3062		229	6.6	226	6.8	.60	1.60	.003	.989	.69?
122	2503		11	6.1	9	6.4	1.10	1.40	.065	.840	.35
19	3802		246	6.7	230	7.1	.10	1.70	.013	.937	.33
15	2571		239	7.1	236	7.3	.30	1.60	.004	.990	.58
17	3274		25	6.4	22	6.7	1.40	1.30	.051	.876	.32
115	2820		26	6.6	25	6.9	1.20	1.40	.021	.954	.41

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SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 1		STORM 2									
116	2260		444	8.4	442	8.6	.20	1.60	.003	.996	.63
14	3448		644	8.5	643	8.6	.20	1.70	.002	.998	.66
5	4910		647	8.6	640	8.9	.20	1.60	.008	.989	.39
20	3960		33	6.4	26	6.9	.40	1.50	.094	.785	.21
12	3221		29	6.9	28	7.1	1.30	1.50	.013	.975	.47

112	2250	24	6.0	23	6.1	.80	1.60	.040	.945	.54
195	2788	26	6.0	24	6.1	1.40	1.50	.055	.923	.53
6	8976	68	6.0	46	6.5	.60	1.60	.072	.671	.20
6	8976	13	6.0	6	7.1	.60	1.60	.459	.448	.12
4	2851	670	8.8	668	9.0	.20	1.60	.003	.997	.60
8	3907	46	6.0	46	6.1	6.00	1.40	.027	.996	.82?
104	4066	106	6.0	91	6.2	.80	1.50	.063	.860	.43
3	2482	683	9.0	682	9.1	.10	1.70	.002	.998	.64
2	3432	683	9.1	682	9.3	.20	1.70	.002	.999	.67?
1	7234	684	9.3	680	9.5	.30	1.70	.004	.995	.47

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 57		13.61		
ALTERNATE	1		2214	444
STRUCTURE 56		.89		
ALTERNATE	1		200	40
STRUCTURE 55		.88		
ALTERNATE	1		311	72
STRUCTURE 54		.49		
ALTERNATE	1		161	33
STRUCTURE 53		1.58		
ALTERNATE	1		371	84
STRUCTURE 52		1.72		
ALTERNATE	1		335	73
STRUCTURE 50		.36		
ALTERNATE	1		138	29
STRUCTURE 49		.75		
ALTERNATE	1		246	49
STRUCTURE 48		1.06		
ALTERNATE	1		324	66
STRUCTURE 47		.56		
ALTERNATE	1		108	25
STRUCTURE 45		.48		
ALTERNATE	1		140	29
STRUCTURE 44		1.36		
ALTERNATE	1		355	65
STRUCTURE 43		.77		
ALTERNATE	1		161	36
STRUCTURE 42		1.91		

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 42	1.91		
ALTERNATE 1		367	79
STRUCTURE 41	1.75		
ALTERNATE 1		405	91
STRUCTURE 40	4.58		
ALTERNATE 1		927	211
STRUCTURE 39	.68		
ALTERNATE 1		177	35
STRUCTURE 38	.35		
ALTERNATE 1		57	7
STRUCTURE 37	.43		
ALTERNATE 1		69	9
STRUCTURE 36	1.16		
ALTERNATE 1		269	55
STRUCTURE 35	5.54		
ALTERNATE 1		1130	249
STRUCTURE 34	1.61		
ALTERNATE 1		366	76
STRUCTURE 30	6.59		
ALTERNATE 1		1262	271
STRUCTURE 29	10.91		
ALTERNATE 1		2037	411
STRUCTURE 28	.66		
ALTERNATE 1		111	25
STRUCTURE 27	.76		
ALTERNATE 1		116	26
STRUCTURE 26	.92		
ALTERNATE 1		129	29

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 25	1.44		

ALTERNATE	1	373	68
STRUCTURE 24	.93		
ALTERNATE	1	263	55
STRUCTURE 23	1.07		
ALTERNATE	1	596	162
STRUCTURE 22	1.33		
ALTERNATE	1	615	162
STRUCTURE 21	3.44		
ALTERNATE	1	739	138
STRUCTURE 20	.40		
ALTERNATE	1	143	30
STRUCTURE 19	11.55		
ALTERNATE	1	2085	422
STRUCTURE 18	12.02		
ALTERNATE	1	2108	423
STRUCTURE 17	12.28		
ALTERNATE	1	2122	427
STRUCTURE 16	.50		
ALTERNATE	1	207	42
STRUCTURE 15	5.50		
ALTERNATE	1	1105	229
STRUCTURE 14	.69		
ALTERNATE	1	133	29
STRUCTURE 13	5.93		
ALTERNATE	1	1179	246

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
STRUCTURE 12	13.21		
ALTERNATE	1	2190	441
STRUCTURE 11	6.22		
ALTERNATE	1	1191	239
STRUCTURE 10	.51		
ALTERNATE	1	119	26
STRUCTURE 9	20.59		
ALTERNATE	1	3372	644
STRUCTURE 8	1.14		
ALTERNATE	1	331	69
STRUCTURE 7	20.94		

ALTERNATE	1	3390	647
STRUCTURE 6	.71		
ALTERNATE	1	443	108
STRUCTURE 5	22.68		
ALTERNATE	1	3516	670
STRUCTURE 4	23.98		
ALTERNATE	1	3580	683
STRUCTURE 3	24.14		
ALTERNATE	1	3586	683
STRUCTURE 2	24.50		
ALTERNATE	1	3599	684
STRUCTURE 1	24.98		
ALTERNATE	1	3613	685
XSECTION 1	.48		
ALTERNATE	1	167	32

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TR20 ---------- SCS -
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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 2	.36		
ALTERNATE	1	71	6
XSECTION 3	.16		
ALTERNATE	1	44	4
XSECTION 4	.59		
ALTERNATE	1	277	56
XSECTION 5	.18		
ALTERNATE	1	90	18
XSECTION 6	.29		
ALTERNATE	1	52	3
XSECTION 7	.38		
ALTERNATE	1	199	40
XSECTION 8	.19		
ALTERNATE	1	104	23
XSECTION 9	.14		
ALTERNATE	1	140	47
XSECTION 10	.13		
ALTERNATE	1	92	25
XSECTION 11	.10		
ALTERNATE	1	86	27

XSECTION	12	.22		
ALTERNATE	1		110	22
XSECTION	13	.13		
ALTERNATE	1		66	13
XSECTION	14	.35		
ALTERNATE	1		151	31

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION	15	.25		
ALTERNATE	1		126	26
XSECTION	16	.38		
ALTERNATE	1		115	25
XSECTION	17	.13		
ALTERNATE	1		65	13
XSECTION	18	.40		
ALTERNATE	1		98	16
XSECTION	19	.29		
ALTERNATE	1		118	24
XSECTION	20	.30		
ALTERNATE	1		59	4
XSECTION	21	.10		
ALTERNATE	1		47	11
XSECTION	22	.13		
ALTERNATE	1		77	18
XSECTION	23	.20		
ALTERNATE	1		50	9
XSECTION	24	.28		
ALTERNATE	1		98	12
XSECTION	25	.26		
ALTERNATE	1		125	25
XSECTION	26	.47		
ALTERNATE	1		46	3
XSECTION	27	.15		
ALTERNATE	1		72	15

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 28		.32		
ALTERNATE	1		145	30
XSECTION 29		.17		
ALTERNATE	1		68	16
XSECTION 30		.10		
ALTERNATE	1		59	14
XSECTION 31		.24		
ALTERNATE	1		134	29
XSECTION 32		.15		
ALTERNATE	1		19	2
XSECTION 33		.50		
ALTERNATE	1		106	22
XSECTION 34		.23		
ALTERNATE	1		103	25
XSECTION 35		.26		
ALTERNATE	1		94	23
XSECTION 36		.39		
ALTERNATE	1		132	33
XSECTION 37		.18		
ALTERNATE	1		148	59
XSECTION 38		.89		
ALTERNATE	1		478	114
XSECTION 39		.15		
ALTERNATE	1		53	11
XSECTION 40		.16		
ALTERNATE	1		50	11

TR20 ---------- SCS -
EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
02/27/** 24 HR TYPE IIA CURVE 2.04TEST
15:13:35 SUMMARY, JOB NO. 1 PAGE 61

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 41		.16		
ALTERNATE	1		41	6
XSECTION 42		.10		
ALTERNATE	1		17	2
XSECTION 43		.40		

ALTERNATE	1		79	13
XSECTION 44		.59		
ALTERNATE	1		254	52
XSECTION 45		.32		
ALTERNATE	1		104	22
XSECTION 46		.04		
ALTERNATE	1		16	3
XSECTION 47		.23		
ALTERNATE	1		69	15
XSECTION 48		.56		
ALTERNATE	1		159	34
XSECTION 49		.27		
ALTERNATE	1		61	8
XSECTION 50		.51		
ALTERNATE	1		96	23
XSECTION 51		.14		
ALTERNATE	1		31	4
XSECTION 52		.45		
ALTERNATE	1		98	22
XSECTION 53		.18		
ALTERNATE	1		50	11

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 54		.24		
ALTERNATE	1		84	21
XSECTION 56		.06		
ALTERNATE	1		18	5
XSECTION 58		.10		
ALTERNATE	1		33	7
XSECTION 59		1.06		
ALTERNATE	1		302	58
XSECTION 60		.08		
ALTERNATE	1		38	9
XSECTION 61		.37		
ALTERNATE	1		128	29
XSECTION 62		.26		
ALTERNATE	1		80	17

XSECTION 63	.07		
ALTERNATE	1	24	5
XSECTION 64	.15		
ALTERNATE	1	50	11
XSECTION 65	.08		
ALTERNATE	1	30	6
XSECTION 66	.09		
ALTERNATE	1	28	6
XSECTION 67	.19		
ALTERNATE	1	60	13
XSECTION 68	.11		
ALTERNATE	1	35	7

D

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 69		.22		
ALTERNATE	1		58	13
XSECTION 70		.43		
ALTERNATE	1		87	20
XSECTION 71		.72		
ALTERNATE	1		158	36
XSECTION 72		.44		
ALTERNATE	1		95	22
XSECTION 73		.15		
ALTERNATE	1		34	8
XSECTION 74		.19		
ALTERNATE	1		60	13
XSECTION 75		.17		
ALTERNATE	1		52	11
XSECTION 76		.19		
ALTERNATE	1		51	11
XSECTION 77		.30		
ALTERNATE	1		75	17
XSECTION 78		.29		
ALTERNATE	1		49	6
XSECTION 79		.27		
ALTERNATE	1		43	6
XSECTION 80		.08		
ALTERNATE	1		22	2

XSECTION 81	.35		
ALTERNATE 1		157	32

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2
XSECTION 82	.24		
ALTERNATE 1		114	23
XSECTION 83	.35		
ALTERNATE 1		75	17
XSECTION 84	.19		
ALTERNATE 1		54	12
XSECTION 85	.27		
ALTERNATE 1		71	16
XSECTION 86	.33		
ALTERNATE 1		72	16
XSECTION 87	.13		
ALTERNATE 1		30	7
XSECTION 88	.28		
ALTERNATE 1		135	27
XSECTION 89	.09		
ALTERNATE 1		38	8
XSECTION 90	.08		
ALTERNATE 1		29	6
XSECTION 91	.37		
ALTERNATE 1		96	21
XSECTION 92	.38		
ALTERNATE 1		183	37
XSECTION 93	.24		
ALTERNATE 1		74	19
XSECTION 94	.43		
ALTERNATE 1		242	57

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE	DRAINAGE AREA	STORM NUMBERS.....

ID	(SQ MI)	1	2
XSECTION 95	.11		
ALTERNATE 1		25	6
XSECTION 96	.14		
ALTERNATE 1		43	9
XSECTION 97	.07		
ALTERNATE 1		30	6
XSECTION 98	.14		
ALTERNATE 1		78	20
XSECTION 99	.51		
ALTERNATE 1		132	29
XSECTION 145	4.00		
ALTERNATE 1		743	138

0

TR20 ---------- SCS -
02/27/** EXISTING CONDITION - E. FORK SAND CREEK TRIB. - CPH PROPERTIES VERSION
24 HR TYPE IIA CURVE 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = C:\TR20\BLRTR20\EFSCEX24.DAT , GIVEN DATA FILE
OUTPUT = C:\TR20\BLRTR20\EFSCEX24.OUT , DATED 02/27/**,15:13:35

FILES GENERATED - DATED 02/27/**,15:13:35

NONE!

TOTAL NUMBER OF WARNINGS = 33, MESSAGES = 0

JOB ENDED AT 15:13:36
*** TR-20 RUN COMPLETED ***

APPENDIX L:

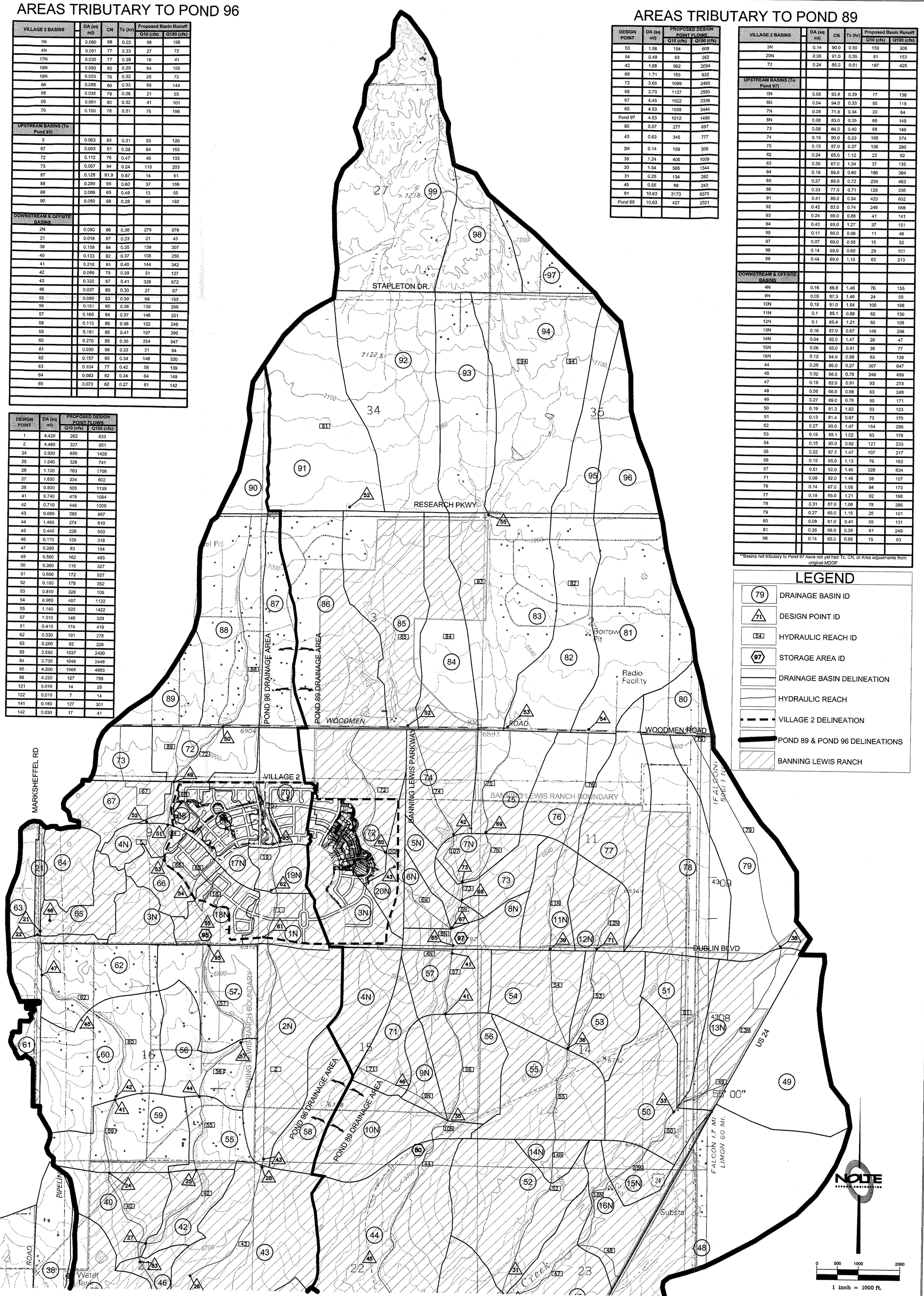
BASIN MAPS

DATE: 7/24/07 TIME: 1:18:59 PM DRAWING NAME: PRHYDAV2.DWG
SERVER: DVS1 DESIGNER: JMH PROJ. MGR: RLM PLOTTED BY: MIEDEN
PATH: N:\CSB0602\CADD\CIVIL\V2\MDDP
XREFS: prPRMA, PRHYDAV2TB, 13cpPRTO, 14cpPRTO, 15cpPRTO, xe-base-offsite, XE-TOPO-PH1-2, EX-BASE, V2MDPP, AllBLRBoundary(MDDP), 14PRSDBA, 13CPPRUT, 14cpPRUT, 15cpPRUT, FALCON_NW(TRIMMED), Village2FilingStrategy, 16cpPRTO, 18cpPRTO

AREAS TRIBUTARY TO POND 96

VILLAGE 2 BASINS	DA (sq mi)	CN	Tc (hr)	Proposed Basin Runoff Q10 (cfs)	Proposed Basin Runoff Q100 (cfs)
1N	0.080	88	0.22	98	198
4N	0.051	77	0.33	27	72
17N	0.030	77	0.38	16	41
18N	0.093	80	0.29	64	155
19N	0.053	76	0.32	26	72
66	0.088	80	0.33	59	144
68	0.035	79	0.36	21	53
69	0.061	80	0.32	41	101
70	0.150	78	0.51	76	196
UPSTREAM BASINS (To Pond 95)					
3	0.063	83	0.31	53	120
67	0.093	81	0.39	64	153
72	0.112	76	0.47	49	133
73	0.067	94	0.24	115	203
87	0.128	81.9	0.87	14	61
88	0.280	65	0.60	37	159
89	0.089	65	0.49	13	55
90	0.080	88	0.28	95	192
DOWNSTREAM & OFFSITE BASINS					
2N	0.080	86	0.38	275	578
21	0.018	87	0.23	21	43
39	0.158	84	0.35	139	307
40	0.133	82	0.37	108	250
41	0.210	81	0.40	144	342
42	0.085	79	0.39	51	127
43	0.320	87	0.41	328	672
46	0.037	80	0.30	27	67
55	0.085	83	0.39	68	153
56	0.151	85	0.38	139	299
57	0.165	84	0.37	146	321
58	0.113	88	0.38	122	246
59	0.181	88	0.41	197	396
60	0.270	85	0.35	254	547
61	0.030	86	0.33	31	64
62	0.157	85	0.34	148	320
63	0.104	77	0.42	58	139
64	0.083	82	0.34	64	149
65	0.073	82	0.27	61	142

DESIGN POINT	DA (sq mi)	PROPOSED DESIGN POINT FLOWS Q10 (cfs)	PROPOSED DESIGN POINT FLOWS Q100 (cfs)
1	4.420	282	833
2	4.480	327	851
24	0.920	650	1428
25	1.540	326	741
26	1.120	763	1708
27	1.630	334	802
28	0.800	505	1139
41	0.740	479	1064
42	0.710	448	1000
43	0.690	385	897
44	1.460	274	610
45	0.440	228	500
46	0.170	139	318
47	0.280	83	194
49	0.560	162	493
50	0.360	116	327
51	0.600	172	527
52	0.160	178	352
53	0.810	328	106
54	0.960	407	1122
55	1.140	522	1422
57	1.310	148	329
61	0.410	174	419
62	0.330	101	278
63	0.280	82	226
83	2.690	1037	2400
84	2.730	1046	2446
85	4.200	1968	4683
86	4.220	127	788
121	0.010	14	28
122	0.010	7	14
141	0.180	127	301
142	0.030	17	41



AREAS TRIBUTARY TO POND 89

DESIGN POINT	DA (sq mi)	PROPOSED DESIGN POINT FLOWS Q10 (cfs)	PROPOSED DESIGN POINT FLOWS Q100 (cfs)
53	1.58	154	608
54	0.49	63	262
42	1.88	962	2054
69	1.71	163	632
73	3.65	1099	2495
68	3.73	1127	2550
67	4.45	1522	3336
65	4.53	1558	3444
Pond 97	4.53	1012	1490
85	0.57	277	657
43	0.63	345	777
3N	0.14	159	306
35	1.24	406	1009
30	1.54	585	1344
31	0.25	134	262
45	0.55	88	243
91	10.63	3173	6370
Pond 89	10.63	427	2321

VILLAGE 2 BASINS	DA (sq mi)	CN	Tc (hr)	Proposed Basin Runoff Q10 (cfs)	Proposed Basin Runoff Q100 (cfs)
3N	0.14	90.0	0.50	159	306
20N	0.06	91.0	0.35	81	153
72	0.24	85.0	0.51	197	425
UPSTREAM BASINS (To Pond 97)					
5N	0.05	93.8	0.39	77	138
6N	0.04	94.0	0.33	65	115
7N	0.06	71.8	0.34	20	64
8N	0.08	83.0	0.35	65	148
73	0.08	84.0	0.40	68	149
74	0.15	90.0	0.33	195	374
75	0.13	87.0	0.37	136	280
82	0.24	65.0	1.12	22	92
83	0.35	67.0	1.34	37	135
84	0.19	89.0	0.60	186	364
85	0.27	89.0	0.72	235	463
86	0.33	77.0	0.71	128	336
91	0.41	89.0	0.54	423	832
92	0.42	83.0	0.74	249	558
93	0.24	69.0	0.86	41	141
94	0.43	65.0	1.27	37	151
95	0.11	65.0	0.98	11	46
97	0.07	69.0	0.58	15	52
98	0.14	69.0	0.60	29	101
99	0.44	69.0	1.15	63	213
DOWNSTREAM & OFFSITE BASINS					
4N	0.16	86.8	1.46	76	155
9N	0.05	87.3	1.46	24	50
10N	0.18	91.0	1.54	105	198
11N	0.1	85.1	0.88	62	130
12N	0.1	85.4	1.21	50	106
13N	0.18	87.0	0.67	146	298
14N	0.04	92.0	1.47	26	47
15N	0.06	85.0	0.91	36	77
16N	0.12	84.0	0.98	63	138
44	0.29	86.0	0.27	307	647
45	0.32	88.0	0.78	248	499
47	0.19	82.0	0.91	93	213
48	0.56	66.0	0.98	63	248
49	0.27	69.0	0.76	50	171
50	0.19	81.3	1.83	53	123
51	0.13	81.4	0.67	73	170
52	0.27	90.0	1.47	154	296
53	0.15	85.1	1.02	83	178
54	0.15	90.0	0.92	121	233
55	0.22	87.3	1.47	107	217
56	0.15	85.0	1.13	76	163
57	0.51	92.0	1.46	328	604
71	0.09	92.0	1.46	58	107
76	0.14	87.0	1.08	84	173
77	0.19	85.0	1.21	92	198
78	0.31	87.0	1.06	78	386
79	0.27	65.0	1.15	25	101
80	0.08	81.0	0.41	55	131
81	0.35	66.0	0.39	61	249
96	0.14	65.0	0.88	15	63

**Basins not tributary to Pond 97 have not yet had Tc, CN, or Area adjustments from original MDDP

LEGEND

- DRAINAGE BASIN ID
- DESIGN POINT ID
- HYDRAULIC REACH ID
- STORAGE AREA ID
- DRAINAGE BASIN DELINEATION
- HYDRAULIC REACH
- VILLAGE 2 DELINEATION
- POND 89 & POND 96 DELINEATIONS
- BANNING LEWIS RANCH

* REFERENCE BLR PHASE 1 & 2 MDDP FOR BASINS FURTHER DOWNSTREAM

DRAINAGE BASIN ID

PRELIMINARY
NOT FOR CONSTRUCTION

SHEET NUMBER 1 OF 3 SHEETS
JOB NUMBER CSB0602

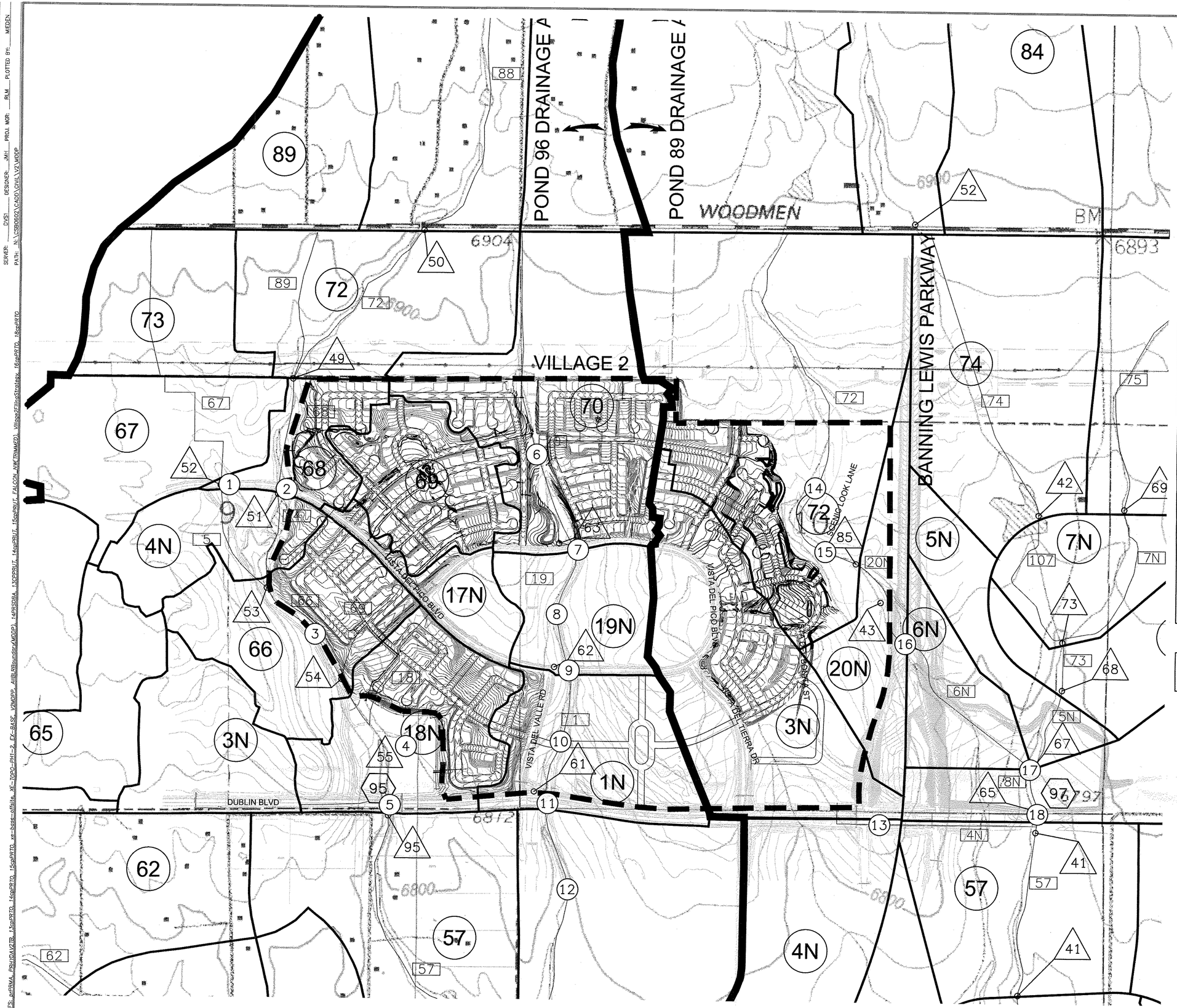
NOLTE
BEYOND ENGINEERING
5225 N. ACADEMY BLVD., SUITE 304 COLORADO SPRINGS, CO 80918
719.268.8500 TEL 719.268.9200 FAX WWW.NOLTE.COM

BANNING LEWIS RANCH

VILLAGE 2 MDDP
OFFSITE DRAINAGE BASIN MAP

PREPARED FOR: BANNING LEWIS RANCH DATE SUBMITTED: MAY 2007

NO.	BY	DATE	REVISIONS:
1	JMH	04/05/2007	ADDED JR ENGINEERING NUMBERS
2	JMH	05/10/2007	CHANGES PER CITY REVIEW COMMENTS



PROPOSED VILLAGE 2 AND SURROUNDING INFRASTRUCTURE

ORIGINAL PHASE 1 & 2 MDDP PROPOSED STRUCTURE SUMMARY

1	VISTA DEL PICO BLVD STA 81+98 72"x135' RCP CULVERT (FILING 2)
2	VISTA DEL PICO BLVD STA 87+66 6'x6'x96' CONCRETE BOX CULVERT (FILING 2)
3	CHANNEL 66 15-50' UNDISTURBED CHANNEL BOTTOM, 4:1 RIPRAPPED SIDESLOPES (FILING 2)
4	DETENTION POND 95 69.6 AC-FT (FILING 2)
5	DUBLIN BLVD STA 576+79 6'x5'x150' CONCRETE BOX CULVERT (FILING 2)
6	FUTURE CHANNEL 70
7	VISTA DEL PICO BLVD STA 152+88 60"x143' RCP CULVERT (FILING 2)
8	CHANNEL 19N 8' FLAT-BOTTOM, 4:1 RIPRAPPED SIDESLOPES (FILING 2)
9	VISTA DEL PICO BLVD STA 118+94 60"x144' RCP CULVERT (FILING 2)
10	CHANNEL 1N 8' FLAT-BOTTOM, 4:1 RIPRAPPED SIDESLOPES (FILING 2)
11	DUBLIN BLVD STA 590+80 66"x184' RCP CULVERT (FILING 2)
12	CHANNEL 2N 10' FLAT-BOTTOM, 4:1 RIPRAPPED SIDESLOPES (FILING 2)
13	DUBLIN BLVD STORM SEWER 66"x1363' RCP (FILING 1)
14	FUTURE CHANNEL 72
15	SCENIC LOOK LANE FUTURE STRUCTURE
16	BANNING LEWIS PARKWAY STA 2822+01 14'x6'x317' CONCRETE BOX CULVERT (FILING 4)
17	DETENTION BASIN 97 146.0 AC-FT (FILING 4)
18	DUBLIN BLVD STA 635+31 TWIN 8'x8'X210' CONCRETE BOX CULVERT (FILING 4)

39 DESIGN POINT ID

0 200 400 800
1 inch = 400 ft.

NO.	BY	DATE	REVISIONS
1	JMH	04/05/2007	ADDED ID NUMBERS
2	JMH	05/10/2007	CHANGES PER CITY REVIEW COMMENTS

CAUTION
The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

BANNING LEWIS RANCH

VILLAGE 2 MDDP DRAINAGE BASIN MAP

PREPARED FOR: BANNING LEWIS RANCH

DATE SUBMITTED: MAY 2007

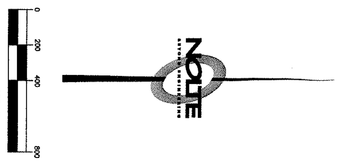
NOLTE
BEYOND ENGINEERING
5325 N. ACADEMY BLVD., SUITE 204 COLORADO SPRINGS, CO 80918
719.268.5500 TEL 719.268.5200 FAX WWW.NOLTE.COM

PRELIMINARY
NOT FOR CONSTRUCTION

SHEET NUMBER 2 OF 3 SHEETS

JOB NUMBER CSB0602

DATE: 7/24/07 TIME: 1:21:20 PM DRAWING NAME: PRHYDAV2.DWG
SERVER: DVS1 DESIGNER: JMH PROJ. MGR: RLM PLOTTED BY: MIEDEN
PATH: N:\CSB0602\CADD\CIVIL\V2\MDDP
XREFS: prPRMA, PRHYDAV2TB, 13cpPRTO, 14cpPRTO, 15cpPRTO, xe-base-offsite, XE-TOPO-PH1-2, EX-BASE, V2MDPP, AllBLRBoundary(MDDP), 14PRSDBA, 13CPPRUT, 14cpPRUT, 15cpPRUT, FALCON_NWTRIMMED, Village2FilingStrategy, 16cpPRTO, 18cpPRTO



PRELIMINARY
NOT FOR CONSTRUCTION

SHEET NUMBER 3 OF 3 SHEETS

JOB NUMBER CSB0602

NOLTE
BEYOND ENGINEERING
5225 N. ACADEMY BLVD., SUITE 304 COLORADO SPRINGS, CO 80918
719.268.8500 TEL 719.268.9200 FAX WWW.NOLTE.COM

BANNING LEWIS RANCH

VILLAGE 2 MDDP
FILING BOUNDARY MAP

PREPARED FOR: BANNING LEWIS RANCH DATE SUBMITTED: MAY 2007

NO.	BY	DATE	REVISIONS
1	JMH	04/05/2007	ADDED JR ENGINEERING NUMBERS
2	JMH	05/10/2007	CHANGES PER CITY REVIEW COMMENTS