

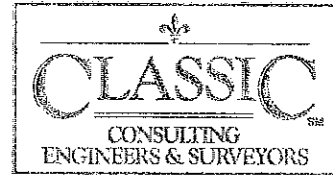
**MASTER DEVELOPMENT DRAINAGE PLAN  
FOR  
MOHAWK COMMERCIAL CENTRE**

**JUNE 2008**

**PREPARED FOR:  
DCL CONCEPTS, LLC.  
8174 S. HOLLY, SUITE 505  
CENTENNIAL, CO 80122  
(720) 489-0424**

**PREPARED BY:  
CLASSIC CONSULTING ENGINEERS & SURVEYORS, LLC  
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COLORADO SPRINGS, CO 80919  
(719) 785-0790**

**2208.10**



**MASTER DEVELOPMENT DRAINAGE PLAN  
MOHAWK COMMERCIAL CENTRE**

**DRAINAGE REPORT STATEMENT**

**ENGINEER'S STATEMENT:**

The attached Master Development 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.

  
\_\_\_\_\_  
Kyle R. Campbell Colorado P.E. #29794

6-13-08  
Date

**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: DCL Concepts, LLC.

By: DRBGA

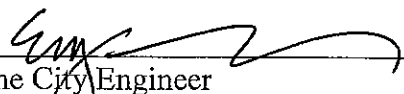
Title: President

Address: 8174 S. Holly, Suite 505

Centennial, CO 80122

**CITY OF COLORADO SPRINGS ONLY:**

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

  
\_\_\_\_\_  
For the City Engineer

7/23/08  
Date

Conditions:



# **MASTER DEVELOPMENT DRAINAGE PLAN MOHAWK COMMERCIAL CENTRE**

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## **MASTER DEVELOPMENT DRAINAGE PLAN FOR MOHAWK COMMERCIAL CENTRE**

### **PURPOSE**

The intent of the owner/developer is to annex the Mohawk Commercial Centre into the City of Colorado Springs. The purpose of this Master Development Drainage Plan, as part of the annexation process is to identify major drainage features and facilities and to estimate peak rates of stormwater runoff, from on-site and off-site source, and outline the necessary improvements to safely route developed storm water runoff to adequate outfall facilities.

### **GENERAL DESCRIPTION**

Mohawk Commercial Centre is a 64.23-acre site located within Section 9, Township 13 South, Range 65 West of the Sixth Principal Meridian in the City of Colorado Springs, County of El Paso, State of Colorado. The site is bounded on the north by existing Woodmen Road, to the east and west by unplatted land within El Paso County, and to the south by Banning Lewis Ranch Village 2.

Soil types considered at the site as determined by the "Soil Survey of El Paso County Area," June 1981, consist of Blakeland loamy sand, Hydrologic Group "A", Blakeland-Fluvaquentic Haplaquolls, Hydrologic Group "A", Columbine gravelly sandy loam Hydrologic Group "C", and Pring Coarse sandy loam Hydrologic Group "B" as prepared by the Soil Conservation Service (see map in Appendix).

### **EXISTING DRAINAGE CONDITIONS**

The site proposed for annexation is located within the Sand Creek Drainage Basin. The majority of the site in its existing condition consists of undeveloped grasslands typical of those areas located east of the Colorado Springs area. These grasses were more than likely produced by seeding that accompanied the last overlot grading of the site, sometime within the recent few years. Approximately 20-25% of this disturbed area has been developed prior to this report, which provides dirt access roads and dirt parking lots associated with the construction of four synthetic grass youth soccer fields. These fields are to remain in place with the proposed annexation of the development of the remainder of the parcel. Existing grades on the site have slopes that typically range from 1% to 10% with small area along the southern boundary possessing slopes of up to 3:1. Runoff reaching the site is limited to those flows produced to the north of the site, as grading constraints prevent



offsite flows from entering the site from both offsite areas to the east and west. The aforementioned runoff reaching the site along the northern boundary has been studied most recently with the "Woodmen Road Safety Improvement Project B, Final Drainage Report", by ECI and DMJM Harris, dated June 2003, the "Final Hydrology and Hydraulics Report for Woodmen Road Powers to US 24 El Paso County" by DMJM Harris-AECOM, dated October 2007, and the "Design Report for Sand Creek Regional Pond 96", by JR Engineering, dated May 2007, revised October 2007. CDOT has constructed multiple culverts under Woodmen Road as a part of the ultimate expansion of Woodmen Road from 2 lanes to 4 lanes with a center ditch. These culverts were constructed and sized based upon the Woodmen Road Safety Improvement Final Drainage Report. The most current Woodmen Road report by DMJM Harris-AECOM dated October 2007 is an update to the Woodmen Road Improvement Project B report. The October 2007 report includes the northern expansion of Woodmen Road, adding small basins and island inlets while holding the major basins calculations in the June 2003 report. Additional Basins contributing to Mohawk Commercial Centre are insignificant. JR Engineering was asked to analyze all upstream basins within the Pond 96 watershed which includes the Mohawk Commercial Centre site and basins north of Woodmen Road.

Currently there are 3 culvert crossings constructed with the improvements to Woodmen Road by CDOT that discharge public flows north of Woodmen Road onto the Mohawk Commercial Centre site. The flows from these existing culverts will need to be routed through the Mohawk site. There are two separate crossings of existing 48" RCP culverts, the first is located near the Maverick Road and the second is located near Ponca Road. Runoff from these two culverts is currently directed southward along the toe of an earthen berm located in about the middle of the subject site and continue westward to the small depression located just upstream of what is referred to as Channel 68 within the JR Engineering Report. In addition to the flows discharged by these two culverts, the majority of the runoff produced within the site is conveyed to Channel 68. With the development of the Mohawk Commercial Centre, developed flows reaching this point will be combined with runoff from the northerly culverts and will continue without interruption to the channel, onsite flows will be directed to proposed water quality ponds which will treat developed 2 year flows from Mohawk Commercial Centre before releasing them in to the Banning Lewis Ranch Channel 68. In addition to the aforementioned culverts, a pair of 48" RCP culverts has been constructed underneath Woodmen Road, adjacent to the northeastern corner of the proposed site, directly adjacent to existing Mohawk

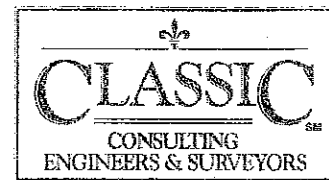


Drive. This dual pipe culvert has also been analyzed with the Woodmen Road Final Drainage Report and discharges northerly flows across the northeast corner of the site. Flows are routed by a swale to another pair of dual 48" culverts under the existing soccer field access road. Runoff from these culverts, in the existing condition, combines with a small portion of onsite flows prior to exiting the site and traveling to a natural swale located along the southeastern corner. This channel is referenced within the BLR Filing No. 2 report as Channel 70. It is expected with the development of this site that flows reaching this point will continue to discharge as they have historically.

The south portion of the Woodmen Road expansion has already been completed and storm sewer systems were designed based upon the "Woodmen Road Safety Improvement Project B Final Drainage Report." Banning Lewis Ranch, south of the Mohawk Commercial Center, is currently under construction, and all existing and future storm sewer facilities, detention ponds, and channel improvements have been based upon the "Design Report for Sand Creek Regional Pond 96. The proposed Mohawk Commercial Center is located in the gap between these two reports. In this report Classic Consulting (CCES) will try to ascertain existing flows from basins to the north taking into account the capacity of the existing culvert crossings while maintaining discharge rates at or below those indicated in the JR Engineering report.

Currently flows north of Woodmen Road are mainly from existing 5 acre ranch residential lots with associated roads and roadside ditches. These residential areas are currently located within the county and not within the city limits of Colorado Springs. Per the Sand Creek Drainage Basin Planning Study land use map, this area is to remain 5 acre+ lots. Flows from these lots travel in multiple swales and are conveyed across Woodmen Road in the previously mentioned culverts.

Design Point EX1 ( $Q_5 = 18$  cfs,  $Q_{100} = 92$  cfs) consists of flows from Basins OS-1 ( $Q_5 = 5$  cfs,  $Q_{100} = 31$  cfs) and OS-2 ( $Q_5 = 10$  cfs,  $Q_{100} = 60$  cfs) and Basin OS-6 ( $Q_5 = 12$  cfs,  $Q_{100} = 24$  cfs). Flows from Basins OS-1 and OS-2 are from existing 5 acre+ residential lots, while flows from Basin OS-6 are from Woodmen Road asphalt and R.O.W. Flows are routed under Woodmen Road via an existing 48" RCP culvert and discharge on the Mohawk Commercial Centre.



Design Point EX2 ( $Q_5 = 25$  cfs,  $Q_{100} = 144$  cfs) consists of flows from Basins OS-3 ( $Q_5 = 24$  cfs,  $Q_{100} = 141$  cfs) and OS-7 ( $Q_5 = 11$  cfs,  $Q_{100} = 30$  cfs). Flows from Basins OS-3 are from existing 5 acre+ residential lots, while flows from Basin OS-7 are from Woodmen Road asphalt and R.O.W. Flows are routed under Woodmen Road via an existing 48" RCP culvert and discharge on the Mohawk Commercial Centre.

Design Point EX3 ( $Q_5 = 36$  cfs,  $Q_{100} = 175$  cfs) consists of flows from Basins OS-4 ( $Q_5 = 2$  cfs,  $Q_{100} = 13$  cfs) and OS-5 ( $Q_5 = 35$  cfs,  $Q_{100} = 172$  cfs). Flows from Basins OS-4 and OS-5 are from existing 5 acre+ residential lots. Flows are routed under Woodmen Road via existing dual 48" RCP culverts and discharge thru Mohawk Commercial Centre and onto the adjacent property to the east.

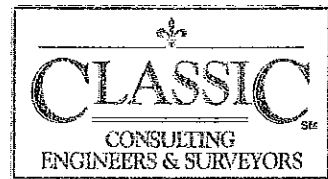
**FLOW COMPARISON TABLE**

<b>CCES Mohawk Commercial Centre</b>	<b>Woodmen Road Safety Project B Report</b>	<b>Woodmen Road Powers/Hwy 24</b>	<b>Sand Creek Regional Pond 96</b>
Design Point EX1 ( $Q_{100} = 92$ cfs)	Culvert C2 ( $Q_{100} = 94$ cfs)	Design Point 74 ( $Q_{100} = 94$ cfs)	Basin 89 ( $Q_{100} = 55$ cfs)
Design Point EX2 ( $Q_{100} = 144$ cfs)	Culvert C3 ( $Q_{100} = 137$ cfs)	Design Point 76 ( $Q_{100} = 327$ cfs)	Design Point 50 ( $Q_{100} = 327$ cfs)
Design Point EX3 ( $Q_{100} = 175$ cfs)	Culvert C4 ( $Q_{100} = 219$ cfs)	Design Point 80 ( $Q_{100} = 193$ cfs)	Basin 87 ( $Q_{100} = 61$ cfs)

The existing culverts under Woodmen Road will adequately convey the flows as calculated by CCES. Any increase in flows North of Woodmen Road will require detention to the capacity of these existing structures. Flows Calculated by CCES are at capacity of the existing culverts based on roadway elevation and pipe size.

**PROPOSED DRAINAGE CONDITIONS**

Per the JR Engineering report for Sand Creek Regional Pond 96, Design Point 49 is the location that flows from north of Woodmen Road and the Mohawk Commercial Centre site discharge flows into Banning Lewis Channel 68. Design Point 49 per the JR report is ( $Q_{10} = 162$  cfs,  $Q_{100} = 493$  cfs). This discharge rate will be maintained with the development of the Mohawk Commercial Centre.



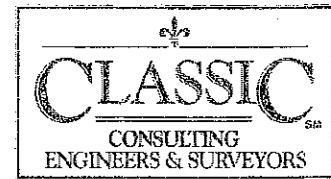
Upon development of any lot within the Mohawk Commercial Centre, individual development plans and final drainage reports will be required.

**Design Point 1** ( $Q_5 = 22$  cfs,  $Q_{100} = 94$  cfs) consists of flows from Basins OS-1 ( $Q_5 = 5$  cfs,  $Q_{100} = 31$  cfs) and OS-2 ( $Q_5 = 10$  cfs,  $Q_{100} = 60$  cfs), Basin OS-6 ( $Q_5 = 12$  cfs,  $Q_{100} = 24$  cfs) and Basin OS-8 ( $Q_5 = 4$  cfs,  $Q_{100} = 7$  cfs). Flows from Basins OS-1 and OS-2 are from existing 5 acre+ residential lots, while flows from Basin OS-6 and OS-8 are from Woodmen Road asphalt and R.O.W. Flows are routed under Woodmen Road via an existing 48" RCP culvert and discharge on the Mohawk Commercial Centre. This 48" RCP culvert will be extended and run parallel along Woodmen Road in Pipe C15 to Pipe 17 and be routed through the site to its ultimate outfall point in Banning Lewis Channel 68. Roadway flows from Basin OS-8 will sheet flow on the site and be picked up in a proposed roadside swale along Woodmen Road and travel to a proposed area inlet at Design Point 10 ( $Q_5 = 4$  cfs,  $Q_{100} = 7$  cfs). This inlet will tie into the 48" storm sewer extension from the Woodmen Road culvert crossing.

**Design Point 2** ( $Q_5 = 26$  cfs,  $Q_{100} = 146$  cfs) consists of flows from Basins OS-3 ( $Q_5 = 24$  cfs,  $Q_{100} = 141$  cfs), OS-7 ( $Q_5 = 11$  cfs,  $Q_{100} = 30$  cfs) and OS-9 ( $Q_5 = 8$  cfs,  $Q_{100} = 17$  cfs). Flows from Basins OS-3 are from existing 5 acre+ residential lots, while flows from Basin OS-7 and OS-9 are from Woodmen Road asphalt and R.O.W. Flows are routed under Woodmen Road via an existing 48" RCP culvert and discharge on the Mohawk Commercial Centre. This 48" RCP culvert will be extended and run parallel along Woodmen Road in Pipe C16 to Pipe 17 and be routed through the site to its ultimate outfall point in Banning Lewis Channel 68. Roadway flows from Basin OS-9 will sheet flow on the site and be picked up in a proposed roadside swale along Woodmen Road and travel to an area inlet at Design Point 11 ( $Q_5 = 8$  cfs,  $Q_{100} = 17$  cfs). This inlet will tie into the 48" storm sewer extension from the Woodmen Road culvert crossing.

**Design Point 3** ( $Q_2 = 71$  cfs,  $Q_5 = 36$  cfs,  $Q_{100} = 175$  cfs) consists of flows from Basins OS-4 ( $Q_5 = 2$  cfs,  $Q_{100} = 13$  cfs) and OS-5 ( $Q_5 = 35$  cfs,  $Q_{100} = 172$  cfs). Flows from Basins OS-4 and OS-5 are from existing 5 acre+ residential lots. Flows are routed under Woodmen Road via existing dual 48" RCP culverts and discharge thru Mohawk Commercial Centre and onto the adjacent property to the east. These flows will continue to discharge to the east unchanged. The existing dual 48" RCP





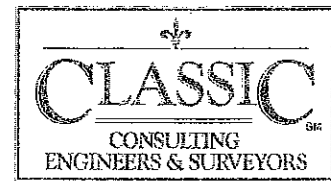
culverts will be extended thru Mohawk Commercial Centre with the construction of Mohawk Road, south of Woodmen Road. A riprap plunge pool will need to be installed because currently there is no erosion protection for the existing culverts. Preliminary sizing per the DCM indicates a dissipater pool length of 22.50, apron length of 11.25', depth of 2.25' with Type M riprap. Final sizing and details will be analyzed with the Final Drainage Report and Construction Drawings for the extension of these culverts.

**Design Point 4** ( $Q_2 = 71$  cfs,  $Q_5 = 98$  cfs,  $Q_{100} = 175$  cfs) consists of flows from Basins A1-A8. Basins A1-A7 are future commercial retail lots with associated buildings, parking lots, and landscaping, and Basin A8 is a future water quality pond No. 1 for Basins A1-A8. The total area that contributes to Water Quality Pond No. 1 is 25.48 acres. This water quality pond will be sized to treat the 2 year event  $Q_2 = 71$  cfs while the 5 and 100 year event will be allowed to pass into the proposed storm sewer system in Pipe C20. These flows will be routed to Banning Lewis Channel 68.

**Design Point 5** ( $Q_2 = 26$  cfs,  $Q_5 = 36$  cfs,  $Q_{100} = 64$  cfs) consists of flows from Basins B1-B7. Basins B1-B6 are future commercial retail lots with associated buildings, parking lots, and landscaping, and Basin B7 is a future Water Quality Pond No. 2 for Basins B1-B7. The total area that contributes to water quality pond No. 2 is 9.58 acres. This water quality pond will be sized to treat the 2 year event  $Q_2 = 26$  cfs while the 5 and 100 year event will be allowed to pass into the proposed storm sewer system in Pipe C18. These flows will be routed to Banning Lewis Channel 68.

**Design Point 6** ( $Q_2 = 7$  cfs,  $Q_5 = 10$  cfs,  $Q_{100} = 18$  cfs) consists of flows from Basins C1 & C2. Basins C1 is a future commercial retail lot with associated buildings, parking lots, landscaping, and Water Quality Pond No. 3. Basin C2 is the future extension of Mohawk Road. The total area that contributes to water quality pond No. 2 is 2.42 acres. This water quality pond will be sized to treat the 2 year event  $Q_2 = 26$  cfs while the 5 and 100 year event will be allowed to pass into the proposed storm sewer system and outfall into Banning Lewis Channel 70, east of Mohawk Commercial Centre.

**Design Point 7** ( $Q_2 = 16$ ,  $Q_5 = 36$  cfs,  $Q_{100} = 176$  cfs) consists of flows from Basins C1, C2, D1 & D2. Basins C1 is a future commercial retail lot with associated buildings, parking lots, landscaping, and



Water Quality Pond No. 3. Basin C2 is the future extension of Mohawk Road. Basins D1 & D2 consists of open space located within an existing Colorado Springs Utilities easement. These flows will continue to sheet flow and outfall into Banning Lewis Channel 70, east of Mohawk Commercial Centre. Design Point 7 is the total discharge of flows from areas north of Woodmen Road and the development of Mohawk Commercial Centre in to Banning Lewis Channel 70.

**Design Point 8** ( $Q_2 = 2$  cfs,  $Q_5 = 2$  cfs,  $Q_{100} = 5$  cfs) consists of flows from Basin E1. Basin E1 consists of open space located within an existing Colorado Springs Utilities easement and an access roadway to the proposed soccer field. A 36" RCP stub has been provided with the construction of Banning Lewis Ranch Filing No. 5 which allows for a direct release rate in the 100-yr event of 64.8 cfs. Flows from Design Point 8 will contribute to this storm sewer stub and be routed through Banning Lewis.

**Design Point 9** ( $Q_2 = 104$  cfs,  $Q_5 = 148$  cfs,  $Q_{100} = 395$  cfs). This is the total discharge of flows from north of Woodmen Road and the development of the Mohawk Commercial Centre into Banning Lewis Channel 68. These flows are compared to the JR Engineering "Sand Creek Regional Pond 96" Design Point No. 49 ( $Q_{10} = 162$  cfs,  $Q_{100} = 493$  cfs). Flows are less than downstream facilities were designed to handle, thus no onsite detention is required of Mohawk Commercial Centre. Flows will be discharged into Channel 68 with a Plunge Pool. Preliminary sizing per the DCM indicates a dissipater pool length of 25.50, apron length of 13', depth of 2.55' with Type H riprap. Final sizing and details will be analyzed with the Final Drainage Report and Construction Drawings for the storm sewer outfall. Channel 68 improvement plans by Nolte & Assoc. show a series of sheet pile cut off walls were used to improve the channel. The discharge for Mohawk Commercial Centre is at the beginning of the improved channel. The plunge pool dissipater will be located as to not disturb the existing sheet piles.

## **STORM WATER QUALITY**

Per the Banning Lewis Ranch Filing No. 1-Street Improvements Addendum No. 1 Final Drainage Report," by Turner Collie & Braden Channel 68 contributes to Detention Pond 95 located north of Dublin Blvd within the Banning Lewis Ranch Village No. 1 development. This Detention facility includes water quality features. On-site water quality ponds within the Mohawk Commercial Centre



will be provided to treat the 2-yr flows within the development. Three (3) separate water quality ponds will be utilized.

**Water Quality Pond No. 1** ( $Q_2 = 71$  cfs,  $Q_5 = 98$  cfs,  $Q_{100} = 175$  cfs) is located at Design Point 4, north of the proposed Soccer fields in the western portion of the development. This facility will be an Extended Detention Basin (EDB). The total area that contributes to Water Quality Pond No. 1 from Basins A1-A8 is 25.48 acres. With the majority of the acreage being commercial/retail development and an imperviousness of 95%, a 1.14 ac-ft facility will be required to handle the 2-yr event. Upon development of any lot within Basins A1-A8, this facility will need to be designed and constructed. An outlet structure will be designed to release the 2-yr event with a 40 hr drain time while the 5-yr and 100-yr event will pass into a proposed storm system.

**Water Quality Pond No. 2** ( $Q_2 = 26$  cfs,  $Q_5 = 36$  cfs,  $Q_{100} = 64$  cfs) is located at Design Point 5, north of the existing Soccer fields in the eastern portion of the development. This facility will be an Extended Detention Basin (EDB). The total area that contributes to Water Quality Pond No. 2 from Basins B1-B7 is 9.58 acres. With the majority of the acreage being commercial/retail development and an imperviousness of 95%, a 0.428 ac-ft facility will be required to handle the 2-yr event. Upon development of any lot within Basins B1-B8, this facility will need to be designed and constructed. An outlet structure will be designed to release the 2-yr event with a 40 hr drain time while the 5-yr and 100-yr event will pass into a proposed storm system.

**Water Quality Pond No. 3** ( $Q_2 = 7$  cfs,  $Q_5 = 10$  cfs,  $Q_{100} = 18$  cfs) is located at Design Point 6, adjacent to the eastern boundary of the Mohawk Commercial Center. This facility will be an Extended Detention Basin (EDB). The total area that contributes to Water Quality Pond No. 3 from Basins C1 and C2 is 2.42 acres. With the majority of the acreage being commercial/retail development and an imperviousness of 95%, a 0.108 ac-ft facility will be required to handle the 2-yr event. Upon development of any lot within Basins C1 or C2, this facility will need to be designed and constructed. An outlet structure will be designed to release the 2-yr event with a 40 hr drain time while the 5-yr and 100-yr event will pass into a proposed storm system.



In the event that development of future lots will not allow flows to be discharged directly into the three proposed water quality ponds, the use of onsite specific water quality features such as parking lot Porous Landscape Detention will be utilized.

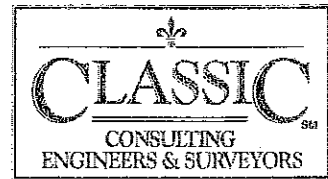
Basin F1 contains the existing and proposed Soccer Fields with associated parking. Upon construction of the future parking area and fields, a Development Plan and associated Final Drainage Report will be required. Water Quality in this area will be evaluated at that time. Possible solutions include a grass buffer at the southern edge of the parking that will sheet flow into a grass swale and discharge into Channel 68, Modular Block Paving, or a Stormceptor type collection system. In all being that the nature of this basin is play fields, the majority of the storm water runoff will be from the future parking lot.

#### **PHASING**

The construction timing of the Storm Sewer infrastructure will vary upon development of the individual lots within the Mohawk Commercial Centre Concept Plan. With the development of any lot within the concept plan, the public systems will need to be constructed to route flows north of Woodmen Road (Design Points 1 and 2) to the Banning Lewis outfall location in Channel 68 (Design Point 9) and the extension of the existing dual 48" culverts (Design Point 3) to Channel 70. The construction of this system may occur in phases depending on the ability to control the erosion from these offsite northerly flows. This public system will be evaluated with the Final Drainage Report for the first platted lot within the Mohawk Commercial Centre Concept Plan. Water Quality Pond No. 1 (Design Point 4) with associated outlet structure and outfall pipes will be required if any development occurs in Basin A-1 thru A-8. Water Quality Pond No. 2 (Design Point 5) with associated outlet structure and outfall pipes will be required if any development occurs in Basin B-1 thru B-7. Water Quality Pond No. 3 (Design Point 6) with associated outlet structure and outfall pipes will be required if any development occurs in Basin C-1 thru C-2.

#### **WETLANDS MITIGATION**

No wetlands are located on site.



### **HYDROLOGIC CALCULATIONS**

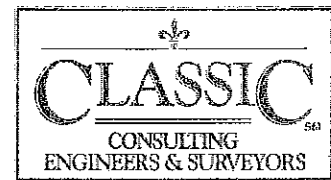
Hydrologic calculations were performed using the City of Colorado Springs/El Paso County Drainage Criteria Manual, as revised in November 1991 and October 1994. Due to offsite basin size and previous reports, SCS was used to determine flows north of Woodmen Road and overall flows from Mohawk Commercial Centre. Rational Method was used to size the onsite drainage systems and water quality ponds.

### **EROSION CONTROL PLAN**

The City of Colorado Springs Drainage Criteria Manual specifies an Erosion Control Plan and associated cost estimate be submitted with the Final Drainage Report. We respectfully request that the Erosion Control Plan be submitted in conjunction with the Overlot Grading Plan and construction assurances posted prior to obtaining a grading permit.

### **FLOODPLAIN STATEMENT**

A portion of this site is not located within a floodplain as determined by the Flood Insurance Rate Maps (F.I.R.M.) Map Number 08041C0535F, effective date, March 17, 1997 (See Appendix).



**CONSTRUCTION COST OPINION**

**Private Drainage Facilities (Non-Reimbursable)**

ITEM	DESCRIPTION	QUANTITY	UNIT COST	COST
1.	24" RCP Storm Drain	471 LF	\$70/LF	\$ 32,970.00
2.	30" RCP Storm Drain	534 LF	\$85/LF	\$ 45,390.00
3.	42" RCP Storm Drain	662 LF	\$110/LF	\$ 72,820.00
4.	54" RCP Storm Drain	155 LF	\$200/LF	\$ 31,000.00
5.	Type 1 Manhole	3 EA	\$6,500/EA	\$ 19,500.00
6.	D-10-R Inlets	6 EA	\$7,500/EA	\$ 45,000.00
7.	SWQ Pond	2 EA	\$30,000/EA	\$ 60,000.00
8.				

<b>SUB-TOTAL</b>				<b>\$ 306,680.00</b>
<b>15% ENGINEERING &amp; CONTINGENCIES</b>				<b>\$ 46,002.00</b>
<b>TOTAL</b>				<b><u>\$ 352,682.00</u></b>

**Public Drainage Facilities (Reimbursable in lieu of DBPS Channel 68 improvements)  
Per DBPS Segment Number 68**

ITEM	DESCRIPTION	QUANTITY	UNIT COST	COST
1.	Grade Controls	3000LF	\$234/LF	\$711,300.00

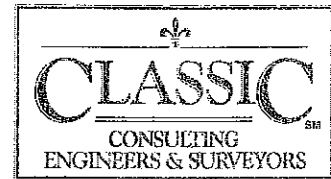
Total Length included with in Mohawk Commercial Centre is 1300LF. Remainder is within Banning Lewis Ranch.

		1300LF	\$234/LF	\$304,200.00
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**Per Mohawk Commercial Centre MDDP**

1.	48" RCP Storm Drain	650 LF	\$125/LF	\$ 81,250.00
2.	66" RCP Storm Drain	400 LF	\$240/LF	\$ 96,000.00
3.	84" RCP Storm Drain	1,300LF	\$400/LF	\$ 520,000.00
4.	Type 1 MH	6 EACH	\$6,500/EA	\$ 39,000.00
5.	Outfall Plunge Pool	1 EACH	\$20,000EA	\$ 20,000.00

<b>SUB-TOTAL</b>			<b>\$</b>	<b>\$766,250.00</b>
<b>15% ENGINEERING &amp; CONTINGENCIES</b>				<b><u>\$114,937.50</u></b>
<b>TOTAL</b>				<b><u>\$ 88,1187.50</u></b>



**Public Drainage Facilities (Non-Reimbursable)**

ITEM	DESCRIPTION	QUANTITY	UNIT COST	COST
1.	48" RCP Storm Drain	395 LF	\$125/LF	\$ 49,375.00
2.	Outfall Plunge Pool	1 EACH	\$15,000/EA	\$ 15,000.00
<b>SUB-TOTAL</b>				<b>\$ 64,375.00</b>
<b>15% ENGINEERING &amp; CONTINGENCIES</b>				<b>\$ 9,656.25</b>
<b>TOTAL</b>				<b>\$ 74,031.25</b>

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.

**DRAINAGE AND BRIDGE FEES**

This area lies within Sand Creek Drainage Basin. The year 2008 drainage and bridge fees are as follows:

**Mohawk Commercial Centre**

<b>Drainage Fees:</b>	
\$9,041/acre x 64.23 acres	\$ 580,703.43
<b>Bridge Fees:</b>	
\$568/acre x 64.23 acres	\$ 36,482.64
<b>Land Fees:</b>	
\$1,070/acre x 64.23 acres	\$ 68,726.10
<b>Facilities:</b>	
\$2,744/acre x 64.23 acres	\$ 176,247.12
<b>TOTAL</b>	<b><u>\$862,159.29</u></b>

**SUMMARY**

All drainage facilities were sized using the current City of Colorado Springs Drainage Criteria and will safely discharge stormwater to adequate outfalls. Overall drainage patterns and developed site densities conform to the historic drainage patterns on-site and in accordance with those set forth



within the "Sand Creek Drainage Basin Planning Study" dated March 1996 by Kiowa Engineering. Existing flows north of Woodmen Road shall be routed through the Mohawk Commercial Centre development. Existing culvert crossings have already been constructed with the Woodmen Road improvements. Any increase in flows intercepted by these existing culvert crossings will require detention to the capacity of these structures. The combination of developed flows from the Mohawk Commercial Centre and offsite flows north of Woodmen Road do not exceed the design flows for the infrastructure within Banning Lewis Ranch, therefore no impacts to these channels and detention ponds is anticipated. On site storm water quality ponds will treat the 2-yr events while allowing the 5-yr and 100 yr event to discharge into the proposed storm system. All maintenance for these water quality facilities shall be the responsibility of the Commercial Center Association. Upon development of the individual lots within the Mohawk Commercial Centre, separate Final Drainage Reports will be required to be submitted and approved by the City of Colorado Springs.

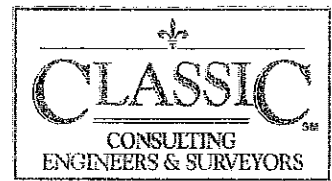
PREPARED BY:

**Classic Consulting Engineers & Surveyors, LLC**

A handwritten signature in black ink, appearing to read "D. L. Gibson", is written over the printed name.

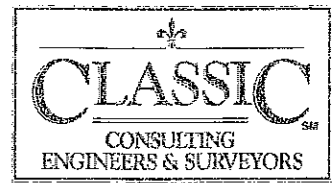
David L. Gibson E.I.  
Project Engineer



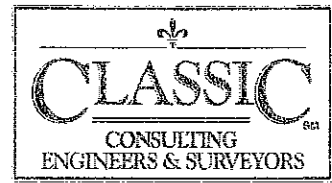


## REFERENCES

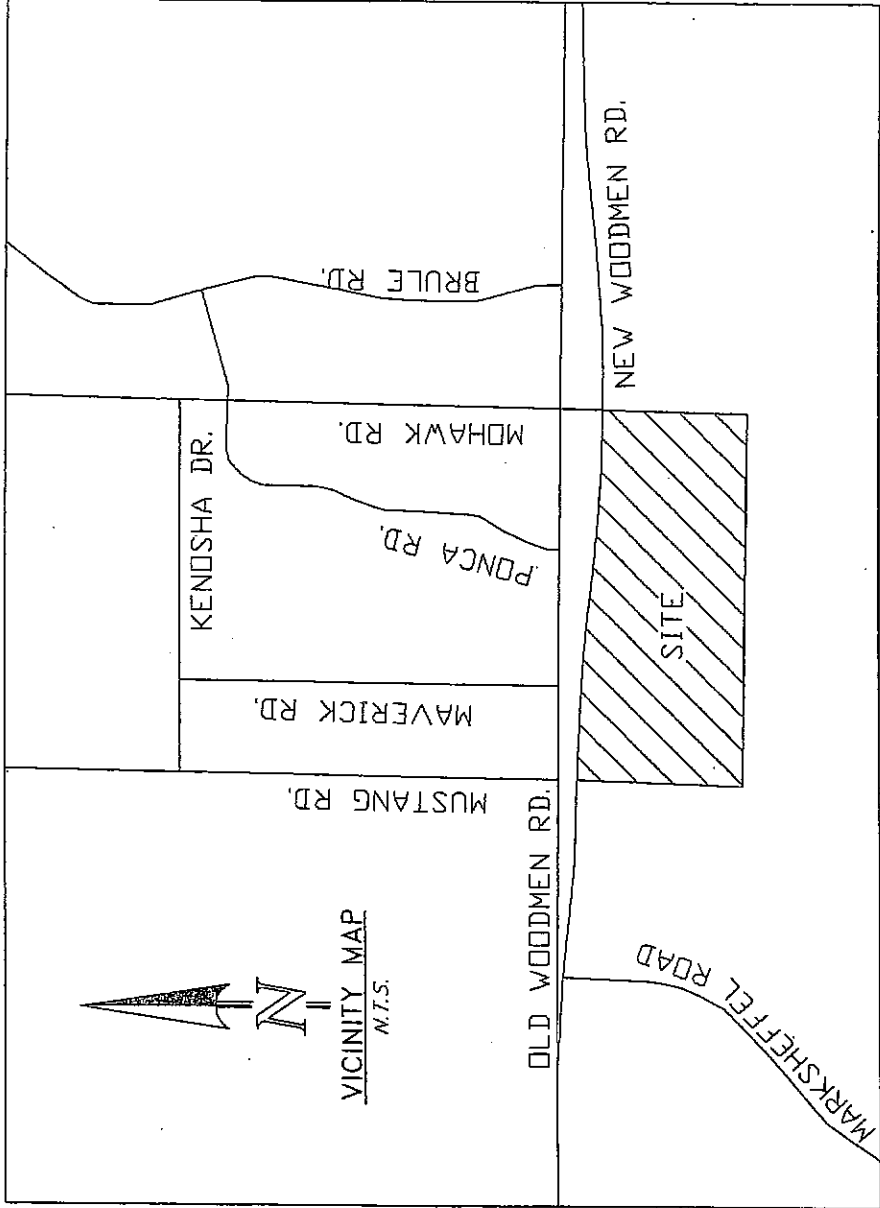
1. City of Colorado Springs/County of El Paso Drainage Criteria Manual dated October 1991.
2. "Drainage Criteria Manual, Volume No. 2," by City of Colorado Springs Engineering Division, dated November 1, 2002.
3. "Banning Lewis Ranch Village 2 MDDP Update," by Nolte Associates, dated June 2007.
4. "Final Drainage Report for Banning Lewis Ranch, Filing No. 2, Drainage Addendum #3," by Turner Collie & Braden, dated January 2007.
5. "Banning Lewis Ranch Filing No. 1-Street Improvements Addendum No. 1 Final Drainage Report," by Turner Collie & Braden, dated January 2007.
6. "Master Development Drainage Plan for Banning Lewis Ranch Village 1 Fillings 1, 2, 5, 6, 7, 8, 9 & 10," by Stantec, Revised June 1 2006.
7. "Final Drainage Report for Banning Lewis Ranch Filing No. 2," by Turner Collie & Braden, dated February 2005.
8. "Master Development Drainage Plan for Banning Lewis Ranch Phases I and II," by Turner Collie & Braden, dated November 2004.
9. "Woodmen Road Safety Improvement Project B Final Drainage Report," by ECI and DMJM Harris, dated June 2003.
10. "Final Hydrology and Hydraulics Report for Woodmen Road Powers to Hwy 24 El Paso County, Colorado" by DMJM Harris-AECOM, Dated September 22, 2006, revised October 4, 2007.
11. "Sand Creek Drainage Basin Planning Study, Preliminary Design Report," by Kiowa Engineering, revised March 1996.
12. "Design Report for Sand Creek Regional Pond 96," by JR Engineering, dated May 2007, Revised October 2007.



**APPENDIX**

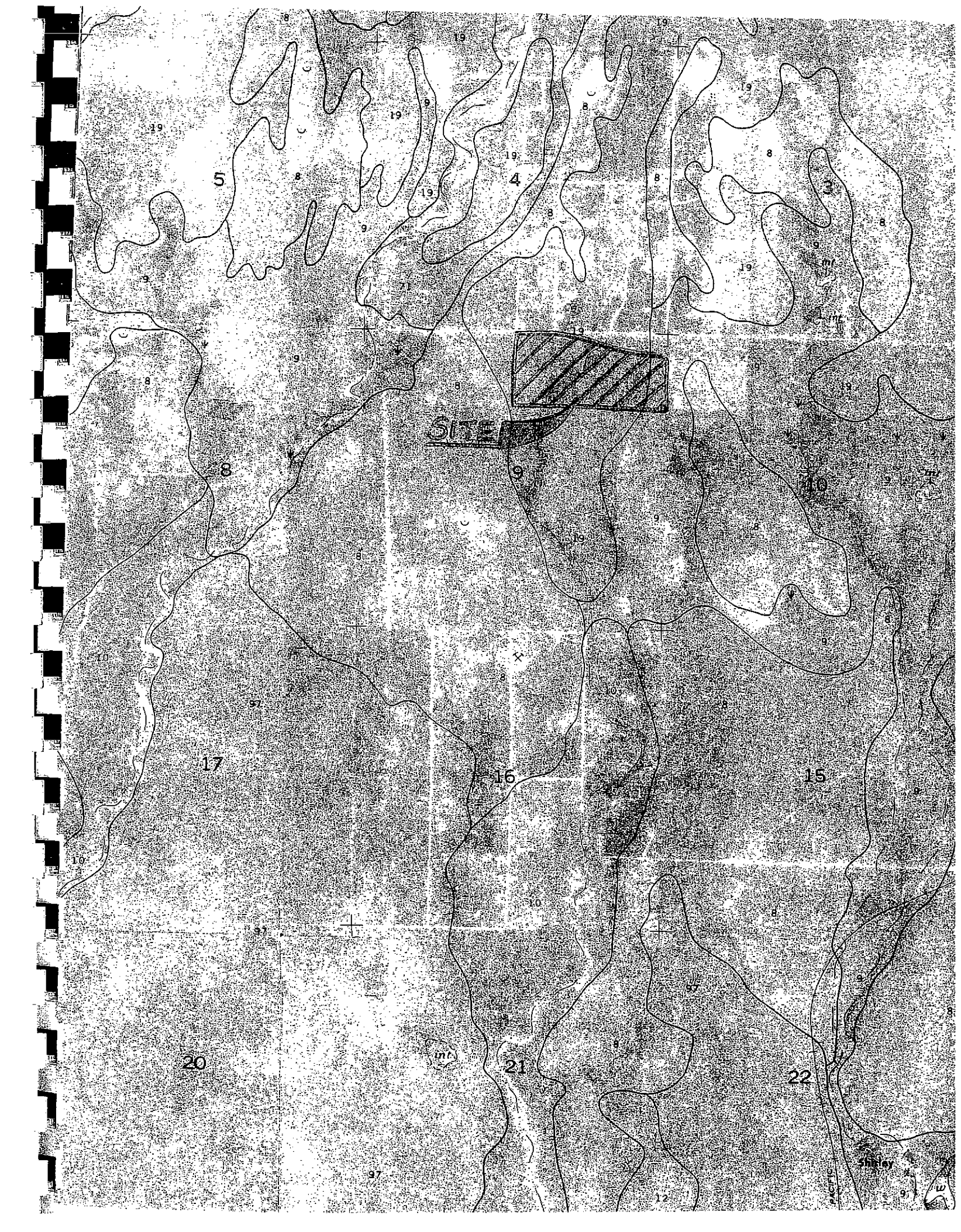


**VICINITY MAP**





**SOILS MAP (S.C.S. SURVEY)**



SITE

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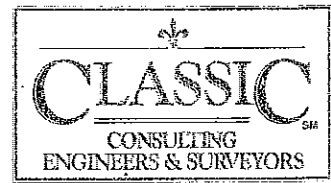
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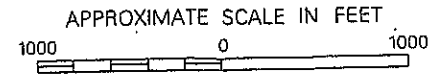
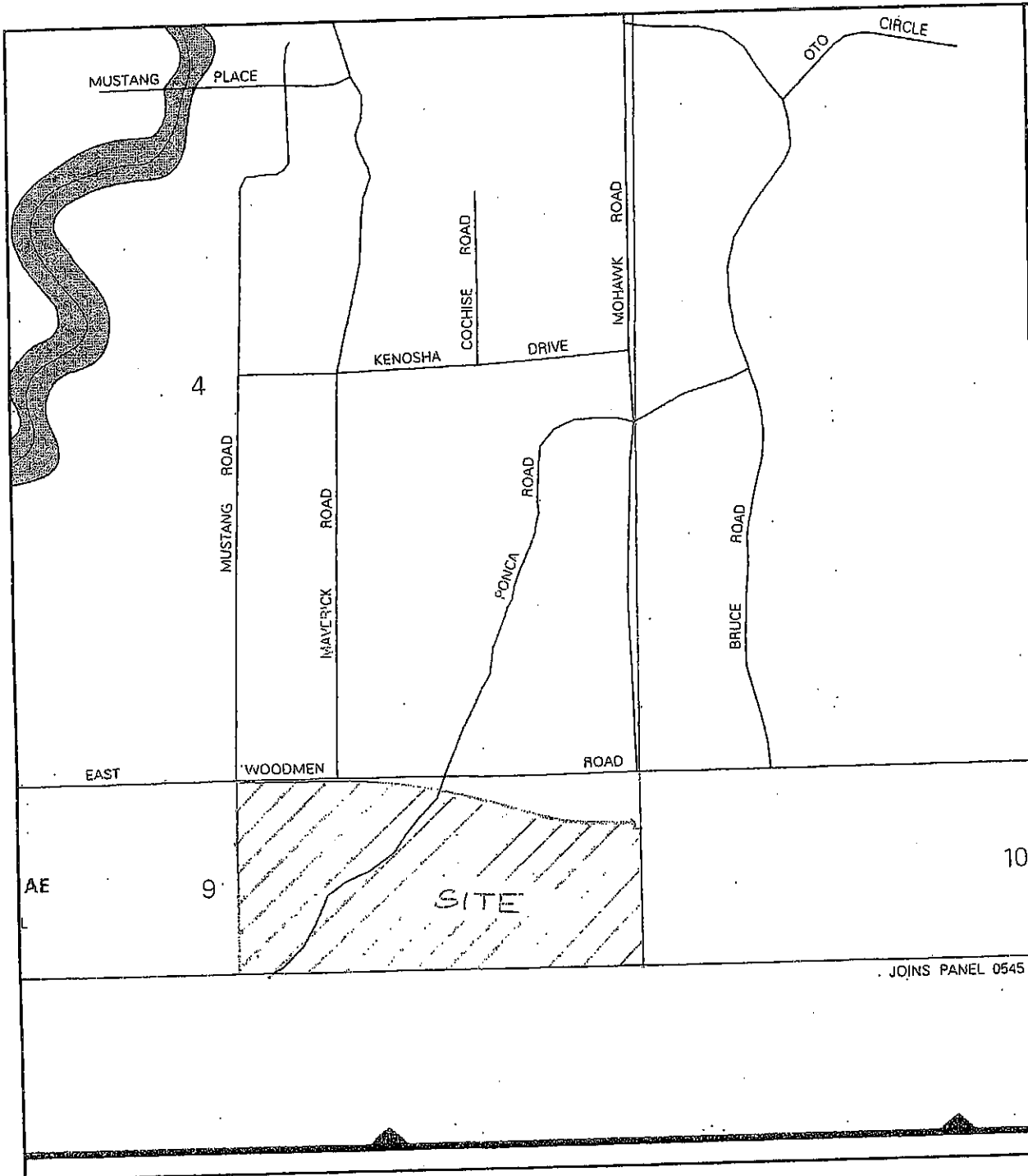
Shirley

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**F.E.M.A. MAP**



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
 EL PASO COUNTY,  
 COLORADO AND  
 INCORPORATED AREAS

PANEL 535 OF 1300  
 (SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY, UNINCORPORATED AREAS	080059	0635	F

MAP NUMBER  
 08041C0535 F

EFFECTIVE DATE:  
 MARCH 17, 1997

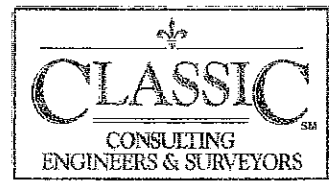


Federal Emergency Management Agency

JOINS PANEL 0545

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)





## **HYDROLOGIC CALCULATIONS**

JOB NAME: MOHAWK COMMERCIAL CENTRE  
 JOB NUMBER: 2208.10  
 DATE: 05/20/08  
 CALCULATED BY: DLG

**FINAL DRAINAGE REPORT ~ BASIN RUNOFF COEFFICIENT SUMMARY**

BASIN	TOTAL AREA (AC)	IMPERVIOUS AREA / STREETS			LANDSCAPE/UNDEVELOPED AREAS			WEIGHTED		WEIGHTED CA	
		AREA (AC)	C(5)	C(100)	AREA (AC)	C(5)	C(100)	C(5)	C(100)	CA(5)	CA(100)
A1	9.33	9.09	0.90	0.90	0.24	0.25	0.35	0.88	0.89	8.24	8.27
A2	7.73	6.88	0.90	0.90	0.85	0.25	0.35	0.83	0.84	6.40	6.49
A3	1.95	1.90	0.90	0.90	0.05	0.25	0.35	0.88	0.89	1.72	1.73
A4	1.65	1.60	0.90	0.90	0.05	0.25	0.35	0.88	0.88	1.45	1.46
A5	1.16	1.13	0.90	0.90	0.03	0.25	0.35	0.88	0.89	1.02	1.03
A6	1.20	1.12	0.90	0.90	0.08	0.25	0.35	0.86	0.86	1.03	1.04
A7	0.87	0.86	0.90	0.90	0.01	0.25	0.35	0.89	0.89	0.78	0.78
A8	1.59	0.59	0.90	0.90	1.00	0.25	0.35	0.49	0.55	0.78	0.88
B1	1.15	1.13	0.90	0.90	0.02	0.30	0.6	0.89	0.89	1.02	1.03
B2	1.36	1.33	0.90	0.90	0.03	0.25	0.35	0.89	0.89	1.20	1.21
B3	1.48	1.44	0.90	0.90	0.04	0.30	0.6	0.88	0.89	1.31	1.32
B4	1.49	1.45	0.90	0.90	0.04	0.25	0.35	0.88	0.89	1.32	1.32
B5	1.09	1.06	0.90	0.90	0.03	0.25	0.35	0.88	0.88	0.96	0.96
B6	1.87	1.83	0.90	0.90	0.04	0.25	0.35	0.89	0.89	1.66	1.66
B7	1.14	0.44	0.90	0.90	0.70	0.25	0.35	0.50	0.56	0.57	0.64
C1	1.92	1.72	0.90	0.90	0.20	0.25	0.35	0.83	0.84	1.60	1.62
C2	0.50	0.50	0.90	0.95	0.00	0.25	0.35	0.90	0.95	0.45	0.48
D1	0.69	0.19	0.90	0.90	0.50	0.25	0.35	0.43	0.50	0.30	0.35
D2	1.31	0.11	0.90	0.90	1.20	0.25	0.35	0.30	0.40	0.40	0.52
E1	2.19	0.19	0.90	0.90	2.00	0.25	0.35	0.31	0.40	0.67	0.87
F1	23.80	8.13	0.90	0.90	15.67	0.30	0.60	0.50	0.70	12.02	16.72

JOB NAME: MOHAWK COMMERCIAL CENTRE  
 JOB NUMBER: 2208.10  
 DATE: 05/20/08  
 CALC'D BY: DLG

**FINAL DRAINAGE REPORT ~ BASIN RUNOFF SUMMARY**

BASIN	WEIGHTED		OVERLAND				STREET / CHANNEL FLOW				Tc (min)	INTENSITY			TOTAL FLOWS		
	CA(5)	CA(100)	C(5)	Length (ft)	Height (ft)	Tc (min)	Length (ft)	Slope (%)	Velocity (fps)	Tc (min)		TOTAL (min)	I(2) (in/hr)	I(5) (in/hr)	I(100) (in/hr)	Q(2) (cfs)	Q(5) (cfs)
A1	8.24	8.27	0.25	25	1	5.0	425	3.3%	6.4	1.1	6.1	3.51	4.83	8.58	29	40	71
A2	6.40	6.49	0.25	25	1	5.0	250	1.5%	4.3	1.0	6.0	3.53	4.86	8.64	23	31	56
A3	1.72	1.73	0.25	25	1	5.0	100	1.5%	4.3	0.4	5.4	3.63	5.00	8.89	6	9	15
A4	1.45	1.46	0.25	25	1	5.0	200	1.5%	4.3	0.8	5.8	3.56	4.91	8.72	5	7	13
A5	1.02	1.03	0.25	25	1	5.0	100	1.0%	3.5	0.5	5.5	3.62	4.98	8.85	4	5	9
A6	1.03	1.04	0.25	25	1	5.0	0	3.5%	6.5	0.0	5.0	3.71	5.10	9.07	4	5	9
A7	0.78	0.78	0.25	25	1	5.0	100	2.0%	4.9	0.3	5.4	3.64	5.01	8.91	3	4	7
A8	0.78	0.88	0.25	50	2	7.1	150	5.0%	7.8	0.3	7.4	3.31	4.55	8.10	3	4	7
B1	1.02	1.03	0.25	25	1	5.0	125	1.5%	4.3	0.5	5.5	3.62	4.98	8.84	4	5	9
B2	1.20	1.21	0.25	25	1	5.0	125	1.5%	4.3	0.5	5.5	3.62	4.98	8.84	4	6	11
B3	1.31	1.32	0.25	25	1	5.0	200	2.0%	4.9	0.7	5.7	3.58	4.93	8.76	5	6	12
B4	1.32	1.32	0.25	25	1	5.0	100	1.0%	3.5	0.5	5.5	3.62	4.98	8.85	5	7	12
B5	0.96	0.96	0.25	25	1	5.0	100	1.0%	3.5	0.5	5.5	3.62	4.98	8.85	3	5	9
B6	1.66	1.66	0.25	25	1	5.0	100	1.2%	3.8	0.4	5.5	3.62	4.99	8.87	6	8	15
B7	0.57	0.64	0.25	50	2	7.1	250	1.5%	4.3	1.0	8.1	3.22	4.43	7.87	2	3	5
C1	1.60	1.62	0.25	25	1	5.0	200	1.0%	3.5	1.0	6.0	3.53	4.86	8.65	6	8	14
C2	0.45	0.48	0.25	25	1	5.0	100	1.0%	3.5	0.5	5.5	3.62	4.98	8.85	2	2	4
D1	0.30	0.35	0.25	150	4	14.1	200	3.0%	6.1	0.5	14.6	2.54	3.50	6.22	1	1	2
D2	0.40	0.52	0.25	25	1	5.0	300	3.0%	6.1	0.8	5.9	3.56	4.89	8.70	1	2	5
E1	0.67	0.87	0.25	175	6	14.0	300	2.3%	5.3	1.0	15.0	2.52	3.47	6.16	2	2	5
F1	12.02	16.72	0.25	400	12	22.1	1000	1.0%	3.5	4.8	26.9	1.87	2.58	4.58	22	31	77

JOB NAME: MOHAWK COMMERCIAL CENTRE  
 JOB NUMBER: 2208.10  
 DATE: 05/20/08  
 CALCULATED BY: DLG

**FINAL DRAINAGE REPORT ~ SURFACE ROUTING SUMMARY**

Design Point(s)	Contributing Basins	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity			Flow			Inlet Size
					I(2)	I(5)	I(100)	Q(2)	Q(5)	Q(100)	
1	EXISTING 48" RCP CULVERT EAST	SEE POND PACK SHEETS						10	18	92	
2	EXISTING 48" RCP CULVERT WEST	SEE POND PACK SHEETS						9	25	144	
3	EXISTING DUAL 48" CULVERTS EAST	SEE POND PACK SHEETS						15	36	175	
4	WATER QUALITY POND A BASIN A1-A8	21.43	21.66	7.4	3.31	4.55	8.10	71	98	175	
5	WATER QUALITY POND B BASIN B1-B7	8.04	8.14	8.1	3.22	4.43	7.87	26	36	64	
6	WATER QUALITY POND C BASIN C1-C2	2.05	2.09	6.0	3.53	4.86	8.65	7	10	18	
7	FLOWS TO EXIST BANNING LEWIS CH 70	SEE POND PACK SHEETS						16	36	176	
8	BASIN E1	0.67	0.87	15.0	2.52	3.47	6.16	2	2	5	
9	FLOWS TO EXIST BANNING LEWIS CH 68	SEE POND PACK SHEETS						104	148	395	
10	BASIN OS-8 (WOODMEN ROAD)	SEE POND PACK SHEETS						3.28	4	7	
11	BASIN OS-9 (WOODMEN ROAD)	SEE POND PACK SHEETS						7.65	10	17	

### COMPOSITE C<sub>N</sub> VALUES - EXISTING CONDITIONS

BASIN (label)	BASIN AREA (ac)	LAND USE	SUB-AREA LAND USE 1		LAND USE	SUB-AREA LAND USE 2		AREA (AC)	TOTAL BASIN AREA (ac)	TOTAL BASIN AREA (sq mi)	WEIGHTED C <sub>N</sub>
			ESTIMATED PERCENT IMPERIOUS	ESTIMATED		ESTIMATED PERCENT IMPERIOUS	ESTIMATED C <sub>N</sub>				
OS-1	20.8	5 ACRE	20	65	5 ACRE	100	98	0.0	20.8	0.03245	65.0
OS-2	51.8	5 ACRE	20	65	5 ACRE	100	98	0.0	51.8	0.08098	65.0
OS-3	192.3	5 ACRE	20	65	5 ACRE	100	98	0.0	192.3	0.30039	65.0
OS-4	7.6	5 ACRE	20	65	5 ACRE	100	98	0.0	7.6	0.01188	65.0
OS-5	197.5	5 ACRE	20	65	5 ACRE	100	98	40.0	197.5	0.30859	71.7
OS-6	4.7	ROADSIDE	20	65	WOODMEN	100	98	3.7	4.7	0.00728	91.1
OS-7	8.5	ROADSIDE	20	65	WOODMEN	100	98	3.2	8.5	0.01328	77.2
OS-8	1.3	ROADSIDE	20	65	WOODMEN	100	98	1.3	1.3	0.00206	98.0
OS-9	3.1	ROADSIDE	20	65	WOODMEN	100	98	3.1	3.1	0.00481	98.0

### TIME OF CONCENTRATION

BASIN	Cn	C(5)	Length (ft)	OVERLAND		STREET / CHANNEL FLOW			Tc TOTAL (min)	Tc TOTAL (hr)	Lagtime TOTAL (hr)
				Height (ft)	Tc (min)	Length (ft)	Velocity (fps)	Tc (min)			
OS-1	65.0	0.4	100	2	<u>10.4</u>	2225	3.0	12.4	22.7747	0.3796	0.2277
OS-2	65.0	0.4	100	2	<u>10.4</u>	4000	3.0	22.2	32.6358	0.5439	0.3264
OS-3	65.0	0.4	100	2	<u>10.4</u>	8500	3.0	47.2	57.6358	0.9606	0.5764
OS-4	65.0	0.4	100	2	<u>10.4</u>	1300	3.0	7.2	17.6358	0.2939	0.1764
OS-5	71.7	0.4	100	2	<u>10.4</u>	8800	3.0	48.9	59.3025	0.9884	0.5930
OS-6	91.1	0.9	50	1	<u>2.1</u>	1000	3.0	5.6	7.6594	0.1277	0.0766
OS-7	77.2	0.9	50	1	<u>2.1</u>	1200	3.0	6.7	8.7705	0.1462	0.0877
OS-8	98.0	0.9	50	1	<u>2.1</u>	800	2.5	5.3	7.4372	0.1240	0.0744
OS-9	98.0	0.9	50	1	<u>2.1</u>	800	2.5	5.3	7.4372	0.1240	0.0744

## BASIN SUMMARY - EXISTING CONDITIONS

BASIN (label)	TOTAL BASIN AREA (acres)	TOTAL BASIN AREA (sq mi)	WEIGHTED CN	TOTAL T <sub>c</sub> (hours)	Q 2 Yr. (cfs)	Q 5 Yr. (cfs)	Q 100 Yr. (cfs)
OS-1	20.8	0.0325	65.0	0.3796	1.72	5.31	30.65
OS-2	51.8	0.0810	65.0	0.5439	3.30	10.06	59.95
OS-3	192.3	0.3004	65.0	0.9606	8.27	23.88	141.34
OS-4	7.6	0.0119	65.0	0.2939	0.78	2.35	12.93
OS-5	197.5	0.3086	71.7	0.9884	14.84	35.34	171.78
OS-6	4.7	0.0073	91.1	0.1277	8.91	11.85	23.67
OS-7	8.5	0.0133	77.2	0.1462	6.63	10.74	30.01
OS-8	1.3	0.0021	98.0	0.1240	3.28	4.09	7.31
OS-9	3.1	0.0048	98.0	0.1240	7.65	9.54	17.05



## HYDRAULIC CALCULATIONS



JOB NAME: MOHAWK COMMERCIAL CENTRE  
 JOB NUMBER: 2208.10  
 DATE: 05/20/08  
 CALCULATED BY: DLG

\* PIPES ARE LISTED AT MAXIMUM SIZE REQUIRED TO ACCOMMODATE Q100 FLOWS AT MINIMUM GRADE.  
 REFER TO INDIVIDUAL PIPE SHEETS FOR HYDRAULIC INFORMATION.

### FINAL DRAINAGE REPORT ~ PIPE ROUTING SUMMARY

Pipe Run	Contributing Basins	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity		Flow		Pipe Size*
					I(5)	I(100)	Q(5)	Q(100)	
C1	BASIN A1	8.24	8.27	6.1	4.83	8.58	40	71	42" RCP @ 0.50%
C2	BASIN A2	6.40	6.49	6.0	4.86	8.64	31	56	42" RCP @ 0.50%
C3	PIPE C1&C2	14.65	14.76	6.1	4.83	8.58	71	127	54" RCP @ 0.50%
C4	BASIN A3	1.72	1.73	5.4	5.00	8.89	9	15	24" RCP @ 0.50%
C5	BASIN A4 & A5	2.48	2.49	5.8	4.91	8.72	12	22	30" RCP @ 0.50%
C6	BASIN A6 & A7	1.80	1.81	5.4	5.01	8.91	9	16	30" RCP @ 0.50%
C7	BASIN B1	1.02	1.03	5.5	4.98	8.84	5	9	24" RCP @ 0.50%
C8	BASIN B2	1.20	1.21	5.5	4.98	8.84	6	11	24" RCP @ 0.50%
C9	PIPES C& C8	2.23	2.24	5.5	4.98	8.84	11	20	30" RCP @ 0.50%
C10	BASIN B3	1.31	1.32	5.7	4.93	8.76	6	12	24" RCP @ 0.50%
C11	BASIN B4 & B5	2.28	2.28	5.5	4.98	8.85	11	20	30" RCP @ 0.50%
C12	BASIN B6	1.66	1.66	5.5	4.99	8.87	8	15	24" RCP @ 0.50%
C13	BASIN C1 & C2	2.05	2.09	6.0	4.86	8.65	10	18	30" RCP @ 0.50%

JOB NAME: MOHAWK COMMERCIAL CENTRE  
 JOB NUMBER: 2208.10  
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 CALCULATED BY: DLG

\* PIPES ARE LISTED AT MAXIMUM SIZE REQUIRED TO ACCOMMODATE Q100 FLOWS AT MINIMUM GRADE.  
 REFER TO INDIVIDUAL PIPE SHEETS FOR HYDRAULIC INFORMATION.

**FINAL DRAINAGE REPORT ~ PIPE ROUTING SUMMARY**

Pipe Run	Contributing Basins	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity		Flow		Pipe Size*	
					I(5)	I(100)	Q(5)	Q(100)		
C14	BASIN E1	0.67	0.87	15.0	3.47	6.16	2	5	18" RCP @ 0.50 %	
C15	DP 1 & OS-8	SEE POND PACK SHEETS						22	94	48" RCP @ 0.50%
C16	DP 2 & OS-9	SEE POND PACK SHEETS						26	146	60" RCP @ 0.50%
C17	PIPE C15 & C16	SEE POND PACK SHEETS						45	205	66" RCP @ 0.50%
C18	DP 5	8.04	8.14	8.1	4.43	7.87	36	64	42" RCP @ 0.50%	
C19	PIPE C17 & C18	SEE POND PACK SHEETS						112	305	84" RCP @ 0.50%
C20	DP 4	21.43	21.66	7.4	4.55	8.10	98	175	60" RCP @ 0.50%	
C21	PIPE C19, C20 & BASIN F1	SEE POND PACK SHEETS						148	395	84" RCP @ 0.50%

Designer: David Gibson  
 Company: CCES  
 Date: March 10, 2008  
 Project: Mohawk Commercial Centre  
 Location: WATER QUALITY NO. 1

<p>1. Basin Storage Volume</p> <p>A) Tributary Area's Imperviousness Ratio (<math>i = I_a / 100</math>)</p> <p>B) Contributing Watershed Area (Area)</p> <p>C) Water Quality Capture Volume (WQCV)                      (WQCV = <math>1.0 * (0.91 * I^3 - 1.19 * I^2 + 0.78 * I)</math>)</p> <p>D) Design Volume: Vol = (WQCV / 12) * Area * 1.2</p>	<p><math>I_a =</math> <u>95.00</u> %  <math>i =</math> <u>0.95</u></p> <p>Area = <u>25.48</u> acres</p> <p>WQCV = <u>0.45</u> watershed inches</p> <p>Vol = <u>1.140</u> acre-feet</p>
<p>2. Outlet Works</p> <p>A) Outlet Type (Check One)</p> <p>B) Depth at Outlet Above Lowest Perforation (H)</p> <p>C) Required Maximum Outlet Area per Row, (<math>A_o</math>)</p> <p>D) Perforation Dimensions (<b>enter one only</b>):                      i) Circular Perforation Diameter <b>OR</b>                      ii) 2" Height Rectangular Perforation Width</p> <p>E) Number of Columns (<math>n_c</math>, See Table 6a-1 For Maximum)</p> <p>F) Actual Design Outlet Area per Row (<math>A_o</math>)</p> <p>G) Number of Rows (<math>n_r</math>)</p> <p>H) Total Outlet Area (<math>A_{ot}</math>)</p>	<p><input checked="" type="checkbox"/> Orifice Plate  <input type="checkbox"/> Perforated Riser Pipe  <input type="checkbox"/> Other: _____</p> <hr/> <p>H = <u>4.50</u> feet</p> <p><math>A_o =</math> <u>0.82</u> square inches</p> <p>D = <u>1.0000</u> inches, <b>OR</b>                      W = _____ inches</p> <p><math>n_c =</math> <u>1</u> number</p> <p><math>A_o =</math> <u>0.79</u> square inches</p> <p><math>n_r =</math> <u>14</u> number</p> <p><math>A_{ot} =</math> <u>10.60</u> square inches</p>
<p>3. Trash Rack</p> <p>A) Needed Open Area: <math>A_t = 0.5 * (\text{Figure 7 Value}) * A_{ot}</math></p> <p>B) Type of Outlet Opening (Check One)</p> <p>C) For 2", or Smaller, <b>Round Opening</b> (Ref.: Figure 6a):                      i) Width of Trash Rack and Concrete Opening (<math>W_{conc}</math>)                      from Table 6a-1                      ii) Height of Trash Rack Screen (<math>H_{TR}</math>)</p>	<p><math>A_t =</math> <u>361</u> square inches</p> <p><input checked="" type="checkbox"/> <math>\leq 2"</math> Diameter <b>Round</b>  <input type="checkbox"/> 2" High <b>Rectangular</b>  <input type="checkbox"/> Other: _____</p> <hr/> <p><math>W_{conc} =</math> <u>9</u> inches</p> <p><math>H_{TR} =</math> <u>78</u> inches</p>

Designer: David Gibson  
 Company: CCES  
 Date: March 10, 2008  
 Project: Mohawk Commercial Centre  
 Location: WATER QUALITY NO. 2

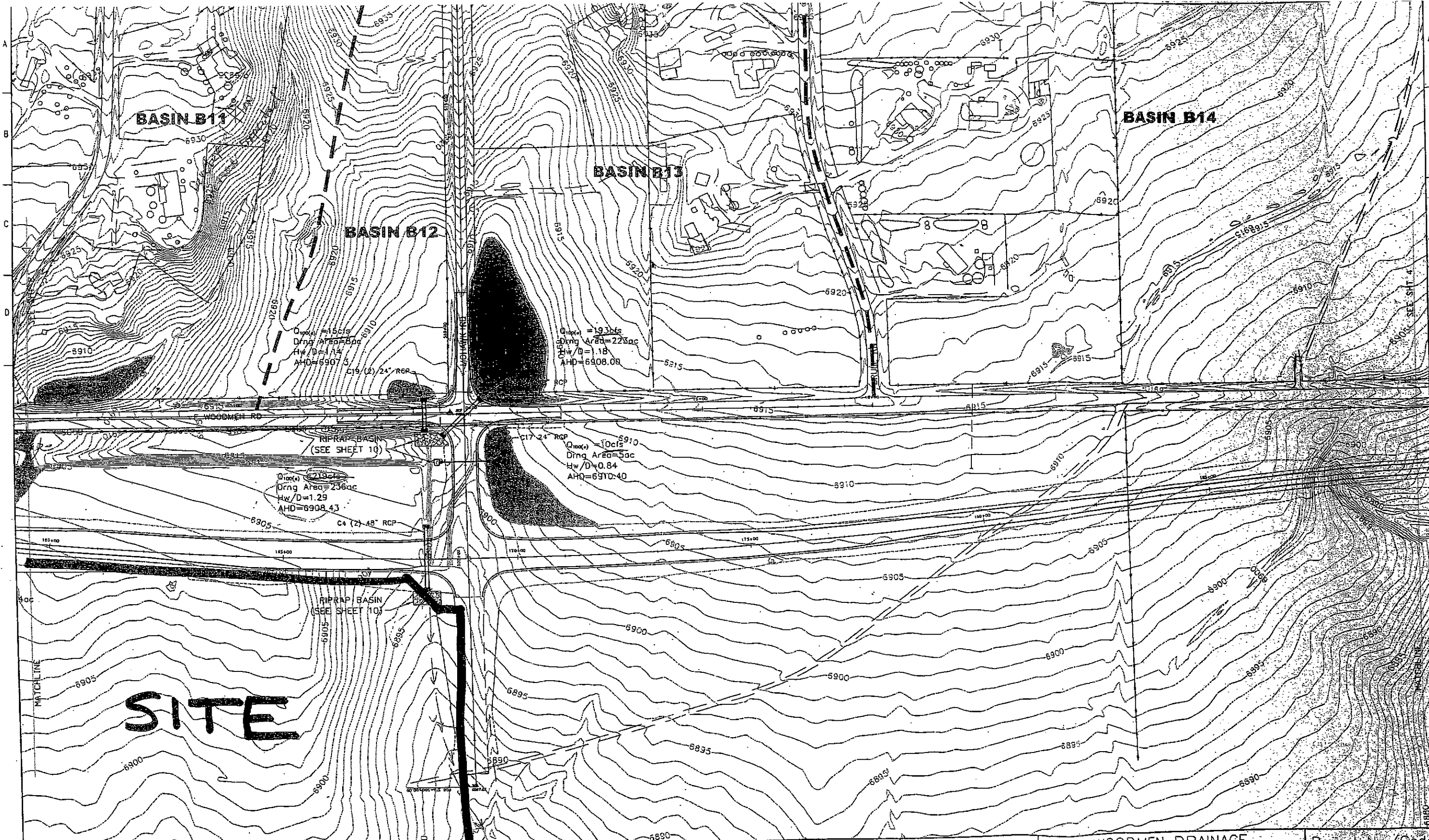
<p>1. Basin Storage Volume</p> <p>A) Tributary Area's Imperviousness Ratio (<math>i = I_a / 100</math>)</p> <p>B) Contributing Watershed Area (Area)</p> <p>C) Water Quality Capture Volume (WQCV)  <math>(WQCV = 1.0 * (0.91 * I^3 - 1.19 * I^2 + 0.78 * I))</math></p> <p>D) Design Volume: <math>Vol = (WQCV / 12) * Area * 1.2</math></p>	<p><math>I_a =</math> <u>95.00</u> %  <math>i =</math> <u>0.95</u></p> <p>Area = <u>9.58</u> acres</p> <p>WQCV = <u>0.45</u> watershed inches</p> <p>Vol = <u>0.428</u> acre-feet</p>
<p>2. Outlet Works</p> <p>A) Outlet Type (Check One)</p> <p>B) Depth at Outlet Above Lowest Perforation (H)</p> <p>C) Required Maximum Outlet Area per Row, (<math>A_o</math>)</p> <p>D) Perforation Dimensions (enter one only):                      i) Circular Perforation Diameter OR                      ii) 2" Height Rectangular Perforation Width</p> <p>E) Number of Columns (<math>nc</math>, See Table 6a-1 For Maximum)</p> <p>F) Actual Design Outlet Area per Row (<math>A_o</math>)</p> <p>G) Number of Rows (<math>nr</math>)</p> <p>H) Total Outlet Area (<math>A_{ot}</math>)</p>	<p><input checked="" type="checkbox"/> Orifice Plate  <input type="checkbox"/> Perforated Riser Pipe  <input type="checkbox"/> Other: _____</p> <p>H = <u>4.00</u> feet</p> <p><math>A_o =</math> <u>0.36</u> square inches</p> <p>D = <u>0.6500</u> inches, OR                      W = _____ inches</p> <p><math>nc =</math> <u>1</u> number</p> <p><math>A_o =</math> <u>0.33</u> square inches</p> <p><math>nr =</math> <u>12</u> number</p> <p><math>A_{ot} =</math> <u>3.98</u> square inches</p>
<p>3. Trash Rack</p> <p>A) Needed Open Area: <math>A_t = 0.5 * (\text{Figure 7 Value}) * A_{ot}</math></p> <p>B) Type of Outlet Opening (Check One)</p> <p>C) For 2", or Smaller, <b>Round Opening</b> (Ref.: Figure 6a):</p> <p>i) Width of Trash Rack and Concrete Opening (<math>W_{conc}</math>)                      from Table 6a-1</p> <p>ii) Height of Trash Rack Screen (<math>H_{TR}</math>)</p>	<p><math>A_t =</math> <u>141</u> square inches</p> <p><input checked="" type="checkbox"/> <u>&lt; 2" Diameter Round</u>  <input type="checkbox"/> <u>2" High Rectangular</u>  <input type="checkbox"/> Other: _____</p> <p><math>W_{conc} =</math> <u>6</u> inches</p> <p><math>H_{TR} =</math> <u>72</u> inches</p>

Designer: David Gibson  
 Company: CCES  
 Date: March 10, 2008  
 Project: Mohawk Commercial Centre  
 Location: WATER QUALITY NO. 3

<p>1. Basin Storage Volume</p> <p>A) Tributary Area's Imperviousness Ratio (<math>i = I_a / 100</math>)</p> <p>B) Contributing Watershed Area (Area)</p> <p>C) Water Quality Capture Volume (WQCV)  <math>(WQCV = 1.0 * (0.91 * I^3 - 1.19 * I^2 + 0.78 * I))</math></p> <p>D) Design Volume: <math>Vol = (WQCV / 12) * Area * 1.2</math></p>	<p><math>I_a =</math> <u>95.00</u> %  <math>i =</math> <u>0.95</u></p> <p>Area = <u>2.42</u> acres</p> <p>WQCV = <u>0.45</u> watershed inches</p> <p>Vol = <u>0.108</u> acre-feet</p>
<p>2. Outlet Works</p> <p>A) Outlet Type (Check One)</p> <p>B) Depth at Outlet Above Lowest Perforation (H)</p> <p>C) Required Maximum Outlet Area per Row, (<math>A_o</math>)</p> <p>D) Perforation Dimensions (enter one only):              i) Circular Perforation Diameter OR              ii) 2" Height Rectangular Perforation Width</p> <p>E) Number of Columns (<math>nc</math>, See Table 6a-1 For Maximum)</p> <p>F) Actual Design Outlet Area per Row (<math>A_o</math>)</p> <p>G) Number of Rows (<math>nr</math>)</p> <p>H) Total Outlet Area (<math>A_{ot}</math>)</p>	<p><input checked="" type="checkbox"/> Orifice Plate  <input type="checkbox"/> Perforated Riser Pipe  <input type="checkbox"/> Other: _____</p> <p>H = <u>4.00</u> feet</p> <p><math>A_o =</math> <u>0.09</u> square inches</p> <p>D = <u>0.3300</u> inches, OR              W = _____ inches</p> <p><math>nc =</math> <u>1</u> number</p> <p><math>A_o =</math> <u>0.09</u> square inches</p> <p><math>nr =</math> <u>12</u> number</p> <p><math>A_{ot} =</math> <u>1.03</u> square inches</p>
<p>3. Trash Rack</p> <p>A) Needed Open Area: <math>A_t = 0.5 * (\text{Figure 7 Value}) * A_{ot}</math></p> <p>B) Type of Outlet Opening (Check One)</p> <p>C) For 2", or Smaller, <b>Round Opening</b> (Ref.: Figure 6a):</p> <p>i) Width of Trash Rack and Concrete Opening (<math>W_{conc}</math>)              from Table 6a-1</p> <p>ii) Height of Trash Rack Screen (<math>H_{TR}</math>)</p>	<p><math>A_t =</math> <u>38</u> square inches</p> <p><input checked="" type="checkbox"/> <math>\leq 2"</math> Diameter <b>Round</b>  <input type="checkbox"/> 2" High <b>Rectangular</b>  <input type="checkbox"/> Other: _____</p> <p><math>W_{conc} =</math> <u>3</u> inches</p> <p><math>H_{TR} =</math> <u>72</u> inches</p>



**EXHIBIT A**  
**DRAINAGE BASIN AND CULVERT INFORMATION**  
**TAKEN FROM**  
**WOODMEN ROAD SAFETY IMPROVEMENT**  
**PROJECT B**  
**FINAL DRAINAGE REPORT**

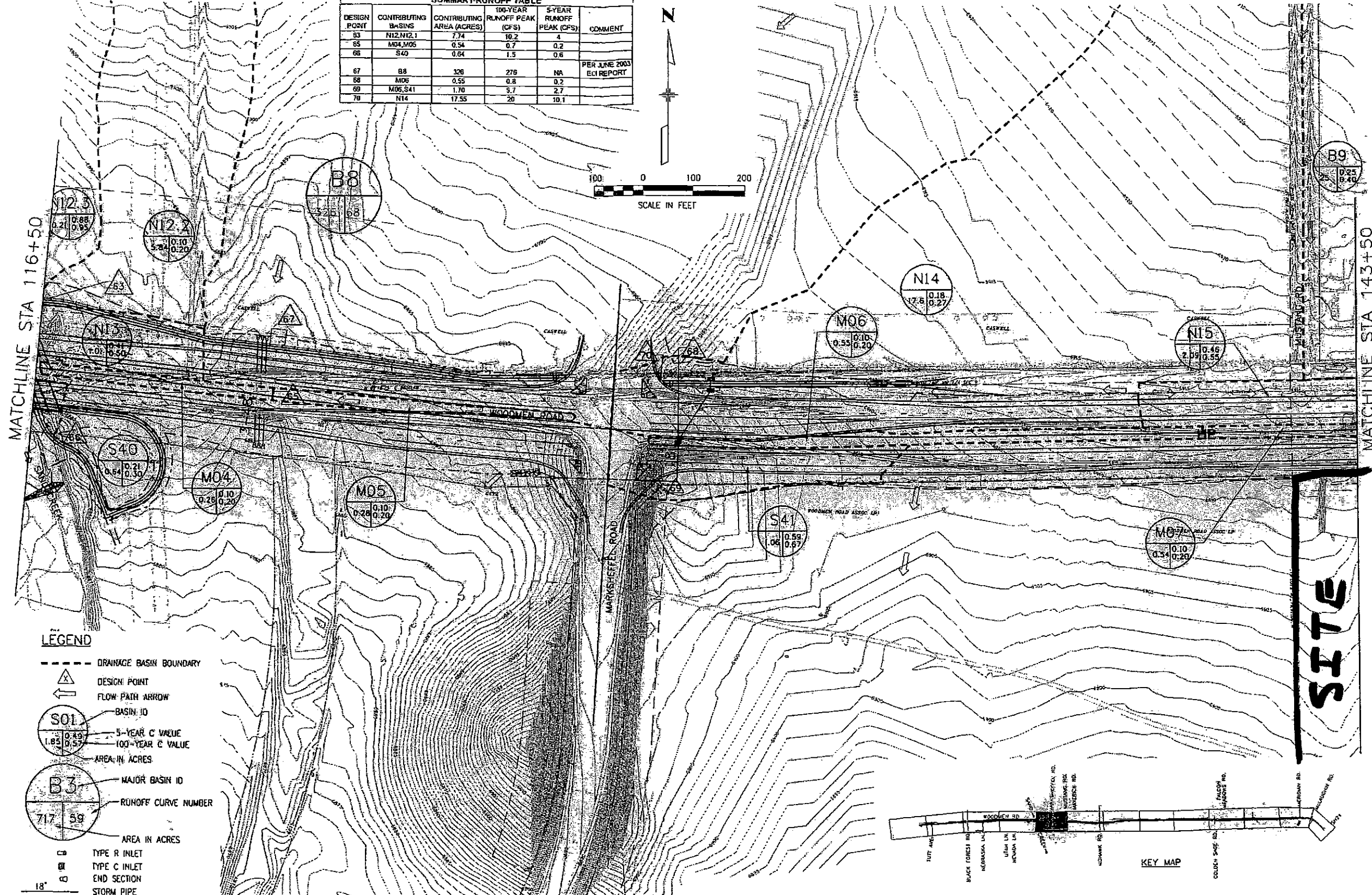
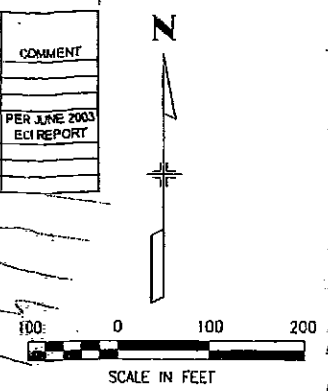


Computer File Information		Sheet Revisions		<b>DMJM HARRIS</b> 2950 Professional Place Colorado Springs, Colorado 80904 Phone: (719) 385-8300 Fax: (719) 385-8338		As Constructed		WOODMEN DRAINAGE PROJECT B - PLAN		Project No./Code		
Creation Date: 12/18/01	Initials: MAL					No Revisions: -						
Last Modification Date: 6/16/03	Initials: MAL					Revised: -	Designer: MAL	Structure Numbers				
Full Path:						Void: -	Detailer:	Subset Sheets: of			Sheet Number 3	
Drawing File Name: 54drng07.dwg					Sheet Subset: Drainage							
Acad Ver. 2002	Scale: 1:100 F.S.	Units: ENGLISH										

Figure D13 Plan; Sheet 3 of 10

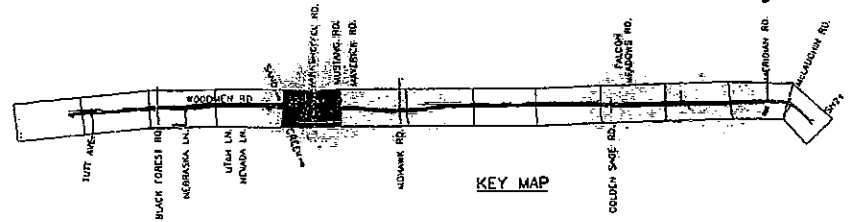
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DESIGN POINT	CONTRIBUTING BASINS	CONTRIBUTING AREA (ACRES)	100-YEAR RUNOFF PEAK (CFS)	5-YEAR RUNOFF PEAK (CFS)	COMMENT
B3	N12,N12.1	7.74	10.2	4	
B5	M04,M05	0.54	0.7	0.2	
B6	S40	0.64	1.5	0.6	
B7	B8	326	278	NA	PER JUNE 2003 ECI REPORT
B8	M06	0.55	0.8	0.2	
B9	M05,S41	1.70	9.7	2.7	
B0	N14	17.55	20	10.1	



**LEGEND**

- DRAINAGE BASIN BOUNDARY
- ▲ DESIGN POINT
- FLOW PATH ARROW
- BASIN ID
- 5-YEAR C VALUE
- 100-YEAR C VALUE
- AREA IN ACRES
- MAJOR BASIN ID
- RUNOFF CURVE NUMBER
- AREA IN ACRES
- TYPE R INLET
- TYPE C INLET
- END SECTION
- STORM PIPE



<b>Computer File Information</b> Creation Date: 8/04/05 Initials: LPS Last Modification Date: 10/5/2007 Initials: LPS Full Path: \\4954\4954_0604\cadd\drainage report\54drbsn05.dwg Drawing Scale: 1"=200' V8 Ver. 08.00.01.19 Units: ENGLISH		<b>Sheet Revisions</b> <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>											<b>DMJM HARRIS   AECOM</b> 2950 Professional Place Colorado Springs, Colorado 80904 Phone: (719) 386-8300 Fax: (719) 386-8338		<b>As Constructed</b> No Revisions: - Revised: - Void: -		<b>WOODMEN ROAD</b> SUB-BASIN PLAN - WOODMEN ROAD Designer: CLK Detailer: LPS Sheet Subset: ROADWAY		Project No./Code STU M240-062 13263 Sheet Number B5	







Computer File Information	
Creation Date: 12/18/01	Initials: MAL
Last Modification Date: 6/16/03	Initials: MAL
Full Path:	
Drawing File Name: 54drng06.dwg	
Acad Ver. 2002	Scale: 1:100 F.S. Units: ENGLISH

Sheet Revisions	

**DMJM HARRIS**  
 2950 Professional Place  
 Colorado Springs, Colorado 80904  
 Phone: (719) 386-8300 Fax: (719) 386-8338



As Constructed	
No Revisions:	—
Revised:	—
Void:	—

WOODMEN DRAINAGE PROJECT B — PLAN			
Designer: MAL	Structure Numbers		
Detailer:			
Sheet Subset: Drainage	Subset Sheets: of		

Project No./Code	
Sheet Number	2

Figure D12 Plan; Sheet 2 of 10

11:45:12 AM

10/5/2007

DESIGN POINT	CONTRIBUTING BASINS	CONTRIBUTING AREA (ACRES)	100-YEAR RUNOFF PEAK (CFS)	5-YEAR RUNOFF PEAK (CFS)	COMMENT
71	B9	25	48	48	PER JUNE 2003 ECI REPORT
72	N15	2.09	6.6	3.4	
73	M07,M08	1.57	1.9	0.8	
74	B10	107	94.0	94.0	PER JUNE 2003 ECI REPORT
75	N16	0.76	2.3	1.1	
76	B11	194	137	137	PER JUNE 2003 ECI REPORT
77	N17	4.27	13.3	6.5	
78	B12	8.00	16.0	16.0	PER JUNE 2003 ECI REPORT
79	N19	2.42	9.6	4.5	
80	B13	223	193	193	PER JUNE 2003 ECI REPORT
81	N20	2.61	11.0	5.3	

MATCHLINE STA 143+50

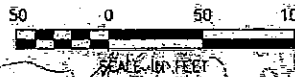
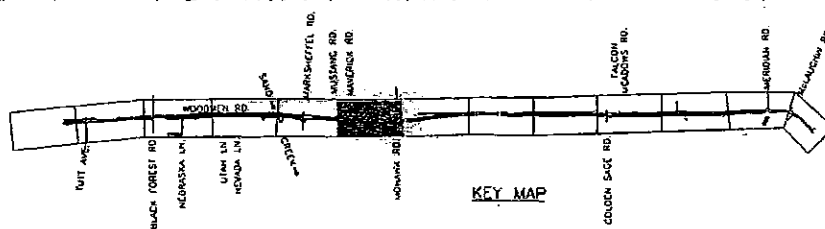
MATCHLINE STA 172+00

LEGEND

- DRAINAGE BASIN BOUNDARY
- DESIGN POINT
- FLOW PATH ARROW
- BASIN ID
- 5-YEAR C VALUE
- 100-YEAR C VALUE
- AREA IN ACRES
- MAJOR BASIN ID
- RUNOFF CURVE NUMBER
- AREA IN ACRES
- TYPE R INLET
- TYPE C INLET
- END SECTION
- STORM PIPE

18"

SITE



Computer File Information	
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V8 Ver.	08.00.01.19 Units: ENGLISH

Sheet Revisions	

**DMJM HARRIS | AECOM**  
 2950 Professional Place  
 Colorado Springs, Colorado 80904  
 Phone: (719) 386-8300 Fax: (719) 386-8338



As Constructed	
No Revisions:	- SUB
Revised:	-
Void:	-

WOODMEN ROAD	
SUB-BASIN PLAN - WOODMEN ROAD	
Designer:	CLK
Detailer:	LPS
Structure Numbers	
Sheet Subset:	ROADWAY
Subset Sheets:	DRBSN 6 of 13

Project No./Code	
STU M240-062	
13263	
Sheet Number	B6

CULVERT DP-1.txt  
 EXISTING 48" RCP CULVERT WOODMEN ROAD STA. 150+89.90  
 Culvert Calculator

All calculator output should be verified prior to design use

Entered Data:

Shape ..... Circular  
 Number of Barrels ..... 1  
 Solving for ..... Headwater  
 Chart Number ..... 1  
 Scale Number ..... 3  
 Chart Description ..... CONCRETE PIPE CULVERT; NO BEVELED RING

ENTRANCE

Scale Description ..... GROOVE END ENTRANCE, PIPE PROJECTING FROM

FILL

Overtopping ..... Off  
 Flowrate ..... 110.0000 cfs  
 Manning's n ..... 0.0130  
 Roadway Elevation ..... 6909.5000 ft  
 Inlet Elevation ..... 6903.5000 ft  
 Outlet Elevation ..... 6902.7100 ft  
 Diameter ..... 48.0000 in  
 Length ..... 156.4000 ft  
 Entrance Loss ..... 0.0000  
 Tailwater ..... 2.0000 ft

Computed Results:

Headwater ..... 6909.3302 ft Outlet Control  
 Slope ..... 0.0051 ft/ft  
 Velocity ..... 10.2959 fps

Messages:

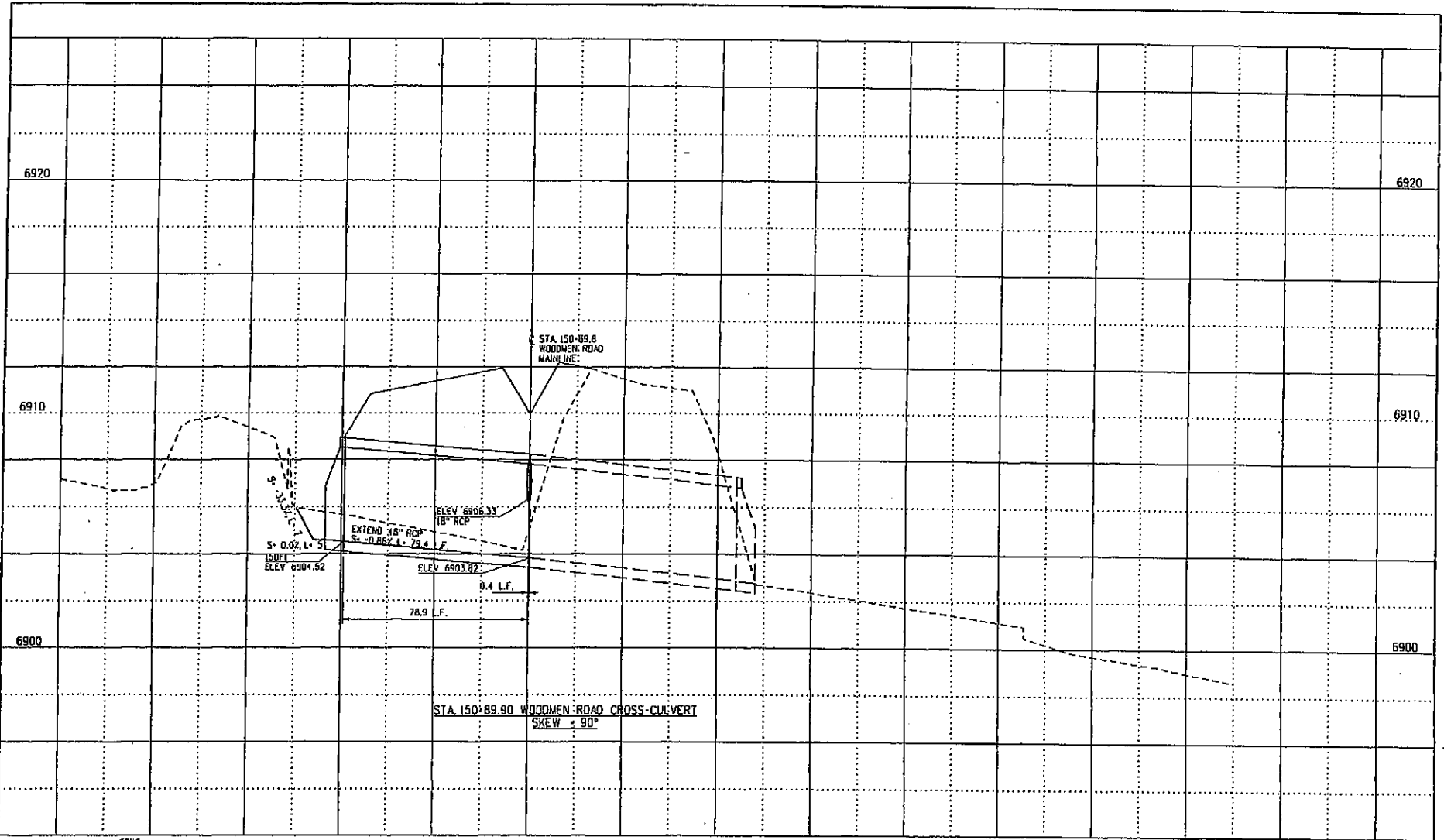
Outlet head > Inlet head.  
 Computing Outlet Control headwater.  
 Outlet not submerged.  
 Normal Depth: 48.0000 in  
 Critical Depth: 38.0523 in  
 Flow is subcritical.  
 Normal depth > critical depth.  
 Tailwater depth < normal depth.  
 M2 drawdown profile.  
 Tailwater depth <= critical depth.  
 Depth computed with direct step method starting at critical depth.  
 Headwater: 6909.3302 ft

DIS- CHARGE Flow cfs	HEAD- WATER ELEV. ft	INLET CONTROL DEPTH ft	OUTLET CONTROL DEPTH ft	FLOW TYPE	NORMAL DEPTH in	CRITICAL DEPTH in	OUTLET VEL. fps	OUTLET DEPTH ft	TAILWATER VEL. fps	TAILWATER DEPTH ft
10.00	6904.74	1.24	0.74	NA	10.12	11.05	5.18	0.84	0.00	
2.00										
20.00	6905.30	1.80	1.15	NA	14.36	15.79	6.33	1.20	0.00	
2.00										
30.00	6905.75	2.25	1.65	NA	17.77	19.49	7.09	1.48	0.00	
2.00										
40.00	6906.15	2.65	2.27	NA	20.81	22.65	7.66	1.73	0.00	
2.00										
50.00	6906.53	3.03	2.80	NA	23.63	25.46	8.12	1.97	0.00	
2.00										
60.00	6906.89	3.39	3.17	NA	26.37	28.01	8.49	2.20	0.00	
2.00										

CULVERT DP-1.txt										
70.00	6907.24	3.74	3.52	NA	29.08	30.35	8.79	2.42	0.00	2.00
80.00	6907.59	4.09	3.88	NA	31.87	32.52	9.03	2.66	0.00	2.00
90.00	6908.87	4.49	5.37	M2	34.84	32.52	9.30	2.90	0.00	2.00
100.00	6908.28	4.78	4.77	NA	38.27	36.36	9.31	3.19	0.00	2.00
110.00	6909.33	5.18	5.83	M2	48.00	36.36	8.75	4.00	0.00	2.00

10:20:04 AM

6/27/2007



SCALE:  
 1" = 40' HORIZONTAL  
 1" = 4' VERTICAL

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Last Modification Date:	6/14/2007 Initials: LPS
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Drawing Scale:	1=20
V8 Ver.	06.00.01.19 Units: ENGLISH

Sheet Revisions	

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As Constructed	
No Revisions:	-
Revised:	-
Void:	-

WOODMEN ROAD STORM SEWER PROFILE - WOODMEN RD. STA. 150+89.90		
Designer:	CLK	Structure Numbers
Detailer:	LPS	
Sheet Subset:	DRAINAGE	Subset Sheets: DR24 of 48

Project No./Code	
STU M240-062	13263
Sheet Number	171

CULVERT DP-2.txt  
 EXISTING 48" RCP CULVERT WOODMEN ROAD STA. 158+13.90  
 Culvert Calculator

All calculator output should be verified prior to design use

Entered Data:

Shape ..... Circular  
 Number of Barrels ..... 1  
 Solving for ..... Headwater  
 Chart Number ..... 1  
 Scale Number ..... 3  
 Chart Description ..... CONCRETE PIPE CULVERT; NO BEVELED RING  
 ENTRANCE  
 Scale Description ..... GROOVE END ENTRANCE, PIPE PROJECTING FROM  
 FILL  
 Overtopping ..... On  
 Flowrate ..... 144.0000 cfs  
 Manning's n ..... 0.0130  
 Roadway Elevation ..... 6909.0000 ft  
 Inlet Elevation ..... 6901.9600 ft  
 Outlet Elevation ..... 6900.5000 ft  
 Diameter ..... 48.0000 in  
 Length ..... 190.8300 ft  
 Entrance Loss ..... 0.0000  
 Tailwater ..... 2.0000 ft

Computed Results:

Headwater ..... 6908.8672 ft Inlet Control  
 Slope ..... 0.0077 ft/ft  
 Velocity ..... 11.4592 fps

Messages:

Inlet head > Outlet head.  
 Computing Inlet Control headwater.  
 Solving Inlet Equation 26.  
 Solving Inlet Equation 28.  
 Headwater: 6908.8672 ft

DIS-CHARGE Flow cfs	HEAD-WATER ELEV. ft	INLET CONTROL DEPTH ft	OUTLET CONTROL DEPTH ft	FLOW TYPE	NORMAL DEPTH in	CRITICAL DEPTH in	OUTLET VEL. fps	OUTLET DEPTH ft	TAILWATER VEL. fps	TAILWATER DEPTH ft
10.00	6903.19	1.23	0.08	NA	9.14	11.05	6.00	0.76	0.00	
2.00										
20.00	6903.75	1.79	0.50	NA	12.92	15.79	7.34	1.08	0.00	
2.00										
30.00	6904.20	2.24	1.04	NA	15.93	19.49	8.23	1.33	0.00	
2.00										
40.00	6904.61	2.65	1.70	NA	18.58	22.65	8.91	1.55	0.00	
2.00										
50.00	6904.99	3.03	2.26	NA	21.01	25.46	9.46	1.75	0.00	
2.00										
60.00	6905.35	3.39	2.64	NA	23.31	28.01	9.91	1.94	0.00	
2.00										
70.00	6905.70	3.74	3.01	NA	25.54	30.35	10.30	2.13	0.00	
2.00										
80.00	6906.05	4.09	3.38	NA	27.75	32.52	10.63	2.31	0.00	
2.00										
90.00	6906.44	4.48	3.75	NA	29.97	34.52	10.90	2.50	0.00	
2.00										
100.00	6906.73	4.77	4.14	NA	32.26	36.36	11.13	2.69	0.00	

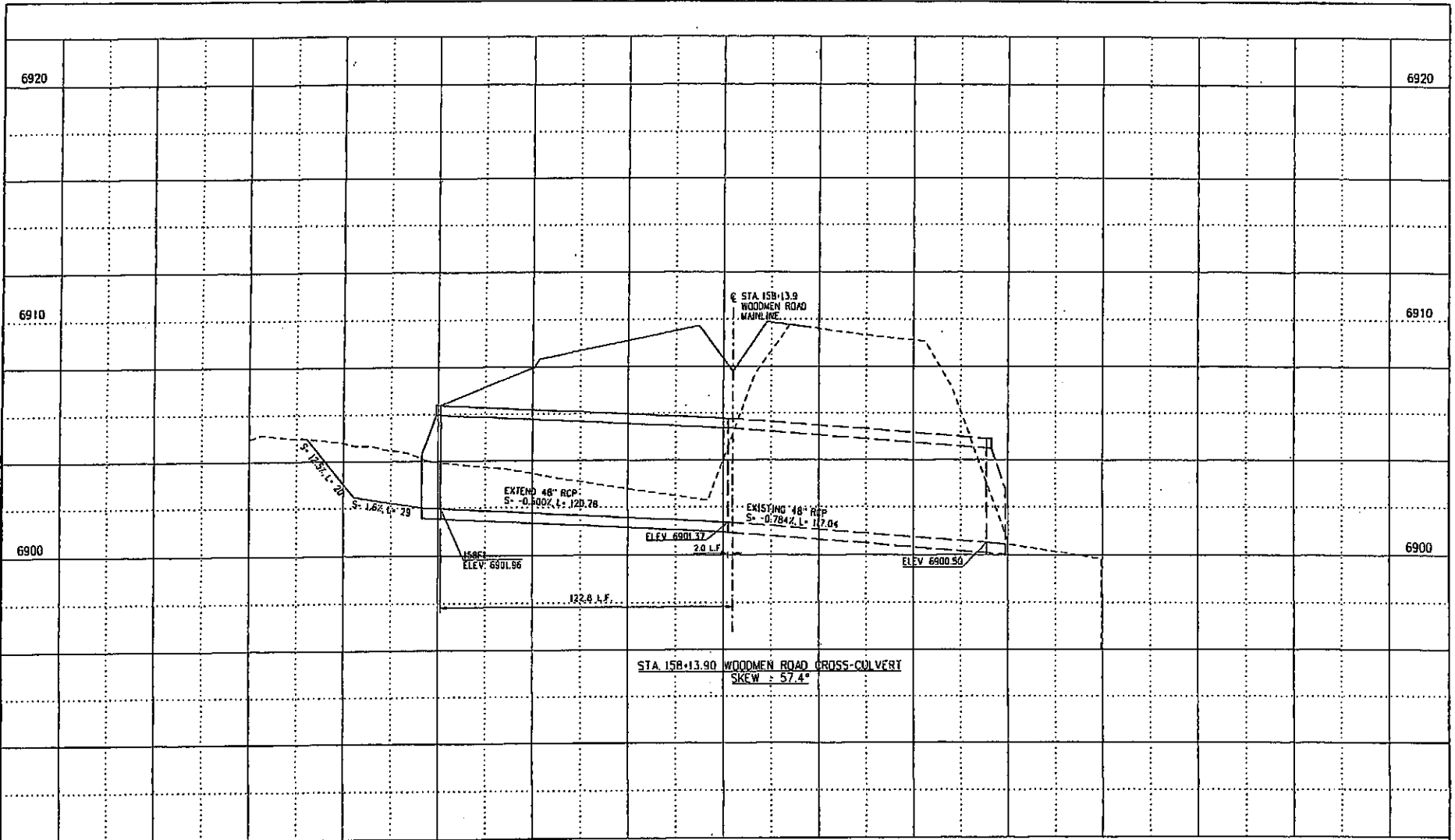
CULVERT DP-2.txt

2.00	110.00	6907.13	5.17	4.55	NA	34.69	38.05	11.31	2.89	0.00
2.00	120.00	6907.60	5.64	4.97	NA	37.40	39.58	11.42	3.12	0.00
2.00	130.00	6908.10	6.14	6.01	NA	48.00	48.00	10.35	4.00	0.00
2.00	140.00	6908.64	6.68	6.40	NA	48.00	48.00	11.14	4.00	0.00
2.00	150.00	6908.79	0.00	6.83	M2	48.00	48.00	11.94	4.00	0.00

Overtopping Results

150.00 6909.00  
155.00 6909.02

10:28:10 AM  
6/22/2007



SCALE:  
1" = 40' HORIZONTAL  
1" = 4' VERTICAL

<b>Computer File Information</b> Creation Date: 02/20/06    Initials: LPS Last Modification Date: 6/14/2007    Initials: LPS Full Path: E:\4954\4954_0604\cadd\drainage\54PSTIR25.dgn Drawing Scale: 1"=20' VB Ver. 08.00.01.19    Units: ENGLISH		<b>Sheet Revisions</b> <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										<b>DMJM HARRIS AECOM</b> 2050 Professional Place Colorado Springs, Colorado 80904 Phone: (719) 388-8300 Fax: (719) 388-8330				<b>As Constructed</b> No Revisions: - Revised: - Void: -		<b>WOODMEN ROAD STORM SEWER PROFILE - WOODMEN RD. STA. 158+13.90</b> Designer: CLK    Structure Numbers Detailer: LPS Sheet Subset: DRAINAGE    Subset Sheets: DR25 of 48		<b>Project No./Code</b> STU M240-062 13263 Sheet Number 172	



CULVERT DP-3.txt  
 EXISTING DUAL 48" RCP CULVERTS WOODMEN ROAD STA. 168+03.20  
 Culvert Calculator

All calculator output should be verified prior to design use

Entered Data:

Shape ..... Circular  
 Number of Barrels ..... 2  
 Solving for ..... Headwater  
 Chart Number ..... 1  
 Scale Number ..... 3  
 Chart Description ..... CONCRETE PIPE CULVERT; NO BEVELED RING  
 ENTRANCE  
 Scale Description ..... GROOVE END ENTRANCE, PIPE PROJECTING FROM  
 FILL  
 Overtopping ..... off  
 Flowrate ..... 175.0000 cfs  
 Manning's n ..... 0.0130  
 Roadway Elevation ..... 6908.4300 ft  
 Inlet Elevation ..... 6898.5000 ft  
 Outlet Elevation ..... 6896.6400 ft  
 Diameter ..... 48.0000 in  
 Length ..... 195.3600 ft  
 Entrance Loss ..... 0.0000  
 Tailwater ..... 2.0000 ft

Computed Results:

Headwater ..... 6902.8461 ft Inlet Control  
 Slope ..... 0.0095 ft/ft  
 Velocity ..... 11.7619 fps

Messages:

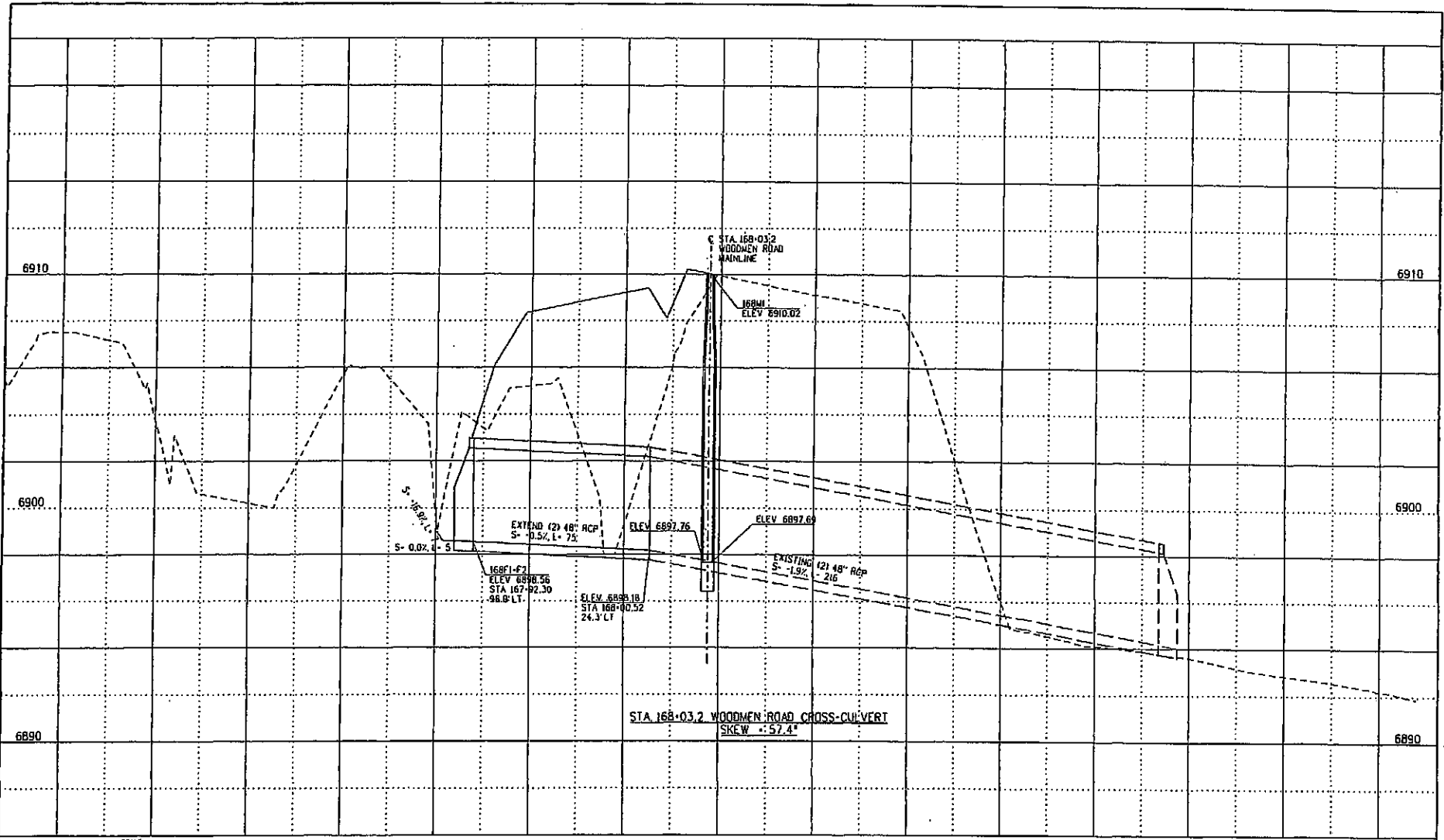
Inlet head > Outlet head.  
 Computing Inlet Control headwater.  
 Solving Inlet Equation 26.  
 Solving Inlet Equation 28.  
 Headwater: 6902.8461 ft

DIS- CHARGE Flow cfs	HEAD- WATER ELEV. ft	INLET CONTROL DEPTH ft	OUTLET CONTROL DEPTH ft	FLOW TYPE	NORMAL DEPTH in	CRITICAL DEPTH in	OUTLET VEL. fps	OUTLET DEPTH ft	TAILWATER VEL. fps	TAILWATER DEPTH ft
10.00	6899.35	0.85	0.05	NA	6.20	7.76	5.25	0.52	0.00	
2.00										
20.00	6899.73	1.23	0.05	NA	8.68	11.05	6.46	0.72	0.00	
2.00										
30.00	6900.03	1.53	0.05	NA	10.61	13.61	7.27	0.88	0.00	
2.00										
40.00	6900.29	1.79	0.11	NA	12.25	15.79	7.91	1.02	0.00	
2.00										
50.00	6900.52	2.02	0.36	NA	13.73	17.73	8.43	1.14	0.00	
2.00										
60.00	6900.74	2.24	0.65	NA	15.08	19.49	8.87	1.26	0.00	
2.00										
70.00	6900.95	2.45	0.96	NA	16.35	21.13	9.27	1.36	0.00	
2.00										
80.00	6901.14	2.64	1.32	NA	17.55	22.65	9.61	1.46	0.00	
2.00										
90.00	6901.34	2.84	1.69	NA	18.70	24.09	9.93	1.56	0.00	
2.00										
100.00	6901.52	3.02	1.88	NA	19.81	25.46	10.21	1.65	0.00	

CULVERT DP-3.txt

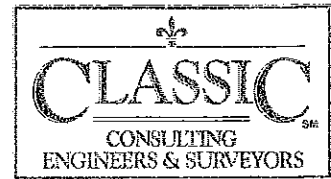
2.00										
110.00	6901.70	3.20	2.07	NA	20.89	26.76	10.48	1.74	0.00	
2.00										
120.00	6901.88	3.38	2.26	NA	21.94	28.01	10.72	1.83	0.00	
2.00										
130.00	6902.06	3.56	2.44	NA	22.97	29.20	10.94	1.91	0.00	
2.00										
140.00	6902.24	3.74	2.63	NA	23.99	30.35	11.15	2.00	0.00	
2.00										
150.00	6902.41	3.91	2.81	NA	24.99	31.45	11.34	2.08	0.00	
2.00										
160.00	6902.58	4.08	3.00	NA	25.99	32.52	11.52	2.17	0.00	
2.00										
170.00	6902.76	4.26	3.19	NA	26.98	33.54	11.68	2.25	0.00	
2.00										
175.00	6902.85	4.35	3.28	NA	27.48	34.03	11.76	2.29	0.00	
2.00										

10/20/22 AM  
6/14/2007



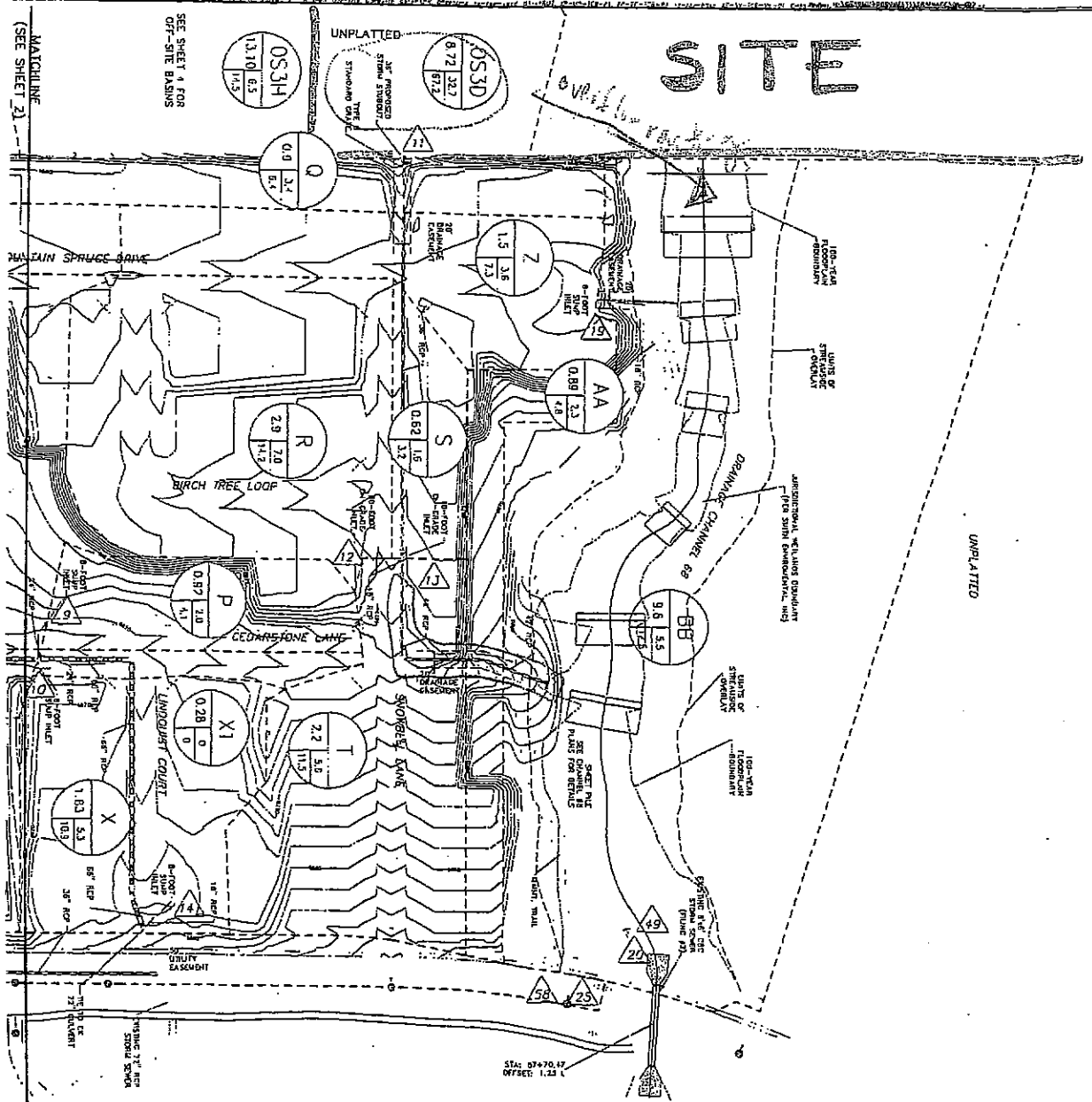
SCALE:  
1" = 40' HORIZONTAL  
1" = 4' VERTICAL

<b>Computer File Information</b> Creation Date: 02/20/06    Initials: LPS Last Modification Date: 6/14/2007    Initials: LPS Full Path: E:\4954\4954_0604\cadd\drainage\54PRSR27.dgn Drawing Scale: 1"=20' V8 Ver. 08.00.01.19    Units: ENGLISH		<b>Sheet Revisions</b> <table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>											<b>DMJM HARRIS   AECOM</b> 2650 Professional Place Colorado Springs, Colorado 80904 Phone: (719) 536-8300 Fax: (719) 536-8330		<b>As Constructed</b> No Revisions: - Revised: - Void: -		<b>WOODMEN ROAD</b> <b>STORM SEWER PROFILE -</b> <b>WOODMEN RD. STA. 168+03.2</b> Designer: CLK    Structure Numbers Detailer: LPS Sheet Subset: DRAINAGE    Subset Sheets: DR27 of 48		<b>Project No./Code</b> STU M240-062 13263 Sheet Number 174	



**EXHIBIT B**  
**ALLOWABLE PIPE DISCHARGE INFORMATION**  
**TAKEN FROM**  
**BANNING LEWIS RANCH FILING NO. 5**  
**FINAL DRAINAGE REPORT**

# SITE



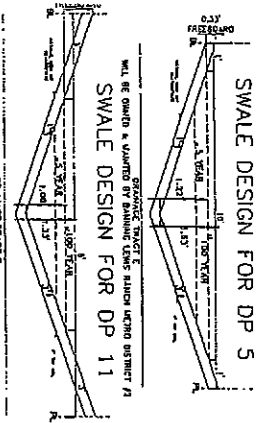
DRAINAGE CHANNEL 67  
 BANNING LEWIS RANCH FIL. 2

DRAINAGE CHANNEL 66  
 BANNING LEWIS RANCH FIL. 2

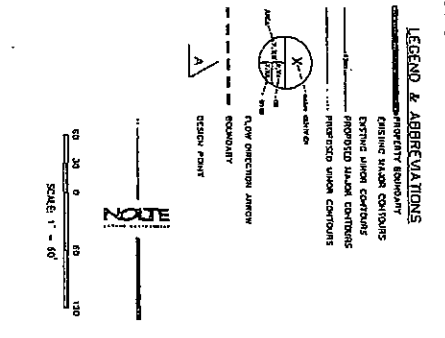
MATCHLINE  
 (SEE SHEET 2)

MATCHLINE  
 (SEE SHEET 2)

STA: 67+70.47  
 OFFSET: 1.25'



DESIGN POINT	CONTRIBUTING AREA (AC)	CONTRIBUTING PERCENT	DESIGN FLOW (MGD)	DESIGN FLOW (MGD)	DESIGN FLOW (MGD)
1	1.00	100%	0.00	0.00	0.00
2	1.00	100%	0.00	0.00	0.00
3	1.00	100%	0.00	0.00	0.00
4	1.00	100%	0.00	0.00	0.00
5	1.00	100%	0.00	0.00	0.00
6	1.00	100%	0.00	0.00	0.00
7	1.00	100%	0.00	0.00	0.00
8	1.00	100%	0.00	0.00	0.00
9	1.00	100%	0.00	0.00	0.00
10	1.00	100%	0.00	0.00	0.00
11	1.00	100%	0.00	0.00	0.00
12	1.00	100%	0.00	0.00	0.00
13	1.00	100%	0.00	0.00	0.00
14	1.00	100%	0.00	0.00	0.00
15	1.00	100%	0.00	0.00	0.00
16	1.00	100%	0.00	0.00	0.00
17	1.00	100%	0.00	0.00	0.00
18	1.00	100%	0.00	0.00	0.00
19	1.00	100%	0.00	0.00	0.00
20	1.00	100%	0.00	0.00	0.00
21	1.00	100%	0.00	0.00	0.00
22	1.00	100%	0.00	0.00	0.00
23	1.00	100%	0.00	0.00	0.00
24	1.00	100%	0.00	0.00	0.00
25	1.00	100%	0.00	0.00	0.00
26	1.00	100%	0.00	0.00	0.00
27	1.00	100%	0.00	0.00	0.00
28	1.00	100%	0.00	0.00	0.00
29	1.00	100%	0.00	0.00	0.00
30	1.00	100%	0.00	0.00	0.00
31	1.00	100%	0.00	0.00	0.00
32	1.00	100%	0.00	0.00	0.00
33	1.00	100%	0.00	0.00	0.00
34	1.00	100%	0.00	0.00	0.00
35	1.00	100%	0.00	0.00	0.00
36	1.00	100%	0.00	0.00	0.00
37	1.00	100%	0.00	0.00	0.00
38	1.00	100%	0.00	0.00	0.00
39	1.00	100%	0.00	0.00	0.00
40	1.00	100%	0.00	0.00	0.00
41	1.00	100%	0.00	0.00	0.00
42	1.00	100%	0.00	0.00	0.00
43	1.00	100%	0.00	0.00	0.00
44	1.00	100%	0.00	0.00	0.00
45	1.00	100%	0.00	0.00	0.00
46	1.00	100%	0.00	0.00	0.00
47	1.00	100%	0.00	0.00	0.00
48	1.00	100%	0.00	0.00	0.00
49	1.00	100%	0.00	0.00	0.00
50	1.00	100%	0.00	0.00	0.00
51	1.00	100%	0.00	0.00	0.00
52	1.00	100%	0.00	0.00	0.00
53	1.00	100%	0.00	0.00	0.00
54	1.00	100%	0.00	0.00	0.00
55	1.00	100%	0.00	0.00	0.00
56	1.00	100%	0.00	0.00	0.00
57	1.00	100%	0.00	0.00	0.00
58	1.00	100%	0.00	0.00	0.00
59	1.00	100%	0.00	0.00	0.00
60	1.00	100%	0.00	0.00	0.00
61	1.00	100%	0.00	0.00	0.00
62	1.00	100%	0.00	0.00	0.00
63	1.00	100%	0.00	0.00	0.00
64	1.00	100%	0.00	0.00	0.00
65	1.00	100%	0.00	0.00	0.00
66	1.00	100%	0.00	0.00	0.00
67	1.00	100%	0.00	0.00	0.00
68	1.00	100%	0.00	0.00	0.00
69	1.00	100%	0.00	0.00	0.00
70	1.00	100%	0.00	0.00	0.00
71	1.00	100%	0.00	0.00	0.00
72	1.00	100%	0.00	0.00	0.00
73	1.00	100%	0.00	0.00	0.00
74	1.00	100%	0.00	0.00	0.00
75	1.00	100%	0.00	0.00	0.00
76	1.00	100%	0.00	0.00	0.00
77	1.00	100%	0.00	0.00	0.00
78	1.00	100%	0.00	0.00	0.00
79	1.00	100%	0.00	0.00	0.00
80	1.00	100%	0.00	0.00	0.00
81	1.00	100%	0.00	0.00	0.00
82	1.00	100%	0.00	0.00	0.00
83	1.00	100%	0.00	0.00	0.00
84	1.00	100%	0.00	0.00	0.00
85	1.00	100%	0.00	0.00	0.00
86	1.00	100%	0.00	0.00	0.00
87	1.00	100%	0.00	0.00	0.00
88	1.00	100%	0.00	0.00	0.00
89	1.00	100%	0.00	0.00	0.00
90	1.00	100%	0.00	0.00	0.00
91	1.00	100%	0.00	0.00	0.00
92	1.00	100%	0.00	0.00	0.00
93	1.00	100%	0.00	0.00	0.00
94	1.00	100%	0.00	0.00	0.00
95	1.00	100%	0.00	0.00	0.00
96	1.00	100%	0.00	0.00	0.00
97	1.00	100%	0.00	0.00	0.00
98	1.00	100%	0.00	0.00	0.00
99	1.00	100%	0.00	0.00	0.00
100	1.00	100%	0.00	0.00	0.00

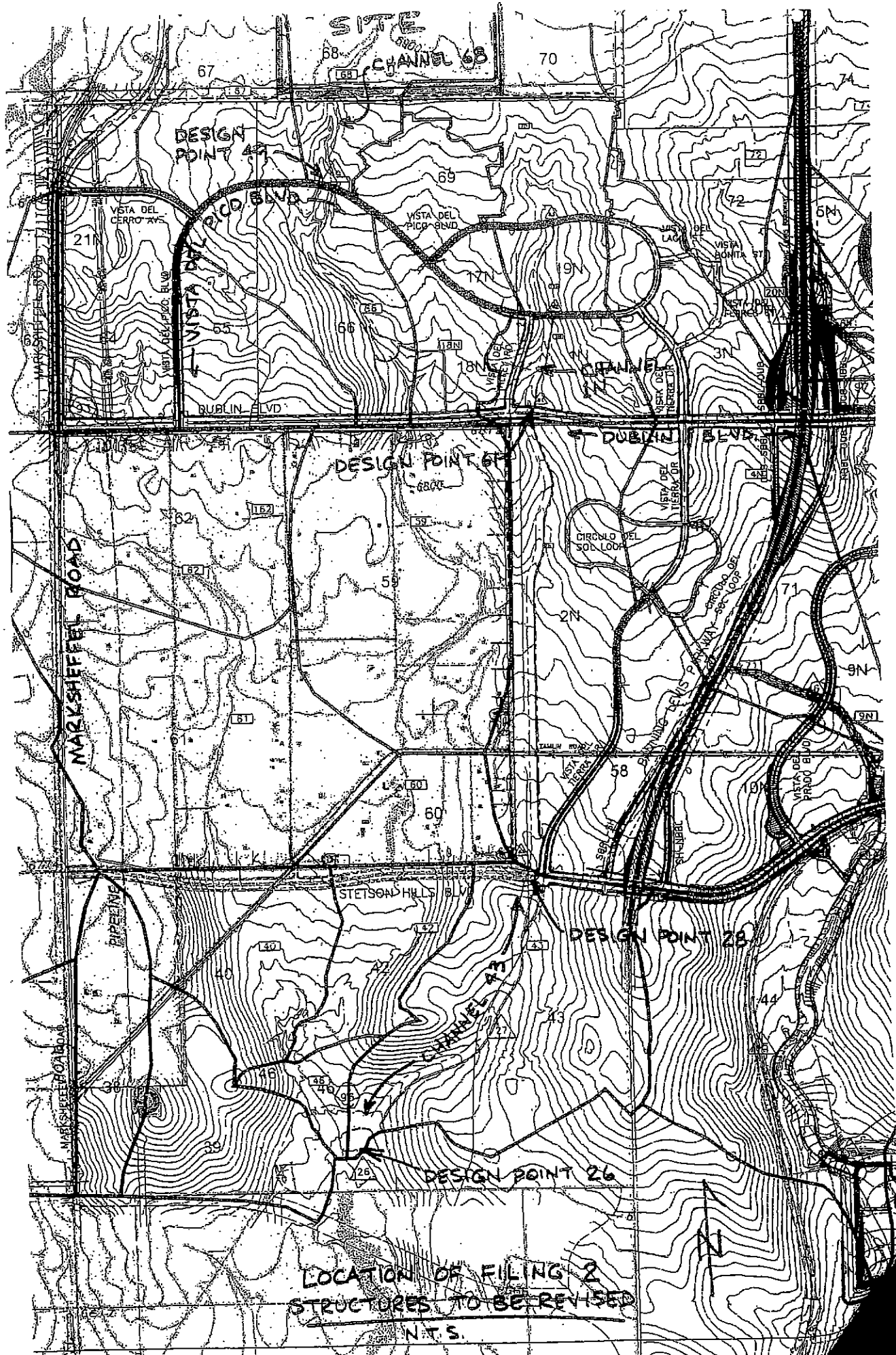


## BANNING LEWIS RANCH FILING 5 PROPOSED DRAINAGE MAP

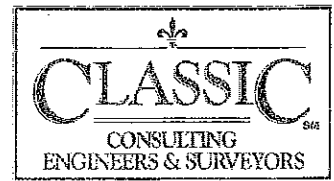
**PRELIMINARY**  
 DATE: 06/11/2008  
 DRAWN BY: J. B. BANNING  
 CHECKED BY: J. B. BANNING

**NOLTE**  
 BEYOND ENGINEERING  
 309 N. ACACENT BLVD., SUITE 100  
 DENVER, CO 80202  
 TEL: 303.733.7222  
 WWW.NOLTE.COM

**CB**



LOCATION OF FILING 2  
STRUCTURES TO BE REVISED  
N.T.S.



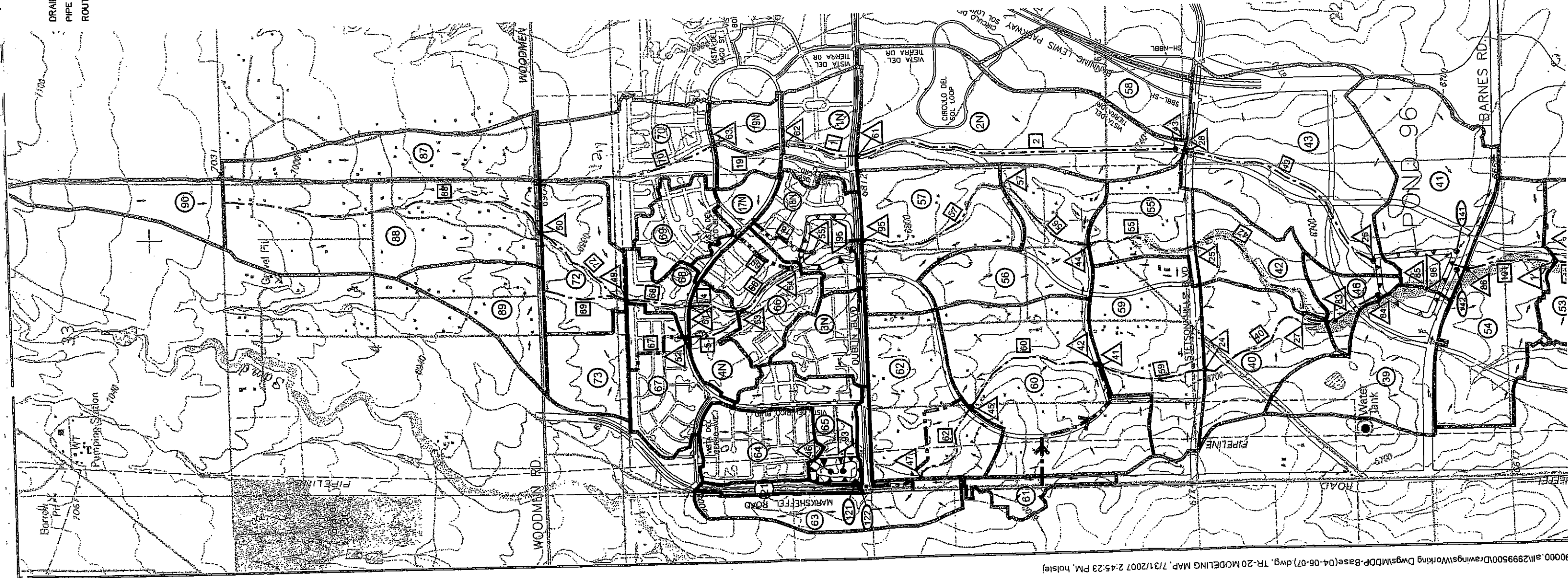
**EXHIBIT C**  
**TR-20 MODELING MAP**  
**SAND CREEK POND 96**  
**TAKEN FROM**  
**DESIGN REPORT FOR SAND CREEK**  
**REGIONAL POND 96**

LEGEND

- DRAINAGE BASIN BOUNDARY
- PIPE CONVEYENCE
- ROUTING REACH

LEGEND

- SUB BASIN I.D.
- ANALYSIS POINT I.D.
- DIVERSION I.D.
- ROUTING REACH I.D.
- REGIONAL DETENTION POND I.D.



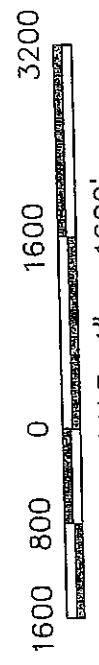
ANALYSIS PTS	TRIBUTARY AREA		Q <sub>10</sub> cfs	Q <sub>100</sub> cfs
	sq	ac		
1	4.420	2828.8	282	833
2	4.480	2867.2	327	851
24	0.920	588.8	650	1428
25	1.540	985.6	326	741
26	1.120	716.8	763	1708
27	1.630	1043.2	334	802
28	0.800	512.0	505	1139
41	0.740	473.6	479	1064
42	0.710	454.4	448	1000
43	0.690	441.6	385	897
44	1.460	934.4	274	610
45	0.440	281.6	228	500
46	0.170	108.8	139	318
47	0.280	179.2	83	194
49	0.560	358.4	162	493
50	0.360	230.4	116	327
51	0.600	384.0	172	527
52	0.160	102.4	178	352
53	0.810	518.4	328	896
54	0.960	614.4	407	1122
55	1.140	729.6	522	1422
57	1.310	838.4	148	329
61	0.410	262.4	174	419
62	0.330	211.2	101	278
63	0.280	179.2	82	226
83	2.690	1721.6	1037	2400
84	2.730	1747.2	1046	2446
85	4.200	2688.0	1968	4683
86	4.220	2700.8	127	788
121	0.010	6.4	14	28
122	0.010	6.4	7	14
141	0.180	115.2	127	301
142	0.030	19.2	17	41

TR-20 HYDROLOGY ANALYSIS

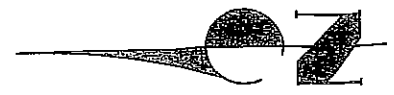
SUB-BASIN SUMMARY						
Basin	TRIBUTARY AREA		CN	Tc hr	Q <sub>10</sub> cfs	Q <sub>100</sub> cfs
	sq	ac				
1	0.080	51.2	88	0.22	98	198
2	0.280	179.2	86	0.38	275	578
3	0.063	40.3	83	0.31	53	120
4	0.051	32.6	77	0.33	27	72
17	0.030	19.2	77	0.39	16	41
18	0.093	59.5	80	0.29	64	155
19	0.053	33.9	76	0.32	26	72
21	0.018	11.5	87	0.23	21	43
39	0.158	101.1	84	0.35	139	307
40	0.133	85.1	82	0.37	108	250
41	0.210	134.4	81	0.40	144	342
42	0.085	54.4	79	0.39	51	127
43	0.320	204.8	87	0.41	328	672
46	0.037	23.7	80	0.30	27	67
53	0.059	37.8	82	0.33	46	106
54	0.197	126.1	85	0.35	185	399
55	0.085	54.4	83	0.39	68	153
56	0.151	96.6	85	0.38	139	299
57	0.165	105.6	84	0.37	146	321
58	0.113	72.3	88	0.38	122	246
59	0.181	115.8	88	0.41	197	396
60	0.270	172.8	85	0.35	254	547
61	0.030	19.2	86	0.33	31	64
62	0.157	100.5	85	0.34	148	320
63	0.104	66.6	77	0.42	58	139
64	0.083	53.1	82	0.34	64	149
65	0.073	46.7	82	0.27	61	142
66	0.088	56.3	80	0.33	53	144
67	0.093	59.5	81	0.39	64	153
68	0.035	22.4	79	0.36	21	53
69	0.051	39.0	80	0.32	41	101
70	0.150	96.0	78	0.51	76	196
72	0.112	71.7	76	0.47	49	113
73	0.067	42.9	94	0.24	115	203
87	0.128	81.9	65	0.87	14	61
88	0.280	179.2	65	0.60	37	159
89	0.069	57.0	65	0.49	13	55
90	0.080	51.2	88	0.28	95	192

REGIONAL DETENTION POND SUMMARY

DETENTION POND ID	WATERSHED AREA (ac)	PEAK INFLOW (cfs)		PEAK OUTFLOW (cfs)		PEAK STORAGE VOLUME (ac-ft)	
		Q <sub>10</sub>	Q <sub>100</sub>	Q <sub>10</sub>	Q <sub>100</sub>	V <sub>10</sub>	V <sub>100</sub>
93	109	139	318	21	51	5.6	12.4
95	730	522	1422	14	265	41.5	66.3
96	2688	1968	4683	126	784	126.5	233.0



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







**POND PACK DATA**

Job File: X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.PPW  
Rain Dir: X:\220810\DRAWINGS\PONDPACK\

---

JOB TITLE

---

Project Date: 3/5/2008  
Project Engineer: DAVE GIBSON  
Project Title: MOHAWK COMMERCIAL CENTRE  
Project Comments:  
SCS MODEL EXISTING CONDITIONS

\*\*\*\*\* MASTER SUMMARY \*\*\*\*\*

Watershed..... Master Network Summary ..... 1.01

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

Watershed..... 5  
    Executive Summary (Nodes) ..... 2.01  
    Executive Summary (Links) ..... 2.02

Watershed..... 100  
    Executive Summary (Nodes) ..... 2.04  
    Executive Summary (Links) ..... 2.05

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

COLO SPRGS..... Design Storms ..... 3.01

\*\*\*\*\* TC CALCULATIONS \*\*\*\*\*

OS-1..... Tc Calcs ..... 4.01  
OS-2..... Tc Calcs ..... 4.03  
OS-3..... Tc Calcs ..... 4.05  
OS-4..... Tc Calcs ..... 4.07  
OS-5..... Tc Calcs ..... 4.09  
OS-6..... Tc Calcs ..... 4.11  
OS-7..... Tc Calcs ..... 4.13

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OS-8..... Tc Calcs ..... 4.15

OS-9..... Tc Calcs ..... 4.17

\*\*\*\*\* CN CALCULATIONS \*\*\*\*\*

OS-1..... Runoff CN-Area ..... 5.01

OS-2..... Runoff CN-Area ..... 5.02

OS-3..... Runoff CN-Area ..... 5.03

OS-4..... Runoff CN-Area ..... 5.04

OS-5..... Runoff CN-Area ..... 5.05

OS-6..... Runoff CN-Area ..... 5.06

OS-7..... Runoff CN-Area ..... 5.07

OS-8..... Runoff CN-Area ..... 5.08

OS-9..... Runoff CN-Area ..... 5.09

MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
100	4.6000	Synthetic Curve	TYPEIIA 24HR
5	2.6000	Synthetic Curve	TYPEIIA 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
*BANNING CH 70	JCT	100	19.170		6.4600	116.34		
*BANNING CH 70	JCT	5	4.620		6.5900	19.80		
*BANNING CH 68	JCT	100	35.372		6.3200	204.56		
*BANNING CH 68	JCT	5	9.511		6.0300	45.23		
DESIGN POINT EX1	JCT	100	9.826		6.1200	92.20		
DESIGN POINT EX1	JCT	5	2.692		6.0400	18.19		
DESIGN POINT EX2	JCT	100	23.946		6.4500	144.24		
DESIGN POINT EX2	JCT	5	5.949		6.5800	24.89		
DESIGN POINT EX3	JCT	100	19.170		6.4600	116.34		
DESIGN POINT EX3	JCT	5	4.620		6.5900	19.80		
JUNC 10	JCT	100	35.372		6.3200	204.56		
JUNC 10	JCT	5	9.511		6.0300	45.23		
OS-1	AREA	100	2.412		6.1300	30.65		
OS-1	AREA	5	.581		6.1800	5.31		

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
OS-2	AREA	100	6.018		6.2000	59.95		
OS-2	AREA	5	1.450		6.2700	10.06		
OS-3	AREA	100	22.323		6.4500	141.34		
OS-3	AREA	5	5.380		6.5800	23.88		
OS-4	AREA	100	.882		6.0800	12.93		
OS-4	AREA	5	.213		6.1100	2.35		
OS-5	AREA	100	18.288		6.4600	113.67		
OS-5	AREA	5	4.408		6.5900	19.26		
OS-6	AREA	100	1.396		5.9900	23.67		
OS-6	AREA	5	.661		6.0100	11.85		
OS-7	AREA	100	1.623		6.0200	30.01		
OS-7	AREA	5	.569		6.0200	10.74		
OS-8	AREA	100	.480		5.9800	7.31		
OS-8	AREA	5	.261		5.9900	4.09		
OS-9	AREA	100	1.120		5.9900	17.05		
OS-9	AREA	5	.608		5.9900	9.54		

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 = 5

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 5 yr  
 Total Rainfall Depth= 2.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun. hrs	Qpeak cfs	Max WSEL ft
Outfall BANNING CH 70	JCT	4.620		6.5900	19.80
Outfall BANNING CH 68	JCT	9.511		6.0300	45.23
DESIGN POINT EX1	JCT	2.692		6.0400	18.19
DESIGN POINT EX2	JCT	5.949		6.5800	24.89
DESIGN POINT EX3	JCT	4.620		6.5900	19.80
JUNC 10	JCT	9.511		6.0300	45.23
OS-1	AREA	.581		6.1800	5.31
OS-2	AREA	1.450		6.2700	10.06
OS-3	AREA	5.380		6.5800	23.88
OS-4	AREA	.213		6.1100	2.35
OS-5	AREA	4.408		6.5900	19.26
OS-6	AREA	.661		6.0100	11.85
OS-7	AREA	.569		6.0200	10.74
OS-8	AREA	.261		5.9900	4.09
OS-9	AREA	.608		5.9900	9.54

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 = 5

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 5 yr  
 Total Rainfall Depth= 2.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Peak Time Trun. hrs	Peak Q cfs	End Points
ADDLINK 10	ADD	UN	4.408	6.5900	19.26	OS-5
		DL	4.408	6.5900	19.26	
		DN	4.620	6.5900	19.80	DESIGN POINT EX3
ADDLINK 20	ADD	UN	.213	6.1100	2.35	OS-4
		DL	.213	6.1100	2.35	
		DN	4.620	6.5900	19.80	DESIGN POINT EX3
EX 48" EAST	ADD	UN	2.692	6.0400	18.19	DESIGN POINT EX1
		DL	2.692	6.0400	18.19	
		DN	9.511	6.0300	45.23	JUNC 10
EX 48" WEST	ADD	UN	5.949	6.5800	24.89	DESIGN POINT EX2
		DL	5.949	6.5800	24.89	
		DN	9.511	6.0300	45.23	JUNC 10
EX DUAL 48"	ADD	UN	4.620	6.5900	19.80	DESIGN POINT EX3
		DL	4.620	6.5900	19.80	
		DN	4.620	6.5900	19.80	BANNING CH 70
EX FRNTG CLV 18" ADD	ADD	UN	.581	6.1800	5.31	OS-1
		DL	.581	6.1800	5.31	
		DN	2.692	6.0400	18.19	DESIGN POINT EX1
EX FRNTG CLV 24" ADD	ADD	UN	1.450	6.2700	10.06	OS-2
		DL	1.450	6.2700	10.06	
		DN	2.692	6.0400	18.19	DESIGN POINT EX1



## 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		Peak Time	Peak Q	End Points
			ac-ft	Trun.	hrs	cfs	
EX FRNTG CUL 36"	ADD	UN	5.380		6.5800	23.88	OS-3
		DL	5.380		6.5800	23.88	
		DN	5.949		6.5800	24.89	DESIGN POINT EX2
ROAD1	ADD	UN	.261		5.9900	4.09	OS-8
		DL	.261		5.9900	4.09	
		DN	9.511		6.0300	45.23	JUNC 10
ROAD2	ADD	UN	.608		5.9900	9.54	OS-9
		DL	.608		5.9900	9.54	
		DN	9.511		6.0300	45.23	JUNC 10
ROADSIDE	ADD	UN	.661		6.0100	11.85	OS-6
		DL	.661		6.0100	11.85	
		DN	2.692		6.0400	18.19	DESIGN POINT EX1
ROADSIDE2	ADD	UN	.569		6.0200	10.74	OS-7
		DL	.569		6.0200	10.74	
		DN	5.949		6.5800	24.89	DESIGN POINT EX2
TO BANNING	ADD	UN	9.511		6.0300	45.23	JUNC 10
		DL	9.511		6.0300	45.23	
		DN	9.511		6.0300	45.23	BANNING CH 68

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 = 100

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 100 yr  
 Total Rainfall Depth= 4.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall BANNING CH 70	JCT	19.170		6.4600	116.34	
Outfall BANNING CH 68	JCT	35.372		6.3200	204.56	
DESIGN POINT EX1	JCT	9.826		6.1200	92.20	
DESIGN POINT EX2	JCT	23.946		6.4500	144.24	
DESIGN POINT EX3	JCT	19.170		6.4600	116.34	
JUNC 10	JCT	35.372		6.3200	204.56	
OS-1	AREA	2.412		6.1300	30.65	
OS-2	AREA	6.018		6.2000	59.95	
OS-3	AREA	22.323		6.4500	141.34	
OS-4	AREA	.882		6.0800	12.93	
OS-5	AREA	18.288		6.4600	113.67	
OS-6	AREA	1.396		5.9900	23.67	
OS-7	AREA	1.623		6.0200	30.01	
OS-8	AREA	.480		5.9800	7.31	
OS-9	AREA	1.120		5.9900	17.05	

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 = 100

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 100 yr  
 Total Rainfall Depth= 4.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol		Peak Time	Peak Q	End Points
			ac-ft	Trun.	hrs	cfs	
ADDLINK 10	ADD	UN	18.288		6.4600	113.67	OS-5
		DL	18.288		6.4600	113.67	
		DN	19.170		6.4600	116.34	DESIGN POINT EX3
ADDLINK 20	ADD	UN	.882		6.0800	12.93	OS-4
		DL	.882		6.0800	12.93	
		DN	19.170		6.4600	116.34	DESIGN POINT EX3
EX 48" EAST	ADD	UN	9.826		6.1200	92.20	DESIGN POINT EX1
		DL	9.826		6.1200	92.20	
		DN	35.372		6.3200	204.56	JUNC 10
EX 48" WEST	ADD	UN	23.946		6.4500	144.24	DESIGN POINT EX2
		DL	23.946		6.4500	144.24	
		DN	35.372		6.3200	204.56	JUNC 10
EX DUAL 48"	ADD	UN	19.170		6.4600	116.34	DESIGN POINT EX3
		DL	19.170		6.4600	116.34	
		DN	19.170		6.4600	116.34	BANNING CH 70
EX FRNTG CLV 18" ADD	ADD	UN	2.412		6.1300	30.65	OS-1
		DL	2.412		6.1300	30.65	
		DN	9.826		6.1200	92.20	DESIGN POINT EX1
EX FRNTG CLV 24" ADD	ADD	UN	6.018		6.2000	59.95	OS-2
		DL	6.018		6.2000	59.95	
		DN	9.826		6.1200	92.20	DESIGN POINT EX1

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	Peak Time Trun. hrs	Peak Q cfs	End Points
EX FRNTG CUL 36"	ADD	UN	22.323	6.4500	141.34	OS-3
		DL	22.323	6.4500	141.34	
		DN	23.946	6.4500	144.24	DESIGN POINT EX2
ROAD1	ADD	UN	.480	5.9800	7.31	OS-8
		DL	.480	5.9800	7.31	
		DN	35.372	6.3200	204.56	JUNC 10
ROAD2	ADD	UN	1.120	5.9900	17.05	OS-9
		DL	1.120	5.9900	17.05	
		DN	35.372	6.3200	204.56	JUNC 10
ROADSIDE	ADD	UN	1.396	5.9900	23.67	OS-6
		DL	1.396	5.9900	23.67	
		DN	9.826	6.1200	92.20	DESIGN POINT EX1
ROADSIDE2	ADD	UN	1.623	6.0200	30.01	OS-7
		DL	1.623	6.0200	30.01	
		DN	23.946	6.4500	144.24	DESIGN POINT EX2
TO BANNING	ADD	UN	35.372	6.3200	204.56	JUNC 10
		DL	35.372	6.3200	204.56	
		DN	35.372	6.3200	204.56	BANNING CH 68

Type.... Executive Summary (Links)

Page 2.06

Name.... Watershed

Event: 100 yr

File.... X:\220810\DRAWINGS\PONDPACK\MORAWK SCS-EXISTING.ppw

Storm... TYPEIIA.24HR Tag: 100

---

Title... Project Date: 3/5/2008  
Project Engineer: DAVE GIBSON  
Project Title: MOHAWK COMMERCIAL CENTRE  
Project Comments:  
SCS MODEL EXISTING CONDITIONS

DESIGN STORMS SUMMARY

Design Storm File, ID = COLO SPRGS

Storm Tag Name = 100

---

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
Storm Frequency = 100 yr  
Total Rainfall Depth= 4.6000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Storm Tag Name = 5

---

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
Storm Frequency = 5 yr  
Total Rainfall Depth= 2.6000 in  
Duration Multiplier = 1  
Resulting Duration = 24.0000 hrs  
Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .3800 hrs  
-----

=====  
Total Tc: .3800 hrs  
=====

Type.... Tc Calcs

Page 4.01

Name.... OS-1

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs  
Name.... OS-1

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .5400 hrs

=====  
Total Tc: .5400 hrs  
=====



Type.... Tc Calcs

Page 4.03

Name.... OS-2

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs

Page 4.04

Name.... OS-2

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .9670 hrs  
-----

=====  
Total Tc: .9670 hrs  
=====

Type.... Tc Calcs  
Name.... OS-3

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs  
Name.... OS-3

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .2939 hrs  
-----

=====  
Total Tc: .2939 hrs  
=====

Type.... Tc Calcs

Page 4.07

Name.... OS-4

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs

Name.... OS-4

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .9884 hrs

=====  
Total Tc: .9884 hrs  
=====

Type.... Tc Calcs

Page 4.09

Name.... OS-5

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1277 hrs  
-----

=====  
Total Tc: .1277 hrs  
=====



Type.... Tc Calcs

Page 4.11

Name.... OS-6

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs

Name.... OS-6

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1462 hrs

-----  
Total Tc: .1462 hrs  
=====

Type.... Tc Calcs

Page 4.13

Name.... OS-7

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

=== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs

Name.... OS-7

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1091 hrs

-----  
Total Tc: .1091 hrs  
=====

Type.... Tc Calcs

Page 4.15

Name.... OS-8

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs

Name.... OS-8

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1091 hrs  
-----

=====  
Total Tc: .1091 hrs  
=====

Type.... Tc Calcs

Page 4.17

Name.... OS-9

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

RUNOFF CURVE NUMBER DATA

.....

-----

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	65	20.770			65.00
COMPOSITE AREA & WEIGHTED CN --->		20.770			65.00 (65)

.....



RUNOFF CURVE NUMBER DATA

.....

-----

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	65	51.830			65.00
COMPOSITE AREA & WEIGHTED CN --->		51.830			65.00 (65)

.....

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	65	192.250			65.00
COMPOSITE AREA & WEIGHTED CN --->		192.250			65.00 (65)

.....

Name.... OS-3

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	65	7.600			65.00

COMPOSITE AREA & WEIGHTED CN ---> 7.600 65.00 (65)

.....

Type.... Runoff CN-Area

Name.... OS-4

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	65	157.500			65.00

COMPOSITE AREA & WEIGHTED CN ---> 157.500 65.00 (65)

.....

Type.... Runoff CN-Area  
Name.... OS-5

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

RUNOFF CURVE NUMBER DATA

.....

---

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
WOODMEN ROAD	91	4.660			91.10

COMPOSITE AREA & WEIGHTED CN ---> 4.660 91.10 (91)

.....

Type.... Runoff CN-Area  
Name.... OS-6

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

---

RUNOFF CURVE NUMBER DATA

.....

---

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
WOODMEN ROAD	77	8.500			77.20
COMPOSITE AREA & WEIGHTED CN --->		8.500			77.20 (77)

.....

Type.... Runoff CN-Area

Name.... OS-7

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-EXISTING.ppw

RUNOFF CURVE NUMBER DATA

.....

-----

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
WOODMEN ROAD	98	1.320			98.00

COMPOSITE AREA & WEIGHTED CN ---->                    1.320                    98.00 (98)

.....

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
WOODMEN ROAD	98	3.080			98.00

COMPOSITE AREA & WEIGHTED CN --->                    3.080                    98.00 (98)  
 .....



Type.... Runoff CN-Area

Page 5.09

Name.... OS-9

---

----- C -----  
COLO SPRGS... 3.01

----- O -----  
OS-1... 4.01, 5.01  
OS-2... 4.03, 5.02  
OS-3... 4.05, 5.03  
OS-4... 4.07, 5.04  
OS-5... 4.09, 5.05  
OS-6... 4.11, 5.06  
OS-7... 4.13, 5.07  
OS-8... 4.15, 5.08  
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2.05

Job File: X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.PPW

Rain Dir: X:\220810\DRAWINGS\PONDPACK\

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JOB TITLE

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Project Date: 3/5/2008

Project Engineer: DAVE GIBSON

Project Title: MOHAWK COMMERCIAL CENTRE

Project Comments:

SCS MODEL

PROPOSED CONDITIONS WITH THE DEVELOPMENT OF MOHAWK COMMERCIAL  
CENTRE

\*\*\*\*\* MASTER SUMMARY \*\*\*\*\*

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 MASTER DESIGN STORM SUMMARY

Network Storm Collection: COLO SPRGS

Return Event	Total Depth in	Rainfall Type	RNF ID
100	4.6000	Synthetic Curve	TYPEIIA 24HR
5	2.6000	Synthetic Curve	TYPEIIA 24HR
2	2.1000	Synthetic Curve	TYPEIIA 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
*BANNING CH 70	JCT	100	28.225		6.4600	176.12		
*BANNING CH 70	JCT	5	7.723		6.5900	36.49		
*BANNING CH 70	JCT	2	4.135		6.5900	15.52		
*BANNING CH 68	JCT	100	50.410		6.0200	395.13		
*BANNING CH 68	JCT	5	16.140		6.0100	147.54		
*BANNING CH 68	JCT	2	9.869		6.0100	103.59		
BASIN B1-B7	AREA	100	2.959		5.9900	49.94		
BASIN B1-B7	AREA	5	1.429		6.0000	25.66		
BASIN B1-B7	AREA	2	1.062		6.0000	19.54		
BASIN F1	AREA	100	4.221		6.1500	52.76		
BASIN F1	AREA	5	1.407		6.1600	15.57		
BASIN F1	AREA	2	.854		6.2100	8.52		
BASINA1-A8	AREA	100	7.858		5.9900	132.59		
BASINA1-A8	AREA	5	3.794		6.0000	68.14		
BASINA1-A8	AREA	2	2.819		6.0000	51.88		

Name.... Watershed

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.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
BASINC1-D2	AREA	100	1.003		6.0100	18.33		
BASINC1-D2	AREA	5	.395		6.0100	7.53		
BASINC1-D2	AREA	2	.264		6.0100	5.06		
DESIGN POINT EX1	JCT	100	9.826		6.1200	92.20		
DESIGN POINT EX1	JCT	5	2.692		6.0400	18.19		
DESIGN POINT EX1	JCT	2	1.474		6.0200	10.03		
DESIGN POINT EX2	JCT	100	23.946		6.4500	144.24		
DESIGN POINT EX2	JCT	5	5.949		6.5800	24.89		
DESIGN POINT EX2	JCT	2	2.973		6.7000	8.77		
DESIGN POINT EX3	JCT	100	27.222		6.4600	174.45		
DESIGN POINT EX3	JCT	5	7.328		6.5900	35.88		
DESIGN POINT EX3	JCT	2	3.872		6.5900	15.09		
JUNC 10	JCT	100	10.306		6.0800	94.39		
JUNC 10	JCT	5	2.953		6.0300	21.87		
JUNC 10	JCT	2	1.680		6.0100	13.23		
JUNC 20	JCT	100	35.372		6.3200	204.56		
JUNC 20	JCT	5	9.511		6.0300	45.23		
JUNC 20	JCT	2	5.134		6.0200	28.04		
JUNC 30	JCT	100	25.066		6.4500	145.66		
JUNC 30	JCT	5	6.558		6.5700	25.55		
JUNC 30	JCT	2	3.454		6.0200	14.82		
JUNC 40	JCT	100	43.230		6.0200	304.15		
JUNC 40	JCT	5	13.304		6.0100	112.32		
JUNC 40	JCT	2	7.953		6.0100	79.58		
JUNC 50	JCT	100	50.410		6.0200	395.13		
JUNC 50	JCT	5	16.140		6.0100	147.54		
JUNC 50	JCT	2	9.869		6.0100	103.59		

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
OS-1	AREA	100	2.412		6.1300	30.65		
OS-1	AREA	5	.581		6.1800	5.31		
OS-1	AREA	2	.283		6.1800	1.72		
OS-2	AREA	100	6.018		6.2000	59.95		
OS-2	AREA	5	1.450		6.2700	10.06		
OS-2	AREA	2	.706		6.3300	3.30		
OS-3	AREA	100	22.323		6.4500	141.34		
OS-3	AREA	5	5.380		6.5800	23.88		
OS-3	AREA	2	2.617		6.7000	8.27		
OS-4	AREA	100	.882		6.0800	12.93		
OS-4	AREA	5	.213		6.1100	2.35		
OS-4	AREA	2	.103		6.1500	.78		
OS-5	AREA	100	26.339		6.4600	171.78		
OS-5	AREA	5	7.115		6.5900	35.34		
OS-5	AREA	2	3.768		6.5900	14.84		
OS-6	AREA	100	1.396		5.9900	23.67		
OS-6	AREA	5	.661		6.0100	11.85		
OS-6	AREA	2	.486		6.0100	8.91		
OS-7	AREA	100	1.623		6.0200	30.01		
OS-7	AREA	5	.569		6.0200	10.74		
OS-7	AREA	2	.356		6.0300	6.63		
OS-8	AREA	100	.480		5.9800	7.31		
OS-8	AREA	5	.261		5.9900	4.09		
OS-8	AREA	2	.206		5.9800	3.28		
OS-9	AREA	100	1.120		5.9900	17.05		
OS-9	AREA	5	.608		5.9900	9.54		
OS-9	AREA	2	.481		5.9900	7.65		

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 = 2

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 2 yr  
 Total Rainfall Depth= 2.1000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall BANNING CH 70	JCT	4.135		6.5900	15.52	
Outfall BANNING CH 68	JCT	9.869		6.0100	103.59	
BASIN B1-B7	AREA	1.062		6.0000	19.54	
BASIN F1	AREA	.854		6.2100	8.52	
BASIN A1-A8	AREA	2.819		6.0000	51.88	
BASIN C1-D2	AREA	.264		6.0100	5.06	
DESIGN POINT EX1	JCT	1.474		6.0200	10.03	
DESIGN POINT EX2	JCT	2.973		6.7000	8.77	
DESIGN POINT EX3	JCT	3.872		6.5900	15.09	
JUNC 10	JCT	1.680		6.0100	13.23	
JUNC 20	JCT	5.134		6.0200	28.04	
JUNC 30	JCT	3.454		6.0200	14.82	
JUNC 40	JCT	7.953		6.0100	79.58	
JUNC 50	JCT	9.869		6.0100	103.59	
OS-1	AREA	.283		6.1800	1.72	
OS-2	AREA	.706		6.3300	3.30	
OS-3	AREA	2.617		6.7000	8.27	
OS-4	AREA	.103		6.1500	.78	
OS-5	AREA	3.768		6.5900	14.84	
OS-6	AREA	.486		6.0100	8.91	
OS-7	AREA	.356		6.0300	6.63	
OS-8	AREA	.206		5.9800	3.28	
OS-9	AREA	.481		5.9900	7.65	



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)

DEFAULT Design Storm File, ID = COLO SPRGS

Storm Tag Name = 2

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 2 yr  
 Total Rainfall Depth= 2.1000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 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	3.768		6.5900	14.84	OS-5
		DL	3.768		6.5900	14.84	
		DN	3.872		6.5900	15.09	DESIGN POINT EX3
ADDLINK 20	ADD	UN	.103		6.1500	.78	OS-4
		DL	.103		6.1500	.78	
		DN	3.872		6.5900	15.09	DESIGN POINT EX3
ADDLINK 30	ADD	UN	.854		6.2100	8.52	BASIN F1
		DL	.854		6.2100	8.52	
		DN	9.869		6.0100	103.59	JUNC 50
ADDLINK 50	ADD	UN	.264		6.0100	5.06	BASINC1-D2
		DL	.264		6.0100	5.06	
		DN	4.135		6.5900	15.52	BANNING CH 70
C15	ADD	UN	1.680		6.0100	13.23	JUNC 10
		DL	1.680		6.0100	13.23	
		DN	5.134		6.0200	28.04	JUNC 20
C16	ADD	UN	3.454		6.0200	14.82	JUNC 30
		DL	3.454		6.0200	14.82	
		DN	5.134		6.0200	28.04	JUNC 20
C17	ADD	UN	5.134		6.0200	28.04	JUNC 20
		DL	5.134		6.0200	28.04	
		DN	7.953		6.0100	79.58	JUNC 40

## 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		Peak Time	Peak Q	End Points
			ac-ft	Trun.	hrs	cfs	
C18	ADD	UN	2.819		6.0000	51.88	BASINA1-A8
		DL	2.819		6.0000	51.88	
		DN	7.953		6.0100	79.58	JUNC 40
C19	ADD	UN	7.953		6.0100	79.58	JUNC 40
		DL	7.953		6.0100	79.58	
		DN	9.869		6.0100	103.59	JUNC 50
C20	ADD	UN	1.062		6.0000	19.54	BASIN B1-B7
		DL	1.062		6.0000	19.54	
		DN	9.869		6.0100	103.59	JUNC 50
C21	ADD	UN	9.869		6.0100	103.59	JUNC 50
		DL	9.869		6.0100	103.59	
		DN	9.869		6.0100	103.59	BANNING CH 68
EX 48" EAST	ADD	UN	2.973		6.7000	8.77	DESIGN POINT EX2
		DL	2.973		6.7000	8.77	
		DN	3.454		6.0200	14.82	JUNC 30
EX 48" WEST	ADD	UN	1.474		6.0200	10.03	DESIGN POINT EX1
		DL	1.474		6.0200	10.03	
		DN	1.680		6.0100	13.23	JUNC 10
EX DUAL 48"	ADD	UN	3.872		6.5900	15.09	DESIGN POINT EX3
		DL	3.872		6.5900	15.09	
		DN	4.135		6.5900	15.52	BANNING CH 70
EX FRNTG CLV 18" ADD	ADD	UN	.283		6.1800	1.72	OS-1
		DL	.283		6.1800	1.72	
		DN	1.474		6.0200	10.03	DESIGN POINT EX1
EX FRNTG CLV 24" ADD	ADD	UN	.706		6.3300	3.30	OS-2
		DL	.706		6.3300	3.30	
		DN	1.474		6.0200	10.03	DESIGN POINT EX1
EX FRNTG CUL 36" ADD	ADD	UN	2.617		6.7000	8.27	OS-3
		DL	2.617		6.7000	8.27	
		DN	2.973		6.7000	8.77	DESIGN POINT EX2

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	Peak Time Trun. hrs	Peak Q cfs	End Points
ROADSIDE	ADD	UN	.486	6.0100	8.91	OS-6
		DL	.486	6.0100	8.91	
		DN	1.474	6.0200	10.03	DESIGN POINT EX1
ROADSIDE2	ADD	UN	.356	6.0300	6.63	OS-7
		DL	.356	6.0300	6.63	
		DN	2.973	6.7000	8.77	DESIGN POINT EX2
WOODMEN RD	ADD	UN	.481	5.9900	7.65	OS-9
		DL	.481	5.9900	7.65	
		DN	3.454	6.0200	14.82	JUNC 30
WOODMEN ROAD	ADD	UN	.206	5.9800	3.28	OS-8
		DL	.206	5.9800	3.28	
		DN	1.680	6.0100	13.23	JUNC 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 = 5

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 5 yr  
 Total Rainfall Depth= 2.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Qpeak Trun. hrs	Qpeak cfs	Max WSEL ft
Outfall BANNING CH 70	JCT	7.723	6.5900	36.49	
Outfall BANNING CH 68	JCT	16.140	6.0100	147.54	
BASIN B1-B7	AREA	1.429	6.0000	25.66	
BASIN F1	AREA	1.407	6.1600	15.57	
BASINAL-A8	AREA	3.794	6.0000	68.14	
BASINC1-D2	AREA	.395	6.0100	7.53	
DESIGN POINT EX1	JCT	2.692	6.0400	18.19	
DESIGN POINT EX2	JCT	5.949	6.5800	24.89	
DESIGN POINT EX3	JCT	7.328	6.5900	35.88	
JUNC 10	JCT	2.953	6.0300	21.87	
JUNC 20	JCT	9.511	6.0300	45.23	
JUNC 30	JCT	6.558	6.5700	25.55	
JUNC 40	JCT	13.304	6.0100	112.32	
JUNC 50	JCT	16.140	6.0100	147.54	
OS-1	AREA	.581	6.1800	5.31	
OS-2	AREA	1.450	6.2700	10.06	
OS-3	AREA	5.380	6.5800	23.88	
OS-4	AREA	.213	6.1100	2.35	
OS-5	AREA	7.115	6.5900	35.34	
OS-6	AREA	.661	6.0100	11.85	
OS-7	AREA	.569	6.0200	10.74	
OS-8	AREA	.261	5.9900	4.09	
OS-9	AREA	.608	5.9900	9.54	

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 = 5

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 5 yr  
 Total Rainfall Depth= 2.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 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	7.115		6.5900	35.34	OS-5
		DL	7.115		6.5900	35.34	
		DN	7.328		6.5900	35.88	DESIGN POINT EX3
ADDLINK 20	ADD	UN	.213		6.1100	2.35	OS-4
		DL	.213		6.1100	2.35	
		DN	7.328		6.5900	35.88	DESIGN POINT EX3
ADDLINK 30	ADD	UN	1.407		6.1600	15.57	BASIN F1
		DL	1.407		6.1600	15.57	
		DN	16.140		6.0100	147.54	JUNC 50
ADDLINK 50	ADD	UN	.395		6.0100	7.53	BASINC1-D2
		DL	.395		6.0100	7.53	
		DN	7.723		6.5900	36.49	BANNING CH 70
C15	ADD	UN	2.953		6.0300	21.87	JUNC 10
		DL	2.953		6.0300	21.87	
		DN	9.511		6.0300	45.23	JUNC 20
C16	ADD	UN	6.558		6.5700	25.55	JUNC 30
		DL	6.558		6.5700	25.55	
		DN	9.511		6.0300	45.23	JUNC 20
C17	ADD	UN	9.511		6.0300	45.23	JUNC 20
		DL	9.511		6.0300	45.23	
		DN	13.304		6.0100	112.32	JUNC 40

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		Peak Time	Peak Q	End Points
			ac-ft	Trun.	hrs	cfs	
C18	ADD	UN	3.794		6.0000	68.14	BASINAL-A8
		DL	3.794		6.0000	68.14	
		DN	13.304		6.0100	112.32	JUNC 40
C19	ADD	UN	13.304		6.0100	112.32	JUNC 40
		DL	13.304		6.0100	112.32	
		DN	16.140		6.0100	147.54	JUNC 50
C20	ADD	UN	1.429		6.0000	25.66	BASIN B1-B7
		DL	1.429		6.0000	25.66	
		DN	16.140		6.0100	147.54	JUNC 50
C21	ADD	UN	16.140		6.0100	147.54	JUNC 50
		DL	16.140		6.0100	147.54	
		DN	16.140		6.0100	147.54	BANNING CH 68
EX 48" EAST	ADD	UN	5.949		6.5800	24.89	DESIGN POINT EX2
		DL	5.949		6.5800	24.89	
		DN	6.558		6.5700	25.55	JUNC 30
EX 48" WEST	ADD	UN	2.692		6.0400	18.19	DESIGN POINT EX1
		DL	2.692		6.0400	18.19	
		DN	2.953		6.0300	21.87	JUNC 10
EX DUAL 48"	ADD	UN	7.328		6.5900	35.88	DESIGN POINT EX3
		DL	7.328		6.5900	35.88	
		DN	7.723		6.5900	36.49	BANNING CH 70
EX FRNTG CLV 18" ADD	ADD	UN	.581		6.1800	5.31	OS-1
		DL	.581		6.1800	5.31	
		DN	2.692		6.0400	18.19	DESIGN POINT EX1
EX FRNTG CLV 24" ADD	ADD	UN	1.450		6.2700	10.06	OS-2
		DL	1.450		6.2700	10.06	
		DN	2.692		6.0400	18.19	DESIGN POINT EX1
EX FRNTG CUL 36" ADD	ADD	UN	5.380		6.5800	23.88	OS-3
		DL	5.380		6.5800	23.88	
		DN	5.949		6.5800	24.89	DESIGN POINT EX2

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		Peak Time	Peak Q	End Points
			ac-ft	Trun.	hrs	cfs	
ROADSIDE	ADD	UN	.661		6.0100	11.85	OS-6
		DL	.661		6.0100	11.85	
		DN	2.692		6.0400	18.19	DESIGN POINT EX1
ROADSIDE2	ADD	UN	.569		6.0200	10.74	OS-7
		DL	.569		6.0200	10.74	
		DN	5.949		6.5800	24.89	DESIGN POINT EX2
WOODMEN RD	ADD	UN	.608		5.9900	9.54	OS-9
		DL	.608		5.9900	9.54	
		DN	6.558		6.5700	25.55	JUNC 30
WOODMEN ROAD	ADD	UN	.261		5.9900	4.09	OS-8
		DL	.261		5.9900	4.09	
		DN	2.953		6.0300	21.87	JUNC 10

## NETWORK SUMMARY -- NODES

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

DEFAULT Design Storm File, ID = COLO SPRGS

Storm Tag Name = 100

-----  
 Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 100 yr  
 Total Rainfall Depth= 4.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
Outfall BANNING CH 70	JCT	28.225		6.4600	176.12	
Outfall BANNING CH 68	JCT	50.410		6.0200	395.13	
BASIN B1-B7	AREA	2.959		5.9900	49.94	
BASIN F1	AREA	4.221		6.1500	52.76	
BASINA1-A8	AREA	7.858		5.9900	132.59	
BASINC1-D2	AREA	1.003		6.0100	18.33	
DESIGN POINT EX1	JCT	9.826		6.1200	92.20	
DESIGN POINT EX2	JCT	23.946		6.4500	144.24	
DESIGN POINT EX3	JCT	27.222		6.4600	174.45	
JUNC 10	JCT	10.306		6.0800	94.39	
JUNC 20	JCT	35.372		6.3200	204.56	
JUNC 30	JCT	25.066		6.4500	145.66	
JUNC 40	JCT	43.230		6.0200	304.15	
JUNC 50	JCT	50.410		6.0200	395.13	
OS-1	AREA	2.412		6.1300	30.65	
OS-2	AREA	6.018		6.2000	59.95	
OS-3	AREA	22.323		6.4500	141.34	
OS-4	AREA	.882		6.0800	12.93	
OS-5	AREA	26.339		6.4600	171.78	
OS-6	AREA	1.396		5.9900	23.67	
OS-7	AREA	1.623		6.0200	30.01	
OS-8	AREA	.480		5.9800	7.31	
OS-9	AREA	1.120		5.9900	17.05	



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 = 100

Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 100 yr  
 Total Rainfall Depth= 4.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Link ID	Type		HYG Vol ac-ft	Peak Time Trun. hrs	Peak Q cfs	End Points
ADDLINK 10	ADD	UN	26.339	6.4600	171.78	OS-5
		DL	26.339	6.4600	171.78	
		DN	27.222	6.4600	174.45	DESIGN POINT EX3
ADDLINK 20	ADD	UN	.882	6.0800	12.93	OS-4
		DL	.882	6.0800	12.93	
		DN	27.222	6.4600	174.45	DESIGN POINT EX3
ADDLINK 30	ADD	UN	4.221	6.1500	52.76	BASIN F1
		DL	4.221	6.1500	52.76	
		DN	50.410	6.0200	395.13	JUNC 50
ADDLINK 50	ADD	UN	1.003	6.0100	18.33	BASINC1-D2
		DL	1.003	6.0100	18.33	
		DN	28.225	6.4600	176.12	BANNING CH 70
C15	ADD	UN	10.306	6.0800	94.39	JUNC 10
		DL	10.306	6.0800	94.39	
		DN	35.372	6.3200	204.56	JUNC 20
C16	ADD	UN	25.066	6.4500	145.66	JUNC 30
		DL	25.066	6.4500	145.66	
		DN	35.372	6.3200	204.56	JUNC 20
C17	ADD	UN	35.372	6.3200	204.56	JUNC 20
		DL	35.372	6.3200	204.56	
		DN	43.230	6.0200	304.15	JUNC 40

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
C18	ADD	UN	7.858		5.9900	132.59	BASINA1-A8
		DL	7.858		5.9900	132.59	
		DN	43.230		6.0200	304.15	JUNC 40
C19	ADD	UN	43.230		6.0200	304.15	JUNC 40
		DL	43.230		6.0200	304.15	
		DN	50.410		6.0200	395.13	JUNC 50
C20	ADD	UN	2.959		5.9900	49.94	BASIN B1-B7
		DL	2.959		5.9900	49.94	
		DN	50.410		6.0200	395.13	JUNC 50
C21	ADD	UN	50.410		6.0200	395.13	JUNC 50
		DL	50.410		6.0200	395.13	
		DN	50.410		6.0200	395.13	BANNING CH 68
EX 48" EAST	ADD	UN	23.946		6.4500	144.24	DESIGN POINT EX2
		DL	23.946		6.4500	144.24	
		DN	25.066		6.4500	145.66	JUNC 30
EX 48" WEST	ADD	UN	9.826		6.1200	92.20	DESIGN POINT EX1
		DL	9.826		6.1200	92.20	
		DN	10.306		6.0800	94.39	JUNC 10
EX DUAL 48"	ADD	UN	27.222		6.4600	174.45	DESIGN POINT EX3
		DL	27.222		6.4600	174.45	
		DN	28.225		6.4600	176.12	BANNING CH 70
EX FRNTG CLV 18" ADD	ADD	UN	2.412		6.1300	30.65	OS-1
		DL	2.412		6.1300	30.65	
		DN	9.826		6.1200	92.20	DESIGN POINT EX1
EX FRNTG CLV 24" ADD	ADD	UN	6.018		6.2000	59.95	OS-2
		DL	6.018		6.2000	59.95	
		DN	9.826		6.1200	92.20	DESIGN POINT EX1
EX FRNTG CUL 36" ADD	ADD	UN	22.323		6.4500	141.34	OS-3
		DL	22.323		6.4500	141.34	
		DN	23.946		6.4500	144.24	DESIGN POINT EX2

## 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 &amp; Rt)

Link ID	Type		HYG Vol ac-ft	Trun.	Peak Time hrs	Peak Q cfs	End Points
ROADSIDE	ADD	UN	1.396		5.9900	23.67	OS-6
		DL	1.396		5.9900	23.67	
		DN	9.826		6.1200	92.20	DESIGN POINT EX1
ROADSIDE2	ADD	UN	1.623		6.0200	30.01	OS-7
		DL	1.623		6.0200	30.01	
		DN	23.946		6.4500	144.24	DESIGN POINT EX2
WOODMEN RD	ADD	UN	1.120		5.9900	17.05	OS-9
		DL	1.120		5.9900	17.05	
		DN	25.066		6.4500	145.66	JUNC 30
WOODMEN ROAD	ADD	UN	.480		5.9800	7.31	OS-8
		DL	.480		5.9800	7.31	
		DN	10.306		6.0800	94.39	JUNC 10

Name... Watershed

Event: 100 yr

File... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

Storm... TYPEIIA 24HR Tag: 100

Title... Project Date: 3/5/2008  
 Project Engineer: DAVE GIBSON  
 Project Title: MOHAWK COMMERCIAL CENTRE  
 Project Comments:  
 SCS MODEL  
 PROPOSED CONDITIONS WITH THE DEVELOPMENT OF MOHAWK  
 COMMERCIAL CENTRE

DESIGN STORMS SUMMARY

Design Storm File, ID = COLO SPRGS

Storm Tag Name = 100

-----  
 Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 100 yr  
 Total Rainfall Depth= 4.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Storm Tag Name = 5

-----  
 Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 5 yr  
 Total Rainfall Depth= 2.6000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

Storm Tag Name = 2

-----  
 Data Type, File, ID = Synthetic Storm TYPEIIA 24HR  
 Storm Frequency = 2 yr  
 Total Rainfall Depth= 2.1000 in  
 Duration Multiplier = 1  
 Resulting Duration = 24.0000 hrs  
 Resulting Start Time= .0000 hrs Step= .2500 hrs End= 24.0000 hrs

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

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .0983 hrs

=====  
Total Tc: .0983 hrs  
=====

Type.... Tc Calcs  
Name.... BASIN B1-B7

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs  
Name.... BASIN B1-B7

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .4483 hrs  
-----

=====  
Total Tc: .4483 hrs  
=====

Type.... Tc Calcs  
Name.... BASIN F1

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration



.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .0983 hrs  
-----

=====  
Total Tc: .0983 hrs  
=====

Type.... Tc Calcs  
Name.... BASINAL-A8

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs  
Name.... BASINA1-A8

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1330 hrs  
-----

=====  
Total Tc: .1330 hrs  
=====

Type.... Tc Calcs  
Name.... BASIN1-D2

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.....Tc Calcs  
Name.... BASINC1-D2

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .3800 hrs

=====  
Total Tc: .3800 hrs  
=====

Type.... Tc Calcs

Page 4.09

Name.... OS-1

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .5400 hrs  
-----

=====  
Total Tc: .5400 hrs  
=====

Type.... Tc Calcs  
Name.... OS-2

Page 4.11

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration



.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .9670 hrs  
-----

=====  
Total Tc: .9670 hrs  
=====

Type.... Tc Calcs  
Name.... OS-3

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .2939 hrs

=====  
Total Tc: .2939 hrs  
=====

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .9884 hrs  
-----

=====  
Total Tc: .9884 hrs  
=====

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1277 hrs  
-----

=====  
Total Tc: .1277 hrs  
=====

Type.... Tc Calcs

Page 4.19

Name.... OS-6

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration



.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1462 hrs

-----  
Total Tc: .1462 hrs  
=====

Type.... Tc Calcs

Page 4.21

Name.... OS-7

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1091 hrs  
-----

=====  
Total Tc: .1091 hrs  
=====

Type.... Tc Calcs  
Name.... OS-8

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

-----  
Tc Equations used...  
-----

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Tc Calcs

Name.... OS-8

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

.....  
TIME OF CONCENTRATION CALCULATOR  
.....

-----  
Segment #1: Tc: User Defined

Segment #1 Time: .1091 hrs  
-----

=====  
Total Tc: .1091 hrs  
=====

RUNOFF CURVE NUMBER DATA

.....

-----

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
A1-A8	92	25.490			92.00
COMPOSITE AREA & WEIGHTED CN --->		25.490			92.00 (92)

.....

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
C1	92	1.920			92.00
C2	92	.500			92.00
D1	69	.690			69.00
D2	69	1.310			69.00

COMPOSITE AREA & WEIGHTED CN --->                    4.420                    81.59 (82)

.....

Type.... Runoff CN-Area  
Name.... OS-1

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

RUNOFF CURVE NUMBER DATA

.....

---

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	65	51.830			65.00
COMPOSITE AREA & WEIGHTED CN --->		51.830			65.00 (65)

.....



RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C %UC	Adjusted CN
5 ACRE LOTS	65	192.250		65.00
COMPOSITE AREA & WEIGHTED CN --->		192.250		65.00 (65)

.....

Type.... Runoff CN-Area

Name.... OS-3

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	65	7.600			65.00
COMPOSITE AREA & WEIGHTED CN --->		7.600			65.00 (65)

.....

Type.... Runoff CN-Area

Name.... OS-4

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
5 ACRE LOTS	68	197.500			68.00
COMPOSITE AREA & WEIGHTED CN --->		197.500			68.00 (68)

.....

Type.... Runoff CN-Area  
Name.... OS-5

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

---

RUNOFF CURVE NUMBER DATA

.....

---

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
WOODMEN ROAD	91	4.660			91.10
COMPOSITE AREA & WEIGHTED CN --->		4.660			91.10 (91)

.....

Type.... Runoff CN-Area

Name.... OS-6

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
WOODMEN ROAD	77	8.500			77.20

COMPOSITE AREA & WEIGHTED CN ---> 8.500 77.20 (77)

.....

Name.... OS-7

File.... X:\220810\DRAWINGS\PONDPACK\MOHAWK SCS-PROPOSED.ppw

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
WOODMEN ROAD	98	1.320			98.00

COMPOSITE AREA & WEIGHTED CN ---> 1.320 98.00 (98)

.....

RUNOFF CURVE NUMBER DATA

.....

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
WOODMEN ROAD	98	3.080			98.00
COMPOSITE AREA & WEIGHTED CN --->		3.080			98.00 (98)

Name.... OS-9

---

----- B -----

BASIN B1-B7... 4.01, 5.01

BASIN F1... 4.03, 5.02

BASINA1-A8... 4.05, 5.03

BASIN C1-D2... 4.07, 5.04

----- C -----

COLO SPRGS... 3.01

----- O -----

OS-1... 4.09, 5.05

OS-2... 4.11, 5.06

OS-3... 4.13, 5.07

OS-4... 4.15, 5.08

OS-5... 4.17, 5.09

OS-6... 4.19, 5.10

OS-7... 4.21, 5.11

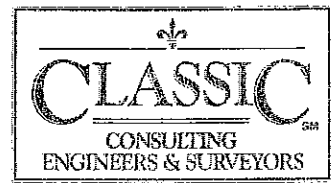
OS-8... 4.23, 5.12

OS-9... 4.25, 5.13

----- W -----

Watershed... 1.01, 2.01, 2.02, 2.05,  
2.06, 2.09, 2.10





**DRAINAGE MAP**