MASTER DEVELOPMENT DRAINAGE PLAN
FOR
WOODMEN HEIGHTS MASTER PLAN

JUNE 2004

PREPARED FOR:

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DRAINAGE REPORT STATEMENT

ENGINEER'S STATEMENT:
The attached drainage plan and report were 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 for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors, or omissions on my part in preparing this report.

COLORADO REGISTERED VIRGIL A. SANCHEZ, II 37160 PROFESSIONAL ENGINEER

Virgil A. Sanchez, II, Colorado P.E. #37160 — Date: 8-5-04

DEVELOPER'S STATEMENT:
I, the developer, have read and will comply with all of the requirements specified in this drainage report and plan.

Business Name: Markshaffel-Woodmen Investments, L.L.C.

By: _____

Title: _____

Address: 102 E. Pikes Peak Avenue, Suite 200

Colorado Springs, CO 80903

CITY OF COLORADO SPRINGS ONLY:
Filed in accordance with Section 15-3-906 of the Code of the City of Colorado Springs, 1980, as amended.

City Engineer — Date: Aug 9, 2004

Conditions: Owners shall be responsible for conformance with the SCDBPS except that no storm drainage flows shall exit the property in excess of historic flow rates until the downstream drainage facilities on the main channel of Sand Creek between Woodmen Road and Constitution Avenue (to include Detention Pond No. 2 which is south of Barnes Road) are either in place in accordance with the SCDBPS or the facilities that are in place are adequate to accept flows in excess of historic that Owners desire to release. In the alternative and subject to approval by the City Engineer, the owner may agree to participate on an equitable basis in the construction of Detention Pond No. 2 in exchange for the approval to release storm flows at the flow rates specified in the SCDBPS

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TABLE OF CONTENTS:

PURPOSE	Page 1
GENERAL DESCRIPTION	Page 2
EXISTING DRAINAGE CONDITIONS	Page 1
DRAINAGE METHODOLOGY	Page 3
GENERAL CONDITIONS	Page 3
PROPOSED DRAINAGE CHARACTERISTICS	Page 6
DETENTION FACILITIES	Page 18
CHANNEL IMPROVEMENTS	Page 20
BOX CULVERTS	Page 21
MAINTENANCE & OBLIGATIONS	Page 21
HYDROLOGIC CALCULATIONS	Page 25
FLOODPLAIN STATEMENT	Page 26
CONSTRUCTION COST OPINION	Page 26
DRAINAGE AND BRIDGE FEES	Page 27
SUMMARY	Page 29
REFERENCES	Page 30

APPENDICES

VICINITY MAP

SOILS MAP (S.C.S. SURVEY)

F.E.M.A. MAPS

CONSTRUCTION COST OPINION

HYDROLOGIC CALCULATIONS

HYDRAULIC CALCULATIONS

DRAINAGE MAP

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PURPOSE

This document is the Master Development Drainage Plan for Woodmen Heights. The purpose of this report is to identify on-site existing and developed drainage patterns, areas tributary to the site, and to indicate major facilities that will need to be constructed with the development of the proposed master plan.

GENERAL DESCRIPTION

Woodmen Heights is 806 acres located in portions of sections 4 & 5, Township 13 South, Range 65 West of the Sixth Principal Meridian, El Paso County, Colorado; this site is bounded to the west by Black Forest Road and to the south by Woodmen Road. This majority of this site lies within the Sand Creek Drainage Basin, with a relatively small portion of the site lying within the Cottonwood Creek Drainage Basin. Multiple proposed land uses including multi and single-family residential, retail/office parcels, and open space are included in the proposed master plan for this site.

The average soil condition reflects Hydrologic Group "A" (Blakeland) as determined by the "Soil Survey of El Paso County Area," prepared by the Soil Conservation Service (see map in Appendix).

The presence of some wetlands within portions of the Woodmen Heights property has required coordination with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife and the Colorado Division of Wildlife.

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EXISTING DRAINAGE CONDITIONS

Existing Drainage Conditions

Portion of Study Area In Cottonwood Creek Basin

A 2.0-acre area of land is located in the far northwest corner of proposed Woodmen Heights and falls within the Cottonwood Creek Drainage Basin. This portion of land is currently undeveloped, with surface slopes averaging 5%. Runoff from the area will be directed to the southwest and away from Cottonwood Creek. No up-gradient watershed runoff currently impacts the site.

Existing Drainage Conditions:

Portion of Study Area In Sand Creek Basin

The remaining 804 acres of Woodmen Heights resides within the northern half of the Sand Creek Drainage Basin. This basin was previously studied by the Kiowa Engineering Corporation in the approved "Sand Creek Drainage Basin Planning Study", with a last revision date of March 1996. The land use assumed by the DBPS was Industrial for the majority of the site. The proposed master plan is a mix of multi-family, single-family, and commercial land uses. The site currently drains southwesterly and southeasterly across rolling hills and pasture with grades that range from 2%-10% into various existing drainage channels and gullies that start in the Woodmen Heights property and extend across the property into Sand Creek. To the east of the property there are numerous low density properties that lie within the Sand Creek Drainage Basin that contribute flows across Woodmen Heights via existing drainage structures and channels that are may or may not be adequate to convey the full 100-year existing flows. These structures will be evaluated and recommendations will be provided within this report. The historic flows from the east are assumed"existing," and conveyance of those flows through the Woodmen Heights property is anticipated. If more intensive development would take place to the east and north and west of Woodmen Heights, they would be required to detain to the DBPS discharge conditions. The existing channels within the Sand Creek Drainage Basin within the Woodmen Heights Property are fairly wide and shallow. Vegetation within these channels consists of natural grasses and shrubs. Erosion from existing flows does not appear to be affecting the existing channel

features. Downstream facilities (i.e. Woodmen Road bridge crossing) are adequately designed to accept existing flows from the Woodmen Heights property in accordance with the Sand Creek D.B.P.S. It is anticipated that the Woodmen Road District will be making the improvements to Woodmen Road by relocating Woodmen Road to the north of its current location. The improvements to Woodmen Road can use the recommendations in this report to construct the necessary facilities per the proposed master plan. Other culvert crossings (i.e. Mustang Road culverts, Vollmer Road culverts) will be analyzed and recommendations will be offered with this report. The final design of these road crossings shall be looked at in detail by future developing parcels and/or Woodmen Road District.

DRAINAGE METHODOLOGY

Due to the size of the subject site, the anticipated runoff from the site will be determined by using the Soil Conservation Service Hydrograph Method. Specifically, the developed flows are estimated by a series of calculations involving the anticipated land uses, parcel acreage, times of concentration, and grading constraints set forth by the Woodmen Heights Master Plan and the Colorado Springs Drainage Criteria Manual.

GENERAL CONDITIONS

As previously mentioned, Woodmen Heights has been studied within in the Sand Creek D.B.P.S. with an assumed Industrial land use. The aforementioned report provides options regarding the location of a series of six regional detention facilities that are to be located within main branch of Sand Creek. Of the six regional facilities, four are to be placed north of Woodmen Road.

Regional Detention Facilities:

The Sand Creek DBPS shows, as an option, the construction of four regional detention facilities, located directly north of Woodmen Road. These facilities are referred to as Sand Creek Regional Detention Facilities 3 through 6 and culminate to form Detention

Site Alt. A. The DBPS also shows as an alternative, two detention ponds, located upstream of the subject area, and are denoted within the DBPS as Detention Site Alt. 'C'. In accordance with the Woodmen Height Master Plan two of the four upstream detention facilities (Facilities #3 and #6) will be constructed per the DBPS Alt. 'A' location while two other facilities will be needed, as shown as Alternative 'C', for upstream development. The four detention facilities will detain developed flows and release runoff in accordance with rates established within the Sand Creek DBPS. Additional drainage analysis will be required to determine the size and configuration of the two-offsite facilities (Det. Site 'C') and thus will not be studied in detail within this report. The on-site proposed regional detention facilities shall provide the necessary 100-year future condition volume without overtopping the overflow spillways and will contain adequate water quality treatment volumes for the site and in addition will serve as an area to mitigate wetlands. The two facilities will intercept the majority of runoff created within Woodmen Heights as well as a portion of offsite flows. Proposed Sand Creek Detention Facilities #3 and #6 will be submitted and reviewed by Colorado Springs Utilities due to portions of the facilities are to be constructed within the existing 300' electrical easement. Proposed Sand Creek Detention Facility #3 will additionally require review by the State Engineer's Office, due to its jurisdictional structure classification in accordance with the Department of Natural Resources Dam Safety and Dam Construction Guidelines.

The Woodmen Road District:

Woodmen Road Safety Project 'B' and 'C' are currently planned for completion prior to, or concurrent with, the development of Woodmen Heights. This will require coordination in regards to detention facility outlet structure conveyance systems and temporary or permanent drainage improvements located along Woodmen Road. Specifics regarding outlet structure sizing, locations, and inverts for crossing Woodmen Road will be not be discussed within this report. A more detailed study will be completed and shall be coordinated with The Woodmen Road District.

Master Plan Phasing:

Per the Master Plan for Woodmen Heights, phasing for development will begin in areas adjacent to Woodmen Road and spread northward first and inwards towards Sand Creek. Construction of the proposed regional detention facilities will need to occur when individual parcel detention can no longer mimic existing flow patterns. Simply stated private temporary detention ponds will allow for development prior to the ultimate regional detention facilities as long as developed flows are detained and released in a manner that will not be conducive to downstream erosion and sedimentation. Each proposal for temporary improvements will be subject to civil engineering design and city review approval. Improvements to Sand Creek channel shall occur prior to adjacent development to Sand Creek. A detailed channel analysis will be required prior to the development of adjacent sites, due to increased runoff frequency and/or concentrated flows directed into the channel. Sand Creek Channel analysis will be subject to local and federal review, with comprehensive channel studies approved by FEMA. An outline for specific channel improvements will be discussed at greater length within this report, and subsequent final drainage reports.

Cottonwood Creek Basin:

As planned, Woodmen Heights lies within the Sand Creek and Cottonwood Creek Basins. The small 2.0-acre portion lying within Cottonwood Creek will deviate from the historical major basin boundary and with the development of the subject area contribute instead to Sand Creek Drainage Basin. This will be a net change of 2.0 acres and will not create a negative impact upon either basin. In accordance with the City of Colorado Springs, runoff from the Master Plan components, will be analyzed and recommendations provided within independent future Preliminary/Final Drainage Reports.

Wetlands:

Portions of the Woodmen Heights Master Plan and Sand Creek Channel that have been identified by the Corps of Engineers as Jurisdictional Waters including wetland areas. Future development will require a permit from the Corps in order to discharge fill or dredged material into these waters and wetlands. Coordination of mitigation of wetland

areas will be concluded with the design of the Sand Creek Regional Detention Facilities and Sand Creek Channel Improvements. The channel improvements, regional pond construction and wetland mitigation will be coordinated with the Streamside Ordinance per the City of Colorado Springs.

Erosion Control and Water Quality:

Best Management Practices (BMPs) shall be provided as required by the City of Colorado Springs Drainage Criteria Manual Vol. 2 and shall be approved by the City Engineering Subdivision Review Team. Per the criteria, Water Quality Capture Volume (WQCV) is required for all parcels within the Woodmen Heights Master Plan, due to the size of the individual parcel and planned zoning. All on-site runoff directed towards a regional detention facility are exempt from this requirement due to the WQCV provided by the regional detention facilities. Runoff from parcels within Woodmen Heights that will not be conveyed to regional ponds shall be subject to treatment via WQCV standard, prior to discharge into Sand Creek.

PROPOSED DRAINAGE CHARACTERISTICS

Basins Tributary to Regional Detention Facility No. 6 (West Pond)

The drainage from these primarily westerly basins within Woodmen Heights will be conveyed through a series of existing and proposed drainage structures, and ultimately collected in the planned Sand Creek Regional Detention Facility No. 6. This facility will be located approximately 1500' east of Black Forest Road and north of Woodmen Road. The pond shall provide detention for the increased runoff as well as provide water quality for the western portion of the Master Plan development. The proposed drainage conditions for this area will be more specifically described as follows.

Off-site Basin OS-1 is approximately 109.0 acres located north of Woodmen Heights. It currently contains natural grasses, a mining operation, and a few rural structures. The existing flows from Basin OS-1 (Q_5= 65cfs, Q_{100}=162cfs) are assumed to remain at existing levels as calculated in this report. Any increase in flows due to future

development of Basin OS-1 will require the construction of a proposed detention facility mentioned within the Sand Creek DBPS. as Alt. site "C." To maintain existing levels, Runoff from OS-1 will be collected by a proposed 54" concrete pipe and will be conveyed through and combined with runoff from Parcel 2 (assuming that all of Basin OS-1 can be collected at one point). Sand Creek Detention Facility Alt. 'C' shall be constructed to intercept and detain those flows that exceed the flow rate shown above.

Parcel 0 (Q_5= 19cfs, Q_{100}= 41cfs) contains 12.0 acres of proposed school development. Flows from this site will be conveyed within a proposed 36" storm system (Pipe 0). Runoff from this site will combine with flows from Parcel 1.

Parcel 1 (Q_5= 1.0cfs, Q_{100}= 1.5cfs) will consist of 5.0 acres of a proposed public park site. Anticipated runoff from this site will be conveyed within a proposed 18" storm system (Pipe 1). Runoff collected from this site will combine with runoff from the aforementioned school site and continue within a proposed 36" storm sewer (Pipe 2) until combining with flows from Parcel 2. The 18" RCP pipe may or may not be warranted at the time of final design. However, this pipe stub is provided for calculation purposes anyway.

Parcel 2 (Q_5= 64cfs, Q_{100}= 176cfs) contains 84.3 acres of proposed single-family residential area assuming a density of 3.5-7.99 DU/AC with associated streets, lots, and structures. Runoff from this site is conveyed by the proposed streets and initial systems, and ultimately collected by a proposed 54" concrete pipe (Pipe 3). The combination of flows from off-site basin OS-1 (Q_5= 65cfs, Q_{100}=162cfs) and Basins 0, 1, and 2 will be conveyed downstream within a proposed 66" R.C.P (Q_5= 111cfs, Q_{100}= 294cfs) – (Pipe 3B). Flows from the proposed school and park site will combine with those conveyed from OS-1 and Parcel 2 totaling Q_5= 125cfs, Q_{100}=325cfs. A proposed 66" storm sewer system will convey the collected runoff southwest along existing Vollmer Road (Pipe 4).

Parcel 3 (Q_5= 56cfs, Q_{100}= 151cfs) contains 72.9 acres of proposed single-family residential area assuming a density of 3.5-7.99 DU/AC with associated streets, lots, and

structures. Flows from the northern 33.7 acres of this area are assumed to be conveyed by street flow and an initial system (Q_5=26cfs, Q_{100}= 70cfs) and will be ultimately intercepted by a proposed 42" concrete storm system which will combine with the runoff from parcels 0, 1, 2, and OS-1 (Pipe 5). A 72" storm sewer will direct the upstream runoff (Q_5= 150cfs, Q_{100}= 396cfs) across Vollmer Road and discharge flows directly into an existing channel or continuation of a 72" RCP (Pipe 5A). This channel is referenced in the Sand Creek DBPS as Segment 154. The collected runoff can be conveyed as open channel flow, or may alternatively be conveyed through a buried 72" concrete storm sewer or equivalent area box culvert. If flows are conveyed, underground mitigation measures will be required to account for the disturbed wetlands. Flows within the channel will then travel to the proposed DBPS Detention Facility No. 6. Currently there are two existing 30" CMP culverts crossing Vollmer Road adjacent to existing channel. These culverts will need to be removed and replaced for future site grading and road improvements to Vollmer Road dictate the need for these culverts. This area will be analyzed with the development of Parcel 3 or Parcel 5 in an individual Final Drainage Report upon development.

Basin OS-A consists of a 54.88 acres of the Reel Annexation located to the west of Black Forest Road and to the north of Woodmen Road. This area, which has been recently approved and annexed into the City of Colorado Springs, currently contains natural grasses, a small commercial area, and a few rural structures. Planned development for this area will consist of community and regional commercial developments. The developed flows from Basin OS-A (Q_5= 102.2 cfs, Q_{100}= 210.0 cfs) were estimated by the Law & Mariotti Consulting in the approved "Master Development Drainage Plan for The Ridge at Woodmen, revised March 2, 2004". As stated within the aforementioned document flows leaving the development will be released at historic rates of Q_5= 20.5cfs and Q_{100}= 52.5cfs. Runoff discharged from this area will be conveyed underneath Black Forest Road in an existing 48" RCP constructed with the El Paso County Woodmen Road Safety Project 'A'.

Basin OS-B consists of an approximately 100.9 acres, consisting of low-density residential and agricultural land located within the county. This area specifically currently contains natural grasses with a few rural structures. Runoff from this area was determined by removing the calculated runoff from a small portion of land within Woodmen Heights Annexation and the Reel Annexation from the Sand Creek DBPS Design Point 155-1. Any increase in flows due to future development of Basin OS-B will require the construction of an off-site detention facility. These offsite flows (Q_5= 41 cfs, Q_{100}= 96 cfs are currently directed by existing roadside ditches to a low point located approximately 1300' north of existing Vollmer Road. The majority of the flows are directed to existing 18" RCP and 36" CMP culverts that run underneath Black Forest Road. The remainder sheet flow across the roadway up gradient from the low point. This will be accomplished by a proposed additional 60" CMP placed across Vollmer Road directly adjacent to the existing 60" culvert. Runoff from this area (Pipe 8A) will combine with flows from the southern portion of Parcel 3 were they will be conveyed to Regional Detention Facility No. 6.

The southern portion of Parcel 3 (Q_5= 25cfs, Q_{100}= 70cfs) contains 39.2 acres and is a proposed single-family residential area assuming a density of 3.5-7.99 DU/AC with associated streets, lots, and structures. Runoff from this area will be conveyed by street flow and initial systems. Flows will be intercepted by a proposed 42" concrete storm system (Pipe 8). Runoff from Basin OS-B will combine with the runoff from the southern portion of Parcel 3 totaling Q_5= 148cfs, Q_{100}= 408cfs. The combined runoff will be conveyed to proposed Detention Facility No. 6 in a proposed 72" concrete pipe or equivalently sized box culvert.

At the time of improvements to Black Forest Road to a City of Colorado Springs standard cross section, Curb and Gutter, and storm sewer facilities will be designed to accommodate the revised profile. These facilities will discharge into the adjacent property to the east, and be conveyed to Regional Detention No. 6.

Parcel 4 (Q_5= 51cfs, Q_{100}= 140cfs) contains 67.1 acres of residential area assuming a density of 3.5-7.99 DU/AC with associated streets, lots, and structures. Flows from this area will be conveyed as street flow and by initial systems. Runoff intercepted from this parcel will be conveyed within a proposed 48" storm system that will discharge in the proposed improved channel or conduit located north of the proposed DBPS Detention Facility No. 6 (Pipe 6).

Parcel 5 (Q_5= 38cfs, Q_{100}= 74cfs) contains 18.7 acres of multi-family area assuming a density of 12-15.99 DU/AC. Flows are generated from associated streets, parking, and structures. Flows from this area are assumed to be conveyed by street flow and initial systems. Discharge from this parcel will be handled with a 42" storm system that will carry developed flows to the proposed improved channel or conduit located north of the proposed DBPS Detention Facility No. 6 (Pipe 7).

Parcel 6 (Q_5= 51cfs, Q_{100}= 92cfs) contains 21.2 acres of retail office land use with associated streets, parking, and structures. Flows from this area are assumed to be in the form of street flow, and parking lot runoff. A 42" storm system (Pipe 9) will collect the flows crossing Black Forest Road from the Reel Annexation and will ultimately convey these flows and discharge directly into the proposed DPBS Detention Facility No. 6.

Parcel 7 (Q_5= 64cfs, Q_{100}= 116cfs) contains 26.6 acres of proposed Neighborhood Commercial/Office development. Flows generated from associated parking, streets, and structures will be conveyed by a proposed 48" storm sewer (Pipe 10). Collected runoff will discharge directly into the proposed DBPS Detention Facility No. 6.

Parcel 8 (Q_5= 5.5cfs, Q_{100}= 20cfs) contains 16.3 acres that include the proposed DBPS Detention Facility No. 6. This parcel will be dedicated to the construction of the regional detention facility required per the Sand Creek Drainage Basin Planning Study. Flows generated from this site will sheet flow directly into the detention facility and be detained along with the other contributing flows per the Woodmen Heights Master Plan. Proposed

Detention Facilities for this Master Plan will be discussed in greater detail within the Detention Facilities portion of this report.

Parcel 9 (Q_5= 64cfs, Q_{100}= 116cfs) contains 32.8 acres of proposed community commercial development and Woodmen Road. This parcel is located south of Woodmen Road, west of Black Forest Road. The developed flows from this parcel will be conveyed within a proposed 48" concrete pipe (Pipe 11). Multiple alternatives exist for the route taken by the proposed storm sewer. Nevertheless, the collected runoff will continue along Woodmen Road, combine with runoff from Parcel 10, and continue easterly towards Detention Facility No. 6. Developed runoff from Parcel 9 could alternatively be detained onsite by a small detention facility and discharged into a roadside swale located along the southern side of Woodmen Road. The release rate of the proposed pond would be governed by the capacity of the roadside swale. The size of the on-site detention facility would be determined by assuming that the discharge could not exceed historic runoff rates and would be analyzed within the Final Drainage Report for Parcel 9. For the purpose of this report and calculations, it was assumed that Parcels 9 and 10 would contribute to the Regional Detention Pond #6.

Parcel 10 (Q_5= 11.5cfs, Q_{100}= 21cfs) contains 4.8 acres of proposed office development. Flows generated from associated parking, streets, and structures will be conveyed via an 18" storm pipe (Pipe 12) to combine with the proposed 48" storm sewer outfall, (Pipe 11), that will discharge into the proposed Regional DBPS Detention Facility No. 6. Parcel 10 is bounded to the north by a small parcel that will not be included within the Woodmen Heights Annexation and Master Plan. A small amount of additional storage within the proposed regional detention facility would allow for the addition of this site to enter the pond should future agreements be reached.

Basins Tributary to Regional Detention Facility No. 3 (East Pond)

The drainage from these primarily easterly basins within Woodmen Heights will be conveyed through a series of existing and proposed drainage structures, and ultimately

collected in the planned on-line Sand Creek Regional Detention Facility No. 3. This facility will be located approximately 1800' west of Proposed Marksheffel Road and north of Woodmen Road and shall provide detention for the increased runoff as well as provide water quality for the eastern portion of the Master Plan development. The proposed drainage conditions for this area will be more specifically described as follows.

Parcel 11 (Q_5= 21cfs, Q_{100}= 43cfs) contains 18.71 acres of multi-family development assuming a density of 8-11.99 DU/AC. Flows include runoff from associated parking, streets, and structures. A 30" storm system will convey flows from this parcel and eventually be discharged into on-line Detention Facility No. 3 (Pipe 13).

Basin OS-2 (Q_5= 216cfs, Q_{100}= 610cfs) consists of 600 acres of native grasses and some rural structures located north of Parcels 4, 12, & 18. These flows were taken from the approved Sand Creek Drainage Basin Planning Study. The DBPS assumes an Industrial land use and single-family residential to the north. This study will continue to hold the DBPS assumptions and flows for this area. Any increase in flows due to future development of Basin OS-2 will require detention facilities to maintain the assumed DBPS levels. Runoff from the western one-half of Basin OS-2 (Q_5= 108cfs, Q_{100}= 305cfs) is to be collected with a 66" RCP and combined with runoff from Parcel 11 (Pipe 14). The combined runoff (Q_5= 111cfs, Q_{100}= 312cfs) will be conveyed southerly towards proposed Sand Creek On-line Detention Facility No. 3 (Pipe 15).

Parcel 12 (Q_5= 40cfs, Q_{100}= 109cfs) contains 52.4 acres of residential acreage assuming a density of 3.5-7.99 DU/AC. Flows generated from associated streets and structures will be conveyed by a 48" storm sewer outfall (Pipe 16) that will combine with flows from upstream parcels (OS-2 and Parcel 11) within a proposed 72" RCP and discharge directly into the proposed on-line DBPS Detention Facility No. 3 at Q_5= 122cfs, Q_{100}= 347cfs) – (Pipe 17).

Parcel 13 (Q_5= 52cfs, Q_{100}= 94cfs) contains 21.7 acres of retail office development with associated streets, parking, and structures. Flows generated from this parcel will be

detained by a 2.7 acre-ft. detention facility with a water quality outlet structure. Runoff will be routed by a 42" storm system south across Woodmen and will provide a source of water to help retained existing wetlands located to the south of Woodmen.

Basin OS-3 (Q_5= 216cfs, Q_{100}= 610cfs) consists of 600 acres of native grasses and some rural structures located north of Parcel 16. These flows were taken from the approved Sand Creek Drainage Basin Planning Study. The DBPS assumes a single-family land use. This study will continue to hold the DBPS assumptions and flows for this area. Any increase in flows due to future development of Basin OS-3 will require detention facilities to maintain the assumed DBPS levels. Sand Creek Detention Facility Alt. 'C' shall be constructed to intercept and detain those flows that otherwise would exceed existing rates.

Basin OS-4 (Q_5= 809, Q_{100}= 2285) consists of existing Sand Creek Channel flow located upstream from the subject site. Flows were taken from the approved Drainage Basin Planning Study for Sand Creek. Reach SC-8 at the proposed 2-8'x6' CBC located at the Mustang Place crossing north of the Proposed Woodmen Heights Master Plan. These flows are assumed to be in the channel at this point and these flows are assumed to be tributary to the proposed On-line Detention Facility No. 3.

Parcel 14 (Q_5= 22cfs, Q_{100}= 61cfs) contains 29.3 acres of proposed residential development assuming a density of 3.5-7.99 DU/AC. This parcel will contain associated streets and structures. Developed flows will be discharged directly into the proposed improved Sand Creek. There will be two discharge points along Sand Creek from this parcel. A 30" RCP will convey runoff from the northern half of the parcel (Q_5= 11.4cfs, Q_{100}= 30cfs) - (Pipe 19), and a proposed 30" RCP will discharge runoff (Q_5= 11.0cfs, Q_{100}= 30cfs) - (Pipe 22) into Sand Creek that is created from the southern half of the parcel.

Parcel 15 (Q_5= 66cfs, Q_{100}= 138cfs) contains 24.6 acres of proposed major public assembly. This parcel will contain associated streets and structures. The northern and

central portion of the developed flows will be discharged directly into the proposed improved Sand Creek. The runoff collected from this portion of the site shall be conveyed by 36" RCP storm sewer and will discharge developed runoff of Q_5= 21cfs, Q_{100}= 44cfs (Pipe 20), while the lower third of the parcel will be conveyed within a proposed 36" RCP Q_5= 24cfs, Q_{100}= 50cfs (Pipe 21), where it will be directed under the proposed bridge at Marksheffel Road and Sand Creek.

Parcel 16 (Q_5= 1.5cfs, Q_{100}= 14.1cfs) contains 15.1 acres of the Sand Creek Channel. Flows generated within the channel will combine with runoff from Parcels 14 and 15. These combined flows will continue within the channel towards the proposed On-line Detention Facility No. 3. Channel improvements will be required with the development of the adjacent sites and will be discussed in depth within this report.

Parcel 17 (Q_5= 22cfs, Q_{100}= 46cfs) contains 13.7 acres of multi-family development with associated streets, parking and structures. Developed flows will be routed westerly via a proposed 36" storm system (Pipe 24). Runoff from the eastern-half of Basin OS-2 (Q_5= 108cfs, Q_{100}= 305cfs) – (Pipe 25) is to be collected by a 66" RCP and combined with runoff from Parcel 17. The combined runoff (Q_5= 111cfs, Q_{100}= 312cfs) – (Pipe 26) will be conveyed southerly towards the proposed On-line Detention Facility No. 3.

Parcel 18 (Q_5= 22cfs, Q_{100}= 54cfs) consists of 23.6 acres of proposed public school development. Runoff from a portion of this site will be conveyed by a proposed 24" storm system, where it will combine with runoff from Parcel 17 and OS-2 (Pipe 27). Flows totaling Q_5= 112cfs, Q_{100}= 314cfs will continue south within a proposed 66" RCP towards proposed On-line Detention Facility No. 3. The remainder of the runoff collected from the basin will be conveyed within a 36" RCP storm drain and discharged into the Sand Creek Drainage Channel (Q_5= 21cfs, Q_{100}= 43cfs) - (Pipe 23).

Parcel 19 (Q_5= 0.6cfs, Q_{100}= 6.2cfs) will consist of 6.70 acres of a proposed public park site. Anticipated runoff from this site will be conveyed within a proposed 18" storm system (Pipe 29). Runoff collected from this site will discharge into proposed On-line

Detention Facility No. 3. The 18" RCP pipe may or may not be warranted at the time of final design, however, this pipe stub is provided for calculation purposes anyway.

Basin OS-5 (Q_5= 72, Q_{100}= 340) 323.00 acres, consists of a large lot residential neighborhood within the main stem of the Sand Creek Basin. Per the Sand Creek Drainage Basin Planning Study, Q_{100}=340cfs is entering Parcel 20 via existing 42" CMP storm culverts under Mustang Road. The DBPS calls for replacement of the 42" CMP with twin 60" CMP culverts. DBPS Segment 150-2 describes the improvements for a rip rap channel. This option is an alternative to an underground 72" storm system (Pipe 30). A separate Final Drainage Report for this parcel will make the determination for the ultimate drainage system. Channel improvements and the underground pipe system will be sized to handle existing flows from OS-5. Land use east of the Woodmen Heights boundary currently includes developed 5-acre residential properties. Any future change in land use that will increase runoff will require on-site detention to maintain anticipated release rates.

Parcel 20 (Q_5= 28cfs, Q_{100}= 58cfs) contains 17.3 acres of proposed major public assembly. This parcel will contain associated streets and structures. Developed flows from this parcel will be collected within proposed 36" and combine with runoff from OS-5 and a small portion of Parcel 15 (Pipe 31). These combined flows of Q_5= 106cfs, Q_{100}= 418cfs will be directed south within a proposed 72" RCP (Pipe 32).

Parcel 21 (Q_5= 82cfs, Q_{100}= 170cfs) contains 50.4 acres proposed for major public assembly development. The parcel will contain associated streets, parking, and structures. Runoff from the northern portion of the parcel (25.2 acres) will be collected within a proposed 42" RCP (Q_5= 41cfs, Q_{100}= 85cfs) - (Pipe 35). The collected runoff combines with flows from Parcels OS-5, 15, and 20 within a proposed 72" RCP. Combining for total runoff of Q_5= 141cfs, Q_{100}= 489cfs, which is to be conveyed within a proposed 78" RCP west to Sand Creek (Pipe 36).

The southern portion of Parcel 21 contains 25.2 acres proposed for major public assembly development. The parcel will contain associated streets, parking, and structures. Runoff from this portion of the parcel will be collected within a proposed 42" RCP (Q_5= 41cfs, Q_{100}= 85cfs) – (Pipe 39), and will continue toward On-line Regional Detention Facility No. 3. A temporary detention pond may be constructed on-site until such time that the regional pond is constructed.

Parcel 22 (Q_5= 40cfs, Q_{100}= 73cfs) contains 16.7 acres of neighborhood commercial/multi-family development. This parcel will contain associated streets, parking, and structures. Developed flows from this parcel will be collected within a 42" RCP (Pipe 37) and will combine with flows Basins 15, 20, 21, and OS-5. Combined runoff will be transported to Sand Creek within an 84" storm system or equivalently sized box culvert with flows totaling Q_5= 172cfs, Q_{100}= 543cfs (Pipe 38).

Parcel 23 (Q_5= 59cfs, Q_{100}= 106cfs) contains 24.3 acres proposed for community commercial and office development. This parcel will contain associated streets, parking, and structures. Developed flows from this parcel will be collected by a 42" RCP (Pipe 40) and combine with flows from the southern portion of parcel 21 and discharge directly into the proposed On-line Detention Facility No. 3.

Parcel 24 (Q_5= 1.5cfs, Q_{100}= 13.3cfs) contains 14.3 acres of the Sand Creek Channel. Flows generated within the channel will combine with developed runoff from Parcels 18, 22, 23, and upstream flows in Sand Creek. These combined flows will continue within the channel towards the proposed On-line Detention Facility No. 3. Channel improvements will be required with the development of the adjacent sites and will be discussed in greater detail within this report.

Parcel 25 (Q_5= 8.6cfs, Q_{100}= 32cfs) contains 25.5 acres that include the proposed On-line Detention Facility No. 3. This parcel will be dedicated to the construction of the regional detention facility required per the Sand Creek Drainage Basin Planning Study. Flows generated from this site will sheet flow directly into the detention facility and be detained

along with the other contributing flows per the Woodmen Heights Master Plan. Proposed Detention Facilities for this Master Plan will be discussed in greater detail within the Detention Facilities portion of this report.

Parcel 26 (Q_5= 55cfs, Q_{100}= 100cfs) contains 22.9 acres of proposed neighborhood retail office development with associated streets, parking, and structures. This parcel is located south of Woodmen road. A water quality control pond will be required on-site prior to release into Sand Creek. Alternatives to the City of Colorado Springs Drainage Criteria Manual Vol. 2 approved BMP's (Best management Practices) may be used in addition, or in place of, a WQCV Pond (Pipe 42).

Parcel 27 (Q_5= 24cfs, Q_{100}= 50cfs) contains 13.8 acres of proposed multi-family development assuming a density of 8-11.99 DU/AC with associated street, parking, and structures. A water quality control volume will be required on-site prior to release into Sand Creek. Alternatives to the City of Colorado Springs Drainage Criteria Manual Vol. 2 approved BMP's (Best management Practices) may be used in addition, or in place of, a WQCV Pond (Pipe 43).

Parcel 28 (Q_5= 0.9.5cfs, Q_{100}= 7.8cfs) contains 7.4 acres of the Sand Creek Channel. Flows generated within the channel will combine with runoff from On-line Detention Facility No. 3 and Parcels 26 and 27. These combined flows will continue within the channel to downstream facilities. Developed flows at this point in Sand Creek, are in accordance with the amounts described in the DBPS.

Parcel 29 (Q_5= 90cfs, Q_{100}= 164cfs) contains 37.7 acres proposed for the community commercial/office development. This parcel lies south of Woodmen Road and within the East Fork of Sand Creek Drainage Basin. A water quality control pond will be required on-site prior to release of flows off-site into Banning Lewis Ranch. Alternatives to the City of Colorado Springs Drainage Criteria Manual Vol. 2 approved BMP's (Best management Practices) may be used in addition, or in place of, a WQCV Pond. The ultimate storm system required to route developed flows to the WQCV facility will be a

54" storm system (Pipe 45). Pond outlet design will be evaluated with a Final Drainage Report upon development of this parcel.

DETENTION FACILITIES

As previously mentioned, there are multiple detention facilities proposed for the Woodmen Heights Master Plan. The proposed construction is for two of the four ponds as shown with option Detention Site Alt. 'A' as described in the Sand Creek Drainage Basin Planning Study revised March 1996. This plan would eliminate Sand Creek DBPS detention facilities No's 4 and 5 and route the previously anticipated runoff into the enlarged remaining Sand Creek DBPS detention facilities No's 3, and 6. Additionally, Detention Site Alt. 'C" as shown in the Sand Creek DBPS, is to be constructed north of Woodmen Heights to detain increases in runoff tributary to Sand Creek from future developments within the up-gradient watershed. The easterly pond is to be placed on-line with Sand Creek where it will be most efficient in preventing erosion and sedimentation within the channel. Both the large scale regional and smaller detention facilities proposed within this study will be detailed in future Final Drainage Reports upon development of said parcels.

Upon final design of the detention facilities, water quality management, wetland mitigation, and the Streamside Ordinance shall be addressed. It is proposed that wetland areas be mitigated within the proposed detention facilities as well as the proposed on site detention facilities where these are required. This mitigation will need to be analyzed in a wetland report upon development of the individual parcels. At this time it is proposed the majority of storm water quality features will be included in the regional detention facilities and that only four site-specific features will be required (Parcels 13,26,27,and 29).

Sand Creek Drainage Basin Planning Study Detention Facility No. 3 is an on-line facility located north of the Sand Creek main channel's intersection with Woodmen Road. This facility is required per the Sand Creek Drainage Basin Planning Study. Flows entering

this facility (Q_5= 1030cfs, Q_{100}=2883cfs) will be detained and released at a rate dictated by the Sand Creek Drainage Basin Planning Study. Per the DBPS this facility was to be 140 acre-ft with (Q_{100}=3230cfs) entering and a release rate of (Q_{100}=2240cfs). Per CCES calculations and due to the fact that we are combining DBPS detention facilities 3, 4, and 5, facility No. 3 is a 224 acre-ft facility with a total inflow of (Q_5= 1030cfs, Q_{100}=2883cfs) and a release rate of (Q_5= 691cfs, Q_{100}=2242cfs). Upon final design, this facility will include water quality control features, and an outlet structure to be designed to conform to the release rates allowed per the DBPS (Overall Volume of 224 acre-ft. does not include WQCV). The released flows will enter the Sand Creek Main Channel at its Woodmen Road Crossing. Per the Sand Creek Drainage Basin Planning Study, the existing bridge crossing is adequate to handle the released flows until such a time that Woodmen Road is widened. This detention facility, due to its large size, is proposed to be a combined detention facility and public park site with storage volume with in the park area. Coordination with the City Parks Department will be required with the final design of this Detention Facility.

Sand Creek Drainage Basin Planning Study Detention Facility No. 6 is an online facility to a Sand Creek Tributary located northeast of the intersection of Woodmen Road and Black Forest Road. This facility is required per the Sand Creek Drainage Basin Planning Study. Per the DBPS, this facility is to be a 125 acre-ft facility with an inflow of (Q_{100}=1320cfs) and a release rate of (Q_{100}=70cfs). Per this MDDP and CCES calculations, this detention facility will be a 71 acre-ft facility with an inflow of (Q_5= 449cfs, Q_{100}=1093cfs) and the release rate dictated by the DBPS of (Q_{100}=70cfs). Upon final design, this facility will include water quality control features and an outlet structure to be designed to conform to the release rates allowed per the DBPS (Overall Volume of 71 acre-ft. does not include WQCV). The released flows will enter the Sand Creek Tributary Channel 153-2 at its Woodmen Road Crossing. Per the Sand Creek Drainage Basin Planning Study, the existing 48" x 72" CMP culvert is adequate to handle the released flows. An outlet structure will be designed and installed when construction of this facility takes place.

CHANNEL IMPROVEMENTS

As a part of the development of the Woodmen Heights Master Plan, there are several improvements that are required per the Sand Creek Drainage Basin Planning Study, including improvements to Sand Creek. Channel improvements that are to be installed with the development of the Woodmen Heights Master Plan are as follows:

DBPS tributary channel segments 154 through 155-1, 157, 152-2, 159, 150-2, are proposed grass lined or rip rap channels. It is likely that the proposed development will consist of improvements that will not condone the assumed open channels in all cases. The proposed improvements to convey the 100-year event will consist of buried reinforced concrete pipe and structures.

DBPS channel segments 151 and 160 include Sand Creek main channel from south of Mustang Place to the crossing of Woodmen Road, DBPS Reach SC-8. The Sand Creek Main channel will be improved to handle the developed flows that will be discharged from the Master Plan Parcels per the DPBS proposal. The DBPS requires multiple check structures, drop structures, 10-year rip rap lining, and On-line Detention Facility No. 3. Upon final design of the channel and the Sand Creek On-line Detention Facility No. 3, further improvements may be required in order to accommodate the developed flows. A separate drainage report and channel improvement plans will be required for final design.

DBPS channel segments 164 and 159 Sand Creek tributary channel west of Sand Creek. Per this MDDP, the Woodmen Height Master Plan proposes to divert this channel with a Channel Diversion and discharge flows directly into Sand Creek north of its current confluence. The new confluence location is proposed to be just north of Woodmen Heights Parcel 14. Improvements suggested by the DBPS include an improved riprap channel with 3 drops at 250' intervals. Upon final design of this channel the Sand Creek Main Channel improvements, further improvements may be required in order to accommodate the developed flows.

DBPS channel segment 150-2, Sand Creek tributary channel east of Sand Creek receiving flows from MDDP basin OS-4. These channel improvements are required by the DBPS, but per the Woodmen Heights Master Development Drainage Plan, we are reserving the right to make these improvements optional and install an under ground storm system to handle flows from OS-4. This channel alignment is currently running through Parcels 18 and 21. This channel will either be realigned or and underground storm system will be installed.

All other open channels within the Woodmen Heights Master Plan may be replaced with an underground storm system or designed as an open channel to convey the 100-year event and integrate with the surrounding development. Wetland areas and open channels are to be mitigated within the development.

BOX CULVERTS

The Woodmen Heights Master Plan proposes the extension of existing Marksheffel Road north across Woodmen Road. This extension has been studied and included in the approved Sand Creek Drainage Basin Planning Study. Marksheffel Road is proposed to cross Sand Creek within the Woodmen Height Master Plan. Per the DBPS, triple 10'x12' box culverts are proposed at the old crossing location. The current crossing location will need to be evaluated and detailed with the channel improvement plans for Sand Creek, and the Street Improvement Plans for the Marksheffel Road extension. This design will conclude if a free-span bridge or box culvert if necessary.

MAINTENANCE AND OBLIGATIONS

The proposed detention facilities and drainage improvements are to be public facilities with maintenance provided by the City of Colorado Springs. The Woodmen Heights Metropolitan District will construct the public facilities and warrantee them for two years.

Bridges

Marksheffel Road Sand Creek Crossing. The Owners shall construct the Marksheffel Road bridge or box culvert, as applicable, across Sand Creek at their expense. The owners will be eligible for fifty percent (50%) reimbursement for the construction cost of the bridge or box culvert, as applicable, per section 7.7.1001-1006 (Arterial Roadway Bridges) of the City Code.[1]

Black Forest Road Cottonwood Creek Crossing. Owners acknowledge that there is a need to construct the Black Forest Road bridge or box culvert, as applicable, across Cottonwood Creek. The Owners, either directly or through the Districts, shall construct the bridge or box culvert over Cottonwood Creek prior to the expiration of the second phase of the development but in any case prior to December 31, 2011. The City commits to acquire the necessary right-of-way and easements necessary for the construction of the bridge through the development process and/or through its powers of eminent domain. The owners will be eligible for reimbursement as applicable, per Section 7.7.1001-1006 (Arterial Roadway Bridges) of the City Code. City participation or reimbursement for the costs of construction of the bridge or box culvert for the Black Forest Road Cottonwood Creek crossing will not be allowed. [1]

Roadways

Woodmen Road

....Woodmen Road shall be designated, designed and constructed to meet City of Colorado Springs Public Works design standards as identified and in accord with the County Major Thoroughfare Plan and the City Intermodal Transportation Plan. In the future, it may be necessary to improve Woodmen Road beyond the level contemplated by this Agreement at this time. The specifications for future improvements for which Owners are ultimately responsible to the extent they are not installed by the District will be determined at the time of development plan approval. Notwithstanding the foregoing,

[1] Per Approved Annexation Agreement for Woodmen Heights Filing Nos 1-6.

Owners' responsibility is for the construction of Woodmen Road where it is adjacent to the Property and related turning movement lanes and acceleration and deceleration lanes for access into the Property in order to meet City standards for those Improvements. [1]

Marksheffel Road. The Owners shall be responsible for all costs, including design, right-of-way dedication and construction, associated with Marksheffel Road, as a principal arterial street with one hundred sixty feet (160') of total right-of-way and with on-street bike lanes and a raised median, from the north end of the property and continuing south crossing Woodmen Road until it intersects with the existing City limits. The Owners shall plat and dedicate the full right-of-way for Marksheffel Road when requested by the City. Owners will be entitled to cost recovery for the extension of Marksheffel Road south of Woodmen Road in accord with Section 7.7.705.B. of the City Code (Subdivision Regulations). [1]

Vollmer Road. Owners, at Owners' expense, will dedicate all necessary right-of-way needed for and construct Vollmer Road connecting with Black Forest Road as shown on the approved Master Plan for the Property. Owners will be responsible for upgrading Vollmer Road to meet City standards as a minor arterial road with a total of eighty feet (80') to one hundred twenty feet (120') of right-of-way required to be dedicated by Owners. The reason for the varying right-of-way width is to enable the proper transition of Vollmer Road from the jurisdiction of the City to El Paso County. The parties acknowledge that El Paso County is currently studying Vollmer Road and may in the future downgrade the classification of the road. Should that happen, the City agrees that the right-of-way for Vollmer Road may be reduced to match the ultimate design of Vollmer Road as determined by El Paso County. [1]

Black Forest Road. The Owners will be responsible for dedicating one-half (1/2) of the necessary right-of-way for, and constructing Black Forest Road so that Black Forest Road has four (4) lanes and meets City standards for a principal arterial road with a total

[1] Per Approved Annexation Agreement for Woodmen Heights Filing Nos 1-6.

right-of-way of one hundred twenty feet (120') from its intersection with Woodmen Road north to the northern boundary of the Property. Owners or the District (as defined in Section XII of this Agreement) will be entitled to cost recovery for the costs to construct and improve the west one-half (1/2) of Black Forest Road from owners having frontage on said road in accord with Section 7.7.705.B. of the City Code (Subdivision Regulations).[1]

Drainage

...Owners may in the future desire to have this property treated as a "closed" drainage basin which does not require payment of drainage, bridge, or detention pond fees and there is no reimbursement for drainage facilities constructed. This property may be treated as a "closed" basin subject to approval by the City Engineer, the Colorado Springs/El Paso County Drainage Board, and City Council of an amendment to the Sand Creek Drainage Basin Planning Study ("SCDBPS") that "closes" this portion of the Sand Creek basin and demonstrates 1) no adverse impact on other properties in Sand Creek and 2) no negative impact on the fiscal integrity of the Sand Creek Drainage Basin fee structure. Owners shall be responsible for conformance with the SCDBPS except that no storm drainage flows shall exit the property in excess of historic flow rates until the downstream drainage facilities on the main channel of Sand Creek between Woodmen Road and Constitution Avenue (to include Detention Pond No. 2 which is south of Barnes Road) are either in place in accord with the SCDBPS or the facilities that are in place are adequate to accept flows in excess of historic that Owners desire to release. In the alternative and subject to approval by the City Engineer, the Owners may agree to participate on an equitable basis in the construction of Detention Pond No. 2 in exchange for the approval to release storm flows at the flow rates specified in the SCDBPS. [1]

[1] Per Approved Annexation Agreement for Woodmen Heights Filing Nos 1-6.

Parks

....Owners agree to pay the costs of constructing all of the trails and parks as shown on the Master Plan. Proposed improvements to the trail and park sites shall be submitted to the City Parks Department for review and approval in the City Parks Department's reasonable discretion to insure that all parks and trails meet current trail and park development standards at the time of construction. The costs of such improvements shall not be subject to reimbursement by the City. The Owners and the City shall also agree upon the timing and phasing of construction and improvements. The City will not program recreational activities in the park sites within the Property unless requested by the owner of the parks. Any request of the City by the owner of the parks to schedule the Parks will be subject to the City' review and approval, in the City's sole discretion. Trails and parks must remain accessible to the general public in perpetuity for parkland credit to be retained.[1]

HYDROLOGIC CALCULATIONS

Hydrologic calculations were performed using the City of Colorado Springs/El Paso County Drainage Criteria Manual, as revised in November 1991 and October 1994. The Soil Conservation Service method utilizing Pond Pak version 8.0 was used to estimate peak storm water runoff and hydrograph generation anticipated from design storms with 5-year and 100-year recurrence interval. Rainfall data was obtained from standard isopluvial maps for this area from the City of Colorado Springs/El Paso County Drainage Criteria Manual, NOAA Atlas II, volume III. A 24-hour SCS Type II distribution was used per criteria with a 100-year precipitation of 4.40 inches and a 5-year precipitation of 2.7 inches. The average soil condition reflects Hydrologic Group "A" (Blakeland) as determined by the "Soil Survey of El Paso County Area," prepared by the Soil Conservation Service (see map in Appendix).

[1] Per Approved Annexation Agreement for Woodmen Heights Filing Nos 1-6.

Due to the overlot grading that will take place on this site, per the El Paso County Drainage Criteria Manual, Hydrologic Group "B" Curve Numbers were used for the SCS Method to determine developed flows.

FLOODPLAIN STATEMENT

Portions of this site are located within a floodplain as determined by the Flood Insurance Rate Maps (F.I.R.M.) Map Number 08041C 0535F and effective date, March 17, 1997 (See Appendix).

CONSTRUCTION COST OPINION (See Appendix)

Quantities and costs were evaluated for the major systems that will be required for the development of the proposed Woodmen Heights Master Plan. These improvements include the construction and replacement of existing inadequately sized culverts, storm sewers, lined channels, box culverts and regional detention facilities. See Appendix for DBPS and MDDP cost comparison.

The summation of the reimbursable facilities per the DBPS total $8,337,988.00. This includes the tributary drainageway improvements, Sand Creek, detention, and bridge costs. The comparative costs per this MDDP calculating buried pipe in lieu of open channel, Sand Creek, detention, and bridge costs total $12,029,120.35. The difference being $3,691,140.35. This information will be presented to the City/County Drainage Board for consideration of a fee increase to the Sand Creek Basin.

Classic Consulting Engineers & Surveyors cannot and does not guarantee that the construction cost will not vary from these opinions of probable construction costs. These opinions represent our best judgment as design professionals familiar with the construction industry and this development in particular.

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COTTONWOOD DRAINAGE AND BRIDGE FEES

A portion of this area lies within Cottonwood Creek drainage basin boundaries. Per the approved DBPS for the Cotton Creek Drainage Basin, only major systems include in the DBPS are reimbursable thru the drainage basin funds, not the initial systems. The year 2004 drainage and bridge fees are as follows:

Drainage Fees:	
$8,530/acre x 2acres*	$17,060.00
Bridge Fees:	
$696/acre x 2 acres*	$ 1,392.00
TOTAL	**$18,452.00**

*This acreage represents the summation of all parcels contained in the Woodmen Heights Master Plan. The amount of fees due will be determined at the time of recordation of a Final Plat within this Master Plan.

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SAND CREEK DRAINAGE AND BRIDGE FEES

A portion of this area lies within Sand Creek drainage basin boundaries. Per the approved DBPS for the Sand Creek Drainage Basin, only major systems include in the DBPS are reimbursable thru the drainage basin funds, not the initial systems. The year 2004 drainage and bridge fees are as follows:

Drainage Fees:	
$7,448/acre x 804acres*	$5,988,192.00
Bridge Fees:	
$454/acre x 804 acres*	$ 365,016.00
Land Fees:	
$586/acre x 804 acres*	$ 471,144.00
Facilities:	
$1,637/acre x 804 acres*	$1,316,148.00
TOTAL	**$8,140,500.00**

*This acreage represents the summation of all parcels contained in the Woodmen Heights Master Plan. The amount of fees due will be determined at the time of recordation of a Final Plat within this Master Plan.

Conditions: Owners shall be responsible for conformance with the SCDBPS except that no storm drainage flows shall exit the property in excess of historic flow rates until the downstream drainage facilities on the main channel of Sand Creek between Woodmen Road and Constitution Avenue (to include Detention Pond No. 2 which is south of Barnes Road) are either in place in accordance with the SCDBPS or the facilities that are in place are adequate to accept flows in excess of historic that Owners desire to release. In the alternative and subject to approval by the City Engineer, the owner may agree to participate on an equitable basis in the construction of Detention Pond No. 2 in exchange for the approval to release storm flows at the flow rates specified in the SCDBPS

Fees are due prior to plat recordation. Prior to issuance of building permits a plat will need to be submitted and appropriate drainage facility and erosion control assurances will need to be posted.

SUMMARY

Developed flows are to be routed to the various proposed detention facilities that are required to detain the 5 and 100 year storms and release only the historic flows into the various drainage basins per the approve DBPS criteria. Flows for the land uses were calculated using the SCS method and are conceptual only. Upon development of the individual Master Plan components, a Preliminary/Final Drainage Report will be required utilizing the Rational Method per the City/County Drainage Criteria Manual. Wetland areas will be conserved were possible and mitigated with in the Woodmen Heights development.

PREPARED BY:

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Project Manager

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REFERENCES

1. City of Colorado Springs/County of El Paso Drainage Criteria Manual dated October 1991.

2. City of Colorado Springs/County of El Paso Drainage Criteria Manual Volume II, dated November 1, 2002.

3. "Sand Creek Drainage Basin Planning Study," Kiowa Engineering Corporation., March 1996.

4. "Master Development Drainage Plan for The Ridge at Woodmen," Law & Mariotti Consultants, Inc., revised March 2004.

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APPENDIX

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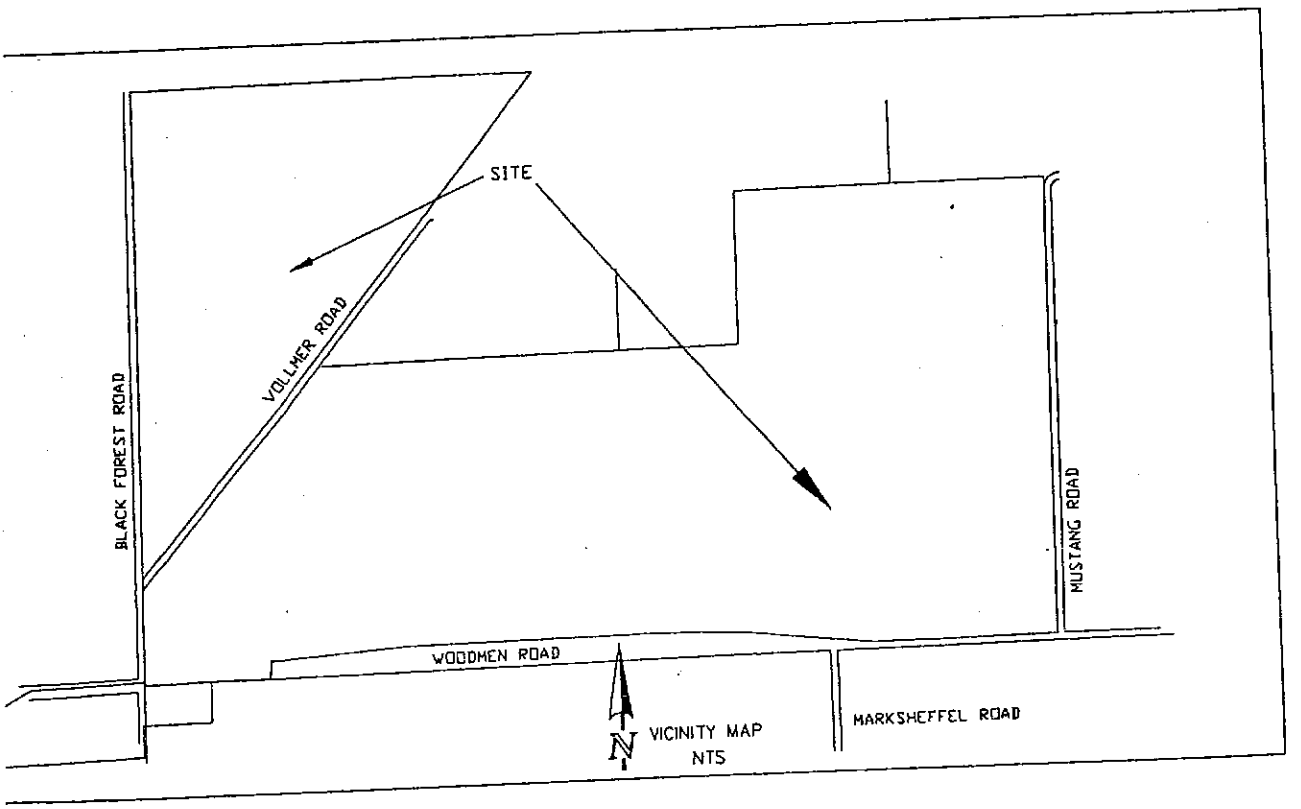
VICINITY MAP



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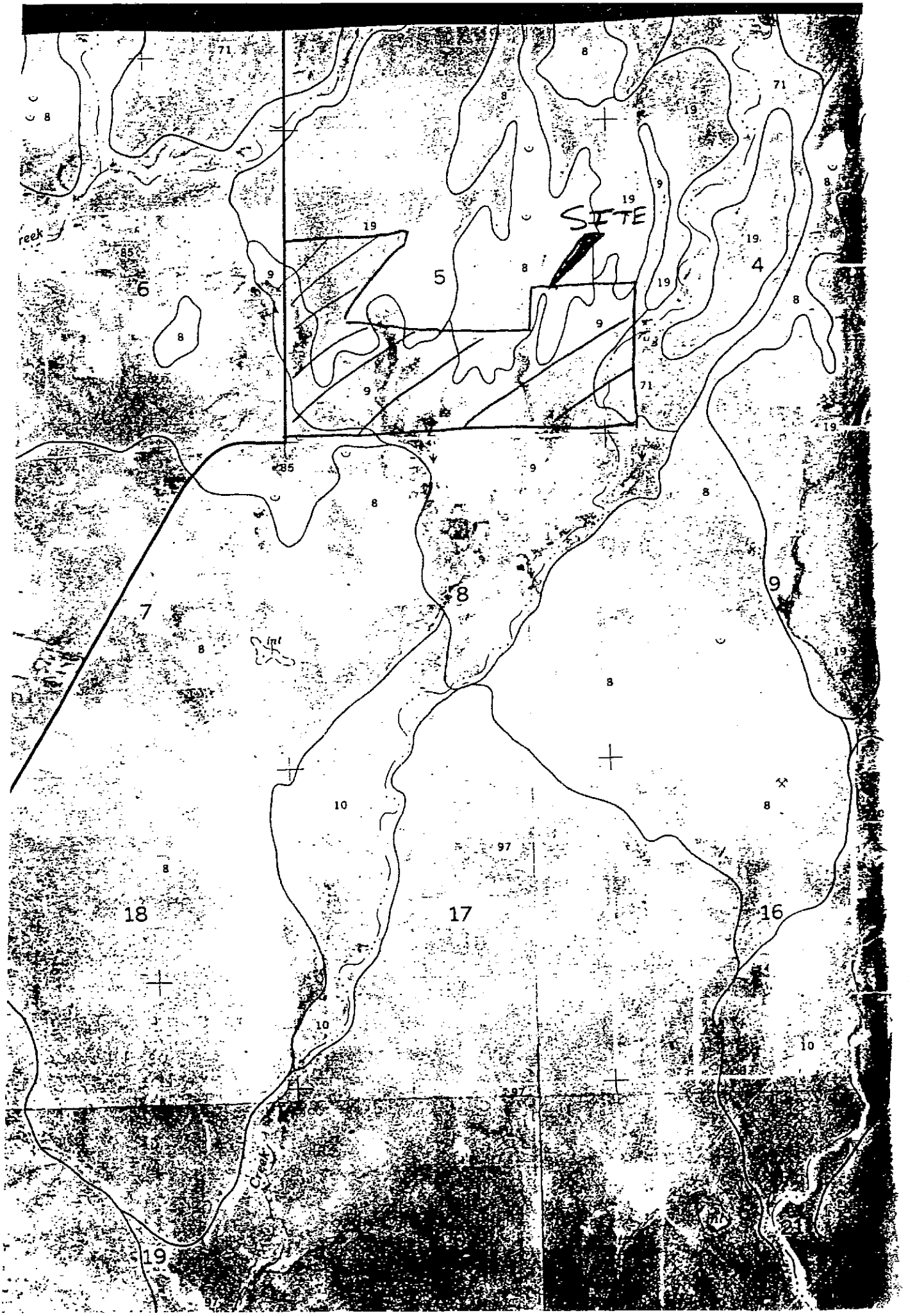
SOILS MAP (S.C.S SURVEY)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F.E.M.A. MAPS

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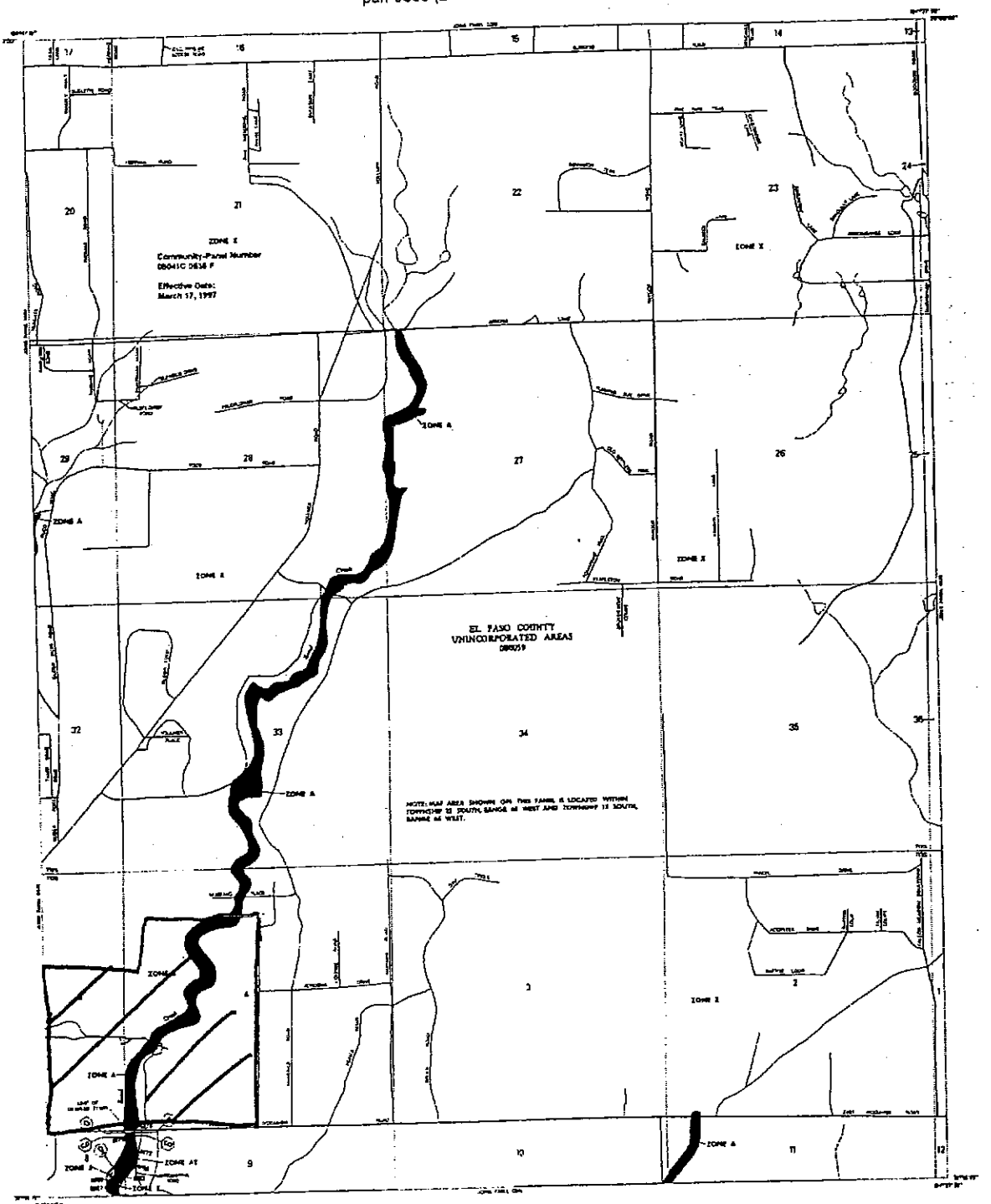

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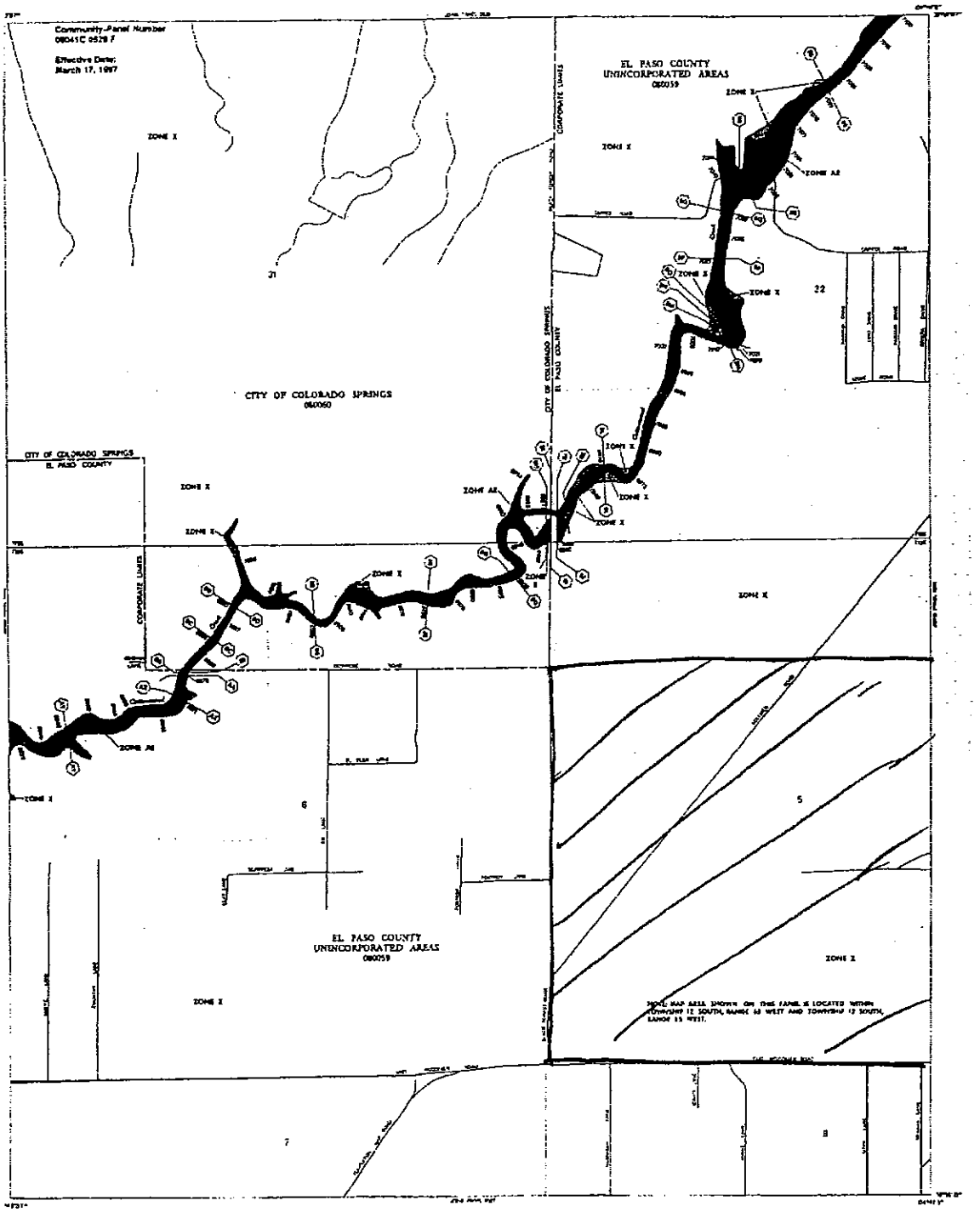

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CONSTRUCTION COST OPINION

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

CONSTRUCTION COST OPINION PER DBPS
Public Drainage Facilities (Reimbursable System per DBPS)*

Tributary Drainageway Conveyance Cost Estimate (pg. 73 DBPS)

ITEM	SEGMENT / DESCRIPTION	QUANTITY		UNIT COST	GRADE CONTOLS	LENGTH	REIM. COST
1.	152-2 "	800	$	150.00 /LF	2	100	$ 138,000.00
2.	150-1 100-YR STORM SEWER 36" RCP	800	$	58.00 /LF	0	0	$ 46,400.00
3.	150-2 100-YR RIP RAP	2400	$	200.00 /LF	0	0	$ 480,000.00
4.	161-1 100-YR GRASSLINED	550	$	150.00 /LF	0	0	$ 82,500.00
5.	154 "	2100	$	200.00 /LF	10	600	$ 528,000.00
6.	157 "	2400	$	200.00 /LF	13	520	$ 573,600.00
7.	155-1 "	550	$	175.00 /LF	4	140	$ 121,450.00
8.	159 100-YR RIP RAP	3450	$	200.00 /LF	14	840	$ 841,200.00
	SUB-TOTAL						**$ 2,811,150.00**

Drainageway Conveyance Cost Estimate (pg. 64 DBPS)

ITEM	SEGMENT / DESCRIPTION	QUANTITY		UNIT COST	GRADE CONTOLS	LENGTH	REIM. COST
1.	148-2 SELECT LININGS (1 SIDE)	2150	$	127.00 /LF	5	620	$ 384,650.00
2.	151 10-YR RIP RAP	500	$	238.00 /LF	3	250	$ 164,000.00
3.	160 SELECT LININGS (1 SIDE)	4400	$	127.00 /LF	6	720	$ 688,400.00
4.	160 10-YR RIP RAP	600	$	238.00 /LF	0	0	$ 142,800.00
	SUB-TOTAL						**$ 1,379,850.00**

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

Roadway Culvert Crossing Cost Estimate (pg. 76 DBPS)

ITEM	DESCRIPTION	QUANTITY		UNIT COST	COST	REIM. COST
1.	Vollmer Road - 2-60" RCP	60	$	240.00 /LF	$ 14,400.00	$ 0.00
2.	Woodmen Road - 4'Hx6'W CBC	300	$	240.00 /LF	$ 72,000.00	$ 72,000.00
3.	Woodmen Road - 4'Hx4'W CBC	400	$	210.00 /LF	$ 84,000.00	$ 84,000.00
4.	Vollmer Road - 2-6'Hx10'W CBC	80	$	690.00 /LF	$ 55,200.00	$ 0.00
5.	Mustang Road - 2-60" CMP	60	$	240.00 /LF	$ 14,400.00	$ 0.00
	SUB-TOTAL					**$ 156,000.00**

Bridge Crossing Cost Estimate (pg. 83 DBPS)

ITEM	DESCRIPTION	QUANTITY		UNIT COST	COST	REIM. COST
1.	Marksheffel Road - 3-10'Hx10'W CBC	80	$	1,260.00 /LF	$ 100,800.00	$ 100,800.00
	SUB-TOTAL					**$ 100,800.00**

Regional Detention Basin Land Fee Calculation (pg. 87 DBPS)

ITEM	DESCRIPTION	QUANTITY		UNIT COST	COST	REIM. COST
1.	SC-3	9.7	$	15,900.00 /AC	$ 154,230.00	$ 154,230.00
2.	SC-4	6.0	$	15,900.00 /AC	$ 95,400.00	$ 95,400.00
3.	SC-5	3.5	$	15,900.00 /AC	$ 55,650.00	$ 55,650.00
4.	SC-6	11.0	$	15,900.00 /AC	$ 174,900.00	$ 174,900.00
	SUB-TOTAL					**$ 480,180.00**

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

Detention Basin Cost Estimate (pg. 80 DBPS)

ITEM	DESCRIPTION	QUANTITY		UNIT COST			REIM. COST	
1.	SC-3	140.0	$	10,000.00 /AF	+	$ 15,000.00	$	1,415,000.00
2.	SC-4	46.0	$	10,000.00 /AF	+	$ 15,000.00	$	475,000.00
3.	SC-5	24.0	$	10,000.00 /AF	+	$ 15,000.00	$	255,000.00
4.	SC-6	125.0	$	10,000.00 /AF	+	$ 15,000.00	$	1,265,000.00
	SUB-TOTAL						$	**3,410,000.00**
	TOTAL REIMBUSABLE COSTS PER DBPS						$	**8,337,980.00**

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

CONSTRUCTION COST OPINION (MDDP)
Public Drainage Facilities (Reimbursable System)

Tributary Drainageway Conveyance Cost Estimate (In Lieu of Grasslined or Riprap Swales Per DBPS)

ITEM	SEGMENT / DESCRIPTION		QUANTITY	UNIT COST	COST	REIM. COST
1.	152-2	Pipe 13 36" RCP	1000	$ 52.50 /LF	$ 52,500.00	* ~~$ 52,500.00~~ Ø
	152-2	Pipe 14 66" RCP	200	$ 162.75 /LF	$ 32,550.00	$ 32,550.00
	152-2	Pipe 15 66" RCP	2050	$ 162.75 /LF	$ 333,637.50	$ 333,637.50
	152-2	Pipe 16 48" RCP	150	$ 92.50 /LF	$ 13,875.00	$ 13,875.00
	152-2	Pipe 17 72" RCP	200	$ 215.00 /LF	$ 43,000.00	$ 43,000.00
	152-2	Type I Manholes	13	$ 5,000.00 /EA	$ 65,000.00	$ 65,000.00
	152-2	66" RCP Bends	3	$ 1,950.00 /EA	$ 5,850.00	$ 5,850.00
	152-2	66"x36 WYE	1	$ 2,400.00 /EA	$ 2,400.00	* ~~$ 2,400.00~~ Ø
	152-2	72"x66" Reducer	1	$ 1,800.00 /EA	$ 1,800.00	$ 1,800.00
	152-2	72" Headwall	1	$ 3,000.00 /EA	$ 3,000.00	$ 3,000.00
	152-2	D50=2' Riprap	350	$ 60.00 /CY	$ 21,000.00	$ 21,000.00
2.	150-1	(no longer used)	0	$ - /LF	$ 0.00	$ 0.00

Per item taken to D.B 9/3/15 (E.N.)

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

ITEM	SEGMENT / DESCRIPTION		QUANTITY		UNIT COST	COST	REIM. COST
3.	152-0	Pipe 30 72" RCP	1100	$	215.00 /LF	$ 236,500.00	$ 236,500.00
	152-0	Pipe 31 36" RCP	150	$	52.50 /LF	$ 7,875.00	* ~~$ 7,875.00~~ D.
	152-0	Pipe 32 72" RCP	400	$	215.00 /LF	$ 86,000.00	$ 86,000.00
	152-0	Pipe 33 36" RCP	200	$	52.50 /LF	$ 10,500.00	* ~~$ 10,500.00~~ D.
	152-0	Pipe 34 78" RCP	500	$	273.00 /LF	$ 136,500.00	$ 136,500.00
	152-0	Pipe 35 42" RCP	150	$	73.50 /LF	$ 11,025.00	$ 11,025.00
	152-0	Pipe 36 78" RCP	1150	$	273.00 /LF	$ 313,950.00	$ 313,950.00
	152-0	Pipe 37 42" RCP	150	$	73.50 /LF	$ 11,025.00	$ 11,025.00
	152-0	Pipe 38 84" RCP	150	$	325.00 /LF	$ 48,750.00	$ 48,750.00
	152-0	Pipe 39 48" RCP	1200	$	92.50 /LF	$ 111,000.00	$ 111,000.00
	152-0	Pipe 40 48" RCP	150	$	92.50 /LF	$ 13,875.00	$ 13,875.00
	152-0	Pipe 41 60" RCP	250	$	136.50 /LF	$ 34,125.00	$ 34,125.00
	152-0	Type I Manholes	17	$	5,000.00 /EA	$ 85,000.00	$ 85,000.00
	152-0	36" RCP Bends	3	$	1,000.00 /EA	$ 3,000.00	* ~~$ 3,000.00~~ D.
	152-0	72" RCP Bends	6	$	2,150.00 /EA	$ 12,900.00	$ 12,900.00
	152-0	78" RCP Bends	3	$	2,350.00 /EA	$ 7,050.00	$ 7,050.00
	152-0	72"x36" WYE	1	$	3,150.00 /EA	$ 3,150.00	* ~~$ 3,150.00~~ D.
	152-0	78"x42" WYE	1	$	3,500.00 /EA	$ 3,500.00	$ 3,500.00
	152-0	84"x42" WYE	1	$	4,000.00 /EA	$ 4,000.00	$ 4,000.00
	152-0	78"x72" Reducer	1	$	2,150.00 /EA	$ 2,150.00	$ 2,150.00
	152-0	78"x72" Reducer	1	$	2,150.00 /EA	$ 2,150.00	$ 2,150.00
	152-0	84"x78" Reducer	1	$	2,750.00 /EA	$ 2,750.00	$ 2,750.00
	152-0	78"x72" Reducer	1	$	2,150.00 /EA	$ 2,150.00	$ 2,150.00
	152-0	Conc. Junct. Box	1	$	7,500.00 /EA	$ 7,500.00	$ 7,500.00

*Per item taken to D.B. 9/3/15 (E.N.)

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

ITEM	SEGMENT	DESCRIPTION	QUANTITY		UNIT COST	COST	REIM. COST
4.	154	Pipe 5 42" RCP	100	$	73.50 /LF	$ 7,350.00	$ 7,350.00
	154	Pipe 5A 72" RCP	1050	$	215.00 /LF	$ 225,750.00	$ 225,750.00
	154	Pipe 6 48" RCP	150	$	92.50 /LF	$ 13,875.00	$ 13,875.00
	154	Pipe 7 42" RCP	150	$	73.50 /LF	$ 11,025.00	$ 11,025.00
	154	Pipe 7A 78" RCP	300	$	273.00 /LF	$ 81,900.00	$ 81,900.00
	154	Type I Manholes	7	$	5,000.00 /EA	$ 35,000.00	$ 35,000.00
	154	72" RCP Bends	5	$	2,150.00 /EA	$ 10,750.00	$ 2,150.00
	154	78" RCP Bends	1	$	2,350.00 /EA	$ 2,350.00	$ 2,350.00
	154	72"x42" WYE	1	$	3,250.00 /EA	$ 3,250.00	$ 3,250.00
	155	72"x42" Reducer	1	$	1,900.00 /EA	$ 1,900.00	$ 1,900.00
	154	78" Headwall	1	$	3,000.00 /EA	$ 3,000.00	$ 3,000.00
	154	D50=2' Riprap	350	$	60.00 /CY	$ 21,000.00	$ 21,000.00
5.	157	Pipe 0 36" RCP	350	$	52.50 /LF	$ 18,375.00	~~$ 18,375.00~~ 0
	157	Pipe 1 18" RCP	100	$	35.00 /LF	$ 3,500.00	* ~~$ 3,500.00~~ 0
	157	Pipe 2 36" RCP	100	$	52.50 /LF	$ 5,250.00	~~$ 5,250.00~~ 0
	157	Pipe 3 54" RCP	1950	$	125.00 /LF	$ 243,750.00	$ 243,750.00
	157	Pipe 3A 54" RCP	100	$	125.00 /LF	$ 12,500.00	$ 12,500.00
	157	Pipe 3B 66" RCP	600	$	162.50 /LF	$ 97,500.00	$ 97,500.00
	157	Pipe 4 66" RCP	700	$	162.50 /LF	$ 113,750.00	$ 113,750.00
	157	Type I Manholes	13	$	5,000.00 /EA	$ 65,000.00	$ 65,000.00
	157	36" RCP Bends	1	$	1,000.00 /EA	$ 1,000.00	* ~~$ 1,000.00~~ 0
	157	54" RCP Bends	1	$	2,100.00 /EA	$ 2,100.00	$ 2,100.00
	157	36"x18" WYE	1	$	1,550.00 /EA	$ 1,550.00	* ~~$ 1,550.00~~ 0
	158	66"x54" WYE	1	$	3,000.00 /EA	$ 3,000.00	$ 3,000.00
	157	66"x36" Reducer	1	$	1,750.00 /EA	$ 1,750.00	* ~~$ 1,750.00~~ 0

Per MDDP as taken to D.B. 9/3/15 (EN).

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

ITEM	SEGMENT	DESCRIPTION	QUANTITY		UNIT COST	COST	REIM. COST
6.	155-1	Pipe 8 42" RCP	150	$	73.50 /LF	$ 11,025.00	$ 18,375.00
	155-1	Pipe 8A 66" RCP	600	$	162.50 /LF	$ 97,500.00	$ 55,125.00
	155-1	Pipe 8B 72" RCP	100	$	215.00 /LF	$ 21,500.00	$ 32,250.00
	155-1	Type I Manholes	7	$	5,000.00 /EA	$ 35,000.00	$ 35,000.00
	155-1	66" RCP Bends	4	$	1,950.00 /EA	$ 7,800.00	$ 7,800.00
	155-1	72"x42" WYE	1	$	3,250.00 /EA	$ 3,250.00	$ 3,250.00
	155-1	72"x66" Reducer	1	$	1,800.00 /EA	$ 1,800.00	$ 1,800.00
	155-1	72" Headwall	1	$	3,000.00 /EA	$ 3,000.00	$ 3,000.00
	155-1	D50=2' Riprap	350	$	60.00 /CY	$ 21,000.00	$ 21,000.00
7.	159	Pipe 24 36" RCP	625	$	52.50 /LF	$ 32,812.50	* ~~$ 32,812.50~~ 0
	159	Pipe 25 66" RCP	200	$	162.75 /LF	$ 32,550.00	$ 32,550.00
	159	Pipe 26 66" RCP	650	$	162.75 /LF	$ 105,787.50	$ 105,787.50
	159	Pipe 27 24" RCP	150	$	45.00 /LF	$ 6,750.00	* ~~$ 6,750.00~~ 0
	159	Pipe 28 66" RCP	775	$	162.75 /LF	$ 126,131.25	$ 126,131.25
	159	Type I Manholes	8	$	5,000.00 /EA	$ 40,000.00	$ 40,000.00
	159	36" RCP Bends	2	$	1,000.00 /EA	$ 2,000.00	* ~~$ 2,000.00~~ 0
	159	66" RCP Bends	3	$	1,950.00 /EA	$ 5,850.00	$ 5,850.00
	159	66" Headwall	1	$	3,000.00 /EA	$ 3,000.00	$ 3,000.00
	159	D50=2' Riprap	300	$	60.00 /CY	$ 18,000.00	$ 18,000.00

SUB-TOTAL (In Lieu of Grasslined or Riprap Swales Per DBPS) ~~$ 3,259,093.75~~ 3,106,681.25

*Per item taken to D.B 9/3/15. (E.N.)

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

Drainageway Conveyance Cost Estimate

ITEM	SEGMENT / DESCRIPTION	QUANTITY		UNIT COST	GRADE CONTOLS	LENGTH	REIM. COST
1.	148-2 SELECT LININGS (1 SIDE)	2150	$	150.00 /LF	5 @ $550/LF	620	$ 663,500.00
2.	151 10-YR RIP RAP	500	$	300.00 /LF	3 @ $550/LF	250	$ 164,000.00
3.	160 SELECT LININGS (1 SIDE)	4400	$	150.00 /LF	6 @ $550/LF	720	$ 688,400.00
4.	160 10-YR RIP RAP	600	$	300.00 /LF	0	0	$ 142,800.00
	SUB-TOTAL						**$ 1,658,700.00**

Roadway Culvert Crossing Cost Estimate

ITEM	DESCRIPTION	QUANTITY		UNIT COST	COST	REIM. COST
1	Woodmen Road - 42" RCP	300	$	250.00 /LF	$ 75,000.00	$ 0.00
2	Mustang Road - 2-60" CMP	60	$	350.00 /LF	$ 21,000.00	$ 0.00
	SUB-TOTAL				**$ 96,000.00**	**$ 0.00**

Bridge Crossing Cost Estimate

ITEM	DESCRIPTION	QUANTITY		UNIT COST	COST	REIM. COST
1.	Marksheffel Road - Bridge	220	$	4,000.00 /LF	$ 880,000.00	$ 880,000.00
	SUB-TOTAL					**$ 880,000.00**

MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS

Regional Detention Basin Land Fee Calculation

ITEM	DESCRIPTION	QUANTITY	UNIT COST	COST	REIM. COST
1.	SC-3	25.5	$ 42,137.00 /AC	$ 1,074,493.50	$ 1,074,493.50
2	SC-6	16.3	$ 42,137.00 /AC	$ 686,833.10	$ 686,833.10
	SUB-TOTAL			**$ 1,761,326.60**	**$ 1,761,326.60**

Detention Basin Cost Estimate

ITEM	DESCRIPTION	QUANTITY	UNIT COST	COST	REIM. COST
1.	SC-3	225.0	$ 15,000.00 /AF +	$ 3,375,000.00	$ 3,390,000.00
2	SC-6	71.0	$ 15,000.00 /AF +	$ 1,065,000.00	$ 1,080,000.00
	SUB-TOTAL				**$ 4,470,000.00**

TOTAL REIMBUSABLE COSTS PER MDDP $ * 11,876,707.85 ~~12,029,120.35~~

TOTAL REIMBUSABLE COSTS PER DBPS $ 8,337,980.00 (1996)

DIFFERENCE: $ ~~3,691,140.35~~ (N/A)

Per item taken to D.B.
9/3/15 (E.N.)

CLASSIC
CONSULTING
ENGINEERS & SURVEYORS

HYDROLOGIC CALCULATIONS

Job File: X:\207700\REPORTS\MDDP-POND 3-REV.PPW
Rain Dir: X:\207700\REPORTS\

==========
JOB TITLE
==========

Project Date: 7/25/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPEMENT DRAIANGE PLAN FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS.
SAND CREEK DRAIANGE BASIN PLANNING STUDY
DETENTION FACILITY NO. 3

Table of Contents

********** MASTER SUMMARY **********

Watershed..... Master Network Summary 1.01

********** NETWORK SUMMARIES (DETAILED) **********

Watershed..... Pre 5
Executive Summary (Nodes) 2.01
Executive Summary (Links) 2.03
Network Calcs Sequence 2.08

Watershed..... Pre100
Executive Summary (Nodes) 2.10
Executive Summary (Links) 2.12

********** DESIGN STORMS SUMMARY **********

COLO SPRGS..... Design Storms 3.01

COLO SPRGS..... Pre100
Design Storms 3.02

Type.... Master Network Summary
Name.... Watershed
File.... X:\207700\REPORTS\MDDP-POND 3-REV.PPW

MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
Pre100	4.4000	Synthetic Curve	TypeII 24hr
Pre 5	2.7000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
1/2 PARCEL 18.	AREA	100	.758		12.0000	11.30		
1/2 PARCEL 18.	AREA	5	.173		12.0500	1.39		
1/2 OFFSITE 2	AREA	100	49.309		12.5000	304.97		
1/2 OFFSITE 2	AREA	5	19.260		12.5500	108.23		
1/2 OFFSITE 2.	AREA	100	49.309		12.5000	304.97		
1/2 OFFSITE 2.	AREA	5	19.260		12.5500	108.23		
1/2 PARCEL 14	AREA	100	2.466		12.1000	31.24		
1/2 PARCEL 14	AREA	5	.963		12.1000	11.37		
1/2 PARCEL 14.	AREA	100	2.359		12.1000	30.15		
1/2 PARCEL 14.	AREA	5	.921		12.1000	10.99		
1/2 PARCEL 18	AREA	100	2.966		12.0500	42.65		
1/2 PARCEL 18	AREA	5	1.410		12.0500	20.50		
1/2 PARCEL 21	AREA	100	5.914		12.0500	85.04		
1/2 PARCEL 21	AREA	5	2.811		12.0500	40.87		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
1/2 PARCEL 21.	AREA	100	5.914		12.0500	85.04		
1/2 PARCEL 21.	AREA	5	2.811		12.0500	40.87		
1/3 PARCEL 15	AREA	100	3.495		12.0500	50.25		
1/3 PARCEL 15	AREA	5	1.661		12.0500	24.15		
1/3 PARCEL 15.	AREA	100	3.030		12.0500	43.57		
1/3 PARCEL 15.	AREA	5	1.440		12.0500	20.94		
1/3 PARCEL 15..	AREA	100	2.740		12.0000	44.04		
1/3 PARCEL 15..	AREA	5	1.303		12.0000	21.26		
JUNC 15	JCT	100	60.898		12.4000	347.08		
JUNC 15	JCT	5	24.039		12.5000	122.77		
JUNC 25	JCT	100	734.939		13.0500	2635.25		
JUNC 25	JCT	5	287.372		13.1000	929.18		
JUNC 26	JCT	100	737.905		13.1500	2629.61		
JUNC 26	JCT	5	288.782		13.1500	928.79		
JUNC 35	JCT	100	52.531		12.5000	312.59		
JUNC 35	JCT	5	20.792		12.5500	111.73		
JUNC 41	JCT	100	53.289		12.5000	314.44		
JUNC 41	JCT	5	20.965		12.5500	112.14		
JUNC 45	JCT	100	38.188		12.1500	381.47		
JUNC 45	JCT	5	12.046		12.2000	88.13		
JUNC 5	JCT	100	52.280		12.5000	312.00		
JUNC 5	JCT	5	20.673		12.5500	111.45		
JUNC 55	JCT	100	41.683		12.1500	418.04		
JUNC 55	JCT	5	13.708		12.1500	105.66		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
JUNC 65	JCT	100	47.596		12.1000	488.67		
JUNC 65	JCT	5	16.519		12.1000	141.36		
JUNC 75	JCT	100	52.470		12.1000	543.65		
JUNC 75	JCT	5	19.132		12.1000	172.24		
JUNC 85	JCT	100	790.375		13.5000	2669.06		
JUNC 85	JCT	5	307.914		13.6000	945.12		
JUNC 95	JCT	100	13.037		12.0000	188.93		
JUNC 95	JCT	5	6.631		12.0000	97.63		
OFFSITE 3.	AREA	100	98.618		12.5000	609.93		
OFFSITE 3.	AREA	5	38.520		12.5500	216.45		
OFFSITE 4.	AREA	100	624.581		13.1000	2285.88		
OFFSITE 4.	AREA	5	243.962		13.3000	809.27		
OFFSITE 5	AREA	100	34.137		12.2000	339.51		
OFFSITE 5	AREA	5	10.120		12.2000	72.31		
*OUT 10	JCT	100	928.786		14.3000	2242.25		
*OUT 10	JCT	5	364.405		14.6500	690.93		
PARCEL 11	AREA	100	2.971		12.0500	42.72		
PARCEL 11	AREA	5	1.412		12.0500	20.53		
PARCEL 12.	AREA	100	8.618		12.1000	109.19		
PARCEL 12.	AREA	5	3.366		12.1000	39.74		
PARCEL 13.	AREA	100	6.338		12.0000	94.47		
PARCEL 13.	AREA	5	3.398		12.0000	52.20		
PARCEL 16	AREA	100	1.146		12.1000	14.09		
PARCEL 16	AREA	5	.262		12.1500	1.53		

Type.... Master Network Summary
Name.... Watershed
File.... X:\207700\REPORTS\MDDP-POND 3-REV.PPW

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
PARCEL 17.	AREA	100	3.222		12.0500	46.34		
PARCEL 17.	AREA	5	1.532		12.0500	22.27		
PARCEL 19.	AREA	100	.505		12.1000	6.21		
PARCEL 19.	AREA	5	.115		12.1000	.67		
PARCEL 20.	AREA	100	4.051		12.0500	58.26		
PARCEL 20.	AREA	5	1.926		12.0500	28.00		
PARCEL 22	AREA	100	4.874		12.0000	72.65		
PARCEL 22	AREA	5	2.613		12.0000	40.14		
PARCEL 23	AREA	100	7.124		12.0000	106.19		
PARCEL 23	AREA	5	3.820		12.0000	58.67		
PARCEL 24.	AREA	100	1.085		12.1000	13.34		
PARCEL 24.	AREA	5	.248		12.1500	1.45		
PARCEL 25	AREA	100	3.262		12.2000	31.82		
PARCEL 25	AREA	5	1.097		12.2500	8.63		
POND 20	IN POND	100	928.788		13.5500	2883.09		
POND 20	IN POND	5	364.406		13.6500	1029.98		
POND 20	OUT POND	100	928.786		14.3000	2242.25	6885.89	223.415
POND 20	OUT POND	5	364.405		14.6500	690.93	6882.68	100.766

Type.... Executive Summary (Nodes)
Name.... Watershed
File.... X:\207700\REPORTS\MDDP-POND 3-REV.PPW
Storm... TypeII 24hr Tag: Pre 5

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Pre 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

	Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
	1/2 PARCEL 18.	AREA	.173		12.0500	1.39	
	1/2 OFFSITE 2	AREA	19.260		12.5500	108.23	
	1/2 OFFSITE 2.	AREA	19.260		12.5500	108.23	
	1/2 PARCEL 14	AREA	.963		12.1000	11.37	
	1/2 PARCEL 14.	AREA	.921		12.1000	10.99	
	1/2 PARCEL 18	AREA	1.410		12.0500	20.50	
	1/2 PARCEL 21	AREA	2.811		12.0500	40.87	
	1/2 PARCEL 21.	AREA	2.811		12.0500	40.87	
	1/3 PARCEL 15	AREA	1.661		12.0500	24.15	
	1/3 PARCEL 15.	AREA	1.440		12.0500	20.94	
	1/3 PARCEL 15..	AREA	1.303		12.0000	21.26	
	JUNC 15	JCT	24.039		12.5000	122.77	
	JUNC 25	JCT	287.372		13.1000	929.18	
	JUNC 26	JCT	288.782		13.1500	928.79	
	JUNC 35	JCT	20.792		12.5500	111.73	
	JUNC 41	JCT	20.965		12.5500	112.14	
	JUNC 45	JCT	12.046		12.2000	88.13	
	JUNC 5	JCT	20.673		12.5500	111.45	
	JUNC 55	JCT	13.708		12.1500	105.66	
	JUNC 65	JCT	16.519		12.1000	141.36	
	JUNC 75	JCT	19.132		12.1000	172.24	
	JUNC 85	JCT	307.914		13.6000	945.12	
	JUNC 95	JCT	6.631		12.0000	97.63	
	OFFSITE 3.	AREA	38.520		12.5500	216.45	
	OFFSITE 4.	AREA	243.962		13.3000	809.27	
	OFFSITE 5	AREA	10.120		12.2000	72.31	
Outfall	OUT 10	JCT	364.405		14.6500	690.93	
	PARCEL 11	AREA	1.412		12.0500	20.53	
	PARCEL 12.	AREA	3.366		12.1000	39.74	
	PARCEL 13.	AREA	3.398		12.0000	52.20	
	PARCEL 16	AREA	.262		12.1500	1.53	
	PARCEL 17.	AREA	1.532		12.0500	22.27	

NETWORK SUMMARY -- NODES

(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
PARCEL 19.		AREA	.115		12.1000	.67	
PARCEL 20.		AREA	1.926		12.0500	28.00	
PARCEL 22		AREA	2.613		12.0000	40.14	
PARCEL 23		AREA	3.820		12.0000	58.67	
PARCEL 24.		AREA	.248		12.1500	1.45	
PARCEL 25		AREA	1.097		12.2500	8.63	
POND 20	IN	POND	364.406		13.6500	1029.98	
POND 20	OUT	POND	364.405		14.6500	690.93	6882.68

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Pre 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
CHANNEL	ADD	UN	243.962		13.3000	809.27	OFFSITE 4.	
		DL	243.962		13.3000	809.27		
		DN	287.372		13.1000	929.18	JUNC 25	
DIRECT	ADD	UN	.262		12.1500	1.53	PARCEL 16	
		DL	.262		12.1500	1.53		
		DN	287.372		13.1000	929.18	JUNC 25	
DIRECT (POND)	ADD	UN	1.097		12.2500	8.63	PARCEL 25	
		DL	1.097		12.2500	8.63		
		DN	364.406		13.6500	1029.98	POND 20	IN
DIRECT CHANNEL	ADD	UN	.248		12.1500	1.45	PARCEL 24.	
		DL	.248		12.1500	1.45		
		DN	364.406		13.6500	1029.98	POND 20	IN
DIVERSION	ADD	UN	38.520		12.5500	216.45	OFFSITE 3.	
		DL	38.520		12.5500	216.45		
		DN	287.372		13.1000	929.18	JUNC 25	
PIPE 13	ADD	UN	1.412		12.0500	20.53	PARCEL 11	
		DL	1.412		12.0500	20.53		
		DN	20.673		12.5500	111.45	JUNC 5	
PIPE 14	ADD	UN	19.260		12.5500	108.23	1/2 OFFSITE 2	
		DL	19.260		12.5500	108.23		
		DN	20.673		12.5500	111.45	JUNC 5	

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
PIPE 15	ADD	UN	20.673		12.5500	111.45	JUNC 5	
		DL	20.673		12.5500	111.45		
		DN	24.039		12.5000	122.77	JUNC 15	
PIPE 16	ADD	UN	3.366		12.1000	39.74	PARCEL 12.	
		DL	3.366		12.1000	39.74		
		DN	24.039		12.5000	122.77	JUNC 15	
PIPE 17	ADD	UN	24.039		12.5000	122.77	JUNC 15	
		DL	24.039		12.5000	122.77		
		DN	364.406		13.6500	1029.98	POND 20	IN
PIPE 18	ADD	UN	3.398		12.0000	52.20	PARCEL 13.	
		DL	3.398		12.0000	52.20		
		DN	364.406		13.6500	1029.98	POND 20	IN
PIPE 19	ADD	UN	.963		12.1000	11.37	1/2 PARCEL 14	
		DL	.963		12.1000	11.37		
		DN	287.372		13.1000	929.18	JUNC 25	
PIPE 20	ADD	UN	1.303		12.0000	21.26	1/3 PARCEL 15..	
		DL	1.303		12.0000	21.26		
		DN	287.372		13.1000	929.18	JUNC 25	
PIPE 21	ADD	UN	1.440		12.0500	20.94	1/3 PARCEL 15.	
		DL	1.440		12.0500	20.94		
		DN	287.372		13.1000	929.18	JUNC 25	
PIPE 22	ADD	UN	.921		12.1000	10.99	1/2 PARCEL 14.	
		DL	.921		12.1000	10.99		
		DN	287.372		13.1000	929.18	JUNC 25	
PIPE 23	ADD	UN	1.410		12.0500	20.50	1/2 PARCEL 18	
		DL	1.410		12.0500	20.50		
		DN	288.782		13.1500	928.79	JUNC 26	
PIPE 24	ADD	UN	1.532		12.0500	22.27	PARCEL 17.	
		DL	1.532		12.0500	22.27		
		DN	20.792		12.5500	111.73	JUNC 35	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
PIPE 25	ADD	UN	19.260		12.5500	108.23	1/2 OFFSITE 2.	
		DL	19.260		12.5500	108.23		
		DN	20.792		12.5500	111.73	JUNC 35	
PIPE 26	ADD	UN	20.792		12.5500	111.73	JUNC 35	
		DL	20.792		12.5500	111.73		
		DN	20.965		12.5500	112.14	JUNC 41	
PIPE 27	ADD	UN	.173		12.0500	1.39	1/2 PARCEL 18.	
		DL	.173		12.0500	1.39		
		DN	20.965		12.5500	112.14	JUNC 41	
PIPE 28	ADD	UN	20.965		12.5500	112.14	JUNC 41	
		DL	20.965		12.5500	112.14		
		DN	364.406		13.6500	1029.98	POND 20	IN
PIPE 29	ADD	UN	.115		12.1000	.67	PARCEL 19.	
		DL	.115		12.1000	.67		
		DN	364.406		13.6500	1029.98	POND 20	IN
PIPE 30	ADD	UN	10.120		12.2000	72.31	OFFSITE 5	
		DL	10.120		12.2000	72.31		
		DN	12.046		12.2000	88.13	JUNC 45	
PIPE 31	ADD	UN	1.926		12.0500	28.00	PARCEL 20.	
		DL	1.926		12.0500	28.00		
		DN	12.046		12.2000	88.13	JUNC 45	
PIPE 32	ADD	UN	12.046		12.2000	88.13	JUNC 45	
		DL	12.046		12.2000	88.13		
		DN	13.708		12.1500	105.66	JUNC 55	
PIPE 33	ADD	UN	1.661		12.0500	24.15	1/3 PARCEL 15	
		DL	1.661		12.0500	24.15		
		DN	13.708		12.1500	105.66	JUNC 55	
PIPE 34	ADD	UN	13.708		12.1500	105.66	JUNC 55	
		DL	13.708		12.1500	105.66		
		DN	16.519		12.1000	141.36	JUNC 65	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
PIPE 35	ADD	UN	2.811		12.0500	40.87	1/2 PARCEL 21	
		DL	2.811		12.0500	40.87		
		DN	16.519		12.1000	141.36	JUNC 65	
PIPE 36	ADD	UN	16.519		12.1000	141.36	JUNC 65	
		DL	16.519		12.1000	141.36		
		DN	19.132		12.1000	172.24	JUNC 75	
PIPE 37	ADD	UN	2.613		12.0000	40.14	PARCEL 22	
		DL	2.613		12.0000	40.14		
		DN	19.132		12.1000	172.24	JUNC 75	
PIPE 38	ADD	UN	19.132		12.1000	172.24	JUNC 75	
		DL	19.132		12.1000	172.24		
		DN	307.914		13.6000	945.12	JUNC 85	
PIPE 39	ADD	UN	2.811		12.0500	40.87	1/2 PARCEL 21.	
		DL	2.811		12.0500	40.87		
		DN	6.631		12.0000	97.63	JUNC 95	
PIPE 40	ADD	UN	3.820		12.0000	58.67	PARCEL 23	
		DL	3.820		12.0000	58.67		
		DN	6.631		12.0000	97.63	JUNC 95	
PIPE 41	ADD	UN	6.631		12.0000	97.63	JUNC 95	
		DL	6.631		12.0000	97.63		
		DN	364.406		13.6500	1029.98	POND 20	IN
REACH 15	REACH	UN	288.782		13.1500	928.79	JUNC 26	
		DL	288.782		13.6000	922.99		
		DN	307.914		13.6000	945.12	JUNC 85	
REACH 20	REACH	UN	307.914		13.6000	945.12	JUNC 85	
		DL	307.913		13.7000	944.06		
		DN	364.406		13.6500	1029.98	POND 20	IN
REACH 5	REACH	UN	287.372		13.1000	929.18	JUNC 25	
		DL	287.372		13.1500	927.15		
		DN	288.782		13.1500	928.79	JUNC 26	

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ROUTE 10	PONDrt	UN	364.406		13.6500	1029.98	POND 20	IN
ROUTE 10			364.405		14.6500	690.93	POND 20	OUT
		DL	364.405		14.6500	690.93		
		DN	364.405		14.6500	690.93	OUT 10	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data		Apply to Node		Receiving Link	
SCS UH	1/2 PARCEL 14	Subarea	1/2 PARCEL 14	Add Hyd	1/2 PARCEL 14
SCS UH	PARCEL 25	Subarea	PARCEL 25	Add Hyd	PARCEL 25
SCS UH	OFFSITE 4.	Subarea	OFFSITE 4.	Add Hyd	OFFSITE 4.
SCS UH	OFFSITE 3.	Subarea	OFFSITE 3.	Add Hyd	OFFSITE 3.
SCS UH	PARCEL 11	Subarea	PARCEL 11	Add Hyd	PARCEL 11
SCS UH	1/2 OFFSITE 2	Subarea	1/2 OFFSITE 2	Add Hyd	1/2 OFFSITE 2
SCS UH	PARCEL 12.	Subarea	PARCEL 12.	Add Hyd	PARCEL 12.
SCS UH	1/2 OFFSITE 2.	Subarea	1/2 OFFSITE 2.	Add Hyd	1/2 OFFSITE 2.
SCS UH	PARCEL 17.	Subarea	PARCEL 17.	Add Hyd	PARCEL 17.
SCS UH	OFFSITE 5	Subarea	OFFSITE 5	Add Hyd	OFFSITE 5
SCS UH	PARCEL 22	Subarea	PARCEL 22	Add Hyd	PARCEL 22
SCS UH	1/2 PARCEL 21.	Subarea	1/2 PARCEL 21.	Add Hyd	1/2 PARCEL 21.
SCS UH	PARCEL 23	Subarea	PARCEL 23	Add Hyd	PARCEL 23
SCS UH	1/2 PARCEL 14.	Subarea	1/2 PARCEL 14.	Add Hyd	1/2 PARCEL 14.
SCS UH	1/3 PARCEL 15..	Subarea	1/3 PARCEL 15..	Add Hyd	1/3 PARCEL 15..
SCS UH	1/3 PARCEL 15.	Subarea	1/3 PARCEL 15.	Add Hyd	1/3 PARCEL 15.
SCS UH	PARCEL 20.	Subarea	PARCEL 20.	Add Hyd	PARCEL 20.
SCS UH	PARCEL 13.	Subarea	PARCEL 13.	Add Hyd	PARCEL 13.
SCS UH	1/3 PARCEL 15	Subarea	1/3 PARCEL 15	Add Hyd	1/3 PARCEL 15
SCS UH	1/2 PARCEL 21	Subarea	1/2 PARCEL 21	Add Hyd	1/2 PARCEL 21
SCS UH	PARCEL 24.	Subarea	PARCEL 24.	Add Hyd	PARCEL 24.
SCS UH	PARCEL 16	Subarea	PARCEL 16	Add Hyd	PARCEL 16
SCS UH	1/2 PARCEL 18	Subarea	1/2 PARCEL 18	Add Hyd	1/2 PARCEL 18
SCS UH	1/2 PARCEL 18.	Subarea	1/2 PARCEL 18.	Add Hyd	1/2 PARCEL 18.
SCS UH	PARCEL 19.	Subarea	PARCEL 19.	Add Hyd	PARCEL 19.

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node	DNstream Node		
Add Hyd PIPE 30	Subarea OFFSITE 5	Jct	JUNC 45	
Add Hyd PIPE 31	Subarea PARCEL 20.	Jct	JUNC 45	
Add Hyd PIPE 33	Subarea 1/3 PARCEL 15	Jct	JUNC 55	
Add Hyd PIPE 32	Jct JUNC 45	Jct	JUNC 55	
Add Hyd PIPE 35	Subarea 1/2 PARCEL 21	Jct	JUNC 65	
Add Hyd PIPE 34	Jct JUNC 55	Jct	JUNC 65	
Add Hyd DIRECT	Subarea PARCEL 16	Jct	JUNC 25	
Add Hyd PIPE 19	Subarea 1/2 PARCEL 14	Jct	JUNC 25	
Add Hyd PIPE 21	Subarea 1/3 PARCEL 15.	Jct	JUNC 25	
Add Hyd PIPE 20	Subarea 1/3 PARCEL 15..	Jct	JUNC 25	
Add Hyd DIVERSION	Subarea OFFSITE 3.	Jct	JUNC 25	
Add Hyd CHANNEL	Subarea OFFSITE 4.	Jct	JUNC 25	
Add Hyd PIPE 22	Subarea 1/2 PARCEL 14.	Jct	JUNC 25	
Add Hyd PIPE 25	Subarea 1/2 OFFSITE 2.	Jct	JUNC 35	
Add Hyd PIPE 24	Subarea PARCEL 17.	Jct	JUNC 35	
Add Hyd PIPE 37	Subarea PARCEL 22	Jct	JUNC 75	
Add Hyd PIPE 36	Jct JUNC 65	Jct	JUNC 75	
Add Hyd PIPE 23	Subarea 1/2 PARCEL 18	Jct	JUNC 26	
Reach REACH 5	Jct JUNC 25	Jct	JUNC 26	
Add Hyd PIPE 14	Subarea 1/2 OFFSITE 2	Jct	JUNC 5	
Add Hyd PIPE 13	Subarea PARCEL 11	Jct	JUNC 5	
Add Hyd PIPE 26	Jct JUNC 35	Jct	JUNC 41	
Add Hyd PIPE 27	Subarea 1/2 PARCEL 18.	Jct	JUNC 41	
Reach REACH 15	Jct JUNC 26	Jct	JUNC 85	
Add Hyd PIPE 38	Jct JUNC 75	Jct	JUNC 85	
Add Hyd PIPE 16	Subarea PARCEL 12.	Jct	JUNC 15	
Add Hyd PIPE 15	Jct JUNC 5	Jct	JUNC 15	
Add Hyd PIPE 39	Subarea 1/2 PARCEL 21.	Jct	JUNC 95	
Add Hyd PIPE 40	Subarea PARCEL 23	Jct	JUNC 95	
Add Hyd PIPE 41	Jct JUNC 95	Pond	POND 20	IN
Add Hyd PIPE 29	Subarea PARCEL 19.	Pond	POND 20	IN
Add Hyd PIPE 17	Jct JUNC 15	Pond	POND 20	IN
Reach REACH 20	Jct JUNC 85	Pond	POND 20	IN
Add Hyd PIPE 28	Jct JUNC 41	Pond	POND 20	IN
Add Hyd DIRECT CHANNEL	Subarea PARCEL 24.	Pond	POND 20	IN
Add Hyd DIRECT (POND)	Subarea PARCEL 25	Pond	POND 20	IN
Add Hyd PIPE 18	Subarea PARCEL 13.	Pond	POND 20	IN
POND ROUTE TOTAL OUTFLOW...				
Total Pond Outflow	Pond POND 20 IN	Outflow	POND 20	OUT
SET POND ROUTING LINK TO TOTAL POND OUTFLOW...				
Outlet ROUTE 10	Outflow POND 20 OUT	Jct	OUT 10	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Pre100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
1/2 PARCEL 18.	AREA	.758		12.0000	11.30	
1/2 OFFSITE 2	AREA	49.309		12.5000	304.97	
1/2 OFFSITE 2.	AREA	49.309		12.5000	304.97	
1/2 PARCEL 14	AREA	2.466		12.1000	31.24	
1/2 PARCEL 14.	AREA	2.359		12.1000	30.15	
1/2 PARCEL 18	AREA	2.966		12.0500	42.65	
1/2 PARCEL 21	AREA	5.914		12.0500	85.04	
1/2 PARCEL 21.	AREA	5.914		12.0500	85.04	
1/3 PARCEL 15	AREA	3.495		12.0500	50.25	
1/3 PARCEL 15.	AREA	3.030		12.0500	43.57	
1/3 PARCEL 15..	AREA	2.740		12.0000	44.04	
JUNC 15	JCT	60.898		12.4000	347.08	
JUNC 25	JCT	734.939		13.0500	2635.25	
JUNC 26	JCT	737.905		13.1500	2629.61	
JUNC 35	JCT	52.531		12.5000	312.59	
JUNC 41	JCT	53.289		12.5000	314.44	
JUNC 45	JCT	38.188		12.1500	381.47	
JUNC 5	JCT	52.280		12.5000	312.00	
JUNC 55	JCT	41.683		12.1500	418.04	
JUNC 65	JCT	47.596		12.1000	488.67	
JUNC 75	JCT	52.470		12.1000	543.65	
JUNC 85	JCT	790.375		13.5000	2669.06	
JUNC 95	JCT	13.037		12.0000	188.93	
OFFSITE 3.	AREA	98.618		12.5000	609.93	
OFFSITE 4.	AREA	624.581		13.1000	2285.88	
OFFSITE 5	AREA	34.137		12.2000	339.51	
Outfall OUT 10	JCT	928.786		14.3000	2242.25	
PARCEL 11	AREA	2.971		12.0500	42.72	
PARCEL 12.	AREA	8.618		12.1000	109.19	
PARCEL 13.	AREA	6.338		12.0000	94.47	
PARCEL 16	AREA	1.146		12.1000	14.09	
PARCEL 17.	AREA	3.222		12.0500	46.34	

NETWORK SUMMARY -- NODES

(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
PARCEL 19.		AREA	.505		12.1000	6.21	
PARCEL 20.		AREA	4.051		12.0500	58.26	
PARCEL 22		AREA	4.874		12.0000	72.65	
PARCEL 23		AREA	7.124		12.0000	106.19	
PARCEL 24.		AREA	1.085		12.1000	13.34	
PARCEL 25		AREA	3.262		12.2000	31.82	
POND 20	IN	POND	928.788		13.5500	2883.09	
POND 20	OUT	POND	928.786		14.3000	2242.25	6885.89

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Pre100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
CHANNEL	ADD	UN	624.581		13.1000	2285.88	OFFSITE 4.	
		DL	624.581		13.1000	2285.88		
		DN	734.939		13.0500	2635.25	JUNC 25	
DIRECT	ADD	UN	1.146		12.1000	14.09	PARCEL 16	
		DL	1.146		12.1000	14.09		
		DN	734.939		13.0500	2635.25	JUNC 25	
DIRECT (POND)	ADD	UN	3.262		12.2000	31.82	PARCEL 25	
		DL	3.262		12.2000	31.82		
		DN	928.788		13.5500	2883.09	POND 20	IN
DIRECT CHANNEL	ADD	UN	1.085		12.1000	13.34	PARCEL 24.	
		DL	1.085		12.1000	13.34		
		DN	928.788		13.5500	2883.09	POND 20	IN
DIVERSION	ADD	UN	98.618		12.5000	609.93	OFFSITE 3.	
		DL	98.618		12.5000	609.93		
		DN	734.939		13.0500	2635.25	JUNC 25	
PIPE 13	ADD	UN	2.971		12.0500	42.72	PARCEL 11	
		DL	2.971		12.0500	42.72		
		DN	52.280		12.5000	312.00	JUNC 5	
PIPE 14	ADD	UN	49.309		12.5000	304.97	1/2 OFFSITE 2	
		DL	49.309		12.5000	304.97		
		DN	52.280		12.5000	312.00	JUNC 5	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
PIPE 15	ADD	UN	52.280		12.5000	312.00	JUNC 5	
		DL	52.280		12.5000	312.00		
		DN	60.898		12.4000	347.08	JUNC 15	
PIPE 16	ADD	UN	8.618		12.1000	109.19	PARCEL 12.	
		DL	8.618		12.1000	109.19		
		DN	60.898		12.4000	347.08	JUNC 15	
PIPE 17	ADD	UN	60.898		12.4000	347.08	JUNC 15	
		DL	60.898		12.4000	347.08		
		DN	928.788		13.5500	2883.09	POND 20	IN
PIPE 18	ADD	UN	6.338		12.0000	94.47	PARCEL 13.	
		DL	6.338		12.0000	94.47		
		DN	928.788		13.5500	2883.09	POND 20	IN
PIPE 19	ADD	UN	2.466		12.1000	31.24	1/2 PARCEL 14	
		DL	2.466		12.1000	31.24		
		DN	734.939		13.0500	2635.25	JUNC 25	
PIPE 20	ADD	UN	2.740		12.0000	44.04	1/3 PARCEL 15..	
		DL	2.740		12.0000	44.04		
		DN	734.939		13.0500	2635.25	JUNC 25	
PIPE 21	ADD	UN	3.030		12.0500	43.57	1/3 PARCEL 15.	
		DL	3.030		12.0500	43.57		
		DN	734.939		13.0500	2635.25	JUNC 25	
PIPE 22	ADD	UN	2.359		12.1000	30.15	1/2 PARCEL 14.	
		DL	2.359		12.1000	30.15		
		DN	734.939		13.0500	2635.25	JUNC 25	
PIPE 23	ADD	UN	2.966		12.0500	42.65	1/2 PARCEL 18	
		DL	2.966		12.0500	42.65		
		DN	737.905		13.1500	2629.61	JUNC 26	
PIPE 24	ADD	UN	3.222		12.0500	46.34	PARCEL 17.	
		DL	3.222		12.0500	46.34		
		DN	52.531		12.5000	312.59	JUNC 35	

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points
PIPE 25	ADD	UN	49.309		12.5000	304.97	1/2 OFFSITE 2.
		DL	49.309		12.5000	304.97	
		DN	52.531		12.5000	312.59	JUNC 35
PIPE 26	ADD	UN	52.531		12.5000	312.59	JUNC 35
		DL	52.531		12.5000	312.59	
		DN	53.289		12.5000	314.44	JUNC 41
PIPE 27	ADD	UN	.758		12.0000	11.30	1/2 PARCEL 18.
		DL	.758		12.0000	11.30	
		DN	53.289		12.5000	314.44	JUNC 41
PIPE 28	ADD	UN	53.289		12.5000	314.44	JUNC 41
		DL	53.289		12.5000	314.44	
		DN	928.788		13.5500	2883.09	POND 20 IN
PIPE 29	ADD	UN	.505		12.1000	6.21	PARCEL 19.
		DL	.505		12.1000	6.21	
		DN	928.788		13.5500	2883.09	POND 20 IN
PIPE 30	ADD	UN	34.137		12.2000	339.51	OFFSITE 5
		DL	34.137		12.2000	339.51	
		DN	38.188		12.1500	381.47	JUNC 45
PIPE 31	ADD	UN	4.051		12.0500	58.26	PARCEL 20.
		DL	4.051		12.0500	58.26	
		DN	38.188		12.1500	381.47	JUNC 45
PIPE 32	ADD	UN	38.188		12.1500	381.47	JUNC 45
		DL	38.188		12.1500	381.47	
		DN	41.683		12.1500	418.04	JUNC 55
PIPE 33	ADD	UN	3.495		12.0500	50.25	1/3 PARCEL 15
		DL	3.495		12.0500	50.25	
		DN	41.683		12.1500	418.04	JUNC 55
PIPE 34	ADD	UN	41.683		12.1500	418.04	JUNC 55
		DL	41.683		12.1500	418.04	
		DN	47.596		12.1000	488.67	JUNC 65

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
PIPE 35	ADD	UN	5.914		12.0500	85.04	1/2 PARCEL 21	
		DL	5.914		12.0500	85.04		
		DN	47.596		12.1000	488.67	JUNC 65	
PIPE 36	ADD	UN	47.596		12.1000	488.67	JUNC 65	
		DL	47.596		12.1000	488.67		
		DN	52.470		12.1000	543.65	JUNC 75	
PIPE 37	ADD	UN	4.874		12.0000	72.65	PARCEL 22	
		DL	4.874		12.0000	72.65		
		DN	52.470		12.1000	543.65	JUNC 75	
PIPE 38	ADD	UN	52.470		12.1000	543.65	JUNC 75	
		DL	52.470		12.1000	543.65		
		DN	790.375		13.5000	2669.06	JUNC 85	
PIPE 39	ADD	UN	5.914		12.0500	85.04	1/2 PARCEL 21.	
		DL	5.914		12.0500	85.04		
		DN	13.037		12.0000	188.93	JUNC 95	
PIPE 40	ADD	UN	7.124		12.0000	106.19	PARCEL 23	
		DL	7.124		12.0000	106.19		
		DN	13.037		12.0000	188.93	JUNC 95	
PIPE 41	ADD	UN	13.037		12.0000	188.93	JUNC 95	
		DL	13.037		12.0000	188.93		
		DN	928.788		13.5500	2883.09	POND 20	IN
REACH 15	REACH	UN	737.905		13.1500	2629.61	JUNC 26	
		DL	737.904		13.5000	2611.15		
		DN	790.375		13.5000	2669.06	JUNC 85	
REACH 20	REACH	UN	790.375		13.5000	2669.06	JUNC 85	
		DL	790.373		13.6000	2665.24		
		DN	928.788		13.5500	2883.09	POND 20	IN
REACH 5	REACH	UN	734.939		13.0500	2635.25	JUNC 25	
		DL	734.939		13.1500	2626.51		
		DN	737.905		13.1500	2629.61	JUNC 26	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ROUTE 10	PONDrt	UN	928.788		13.5500	2883.09	POND 20	IN
ROUTE 10			928.786		14.3000	2242.25	POND 20	OUT
		DL	928.786		14.3000	2242.25		
		DN	928.786		14.3000	2242.25	OUT 10	

Type.... Design Storms
Name.... COLO SPRGS

File.... X:\207700\REPORTS\
Title... Project Date: 7/25/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPEMENT DRAIANGE PLAN
FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS.
SAND CREEK DRAIANGE BASIN PLANNING STUDY
DETENTION FACILITY NO. 3

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = Pre100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = Pre 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = Pre100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = Pre 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Index of Starting Page Numbers for ID Names

----- C -----
COLO SPRGS... 3.01, 3.02

----- W -----
Watershed... 1.01, 2.01, 2.03, 2.08,
2.10, 2.12

Job File: X:\207700\REPORTS\MDDP-POND 6-REV.PPW
Rain Dir: X:\207700\REPORTS\

==========
JOB TITLE
==========

Project Date: 6/1/2004
Project Engineer: David Gibson / Darin Moffett
Project Title: MASTER DEVELOPEMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENT
SAND CREEK DRAINAGE BASIN PLANNING STUDY
DETENTION FACILITY NO. 6

Table of Contents

********** MASTER SUMMARY **********

Watershed..... Master Network Summary 1.01

********** NETWORK SUMMARIES (DETAILED) **********

Watershed..... Dev 5
Executive Summary (Nodes) 2.01
Executive Summary (Links) 2.02
Network Calcs Sequence 2.05

Watershed..... Dev100
Executive Summary (Nodes) 2.07
Executive Summary (Links) 2.08

********** DESIGN STORMS SUMMARY **********

COLO SPRGS..... Design Storms 3.01

COLO SPRGS..... Dev100
Design Storms 3.02

Type.... Master Network Summary
Name.... Watershed
File.... X:\207700\REPORTS\MDDP-POND 6-REV.PPW

MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
Dev100	4.4000	Synthetic Curve	TypeII 24hr
Dev 5	2.7000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
1/2 PARCEL 3	AREA	100	6.443		12.1000	81.20		
1/2 PARCEL 3	AREA	5	2.516		12.1000	29.53		
1/2 PARCEL 3.	AREA	100	5.531		12.1000	70.08		
1/2 PARCEL 3.	AREA	5	2.160		12.1000	25.51		
JUNC 10	JCT	100	10.974		12.0500	135.22		
JUNC 10	JCT	5	5.883		12.0500	74.29		
JUNC 20	JCT	100	34.683		12.1500	293.74		
JUNC 20	JCT	5	14.260		12.2000	110.90		
JUNC 30	JCT	100	2.983		12.0500	41.83		
JUNC 30	JCT	5	1.349		12.0500	19.39		
JUNC 40	JCT	100	59.057		12.1500	530.33		
JUNC 40	JCT	5	24.496		12.1500	201.15		
JUNC 50	JCT	100	37.666		12.1000	325.56		
JUNC 50	JCT	5	15.609		12.1500	124.93		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
JUNC 60	JCT	100	43.197		12.1000	395.64		
JUNC 60	JCT	5	17.769		12.1500	149.53		
JUNC 70	JCT	100	32.391		12.1000	408.21		
JUNC 70	JCT	5	12.651		12.1000	148.47		
OFFSITE-0	AREA	100	25.948		12.1000	327.02		
OFFSITE-0	AREA	5	10.135		12.1000	118.94		
OFFSITE-1	AREA	100	20.826		12.3000	162.58		
OFFSITE-1	AREA	5	8.848		12.4000	65.24		
*OUT 10	JCT	100	83.749		14.0000	78.87		
*OUT 10	JCT	5	44.821		14.0500	45.15		
PARCEL 0	AREA	100	2.807		12.0500	40.36		
PARCEL 0	AREA	5	1.334		12.0500	19.39		
PARCEL 1	AREA	100	.176		12.1000	1.51		
PARCEL 1	AREA	5	.014		14.6500	.02		
PARCEL 10	AREA	100	1.394		12.0000	20.78		
PARCEL 10	AREA	5	.747		12.0000	11.48		
PARCEL 2	AREA	100	13.857		12.1000	175.57		
PARCEL 2	AREA	5	5.412		12.1000	63.90		
PARCEL 4	AREA	100	11.036		12.1000	139.83		
PARCEL 4	AREA	5	4.310		12.1000	50.89		
PARCEL 5	AREA	100	4.824		12.0000	73.94		
PARCEL 5	AREA	5	2.417		12.0000	37.72		
PARCEL 6	AREA	100	6.198		12.0000	92.38		
PARCEL 6	AREA	5	3.323		12.0000	51.04		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
PARCEL 7	AREA	100	7.778		12.0000	115.94		
PARCEL 7	AREA	5	4.171		12.0000	64.06		
PARCEL 8	AREA	100	2.082		12.2000	20.31		
PARCEL 8	AREA	5	.700		12.2500	5.51		
PARCEL 9	AREA	100	9.580		12.1000	115.96		
PARCEL 9	AREA	5	5.136		12.1000	64.05		
POND 10 IN	POND	100	118.479		12.1000	1092.89		
POND 10 IN	POND	5	51.224		12.1000	449.08		
POND 10 OUT	POND	100	83.749		14.0000	78.87	6860.00	70.105
POND 10 OUT	POND	5	44.821		14.0500	45.15	6854.08	26.922

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Dev 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

	Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
	1/2 PARCEL 3		AREA	2.516		12.1000	29.53	
	1/2 PARCEL 3.		AREA	2.160		12.1000	25.51	
	JUNC 10		JCT	5.883		12.0500	74.29	
	JUNC 20		JCT	14.260		12.2000	110.90	
	JUNC 30		JCT	1.349		12.0500	19.39	
	JUNC 40		JCT	24.496		12.1500	201.15	
	JUNC 50		JCT	15.609		12.1500	124.93	
	JUNC 60		JCT	17.769		12.1500	149.53	
	JUNC 70		JCT	12.651		12.1000	148.47	
	OFFSITE-0		AREA	10.135		12.1000	118.94	
	OFFSITE-1		AREA	8.848		12.4000	65.24	
Outfall	OUT 10		JCT	44.821		14.0500	45.15	
	PARCEL 0		AREA	1.334		12.0500	19.39	
	PARCEL 1		AREA	.014		14.6500	.02	
	PARCEL 10		AREA	.747		12.0000	11.48	
	PARCEL 2		AREA	5.412		12.1000	63.90	
	PARCEL 4		AREA	4.310		12.1000	50.89	
	PARCEL 5		AREA	2.417		12.0000	37.72	
	PARCEL 6		AREA	3.323		12.0000	51.04	
	PARCEL 7		AREA	4.171		12.0000	64.06	
	PARCEL 8		AREA	.700		12.2500	5.51	
	PARCEL 9		AREA	5.136		12.1000	64.05	
	POND 10	IN	POND	51.224		12.1000	449.08	
	POND 10	OUT	POND	44.821		14.0500	45.15	6854.08

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Dev 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
DIRECT TO POND	ADD	UN	.700		12.2500	5.51	PARCEL 8	
		DL	.700		12.2500	5.51		
		DN	51.224		12.1000	449.08	POND 10	IN
PIPE 0	ADD	UN	1.334		12.0500	19.39	PARCEL 0	
		DL	1.334		12.0500	19.39		
		DN	1.349		12.0500	19.39	JUNC 30	
PIPE 1	ADD	UN	.014		14.6500	.02	PARCEL 1	
		DL	.014		14.6500	.02		
		DN	1.349		12.0500	19.39	JUNC 30	
PIPE 10	ADD	UN	4.171		12.0000	64.06	PARCEL 7	
		DL	4.171		12.0000	64.06		
		DN	51.224		12.1000	449.08	POND 10	IN
PIPE 11	ADD	UN	5.136		12.1000	64.05	PARCEL 9	
		DL	5.136		12.1000	64.05		
		DN	5.883		12.0500	74.29	JUNC 10	
PIPE 12	ADD	UN	.747		12.0000	11.48	PARCEL 10	
		DL	.747		12.0000	11.48		
		DN	5.883		12.0500	74.29	JUNC 10	
PIPE 12A	ADD	UN	5.883		12.0500	74.29	JUNC 10	
		DL	5.883		12.0500	74.29		
		DN	51.224		12.1000	449.08	POND 10	IN

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points
PIPE 2	ADD	UN	1.349		12.0500	19.39	JUNC 30
		DL	1.349		12.0500	19.39	
		DN	15.609		12.1500	124.93	JUNC 50
PIPE 3	ADD	UN	8.848		12.4000	65.24	OFFSITE-1
		DL	8.848		12.4000	65.24	
		DN	14.260		12.2000	110.90	JUNC 20
PIPE 3A	ADD	UN	5.412		12.1000	63.90	PARCEL 2
		DL	5.412		12.1000	63.90	
		DN	14.260		12.2000	110.90	JUNC 20
PIPE 3B	ADD	UN	14.260		12.2000	110.90	JUNC 20
		DL	14.260		12.2000	110.90	
		DN	15.609		12.1500	124.93	JUNC 50
PIPE 4	ADD	UN	15.609		12.1500	124.93	JUNC 50
		DL	15.609		12.1500	124.93	
		DN	17.769		12.1500	149.53	JUNC 60
PIPE 5	ADD	UN	2.160		12.1000	25.51	1/2 PARCEL 3.
		DL	2.160		12.1000	25.51	
		DN	17.769		12.1500	149.53	JUNC 60
PIPE 6	ADD	UN	4.310		12.1000	50.89	PARCEL 4
		DL	4.310		12.1000	50.89	
		DN	24.496		12.1500	201.15	JUNC 40
PIPE 7	ADD	UN	2.417		12.0000	37.72	PARCEL 5
		DL	2.417		12.0000	37.72	
		DN	24.496		12.1500	201.15	JUNC 40
PIPE 8	ADD	UN	2.516		12.1000	29.53	1/2 PARCEL 3
		DL	2.516		12.1000	29.53	
		DN	12.651		12.1000	148.47	JUNC 70
PIPE 8A	ADD	UN	10.135		12.1000	118.94	OFFSITE-0
		DL	10.135		12.1000	118.94	
		DN	12.651		12.1000	148.47	JUNC 70

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
PIPE 8B	ADD	UN	12.651		12.1000	148.47	JUNC 70	
		DL	12.651		12.1000	148.47		
		DN	51.224		12.1000	449.08	POND 10	IN
PIPE 9	ADD	UN	3.323		12.0000	51.04	PARCEL 6	
		DL	3.323		12.0000	51.04		
		DN	51.224		12.1000	449.08	POND 10	IN
REACH 20	REACH	UN	17.769		12.1500	149.53	JUNC 60	
		DL	17.769		12.2500	145.54		
		DN	24.496		12.1500	201.15	JUNC 40	
REACH 30	REACH	UN	24.496		12.1500	201.15	JUNC 40	
		DL	24.496		12.3000	196.80		
		DN	51.224		12.1000	449.08	POND 10	IN
ROUTE 10	PONDrt	UN	51.224		12.1000	449.08	POND 10	IN
ROUTE 10			44.821		14.0500	45.15	POND 10	OUT
		DL	44.821		14.0500	45.15		
		DN	44.821		14.0500	45.15	OUT 10	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data		Apply to Node		Receiving Link	
SCS UH	PARCEL 8	Subarea	PARCEL 8	Add Hyd	PARCEL 8
SCS UH	PARCEL 6	Subarea	PARCEL 6	Add Hyd	PARCEL 6
SCS UH	PARCEL 7	Subarea	PARCEL 7	Add Hyd	PARCEL 7
SCS UH	1/2 PARCEL 3.	Subarea	1/2 PARCEL 3.	Add Hyd	1/2 PARCEL 3.
SCS UH	PARCEL 0	Subarea	PARCEL 0	Add Hyd	PARCEL 0
SCS UH	PARCEL 1	Subarea	PARCEL 1	Add Hyd	PARCEL 1
SCS UH	PARCEL 4	Subarea	PARCEL 4	Add Hyd	PARCEL 4
SCS UH	PARCEL 5	Subarea	PARCEL 5	Add Hyd	PARCEL 5
SCS UH	PARCEL 9	Subarea	PARCEL 9	Add Hyd	PARCEL 9
SCS UH	PARCEL 10	Subarea	PARCEL 10	Add Hyd	PARCEL 10
SCS UH	PARCEL 2	Subarea	PARCEL 2	Add Hyd	PARCEL 2
SCS UH	OFFSITE-1	Subarea	OFFSITE-1	Add Hyd	OFFSITE-1
SCS UH	1/2 PARCEL 3	Subarea	1/2 PARCEL 3	Add Hyd	1/2 PARCEL 3
SCS UH	OFFSITE-0	Subarea	OFFSITE-0	Add Hyd	OFFSITE-0

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node			DNstream Node		
Add Hyd PIPE 1	Subarea	PARCEL 1		Jct	JUNC 30	
Add Hyd PIPE 0	Subarea	PARCEL 0		Jct	JUNC 30	
Add Hyd PIPE 3A	Subarea	PARCEL 2		Jct	JUNC 20	
Add Hyd PIPE 3	Subarea	OFFSITE-1		Jct	JUNC 20	
Add Hyd PIPE 3B	Jct	JUNC 20		Jct	JUNC 50	
Add Hyd PIPE 2	Jct	JUNC 30		Jct	JUNC 50	
Add Hyd PIPE 4	Jct	JUNC 50		Jct	JUNC 60	
Add Hyd PIPE 5	Subarea	1/2 PARCEL 3.		Jct	JUNC 60	
Add Hyd PIPE 7	Subarea	PARCEL 5		Jct	JUNC 40	
Reach REACH 20	Jct	JUNC 60		Jct	JUNC 40	
Add Hyd PIPE 6	Subarea	PARCEL 4		Jct	JUNC 40	
Add Hyd PIPE 8	Subarea	1/2 PARCEL 3		Jct	JUNC 70	
Add Hyd PIPE 8A	Subarea	OFFSITE-0		Jct	JUNC 70	
Add Hyd PIPE 12	Subarea	PARCEL 10		Jct	JUNC 10	
Add Hyd PIPE 11	Subarea	PARCEL 9		Jct	JUNC 10	
Add Hyd PIPE 12A	Jct	JUNC 10		Pond	POND 10	IN
Add Hyd PIPE 9	Subarea	PARCEL 6		Pond	POND 10	IN
Add Hyd PIPE 8B	Jct	JUNC 70		Pond	POND 10	IN
Add Hyd DIRECT TO POND	Subarea	PARCEL 8		Pond	POND 10	IN
Add Hyd PIPE 10	Subarea	PARCEL 7		Pond	POND 10	IN
Reach REACH 30	Jct	JUNC 40		Pond	POND 10	IN
POND ROUTE TOTAL OUTFLOW...						
Total Pond Outflow	Pond	POND 10	IN	Outflow	POND 10	OUT
SET POND ROUTING LINK TO TOTAL POND OUTFLOW...						
Outlet ROUTE 10	Outflow	POND 10	OUT	Jct	OUT 10	

NETWORK SUMMARY -- NODES

(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Dev100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

	Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
	1/2 PARCEL 3		AREA	6.443		12.1000	81.20	
	1/2 PARCEL 3.		AREA	5.531		12.1000	70.08	
	JUNC 10		JCT	10.974		12.0500	135.22	
	JUNC 20		JCT	34.683		12.1500	293.74	
	JUNC 30		JCT	2.983		12.0500	41.83	
	JUNC 40		JCT	59.057		12.1500	530.33	
	JUNC 50		JCT	37.666		12.1000	325.56	
	JUNC 60		JCT	43.197		12.1000	395.64	
	JUNC 70		JCT	32.391		12.1000	408.21	
	OFFSITE-0		AREA	25.948		12.1000	327.02	
	OFFSITE-1		AREA	20.826		12.3000	162.58	
Outfall	OUT 10		JCT	83.749		14.0000	78.87	
	PARCEL 0		AREA	2.807		12.0500	40.36	
	PARCEL 1		AREA	.176		12.1000	1.51	
	PARCEL 10		AREA	1.394		12.0000	20.78	
	PARCEL 2		AREA	13.857		12.1000	175.57	
	PARCEL 4		AREA	11.036		12.1000	139.83	
	PARCEL 5		AREA	4.824		12.0000	73.94	
	PARCEL 6		AREA	6.198		12.0000	92.38	
	PARCEL 7		AREA	7.778		12.0000	115.94	
	PARCEL 8		AREA	2.082		12.2000	20.31	
	PARCEL 9		AREA	9.580		12.1000	115.96	
	POND 10	IN	POND	118.479		12.1000	1092.89	
	POND 10	OUT	POND	83.749		14.0000	78.87	6860.00

Type.... Executive Summary (Links)
Name.... Watershed
File.... X:\207700\REPORTS\MDDP-POND 6-REV.PPW
Storm... TypeII 24hr Tag: Dev100

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = Dev100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
DIRECT TO POND	ADD	UN	2.082		12.2000	20.31	PARCEL 8	
		DL	2.082		12.2000	20.31		
		DN	118.479		12.1000	1092.89	POND 10	IN
PIPE 0	ADD	UN	2.807		12.0500	40.36	PARCEL 0	
		DL	2.807		12.0500	40.36		
		DN	2.983		12.0500	41.83	JUNC 30	
PIPE 1	ADD	UN	.176		12.1000	1.51	PARCEL 1	
		DL	.176		12.1000	1.51		
		DN	2.983		12.0500	41.83	JUNC 30	
PIPE 10	ADD	UN	7.778		12.0000	115.94	PARCEL 7	
		DL	7.778		12.0000	115.94		
		DN	118.479		12.1000	1092.89	POND 10	IN
PIPE 11	ADD	UN	9.580		12.1000	115.96	PARCEL 9	
		DL	9.580		12.1000	115.96		
		DN	10.974		12.0500	135.22	JUNC 10	
PIPE 12	ADD	UN	1.394		12.0000	20.78	PARCEL 10	
		DL	1.394		12.0000	20.78		
		DN	10.974		12.0500	135.22	JUNC 10	
PIPE 12A	ADD	UN	10.974		12.0500	135.22	JUNC 10	
		DL	10.974		12.0500	135.22		
		DN	118.479		12.1000	1092.89	POND 10	IN

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points
PIPE 2	ADD	UN	2.983		12.0500	41.83	JUNC 30
		DL	2.983		12.0500	41.83	
		DN	37.666		12.1000	325.56	JUNC 50
PIPE 3	ADD	UN	20.826		12.3000	162.58	OFFSITE-1
		DL	20.826		12.3000	162.58	
		DN	34.683		12.1500	293.74	JUNC 20
PIPE 3A	ADD	UN	13.857		12.1000	175.57	PARCEL 2
		DL	13.857		12.1000	175.57	
		DN	34.683		12.1500	293.74	JUNC 20
PIPE 3B	ADD	UN	34.683		12.1500	293.74	JUNC 20
		DL	34.683		12.1500	293.74	
		DN	37.666		12.1000	325.56	JUNC 50
PIPE 4	ADD	UN	37.666		12.1000	325.56	JUNC 50
		DL	37.666		12.1000	325.56	
		DN	43.197		12.1000	395.64	JUNC 60
PIPE 5	ADD	UN	5.531		12.1000	70.08	1/2 PARCEL 3.
		DL	5.531		12.1000	70.08	
		DN	43.197		12.1000	395.64	JUNC 60
PIPE 6	ADD	UN	11.036		12.1000	139.83	PARCEL 4
		DL	11.036		12.1000	139.83	
		DN	59.057		12.1500	530.33	JUNC 40
PIPE 7	ADD	UN	4.824		12.0000	73.94	PARCEL 5
		DL	4.824		12.0000	73.94	
		DN	59.057		12.1500	530.33	JUNC 40
PIPE 8	ADD	UN	6.443		12.1000	81.20	1/2 PARCEL 3
		DL	6.443		12.1000	81.20	
		DN	32.391		12.1000	408.21	JUNC 70
PIPE 8A	ADD	UN	25.948		12.1000	327.02	OFFSITE-0
		DL	25.948		12.1000	327.02	
		DN	32.391		12.1000	408.21	JUNC 70

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
PIPE 8B	ADD	UN	32.391		12.1000	408.21	JUNC 70	
		DL	32.391		12.1000	408.21		
		DN	118.479		12.1000	1092.89	POND 10	IN
PIPE 9	ADD	UN	6.198		12.0000	92.38	PARCEL 6	
		DL	6.198		12.0000	92.38		
		DN	118.479		12.1000	1092.89	POND 10	IN
REACH 20	REACH	UN	43.197		12.1000	395.64	JUNC 60	
		DL	43.197		12.2000	381.71		
		DN	59.057		12.1500	530.33	JUNC 40	
REACH 30	REACH	UN	59.057		12.1500	530.33	JUNC 40	
		DL	59.057		12.2500	516.33		
		DN	118.479		12.1000	1092.89	POND 10	IN
ROUTE 10	PONDrt	UN	118.479		12.1000	1092.89	POND 10	IN
ROUTE 10			83.749		14.0000	78.87	POND 10	OUT
		DL	83.749		14.0000	78.87		
		DN	83.749		14.0000	78.87	OUT 10	

Type.... Design Storms
Name.... COLO SPRGS

File.... X:\207700\REPORTS\
Title... Project Date: 6/1/2004
Project Engineer: David Gibson / Darin Moffett
Project Title: MASTER DEVELOPEMENT DRAINAGE PLAN
FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENT
SAND CREEK DRAINAGE BASIN PLANNING STUDY
DETENTION FACILITY NO. 6

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = Dev100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = Dev 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = Dev100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = Dev 5

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Index of Starting Page Numbers for ID Names

----- C -----
COLO SPRGS... 3.01, 3.02

----- W -----
Watershed... 1.01, 2.01, 2.02, 2.05,
2.07, 2.08

Job File: X:\207700\REPORTS\PARCEL 26A.PPW
Rain Dir: X:\207700\REPORTS\

==========
JOB TITLE
==========

Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

Table of Contents

********** MASTER SUMMARY **********

Watershed..... Master Network Summary 1.01

********** NETWORK SUMMARIES (DETAILED) **********

Watershed..... 5Y24H
Executive Summary (Nodes) 2.01
Executive Summary (Links) 2.02
Network Calcs Sequence 2.03

Watershed..... 100Y24
Executive Summary (Nodes) 2.05
Executive Summary (Links) 2.06

********** DESIGN STORMS SUMMARY **********

COLO SPRGS..... Design Storms 3.01

COLO SPRGS..... 100Y24
Design Storms 3.02

MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
100Y24	4.4000	Synthetic Curve	TypeII 24hr
5Y24H	2.7000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*OUT 10	JCT	100	6.691		12.0000	99.74		
*OUT 10	JCT	5	3.588		12.0000	55.11		
PARCEL 26	AREA	100	6.691		12.0000	99.74		
PARCEL 26	AREA	5	3.588		12.0000	55.11		
POND 10 IN	POND	100	6.691		12.0000	99.74		
POND 10 IN	POND	5	3.588		12.0000	55.11		
POND 10 OUT	POND	100	6.691		12.0000	99.74		
POND 10 OUT	POND	5	3.588		12.0000	55.11		

Type.... Executive Summary (Nodes)
Name.... Watershed
File.... X:\207700\REPORTS\PARCEL 26A.PPW
Storm... TypeII 24hr Tag: 5Y24H

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall OUT 10		JCT	3.588		12.0000	55.11	
PARCEL 26		AREA	3.588		12.0000	55.11	
POND 10	IN	POND	3.588		12.0000	55.11	
POND 10	OUT	POND	3.588		12.0000	55.11	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	3.588		12.0000	55.11	PARCEL 26	
		DL	3.588		12.0000	55.11		
		DN	3.588		12.0000	55.11	POND 10	IN
ROUTE 20	PONDrt	UN	3.588		12.0000	55.11	POND 10	IN
ROUTE 20			3.588		12.0000	55.11	POND 10	OUT
		DL	3.588		12.0000	55.11		
		DN	3.588		12.0000	55.11	OUT 10	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data	Apply to Node	Receiving Link
SCS UH PARCEL 26	Subarea PARCEL 26	Add Hyd PARCEL 26

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node			DNstream Node		
Add Hyd ADDLINK 10	Subarea PARCEL 26			Pond	POND 10	IN
POND ROUTE TOTAL OUTFLOW...						
Total Pond Outflow	Pond	POND 10	IN	Outflow	POND 10	OUT
SET POND ROUTING LINK TO TOTAL POND OUTFLOW...						
Outlet ROUTE 20	Outflow POND 10		OUT	Jct	OUT 10	

Type.... Executive Summary (Nodes)
Name.... Watershed
File.... X:\207700\REPORTS\PARCEL 26A.PPW
Storm... TypeII 24hr Tag: 100Y24

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall OUT 10		JCT	6.691		12.0000	99.74	
PARCEL 26		AREA	6.691		12.0000	99.74	
POND 10	IN	POND	6.691		12.0000	99.74	
POND 10	OUT	POND	6.691		12.0000	99.74	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	6.691		12.0000	99.74	PARCEL 26	
		DL	6.691		12.0000	99.74		
		DN	6.691		12.0000	99.74	POND 10	IN
ROUTE 20	PONDrt	UN	6.691		12.0000	99.74	POND 10	IN
ROUTE 20			6.691		12.0000	99.74	POND 10	OUT
		DL	6.691		12.0000	99.74		
		DN	6.691		12.0000	99.74	OUT 10	

Type.... Design Storms
Name.... COLO SPRGS

File.... X:\207700\REPORTS\
Title... Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN
FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Index of Starting Page Numbers for ID Names

----- C -----
COLO SPRGS... 3.01, 3.02

----- W -----
Watershed... 1.01, 2.01, 2.02, 2.03,
2.05, 2.06

Job File: X:\207700\REPORTS\PARCEL 27A.PPW
Rain Dir: X:\207700\REPORTS\

==========
JOB TITLE
==========

Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

Table of Contents

********** MASTER SUMMARY **********

Watershed..... Master Network Summary 1.01

********** NETWORK SUMMARIES (DETAILED) **********

Watershed..... 5Y24H
Executive Summary (Nodes) 2.01
Executive Summary (Links) 2.02
Network Calcs Sequence 2.03

Watershed..... 100Y24
Executive Summary (Nodes) 2.05
Executive Summary (Links) 2.06

********** DESIGN STORMS SUMMARY **********

COLO SPRGS..... Design Storms 3.01

COLO SPRGS..... 100Y24
Design Storms 3.02

MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
100Y24	4.4000	Synthetic Curve	TypeII 24hr
5Y24H	2.7000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID		Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*OUT 10		JCT	100	3.242		12.0000	50.30		
*OUT 10		JCT	5	1.541		12.0000	24.04		
PARCEL 27		AREA	100	3.242		12.0000	50.30		
PARCEL 27		AREA	5	1.541		12.0000	24.04		
POND 10	IN	POND	100	3.242		12.0000	50.30		
POND 10	IN	POND	5	1.541		12.0000	24.04		
POND 10	OUT	POND	100	3.242		12.0000	50.30		
POND 10	OUT	POND	5	1.541		12.0000	24.04		

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall OUT 10		JCT	1.541		12.0000	24.04	
PARCEL 27		AREA	1.541		12.0000	24.04	
POND 10	IN	POND	1.541		12.0000	24.04	
POND 10	OUT	POND	1.541		12.0000	24.04	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	1.541		12.0000	24.04	PARCEL 27	
		DL	1.541		12.0000	24.04		
		DN	1.541		12.0000	24.04	POND 10	IN
ROUTE 20	PONDrt	UN	1.541		12.0000	24.04	POND 10	IN
ROUTE 20			1.541		12.0000	24.04	POND 10	OUT
		DL	1.541		12.0000	24.04		
		DN	1.541		12.0000	24.04	OUT 10	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data	Apply to Node	Receiving Link
SCS UH PARCEL 27	Subarea PARCEL 27	Add Hyd PARCEL 27

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node			DNstream Node		
Add Hyd ADDLINK 10	Subarea PARCEL 27			Pond	POND 10	IN
POND ROUTE TOTAL OUTFLOW...						
Total Pond Outflow	Pond	POND 10	IN	Outflow	POND 10	OUT
SET POND ROUTING LINK TO TOTAL POND OUTFLOW...						
Outlet ROUTE 20	Outflow	POND 10	OUT	Jct	OUT 10	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

	Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall	OUT 10		JCT	3.242		12.0000	50.30	
	PARCEL 27		AREA	3.242		12.0000	50.30	
	POND 10	IN	POND	3.242		12.0000	50.30	
	POND 10	OUT	POND	3.242		12.0000	50.30	

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	3.242		12.0000	50.30	PARCEL 27	
		DL	3.242		12.0000	50.30		
		DN	3.242		12.0000	50.30	POND 10	IN
ROUTE 20	PONDrt	UN	3.242		12.0000	50.30	POND 10	IN
ROUTE 20			3.242		12.0000	50.30	POND 10	OUT
		DL	3.242		12.0000	50.30		
		DN	3.242		12.0000	50.30	OUT 10	

Type.... Design Storms
Name.... COLO SPRGS

File.... X:\207700\REPORTS\
Title... Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN
FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Index of Starting Page Numbers for ID Names

----- C -----
COLO SPRGS... 3.01, 3.02

----- W -----
Watershed... 1.01, 2.01, 2.02, 2.03,
2.05, 2.06

Job File: X:\207700\REPORTS\PARCEL 28A.PPW
Rain Dir: X:\207700\REPORTS\

==========
JOB TITLE
==========

Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

Table of Contents

********** MASTER SUMMARY **********

Watershed..... Master Network Summary 1.01

********** NETWORK SUMMARIES (DETAILED) **********

Watershed..... 5Y24H
Executive Summary (Nodes) 2.01
Executive Summary (Links) 2.02
Network Calcs Sequence 2.03

Watershed..... 100Y24
Executive Summary (Nodes) 2.05
Executive Summary (Links) 2.06

********** DESIGN STORMS SUMMARY **********

COLO SPRGS..... Design Storms 3.01

COLO SPRGS..... 100Y24
Design Storms 3.02

MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
100Y24	4.4000	Synthetic Curve	TypeII 24hr
5Y24H	2.7000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID		Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*OUT 10		JCT	100	.561		12.0500	7.78		
*OUT 10		JCT	5	.128		12.1000	.87		
PARCEL 28		AREA	100	.561		12.0500	7.78		
PARCEL 28		AREA	5	.128		12.1000	.87		
POND 10	IN	POND	100	.561		12.0500	7.78		
POND 10	IN	POND	5	.128		12.1000	.87		
POND 10	OUT	POND	100	.561		12.0500	7.78		
POND 10	OUT	POND	5	.128		12.1000	.87		

Type.... Executive Summary (Nodes)
Name.... Watershed
File.... X:\207700\REPORTS\PARCEL 28A.PPW
Storm... TypeII 24hr Tag: 5Y24H

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall OUT 10		JCT	.128		12.1000	.87	
PARCEL 28		AREA	.128		12.1000	.87	
POND 10	IN	POND	.128		12.1000	.87	
POND 10	OUT	POND	.128		12.1000	.87	

NETWORK SUMMARY -- LINKS
(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	.128		12.1000	.87	PARCEL 28	
		DL	.128		12.1000	.87		
		DN	.128		12.1000	.87	POND 10	IN
ROUTE 20	PONDrt	UN	.128		12.1000	.87	POND 10	IN
ROUTE 20			.128		12.1000	.87	POND 10	OUT
		DL	.128		12.1000	.87		
		DN	.128		12.1000	.87	OUT 10	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data	Apply to Node	Receiving Link
SCS UH PARCEL 28	Subarea PARCEL 28	Add Hyd PARCEL 28

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node			DNstream Node		
Add Hyd ADDLINK 10	Subarea PARCEL 28			Pond	POND 10	IN
POND ROUTE TOTAL OUTFLOW...						
Total Pond Outflow	Pond	POND 10	IN	Outflow	POND 10	OUT
SET POND ROUTING LINK TO TOTAL POND OUTFLOW...						
Outlet ROUTE 20	Outflow POND 10		OUT	Jct	OUT 10	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall OUT 10		JCT	.561		12.0500	7.78	
PARCEL 28		AREA	.561		12.0500	7.78	
POND 10	IN	POND	.561		12.0500	7.78	
POND 10	OUT	POND	.561		12.0500	7.78	

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	.561		12.0500	7.78	PARCEL 28	
		DL	.561		12.0500	7.78		
		DN	.561		12.0500	7.78	POND 10	IN
ROUTE 20	PONDrt	UN	.561		12.0500	7.78	POND 10	IN
ROUTE 20			.561		12.0500	7.78	POND 10	OUT
		DL	.561		12.0500	7.78		
		DN	.561		12.0500	7.78	OUT 10	

File.... X:\207700\REPORTS\
Title... Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN
FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Index of Starting Page Numbers for ID Names

----- C -----
COLO SPRGS... 3.01, 3.02

----- W -----
Watershed... 1.01, 2.01, 2.02, 2.03,
2.05, 2.06

Job File: X:\207700\REPORTS\PARCEL 29A.PPW
Rain Dir: X:\207700\REPORTS\

==========
JOB TITLE
==========

Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

Table of Contents

********** MASTER SUMMARY **********

Watershed..... Master Network Summary 1.01

********** NETWORK SUMMARIES (DETAILED) **********

Watershed..... 5Y24H
Executive Summary (Nodes) 2.01
Executive Summary (Links) 2.02
Network Calcs Sequence 2.03

Watershed..... 100Y24
Executive Summary (Nodes) 2.05
Executive Summary (Links) 2.06

********** DESIGN STORMS SUMMARY **********

COLO SPRGS..... Design Storms 3.01

COLO SPRGS..... 100Y24
Design Storms 3.02

MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
100Y24	4.4000	Synthetic Curve	TypeII 24hr
5Y24H	2.7000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*OUT 10	JCT	100	11.016		12.0000	164.20		
*OUT 10	JCT	5	5.907		12.0000	90.73		
PARCEL 29	AREA	100	11.016		12.0000	164.20		
PARCEL 29	AREA	5	5.907		12.0000	90.73		
POND 10	IN POND	100	11.016		12.0000	164.20		
POND 10	IN POND	5	5.907		12.0000	90.73		
POND 10	OUT POND	100	11.016		12.0000	164.20		
POND 10	OUT POND	5	5.907		12.0000	90.73		

Type.... Executive Summary (Nodes)
Name.... Watershed
File.... X:\207700\REPORTS\PARCEL 29A.PPW
Storm... TypeII 24hr Tag: 5Y24H

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall OUT 10		JCT	5.907		12.0000	90.73	
PARCEL 29		AREA	5.907		12.0000	90.73	
POND 10	IN	POND	5.907		12.0000	90.73	
POND 10	OUT	POND	5.907		12.0000	90.73	

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	5.907		12.0000	90.73	PARCEL 29	
		DL	5.907		12.0000	90.73		
		DN	5.907		12.0000	90.73	POND 10	IN
ROUTE 20	PONDrt	UN	5.907		12.0000	90.73	POND 10	IN
ROUTE 20			5.907		12.0000	90.73	POND 10	OUT
		DL	5.907		12.0000	90.73		
		DN	5.907		12.0000	90.73	OUT 10	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data	Apply to Node	Receiving Link
SCS UH PARCEL 29	Subarea PARCEL 29	Add Hyd PARCEL 29

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node			DNstream Node		
Add Hyd ADDLINK 10	Subarea PARCEL 29			Pond	POND 10	IN
POND ROUTE TOTAL OUTFLOW...						
Total Pond Outflow	Pond	POND 10	IN	Outflow	POND 10	OUT
SET POND ROUTING LINK TO TOTAL POND OUTFLOW...						
Outlet ROUTE 20	Outflow POND 10		OUT	Jct	OUT 10	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall OUT 10		JCT	11.016		12.0000	164.20	
PARCEL 29		AREA	11.016		12.0000	164.20	
POND 10	IN	POND	11.016		12.0000	164.20	
POND 10	OUT	POND	11.016		12.0000	164.20	

NETWORK SUMMARY -- LINKS

(UN=Upstream Node; DL=DNstream End of Link; DN=DNstream Node)
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points	
ADDLINK 10	ADD	UN	11.016		12.0000	164.20	PARCEL 29	
		DL	11.016		12.0000	164.20		
		DN	11.016		12.0000	164.20	POND 10	IN
ROUTE 20	PONDrt	UN	11.016		12.0000	164.20	POND 10	IN
ROUTE 20			11.016		12.0000	164.20	POND 10	OUT
		DL	11.016		12.0000	164.20		
		DN	11.016		12.0000	164.20	OUT 10	

Type.... Design Storms
Name.... COLO SPRGS

File.... X:\207700\REPORTS\
Title... Project Date: 9/23/2003
Project Engineer: David Gibson
Project Title: MASTER DEVELOPMENT DRAINAGE PLAN
FOR WOODMEN HEIGHTS
Project Comments:
5 YEAR AND 100 YEAR STORM EVENTS
PARCEL 24 ON SITE DETENTION

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = COLO SPRGS

Storm Tag Name = 100Y24

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 4.4000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 5Y24H

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Project Summary Report

Project Description	
Worksheet	PIPE RUN 23
Flow Element	Circular Channe
Method	Manning's Forr
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	36	in

Results		
Depth	3.00	ft
Discharge	66.69	cfs
Flow Area	7.1	ft²
Wetted Perime	9.42	ft
Top Width	0.00	ft
Critical Depth	2.61	ft
Percent Full	100.0	%
Critical Slope	009115	ft/ft
Velocity	9.44	ft/s
Velocity Head	1.38	ft
Specific Energ	4.38	ft
Froude Numbe	0.00	
Maximum Disc	71.74	cfs
Discharge Full	66.69	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 24
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	36	in

Results		
Depth	3.00	ft
Discharge	66.69	cfs
Flow Area	7.1	ft²
Wetted Perime	9.42	ft
Top Width	0.00	ft
Critical Depth	2.61	ft
Percent Full	100.0	%
Critical Slope	009115	ft/ft
Velocity	9.44	ft/s
Velocity Head	1.38	ft
Specific Energ	4.38	ft
Froude Numbe	0.00	
Maximum Disc	71.74	cfs
Discharge Full	66.69	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 25
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	66	in

Results		
Depth	5.50	ft
Discharge	335.79	cfs
Flow Area	23.8	ft²
Wetted Perime	17.28	ft
Top Width	0.00	ft
Critical Depth	4.96	ft
Percent Full	100.0	%
Critical Slope	008789	ft/ft
Velocity	14.13	ft/s
Velocity Head	3.10	ft
Specific Energ	8.60	ft
Froude Numbe	0.00	
Maximum Disc	361.21	cfs
Discharge Full	335.79	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 26
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	66	in

Results		
Depth	5.50	ft
Discharge	335.79	cfs
Flow Area	23.8	ft²
Wetted Perime	17.28	ft
Top Width	0.00	ft
Critical Depth	4.96	ft
Percent Full	100.0	%
Critical Slope	008789	ft/ft
Velocity	14.13	ft/s
Velocity Head	3.10	ft
Specific Energ	8.60	ft
Froude Numbe	0.00	
Maximum Disc	361.21	cfs
Discharge Full	335.79	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 27
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	24	in

Results		
Depth	2.00	ft
Discharge	22.62	cfs
Flow Area	3.1	ft²
Wetted Perime	6.28	ft
Top Width	0.00	ft
Critical Depth	1.69	ft
Percent Full	100.0	%
Critical Slope	009461	ft/ft
Velocity	7.20	ft/s
Velocity Head	0.81	ft
Specific Energ	2.81	ft
Froude Numbe	0.00	
Maximum Disc	24.33	cfs
Discharge Full	22.62	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 28
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	66	in

Results		
Depth	5.50	ft
Discharge	335.79	cfs
Flow Area	23.8	ft²
Wetted Perime	17.28	ft
Top Width	0.00	ft
Critical Depth	4.96	ft
Percent Full	100.0	%
Critical Slope	008789	ft/ft
Velocity	14.13	ft/s
Velocity Head	3.10	ft
Specific Energy	8.60	ft
Froude Numbe	0.00	
Maximum Disc	361.21	cfs
Discharge Full	335.79	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 29
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	18	in

Results		
Depth	1.50	ft
Discharge	10.50	cfs
Flow Area	1.8	ft²
Wetted Perime	4.71	ft
Top Width	0.00	ft
Critical Depth	1.25	ft
Percent Full	100.0	%
Critical Slope	009774	ft/ft
Velocity	5.94	ft/s
Velocity Head	0.55	ft
Specific Energ	2.05	ft
Froude Numbe	0.00	
Maximum Disc	11.30	cfs
Discharge Full	10.50	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

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Project Summary Report

Project Description	
Worksheet	PIPE RUN 30
Flow Element	Circular Channe
Method	Manning's Forr
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	72	in

Results		
Depth	6.00	ft
Discharge	423.49	cfs
Flow Area	28.3	ft²
Wetted Perime	18.85	ft
Top Width	0.00	ft
Critical Depth	5.44	ft
Percent Full	100.0	%
Critical Slope	008759	ft/ft
Velocity	14.98	ft/s
Velocity Head	3.49	ft
Specific Energ	9.49	ft
Froude Numbe	0.00	
Maximum Disc	455.55	cfs
Discharge Full	423.49	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

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Project Summary Report

Project Description	
Worksheet	PIPE RUN 31
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	36	in

Results		
Depth	3.00	ft
Discharge	66.69	cfs
Flow Area	7.1	ft²
Wetted Perime	9.42	ft
Top Width	0.00	ft
Critical Depth	2.61	ft
Percent Full	100.0	%
Critical Slope	009115	ft/ft
Velocity	9.44	ft/s
Velocity Head	1.38	ft
Specific Energ	4.38	ft
Froude Numbe	0.00	
Maximum Disc	71.74	cfs
Discharge Full	66.69	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 32
Flow Element	Circular Channe
Method	Manning's Forr
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	72	in

Results		
Depth	6.00	ft
Discharge	423.49	cfs
Flow Area	28.3	ft²
Wetted Perime	18.85	ft
Top Width	0.00	ft
Critical Depth	5.44	ft
Percent Full	100.0	%
Critical Slope	008759	ft/ft
Velocity	14.98	ft/s
Velocity Head	3.49	ft
Specific Energ	9.49	ft
Froude Numbe	0.00	
Maximum Disc	455.55	cfs
Discharge Full	423.49	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 33
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	36	in

Results		
Depth	3.00	ft
Discharge	66.69	cfs
Flow Area	7.1	ft²
Wetted Perime	9.42	ft
Top Width	0.00	ft
Critical Depth	2.61	ft
Percent Full	100.0	%
Critical Slope	009115	ft/ft
Velocity	9.44	ft/s
Velocity Head	1.38	ft
Specific Energ	4.38	ft
Froude Numbe	0.00	
Maximum Disc	71.74	cfs
Discharge Full	66.69	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 34
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	78	in

Results		
Depth	6.50	ft
Discharge	524.25	cfs
Flow Area	33.2	ft²
Wetted Perime	20.42	ft
Top Width	0.00	ft
Critical Depth	5.91	ft
Percent Full	100.0	%
Critical Slope	008735	ft/ft
Velocity	15.80	ft/s
Velocity Head	3.88	ft
Specific Energ	10.38	ft
Froude Numbe	0.00	
Maximum Disc	563.94	cfs
Discharge Full	524.25	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 35
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	42	in

Results		
Depth	3.50	ft
Discharge	100.60	cfs
Flow Area	9.6	ft²
Wetted Perime	11.00	ft
Top Width	0.00	ft
Critical Depth	3.08	ft
Percent Full	100.0	%
Critical Slope	009012	ft/ft
Velocity	10.46	ft/s
Velocity Head	1.70	ft
Specific Energ	5.20	ft
Froude Numbe	0.00	
Maximum Disc	108.22	cfs
Discharge Full	100.60	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 36
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	78	in

Results		
Depth	6.50	ft
Discharge	524.25	cfs
Flow Area	33.2	ft²
Wetted Perime	20.42	ft
Top Width	0.00	ft
Critical Depth	5.91	ft
Percent Full	100.0	%
Critical Slope	008735	ft/ft
Velocity	15.80	ft/s
Velocity Head	3.88	ft
Specific Energ	10.38	ft
Froude Numbe	0.00	
Maximum Disc	563.94	cfs
Discharge Full	524.25	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 37
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	42	in

Results		
Depth	3.50	ft
Discharge	100.60	cfs
Flow Area	9.6	ft²
Wetted Perime	11.00	ft
Top Width	0.00	ft
Critical Depth	3.08	ft
Percent Full	100.0	%
Critical Slope	009012	ft/ft
Velocity	10.46	ft/s
Velocity Head	1.70	ft
Specific Energ	5.20	ft
Froude Numbe	0.00	
Maximum Disc	108.22	cfs
Discharge Full	100.60	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 38
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	84	in

Results		
Depth	7.00	ft
Discharge	638.80	cfs
Flow Area	38.5	ft²
Wetted Perime	21.99	ft
Top Width	0.00	ft
Critical Depth	6.39	ft
Percent Full	100.0	%
Critical Slope	008715	ft/ft
Velocity	16.60	ft/s
Velocity Head	4.28	ft
Specific Energ	11.28	ft
Froude Numbe	0.00	
Maximum Disc	687.16	cfs
Discharge Full	638.80	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 39
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	42	in

Results		
Depth	3.50	ft
Discharge	100.60	cfs
Flow Area	9.6	ft²
Wetted Perime	11.00	ft
Top Width	0.00	ft
Critical Depth	3.08	ft
Percent Full	100.0	%
Critical Slope	009012	ft/ft
Velocity	10.46	ft/s
Velocity Head	1.70	ft
Specific Energ	5.20	ft
Froude Numbe	0.00	
Maximum Disc	108.22	cfs
Discharge Full	100.60	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 3A
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	54	in

Results		
Depth	4.50	ft
Discharge	196.64	cfs
Flow Area	15.9	ft²
Wetted Perime	14.14	ft
Top Width	0.00	ft
Critical Depth	4.01	ft
Percent Full	100.0	%
Critical Slope	008874	ft/ft
Velocity	12.36	ft/s
Velocity Head	2.38	ft
Specific Energ	6.88	ft
Froude Numbe	0.00	
Maximum Disc	211.53	cfs
Discharge Full	196.64	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 3B
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	66	in

Results		
Depth	5.50	ft
Discharge	335.79	cfs
Flow Area	23.8	ft²
Wetted Perime	17.28	ft
Top Width	0.00	ft
Critical Depth	4.96	ft
Percent Full	100.0	%
Critical Slope	008789	ft/ft
Velocity	14.13	ft/s
Velocity Head	3.10	ft
Specific Energ	8.60	ft
Froude Numbe	0.00	
Maximum Disc	361.21	cfs
Discharge Full	335.79	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 40
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	48	in

Results		
Depth	4.00	ft
Discharge	143.64	cfs
Flow Area	12.6	ft²
Wetted Perime	12.57	ft
Top Width	0.00	ft
Critical Depth	3.54	ft
Percent Full	100.0	%
Critical Slope	008934	ft/ft
Velocity	11.43	ft/s
Velocity Head	2.03	ft
Specific Energ	6.03	ft
Froude Numbe	0.00	
Maximum Disc	154.51	cfs
Discharge Full	143.64	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 41
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	60	in

Results		
Depth	5.00	ft
Discharge	260.43	cfs
Flow Area	19.6	ft²
Wetted Perime	15.71	ft
Top Width	0.00	ft
Critical Depth	4.49	ft
Percent Full	100.0	%
Critical Slope	008827	ft/ft
Velocity	13.26	ft/s
Velocity Head	2.73	ft
Specific Energ	7.73	ft
Froude Numbe	0.00	
Maximum Disc	280.14	cfs
Discharge Full	260.43	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 42
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	42	in

Results		
Depth	3.50	ft
Discharge	100.60	cfs
Flow Area	9.6	ft²
Wetted Perime	11.00	ft
Top Width	0.00	ft
Critical Depth	3.08	ft
Percent Full	100.0	%
Critical Slope	009012	ft/ft
Velocity	10.46	ft/s
Velocity Head	1.70	ft
Specific Energ	5.20	ft
Froude Numbe	0.00	
Maximum Disc	108.22	cfs
Discharge Full	100.60	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 43
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	36	in

Results		
Depth	3.00	ft
Discharge	66.69	cfs
Flow Area	7.1	ft²
Wetted Perime	9.42	ft
Top Width	0.00	ft
Critical Depth	2.61	ft
Percent Full	100.0	%
Critical Slope	009115	ft/ft
Velocity	9.44	ft/s
Velocity Head	1.38	ft
Specific Energ	4.38	ft
Froude Numbe	0.00	
Maximum Disc	71.74	cfs
Discharge Full	66.69	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 44
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	54	in

Results		
Depth	4.50	ft
Discharge	196.64	cfs
Flow Area	15.9	ft²
Wetted Perime	14.14	ft
Top Width	0.00	ft
Critical Depth	4.01	ft
Percent Full	100.0	%
Critical Slope	008874	ft/ft
Velocity	12.36	ft/s
Velocity Head	2.38	ft
Specific Energy	6.88	ft
Froude Numbe	0.00	
Maximum Disc	211.53	cfs
Discharge Full	196.64	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

Project Summary Report

Project Description	
Worksheet	PIPE RUN 45
Flow Element	Circular Channe
Method	Manning's Form
Solve For	Full Flow Capac

Input Data		
Mannings Coeffic	0.013	
Slope	010000	ft/ft
Diameter	54	in

Results		
Depth	4.50	ft
Discharge	196.64	cfs
Flow Area	15.9	ft²
Wetted Perime	14.14	ft
Top Width	0.00	ft
Critical Depth	4.01	ft
Percent Full	100.0	%
Critical Slope	008874	ft/ft
Velocity	12.36	ft/s
Velocity Head	2.38	ft
Specific Energ	6.88	ft
Froude Numbe	0.00	
Maximum Disc	211.53	cfs
Discharge Full	196.64	cfs
Slope Full	010000	ft/ft
Flow Type	N/A	

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