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File SPR-1995-108

Date 8/26/99

Present	Scanned	**A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, not all entries designated to be scanned, are present in the file. There are also documents specific to certain files, not found on the standard list. For this reason, a checklist has been included. Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick guide for the contents of each file. Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc.**
X	X	***Summary Sheet – Table of Contents**
		Application form
		Receipts for fees paid for anything
X	X	***Submittal checklist**
X	X	***General project report**
		Reduced copy of final plans or drawings
X	X	Reduction of assessor's map
		Evidence of title, deeds
		***Mailing list**
		Public notice cards
		Record of certified mail
		Legal description
		Appraisal of raw land
		Reduction of any maps – final copy
X	X	***Final reports for drainage and soils (geotechnical reports)**
		Other bound or nonbound reports
		Traffic studies
X		Individual review comments from agencies
X	X	***Consolidated review comments list**
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		***Staff Reports**
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		***City Council staff report and exhibits**
		***Summary sheet of final conditions**
		***Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date)**

DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:

X	X	Letter form Jon Price to City	X	X	Memo to Kathy Portner from Michael Drollinger - 6/21/96
X	X	E-mail to Don Hobbs and Joe Stevens from Larry Timm – 5/16/96	X		Plans for Light Pole Height
X	X	E-mail from Don Hobbs to Kathy Portner – 5/6/96	X	X	Memo from Bruce Marvin to Don Newton – 7/13/96
X	X	Fence Permit - **	X	X	Kathy Portner to Joe Stevens
X		Letter from John Ballagh, G. J. Drainage Dist. To Kathy Portner - 2/29/96	X		Canyon View Park Preconstruction Meeting
X	X	Drainage Study for City of Grand Junction's Canyon View Park Ph. 1 - 11/95	X	X	Park Impact Study
X	X	E-mail from Shawn Cooper to Marcia Rabideaux re: Compliments to Design Team - 12/8/95	X		Elevation Plans
X		Warranty Deeds - ** - 726 24 Road & 2402 G Road	X		Overall Grading Plan
X		Realignment Corcoran Wash - Plan & Profile	X		Parking Lot Grading
X		Mitchell Drain Culvert Relocation – Plan & Profile	X		Roadway Details
X		24 Road Entrance Bridge – Plan & Sections	X		Sanitary Sewer Details
X		24 Road Main Entrance Bridge Reinforcement Details	X		Water Line Details
X		24 Road Main Entrance Bridge Wing Wall Reinforcement Details	X		Landscape and Seeding Plan
X		24 Road Bridge Traffic Barriers and Cutoff Wall Reinforcement Details	X		Landscape Details
X		24 Road Bridge Miscellaneous Details	X		Concoran Wash Planting Plan
X		Soccer Field Parking Lot Layout and Striping Plan	X		Utility Composite
X		Softball Field Parking Lot Layout and Striping Plan	X		On Site Sewer Plan & Profile
X		E-mail from Kathy Portner to Shawn Cooper – 6/24/96	X		On Site Water Plan & Profile

X	X	Letter from Jon Price to City – 5/7/96	X		Memo re: Review Comments from Jody Kliska
X		24 Road Entrance Plan & Profile	X	X	Site Plan Review – 12/12/95
X		Emergency Access Road Plan & Profile – Road Layout			
X		Internal Acess Road Plan & Profile – Road Layout			
X		Park Main Entrance Road Plan & Profile – Road Layout			
X		Maintenance Road Plan and Profile			
X	X	Site Plan			

SUBMITTAL CHECKLIST

SITE PLAN REVIEW

Location: 24 & GRd Project Name: Sports Complex / Park

ITEMS		DISTRIBUTION																													
Date Received 11-28-95 Receipt # 7 File # SPR-95-108(2) DESCRIPTION	SSID REFERENCE	● City Community Development	● City Dev. Eng.	● City Utility Eng.	● City Property Agent	● City Parks/Recreation	● City Fire Department	● City Attorney	○ ~~City Downtown Dev. Auth.~~	● County Planning	○ ~~County Bldg. Dept.~~	● Irrigation District G.V.	● Drainage District G.V.	● Water District n/c	○ ~~Sewer District~~	○ ~~U.S. West~~	○ ~~Public Service~~	○ ~~GVRP~~	○ ~~CDOT~~	● Corps of Engineers	○ ~~Walker Field~~	○ ~~Persigo WWT~~	○ ~~Mesa County Health~~	○ ~~State Environ. Health~~	○ ~~City Sanitation~~	● School Dist #51						TOTAL REQ'D.
● Application Fee $175 + $5/ac	VII-1	1																													
● Submittal Checklist *	VII-3	1																													
● Review Agency Cover Sheet*	VII-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
○ ~~Planning Clearance*~~	VII-3	1																													
● 11"x17" Reduction of Assessor's Map	VII-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
○ ~~Evidence of Title~~	VII-2	1			1			1																							
○ ~~Deeds~~	VII-1	1			1			1																							
○ ~~Easements~~	VII-2	1	1	1	1			1																							
○ ~~Avigation Easement~~	VII-1	1			1			1																							
○ ~~ROW~~	VII-2	1	1	1	1			1																							
○ ~~Improvements Agreement/Guarantee~~ *	VII-2	1	1	1				1																							
○ ~~CDOT Access Permit~~	VII-3	1	1																												
○ ~~Industrial Pretreatment Sign-off~~	VII-4	1		1																											
● General Project Report	X-7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
● Elevation Drawing proposed structures	IX-13	1	1																												
● Site Plan	IX-29	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
● 11"x17" Reduction of Site Plan	IX-29					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
● Grading and Drainage Plan	IX-16	1	2										1							1											
○ ~~Storm Drainage Plan and Profile~~	IX-30	1	2										1			1	1	1													
● Water and Sewer Plan and Profile	IX-34	1	2	1			1							1	1	1	1	1													
● Roadway Plan and Profile	IX-28	1	2										1																		
○ ~~Road Cross Sections~~ (Not required)	IX-27	1	2																												
● Detail Sheet	IX-12	1	2																												
● Landscape Plan	IX-20	2	1	1		2																									
○ ~~Geotechnical Report~~	X-8	1	1								1																				
● Final Drainage Report	X-5,6	1	2										1																		
● Stormwater Management Plan Hydrology Report	X-14	1	2										1							1											
○ ~~Phase I and II Environmental Report~~	X-10,11	1	1																												
● ~~Traffic Impact Study~~	X-15	1	2																1												
Wetland Planting Plan: Corcorn Wash		1	1			1		1		1			1							1											

NOTES: * An asterisk in the item description column indicates that a form is supplied by the City.

GENERAL PROJECT REPORT
SITE PLAN REVIEW
CANYON VIEW PARK
City of Grand Junction
Parks and Recreation Department

November 21, 1995

A. PROJECT DESCRIPTION

The subject property will be developed as a public park with an emphasis on competitive sports facilities. The proposed master plan for the 103-acre park includes facilities for competitive sports such as softball, soccer, tennis, volleyball, etc. The park will also offer group picnic facilities and an amphitheater. All of the necessary infrastructure such as roads, parking and required utilities will be constructed with the proposed improvements.

1. Location

The subject property is situated on the northeast corner of the intersection of 24 and G Roads (see Location Map). The property is generally bound by Interstate-70 on the north side, 24 Road on the west side, 24½ Road on the east side, and G Road on the south side. Four parcels totaling 40 acres, which are not owned by the City, occupy the southeast quadrant of the area defined by the roads. There are two other small out-parcels along 24 Road. The City has a "Life Estate" on the property at the intersection of 24 and G Roads and first-right-of-refusal on the parcel just north of the Corcoran Wash.

2. Acreage

The total acreage of the property is 103 acres.

3. Proposed Use

Public Park.

B. PUBLIC BENEFIT

Because the property is being developed as a public park, its benefit to the community is obvious. An additional benefit will be the reduced pressure on the City's existing parks, especially those parks now used for competitive softball and soccer.

C. PROJECT COMPLIANCE, COMPATIBILITY AND IMPACT

1. Adopted Plans

There are no existing adopted plans and/or policies for this area.

2. Surrounding Land Use

The Canyon View Park site is surrounded by compatible uses. I-70 will buffer uses north of the highway from the proposed park. The property to the west is currently zoned PRVR and the remaining adjacent properties (including north of I-70) are zoned RSFR. All of the adjacent properties are agricultural at this time. Adequate landscape screens will be provided between the park and the 40 acre property southeast of the site.

3. Site Access and Traffic Patterns

The site is easily accessed via the existing road network in the vicinity of the park. 24 Road, which borders the west side of the park, is one of three interchanges on I-70 in Grand Junction. 24 Road/I-70 will provide excellent access to the primary lodging district along Horizon Drive (3½ miles east) and the developed areas of the City and County east of Horizon Drive. Residents living north of I-70 will use either 24 Road or take I-70 to 24 Road to reach the park site. 24 Road also provides excellent access to the site for residents living in the Redlands and Orchard Mesa (via Business Loop 70 or Redlands Parkway). Residents living or working in central Grand Junction will reach the site either by G Road or 24 Road.

All of the roads accessing the site (except for I-70) are paved, two-lane roads in good condition. It should be noted that 24 Road is scheduled, beginning in 1999, to be widened to add a center turn lane and bike lanes to the two existing travel lanes. Design and construction of the 24 Road improvements will take from two to three years.

The City of Grand Junction Traffic Engineering Department has completed a traffic study for the proposed use and has made recommendations for road improvements based on projected levels of use. The final design for roadways in the parks incorporate improvements recommended by the traffic study. A copy of the final report can be obtained from Traffic Engineering. Adequate parking has been provided for all of the proposed uses based on the City of Grand Junction's parking requirements. Parking standards established by other communities for similarly sized and programmed parks have also been used to determine parking requirements.

4. Availability of Utilities

With the exception of water, which will be extended to the site, the park is well served by existing utilities.

Water (Ute Water Conservancy District): Although water service is available to the property, the existing line size is inadequate to supply required flows for the proposed facilities and fire protection. Therefore, extension of water service to the site must be performed concurrently with the site development. The water line will access the property from 24½ Road.

Sanitary Sewer (City of Grand Junction): There is a 10" sanitary sewer line in G Road which has adequate capacity to serve the site. Because G Road is at a lower elevation than the park site, a gravity system is feasible.

Gas and Electric (Public Service Company): While the site is split between Public Service and Grand Valley Power's service areas, PSCo and Grand Valley have agreed that PSCo will provide service to the entire site. PSCo has stated that adequate service is or will be available to the property. Gas lines exist in the road rights-of-way adjacent to the property, but gas service is not required for this project.

Irrigation Water (Grand Valley Irrigation Company): The City has sufficient water rights, some of which were purchased with the property and others which can be transferred to the property. The

existing delivery system will be adequate to meet the park's needs. An automated irrigation system (using ditch irrigation water) with sufficient on-site storage capacity will be an integral part of the park's development.

Telephone (U.S. West Communications Company): U.S. West will provide phone service for the park. Basic telephone service for maintenance operations and public telephones are all that will be required to serve the site.

Drainage (Grand Junction Drainage District): All drainage improvements and retention/detention required for the site will comply with the City of Grand Junction's "Stormwater Management Manual."

5. Special or Unusual Demands on Utilities

Once again, because of the low intensity of the proposed development, no special or unusual demands are anticipated on the City's utility infrastructure. The greatest impact on utilities will be on the water and sanitary sewer system at peak use times (e.g. a softball or soccer tournament). However, the water system for the site will be designed to provide adequate flow for peak use and the existing sanitary sewer service to the site is more than adequate to meet projected demands.

6. Effects on Public Facilities

As a public entity, the proposed park will have only a positive impact on schools and other parks by alleviating the pressure of competitive sporting events on those facilities. The site will use irrigation water rights purchased with the property or already owned by the City. Because of the small number and types of structures, there should be little or no impact on fire services. Key facilities in the park have been sited to facilitate police surveillance whenever possible. Security lighting is included for all structures. Sanitation services will not be adversely impacted by the proposed use. Finally, roads in the vicinity will receive the necessary improvements to accommodate the demand projected by the proposed use. Funding to widen 24 Road from I-70 to Patterson has been committed by the Federal government, Mesa County and the City. The funding for the 24 Road improvements will be available in 1999 and will take two to three years to design and construct.

7. Site Soils and Geology

Soil testing and geotechnical soil borings have been completed. The soils in the park site were found to be typical of those found throughout the Grand Junction area. All improvements for the site will be designed to meet or exceed the recommendations of the soils report.

According to the Soil Conservation Service, four different soil types are found on the property. Brief summaries of the SCS descriptions for the site soils are found below:

a. **Billings silty clay loam, 0 to 2 percent slopes (Bc).** This soil, locally called adobe, is one of the most important and extensive in the Grand Valley. It covers nearly one-fifth of the Grand Junction Area. The areas in which it occurs are on the broad floodplains and very gently sloping coalescing alluvial fans along streams. Many large areas are found north of the Colorado River.

The soil is derived from deep alluvial deposits that came mainly from Mancos shale but in a few places from fine-grained sandstone materials. The deposits ordinarily range from 4 to 40 feet deep but in places exceed 40 feet. The deposits have been built up from thin sediments brought in by the streams that have formed the coalescing alluvial fans or have been dropped by broad washes that have no drainage channel.

b. **Ravola clay loam, 0 to 2 percent slopes (Ra).** This soil, the second most extensive in the area, has developed in material that consists largely of reworked Mancos shale but includes an appreciable amount of sandy alluvium from the higher Mesaverde formation. The surface of these deposits is relatively level, but the depth of the deposits ranges from 5 to 30 feet. The soil is associated with the Billings silty clay loams and the Ravola fine sandy loams.

c. **Ravola very fine sandy loam, 0 to 2 percent slopes (Rf).** This extensive and important soil occurs either along washes or arroyos extending from the north or on broad coalescing alluvial fans. The alluvial material from which the soil has developed was derived from sandstone and shale and ranges from 4 to 20 feet deep.

d. **Ravola loam, 0 to 2 percent slopes (Re).** This soil is not extensive, but it is important agriculturally. It occupies relatively broad alluvial fans and floodplains along streams. It is at a slightly higher elevation than the bordering areas of Billings silty clay loam soils. It has developed in an alluvial deposit derived largely from Mancos shale and to a lesser extent from the fine-grained sandstone of the Mesaverde formation. The soil is very similar to Ravola very fine sandy loam, 0 to 2 percent slopes, but it contains less very fine sand and a larger amount of silt. In a number of small areas the texture approaches, or may be, a silt loam.

8. Impact of Project on Site Geology and Geological Hazards

Because development will be limited to open space, roads, parking and small buildings on a very flat site, only minor impacts on site geology or geological hazards are anticipated. The confluence of two major drainages, Leach Creek to the west and Corcoran Wash which bisects the property, occurs at the western edge of the property. Preliminary investigations indicate a 100 year flood is likely to cause overbank flow. Some project features may encroach in the floodplain such as built-up portions of playing fields and structures. These features will be designed such that impact on encroachments will be negligible. The ground water in this area is expected to be high and soils are expected to be soft with low bearing capacity. Structures have been designed accordingly. A change in irrigation practices may have an impact on the ground water levels in the immediate area, but is not expected to have a serious impact on adjoining property or site development.

9. Hours of Operation

The park will be open from 5:00AM to Midnight seven days per week (normal operational hours for City of Grand Junction parks). The highest levels of use will occur during the spring, summer and fall months when organized competitive sports teams use the site. Heaviest use will occur from 4:00 PM to 10:30/11:00PM on weekdays and from 9:00AM to 10:30/11:00PM on Saturdays, again for competitive sports usage. Park usage should be limited on Sundays to general park use, unless a tournament(s) for softball, soccer, etc., is held, in which case the use level will be similar to that of a Saturday.

10. Signage Plans

Detailed signage plans have been developed for the park and will follow the standard City of Grand Junction Parks signage being developed by Parks Department staff. Details of the proposed site signage follow this report. Project identification signs will be located as illustrated on the attached Site Plan and Landscape Plans. All park signage will conform to the City's signage guidelines.

D. DEVELOPMENT SCHEDULE AND PHASING

The 24 and G Roads Park site will be developed in phases. At this time, only the first phase of development has been defined. Other portions of the park will be developed as funding is made available by City Council. The first phase of development will encompass approximately 64 acres of the 103 acre site. Included in this first phase will be:

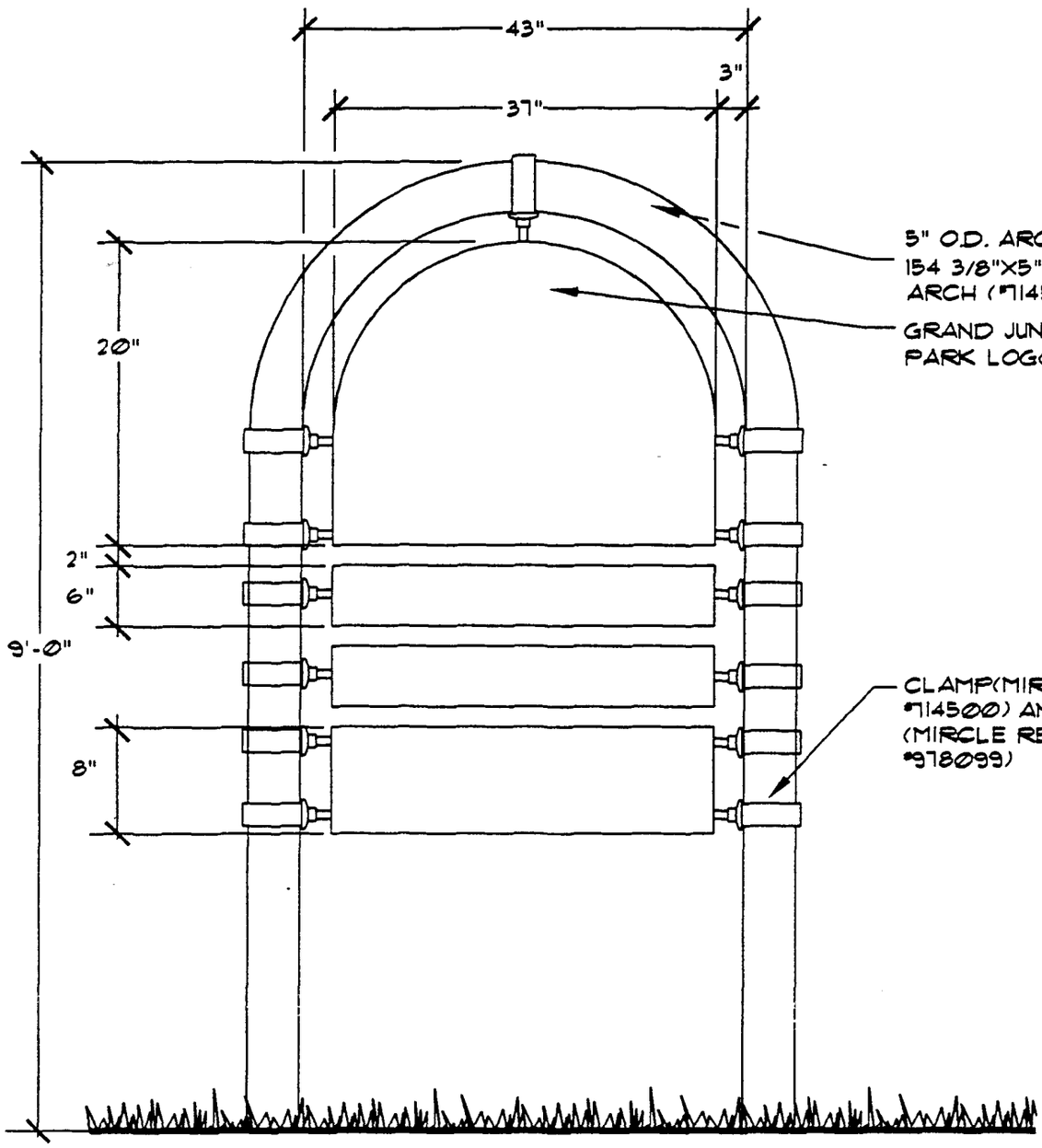
- Extension of off-site utilities to the property. This will generally consist of extending water service to the site and connecting the sanitary sewer to the line in G Road.
- Wetland permitting as required by the Corps of Engineers. (The permit has been approved.)
- All required improvements to 24 and G Roads (except the widening of 24 Road slated for 1999).
- Overlot grading of the area west of the Corcoran Wash and the south quadrant of the property.
- Relocation of a portion of the Corcoran Wash to accommodate the proposed sports fields and to create a more natural alignment for the ditch. Wherever possible, the banks of the wash will be cut back to eliminate the existing steep side banks.
- Construction of the 4.2 acre irrigation water storage pond.
- Drainage improvements and detention ponds required for the first phase of development.
- Internal roads and required emergency access facilities.
- Parking facilities: 207 cars for the softball complex and picnic facility, 257 cars for the multi-purpose field facility and 28 on-street parking spaces.

The park facility improvements scheduled for Phase I include:

- A lighted softball complex (four fields in a "pin wheel" configuration) with concession stand and restrooms, permanent amphitheater style seating, all necessary sidewalks and landscaping and other miscellaneous amenities (e.g. site furnishings, scoreboards, signage, etc.).
- A group picnic facility with a large picnic shelter, play structure and sand volleyball courts.
- A multi-purpose turf area (for soccer, football, etc.) large enough for five full size soccer fields, which will include a restroom and picnic facilities.
- Basketball and in-line skating facilities.
- Trails and sidewalks connecting each facility.
- A maintenance building and storage yard.

The final list of facilities to be constructed in Phase I will be confirmed as the construction budget is refined. The project will be bid in a manner which will allow the City to select the facilities or amenties which meet the established budget. Required infrastructure and improvements will be included in the basic bid package. City Council has established level of funding for the first phase of development of approximately $5.5 million, unless additional funding is designated for the park improvements.

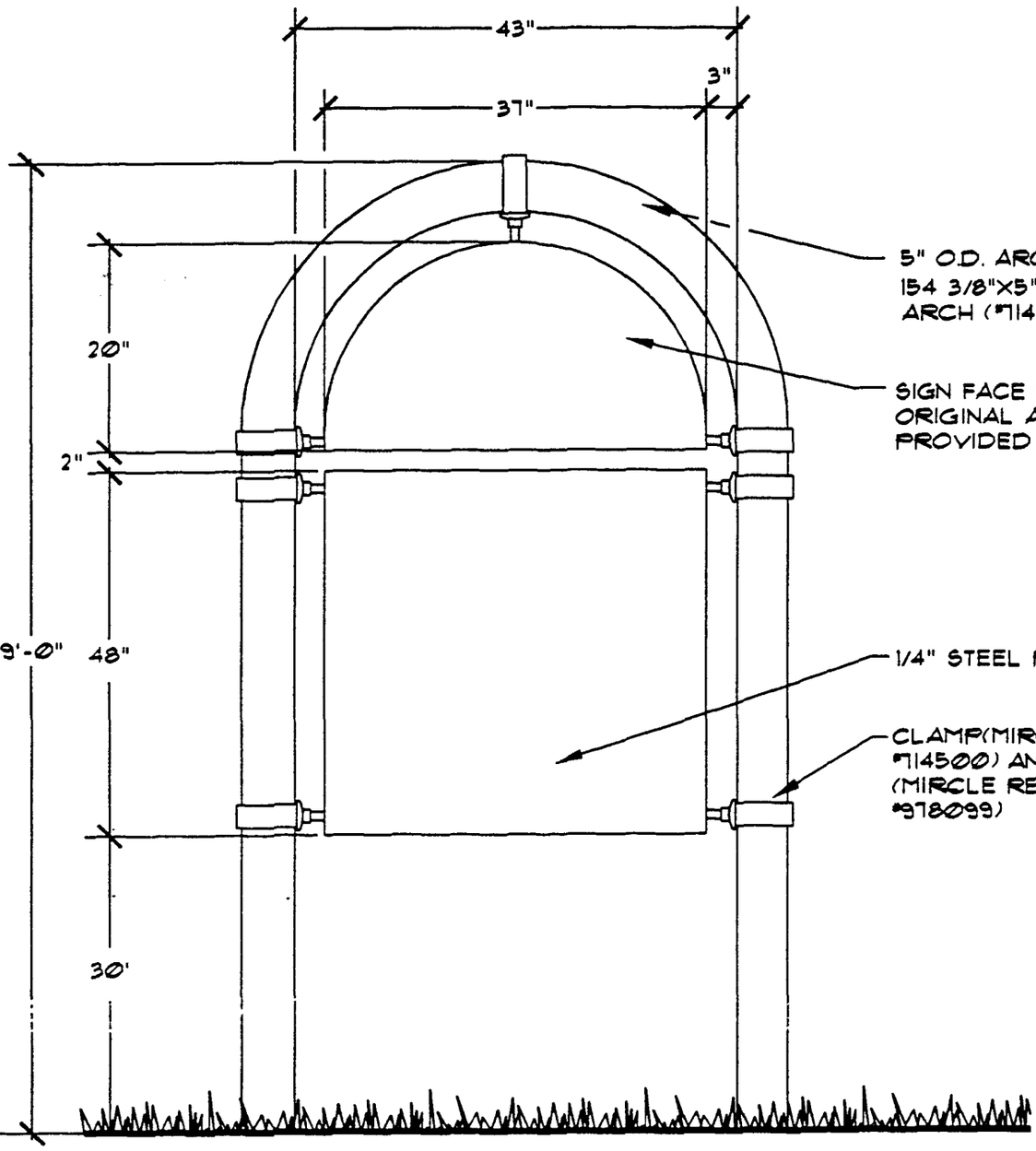
Phase I is scheduled to begin construction early in 1996.



NOTE: SEE SPEC SECTION 02890 FOR COLORS AND FINISHES

1 PARK ENTRY SIGNAGE

SCALE: 3/4" = 1'



NOTE: SEE SPEC SECTION 02890 FOR COLORS AND FINISHES

2 BULLETIN BOARD

SCALE: 3/4" = 1'

DRAINAGE STUDY

for City of Grand Junction's

CANYON VIEW PARK

Phase I

November, 1995

Prepared by:
Western Engineers, Inc.
2150 Highway 6 & 50
Grand Junction, CO.

TABLE OF CONTENTS

LOCATION AND DESCRIPTION:

The City of Grand Junction Parks and Recreation Department is proposing to develop a Public Park/Sports Complex (Canyon View Park) located in the SW 1/4 of Section 33, T1N, R1W, Ute Meridian. The property is generally bounded by 24-1/2 Road to the East, G Road to the South, 24 Road to the West, and Interstate 70 to the North. Four parcels totalling approximately 40 acres, which are not owned by the City, occupy the south-east quadrant of the area defined by the Roads. These private holdings are not part of this project.

Approximately 77 acres of the 111 acres included within the Park boundary will be developed during Phase I construction. Current ground cover consists irrigated row crops. Stormwater discharges from the site occur by means of shallow ditches (furrows). The runoff water from the site discharges into one of three established primary drainage channels, Mitchell Drain, Corcoran Wash, and Leach Creek as shown on Plate 1 in the appendix. Leach Creek flows southerly and discharges into the Colorado River.

Phase I development will consist of several small structures, paved parking areas and interior roads, turf, landscaping and irrigation ponds. The predominant ground cover will be turf.

SCOPE OF PRESENT STUDY:

This drainage study is a detailed analysis of the post-development drainage patterns of Phase I of Canyon View Park. The results presented herein are utilized to design on-site conveyance structures. Post-development drainage characteristics are compared to the pre-development drainage patterns to determine whether on site detention is required.

DRAINAGE EVALUATION METHODOLOGY:

Hydrologic analysis was performed using the Soil Conservation Service (SCS) Tabular Hydrograph method with a type II Unit Hydrograph. In order to provide a pre/post development comparison, the runoff characteristics were evaluated using two methods. These consisted of "Urban Hydrology for Small Watersheds" Soil Conservation Service Technical Release No. 55 (SCS TR-55) and a Western Engineers Spreadsheet which incorporates the capability of routing storm runoff through ponds. Westerns spreadsheet follows the same parameters established for SCS TR-55. Although both methods provide a means for obtaining runoff hydrograph data, Western's spreadsheet was selected for its pond routing capabilities and greater accuracy for small flows.

I). CRITERIA:

Hydrologic Criteria:

Each drainage basin was evaluated for a 24 hour storm with recurrence intervals of 2 and 100 years. Tabular Hydrograph Unit Discharges for SCS type II, 24 hour rainfall distribution published in "Urban Hydrology for Small Watersheds", Technical Release No. 55 (TR-55), were utilized to generate basin discharges. The appropriate tables were selected based on Time of Concentration and Initial Abstraction/Precipitation values.

Hydraulic Criteria:

Pipe capacities were calculated using inlet/outlet control design equations from the U.S. Federal Highway Administration's publication "Hydraulic Design of Highway Culverts". Capacities of proposed valley pans, trench drains and gutters were determined by application of the Manning equation. Refer to Table 1 for a summary of drainage structure hydraulic capacities.

Design Criteria:

The City of Grand Junction has established guidelines which require post-development peak discharge for the 2 and 100 year frequency event to not exceed the pre-development runoff due to changes in the site conditions. All drainage structures must safely convey the 100 year frequency event peak discharge while maintaining a minimum velocity of 2.5 feet per second for pipes carrying the two year event.

II). TIME OF CONCENTRATION:

Times of Concentration for each basin were determined using the following methods:

1. For sheet flow (maximum distance of 300 feet) in both pre and post development conditions, concentration times were calculated using the following Federal Aviation Administration Formula:

$$To = \frac{1.8(1.1 - C)^{0.5}}{S^{0.33}}$$

C = Rational Coefficient

2). For overland flow beyond 300 feet and shallow concentrated flow, concentration times were calculated from flow velocities shown in Figure E-3 of the City of Grand Junction's Storm Water Management Manual (SWMM).

3). For concrete drain pan and gutter flow, concentration times were determined by application of the Manning Equation.

III). CURVE NUMBER DETERMINATION:

1). Soil Types were determined from maps compiled by the Soil Conservation Service and presented in a report entitled "Soil Survey, Grand Junction Area, Colorado". The Park site is made up of two soil types Billings Silty Clay Loam and Ravola Clay Loam. SCS TR-55 classifies Billings soil as Hydrological Soil Group "C" (HSG "C") and Ravola soils are categorized as HSG "B". A conservative approach in determining runoff was to assume HSG "C" over the entire site. This assumption was applied to both the pre and post development analyses.

2). The existing corn fields were deemed to be influenced by factors that inhibit infiltration, and CN's reflecting this were chosen.

3). Almost all of the post-development impervious areas are directly connected to the drainage system. The weighted average method was used to determine composite CN's.

PRE-DEVELOPMENT DRAINAGE PATTERNS:

The pre-development site is divided into three drainage basins, approximately equal in size. (See Plate 1). Basin 2 is roughly square and is bounded by Interstate 70 on the north, Corcoran Wash on the east and south, and 24 Road on the west. During the last growing season it was planted in corn. The cultivated rows and irrigation water ran from north to south. The majority of storm runoff and irrigation tailwater discharged into Corcoran Wash through pipes under a farm road. The western portion of this basin located north of a small out-parcel discharges into Leach Creek.

Basin 3 is square in shape, and is bounded to the north by Corcoran Wash, to the south by G Road, to the west by Leach Creek. Agricultural land lies on the east side. This basin was also farmed last growing season. Corn rows and irrigation water ran from north to south. Drainage and tailwater discharged into Leach Creek via a pipe fed by an earthen ditch paralleling G Road.

Basin 1 is located due east of Basin 2. It will not be developed in Phase I of the Canyon View Park Project, and is thus excluded from this study.

POST DEVELOPMENT DRAINAGE PATTERNS:

Improvements to the site have divided it into nine major drainage basins. (See Plate 2). Three of the major basins are further divided into subbasins in order provide design information at intermediate points and to keep the subbasins as homogeneous as possible.

The east-west leg of Corcoran Wash has been relocated to the north. The new channel discharges into Leach Creek approximately 200 ft north of the former confluence.

Basin A (3 subbasins) is drained into Leach Creek by a network of pipes fed by area inlets. Subbasin A1 consists of the northwest Softball field and a small portion of the core area and half of the approach sidewalk. Runoff from this subbasin is intercepted by two surface channels, outfield v-pan A1 and foul line v-pan A1.(See Plate 2) Both of these channels discharge into MH-A1, and runoff is piped to MH-A2. Subbasin A2 is a narrow strip between the centerline of the approach sidewalk and foul line V-pan A2, also containing a small part of the core area. Runoff from this basin is conveyed to MH-A2 by foul line v-pan A2 where it combines with runoff from basin A1. The combined flow is then piped to MH-A3. Subbasin A3 consists of the northwest softball field parking lot and adjoining roadways. Runoff from this basin is collected by MH-A3, where it combines with the flow from the other subbasins and is discharged into Leach Creek.

Basin B (3 subbasins) is drained into Leach Creek by a network of pipes fed by area inlets and trench drains. Runoff from Subbasin B1 (Soccer fields) is collected by a trench drain (Trench/Pipe T1) that is underlain by a 12" PVC pipe for 70% of its length, (see Plate 3). It is then discharged into area inlet MH-B1 and piped to area inlet MH-B2. A short section of trench drain (Trench T2) discharges into MH-B2 here to drain the south part of the soccer field whose drainage is impeded by a raised berm. The combined flow is then piped to area inlet MH-B3. During Phase II construction, another trench drain/pipe combination (Trench/pipe T3) will tie in to MH-B3. The present analysis assumes this to occur in Phase I. The actual runoff from most of subbasin B2 will be directed to the ditch along G Road by a temporary drain channel,(see Plate 2). At MH-B4, the flow combines with runoff from the soccer field parking lot and adjoining roadway (subbasin B3). The discharge pipe from MH-B3 to Leach Creek will be sized to have adequate capacity to receive runoff from a future parking lot expansion.

Basin C (two subbasins) drains into Irrigation Pond #3 via an area inlet/pipe fed by surface channels. Subbasin C1 consists of one half of the softball core area. Runoff from this subbasin is piped from area inlets within the core area to the foul line drain pans. Subbasin C2 is the softball field between the two foul line drain pans. It sheet flows to the outfield drain pans where it combines with runoff from subbasin C1. The combined flow from basin C discharges into Irrigation Pond 3 and ultimately into Corcoran Wash.

Basin D contains one quarter of the core area and the grass strip between the two northern softball fields. This basin discharges into Irrigation Pond #2 through a pipe fed by a surface channel. Refer to Table 1 for a summary of the drainage structures to be constructed in basins A through D.

Basin E comprises the remaining area that drains into the Irrigation Ponds. It includes one softball field, Maintenance area and part of the maintenance road.

Peak runoff from Basins C,D, and E is attenuated by routing through the irrigation ponds. The three ponds are hydraulically connected and act as a single body of water. Discharge into Corcoran Wash is regulated by a weir located at the east end of Pond #1. Routing through the ponds is performed assuming a normal base flow of 7 cfs into and out of Pond 1. See Figures 5 and 6 for the Irrigation Pond's inflow/outflow hydrographs.

Basin F straddles the re-aligned Corcoran Wash, into which its runoff flows. It contains the Picnic Shelter, Volleyball courts and Kid's Play area, the latter two have subdrains which discharge into Corcoran Wash.

Basin G is the southernmost basin on this site. Runoff from this basin is southwesterly to a ditch along G Road which discharges into Leach Creek through an existing pipe in the Road Right-of-way.

Basin H is a strip of ground immediately west of the soccer field parking lot and includes the out-parcel near the Park entrance. Runoff from this basin discharges directly into Leach Creek.

Basin I is located immediately west of the softball field parking lot. Runoff from this basin also discharges directly into Leach Creek.

COMPARISON OF PRE AND POST DEVELOPMENT PHASE I RUNOFF

RESULTS:	100 YEAR PRE-DEVELOPED	100 YEAR POST-DEVELOPED
PEAK RUNOFF	**48.9 cfs**	**20.9 cfs**
TIME (hours)	12.50	12.20

	2 YEAR PRE-DEVELOPED	2 YEAR POST-DEVELOPED
PEAK RUNOFF	**2.61**	**0.76 cfs**
TIME (hours)	12.80	12.20

DISCUSSION:

The high runoff potential of the irrigated row crops found in the pre-development case has been reduced due to the post-development predominant ground cover being turf. The increase in impervious surfacing after development was not enough to increase runoff to the pre-development level when considering the overall site.

Since post-development runoff from this site is less than pre-development runoff, reduction of peak discharge by means of detention facilities is not required.

DRAINAGE STRUCTURE SUMMARY

BASIN A

STRUCTURE	100 YR. FLOW	DIM.	GOVERNING EQUATION	CAPACITY AS DESIGNED
Foul line V-pan A1	0.50	4" deep	Manning	1.37
Outfield V-pan A1	0.57	4" deep	Manning	0.79
Pipe A-1	1.07	8" dia	Inlet	2.56
Foul line V-pan A2	0.50	4" deep	Manning	1.37
Pipe A2	1.15	10" dia	Inlet	3.99
Pipe A3	7.10	18" dia	Inlet	13.63

BASIN B

STRUCTURE	100 YR. FLOW	DIM.	GOVERNING EQUATION	CAPACITY AS DESIGNED
Trench/pipe T1	1.92	12" dia	Manning	2.79
Pipe B1	1.92	12" dia	Outlet	5.05
Trench T2	0.3*	12" deep	Manning	0.98
Pipe B2	2.22	12" dia	Outlet	7.53
Trench/pipe t3**	2.39	12" dia	Manning	2:79
Pipe B3	4.31	12" dia	Outlet	7.47
Pipe B4	5.79	15" dia	Inlet	8.45
Pipe B5	9.57	18" dia	Inlet	17.93

* Estimated
** To be constructed during Phase II

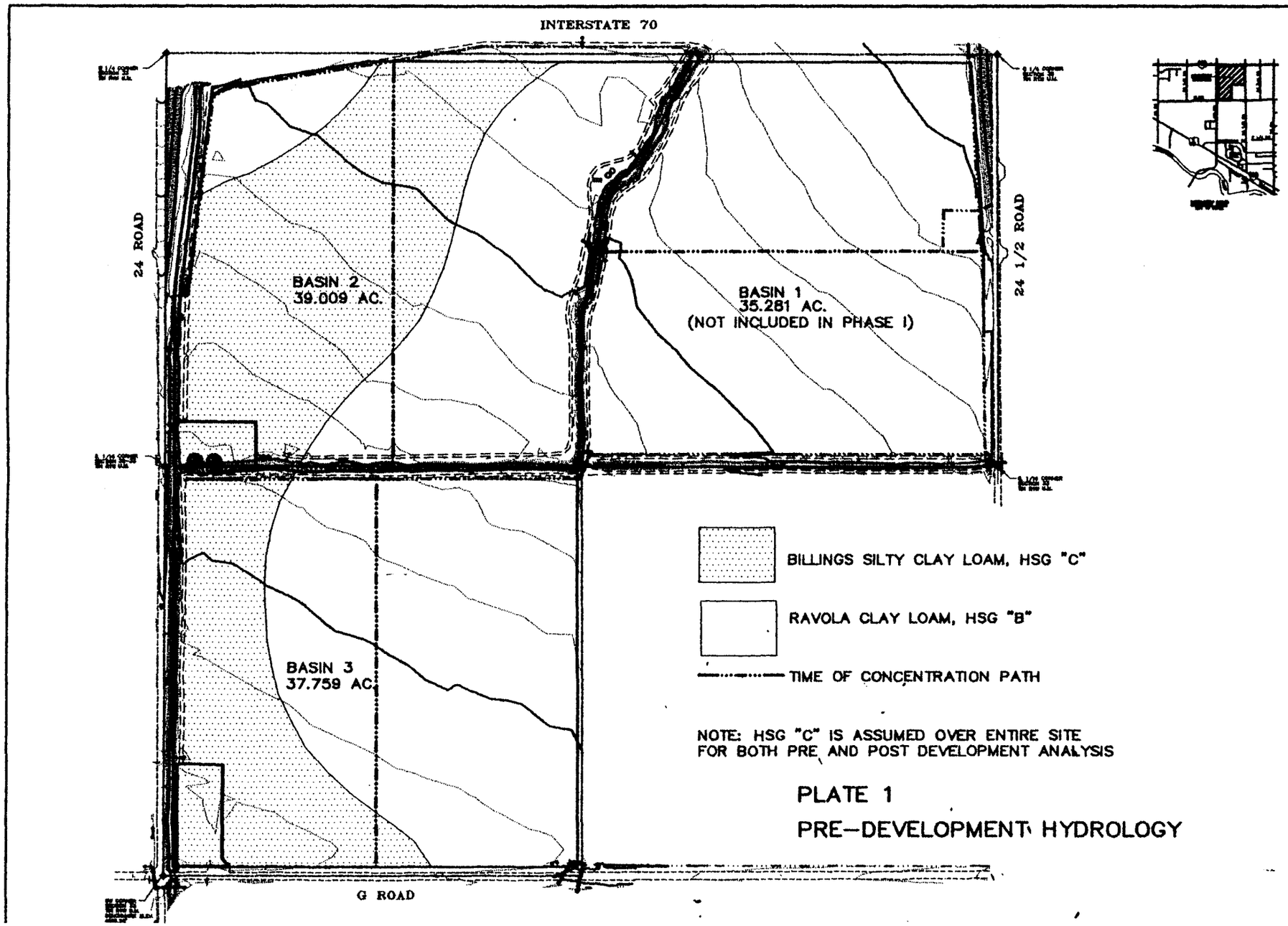
BASIN C

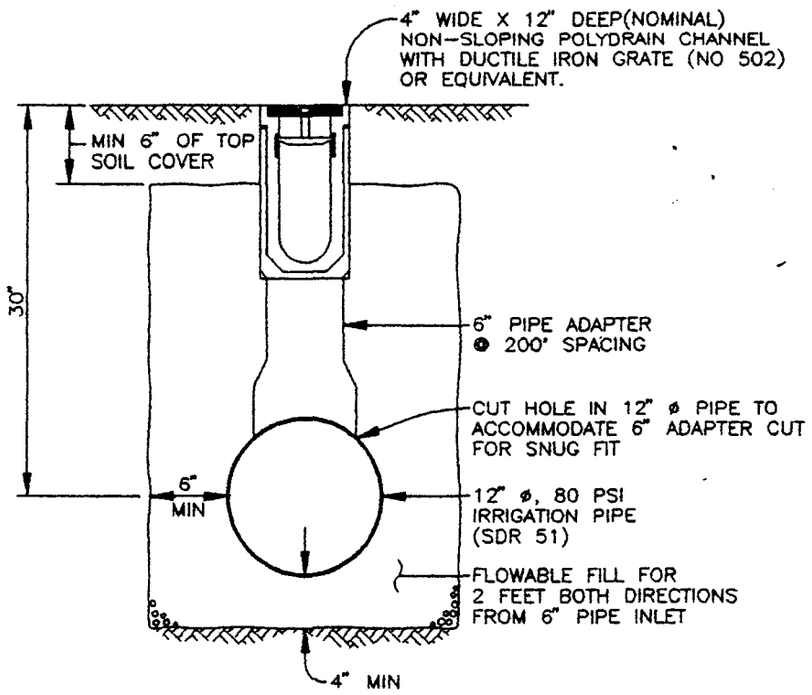
STRUCTURE	100 YR. FLOW	DIM.	GOVERNING EQUATION	CAPACITY AS DESIGNED
Foul line V-pans	0.56	4" deep	Manning	1.37
Outfield V-pans	0.76	6" deep	Manning	1.29
Discharge Pipe (C1)	1.52	10" dia	Inlet	3.32

BASIN D

STRUCTURE	100 YR. FLOW	DIM.	GOVERNING EQUATION	CAPACITY AS DESIGNED
Foul line V-pan	1.16	4" deep	Manning	1.37
Discharge Pipe (D1)	1.16	8" dia	Outlet	2.03

Table 1


INTERSTATE 70
24 ROAD
24 1/2 ROAD
G ROAD
BASIN 2
39.009 AC.
BASIN 1
35.281 AC.
(NOT INCLUDED IN PHASE I)
BASIN 3
37.759 AC.
BILLINGS SILTY CLAY LOAM, HSG "C"
RAVOLA CLAY LOAM, HSG "B"
TIME OF CONCENTRATION PATH
NOTE: HSG "C" IS ASSUMED OVER ENTIRE SITE
FOR BOTH PRE AND POST DEVELOPMENT ANALYSIS
PLATE 1
PRE-DEVELOPMENT HYDROLOGY



TRENCH/PIPE AT DRAIN INLET

NOT TO SCALE

PLATE 3

WESTERN ENGINEERS, INC.

PRE-DEVELOPMENT HYDROGRAPHS

CANYON VIEW PARK

SCS METHOD, PRE-DEV. 100YR, 24HR

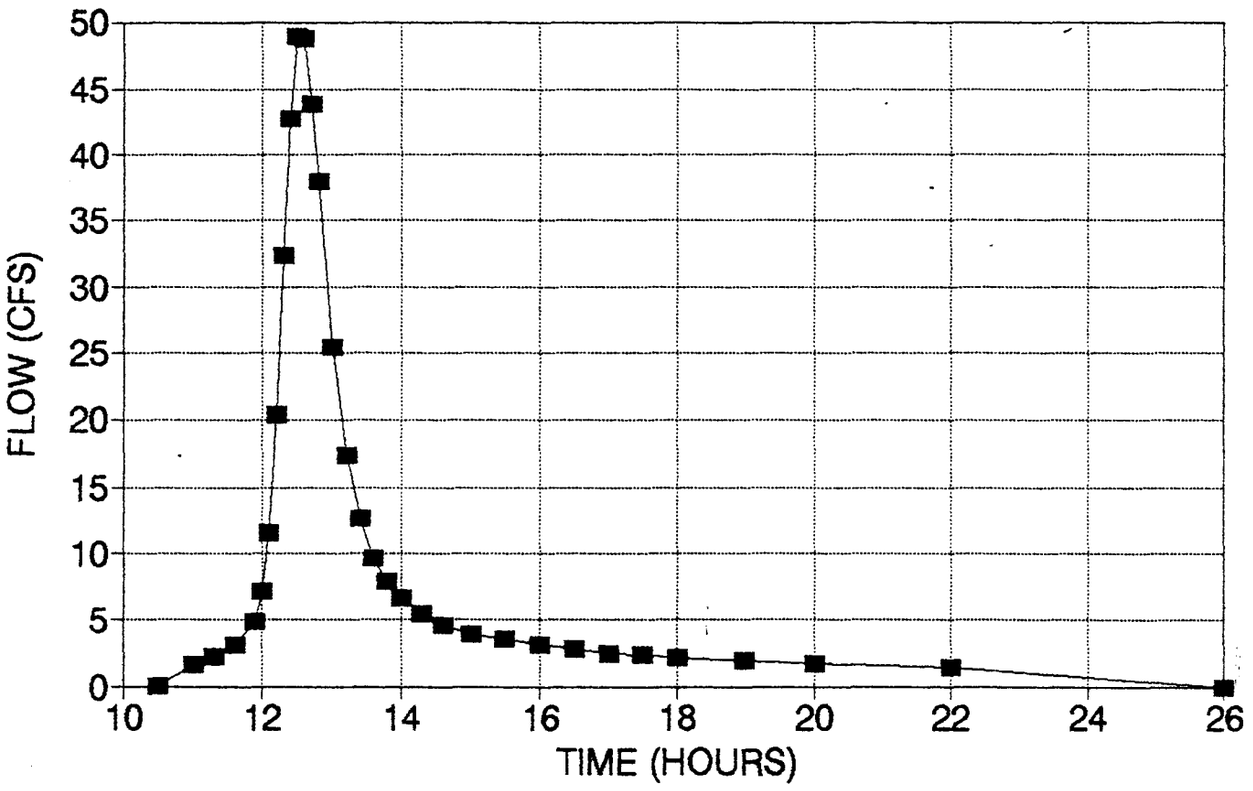


FIG. 1

CANYON VIEW PARK
100 YEAR PRE-DEVELOPMENT HYDROLOGY

TIME	BASIN 2 FLOW	BASIN 3 FLOW	TOTAL FLOW
10.50	0.00	0.00	0.00
11.00	0.91	0.75	1.66
11.30	1.25	1.03	2.28
11.60	1.71	1.38	3.09
11.90	2.89	2.07	4.95
12.00	4.44	2.64	7.08
12.10	7.67	3.90	11.58
12.20	13.70	6.60	20.31
12.30	21.24	11.14	32.38
12.40	25.83	16.88	42.71
12.50	27.09	21.82	48.91
12.60	24.39	24.35	48.74
12.70	20.32	23.54	43.86
12.80	16.81	21.19	38.00
13.00	10.97	14.47	25.44
13.20	7.50	9.88	17.38
13.40	5.56	7.06	12.62
13.60	4.38	5.34	9.72
13.80	3.65	4.25	7.89
14.00	3.12	3.50	6.63
14.30	2.62	2.81	5.44
14.60	2.26	2.35	4.61
15.00	1.97	2.01	3.98
15.50	1.77	1.78	3.55
16.00	1.57	1.55	3.12
16.50	1.39	1.38	2.77
17.00	1.27	1.26	2.53
17.50	1.19	1.15	2.34
18.00	1.13	1.09	2.22
19.00	0.97	0.98	1.95
20.00	0.85	0.86	1.72
22.00	0.71	0.69	1.40
26.00	0.00	0.00	0.00

TABLE 2

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

CANYON VIEW PARK MESA,CO JKE 07-25-95
PRE-DEVELOPMENT CONDITION, 100 YEAR STORM

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concentration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN2	.0608	88	.64	0	BASN3	2.01
BASN3	.059	88	.97			2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	12.2	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
BASN2	7	11	17	22	25	24	22	15	10	7
BASN3	4	6	10	13	17	19	21	18	14	10
TOTAL	11	17	27	35	42	43	43	33	24	17

Esc exit compute process Display earlier time Display later time

TABLE 3

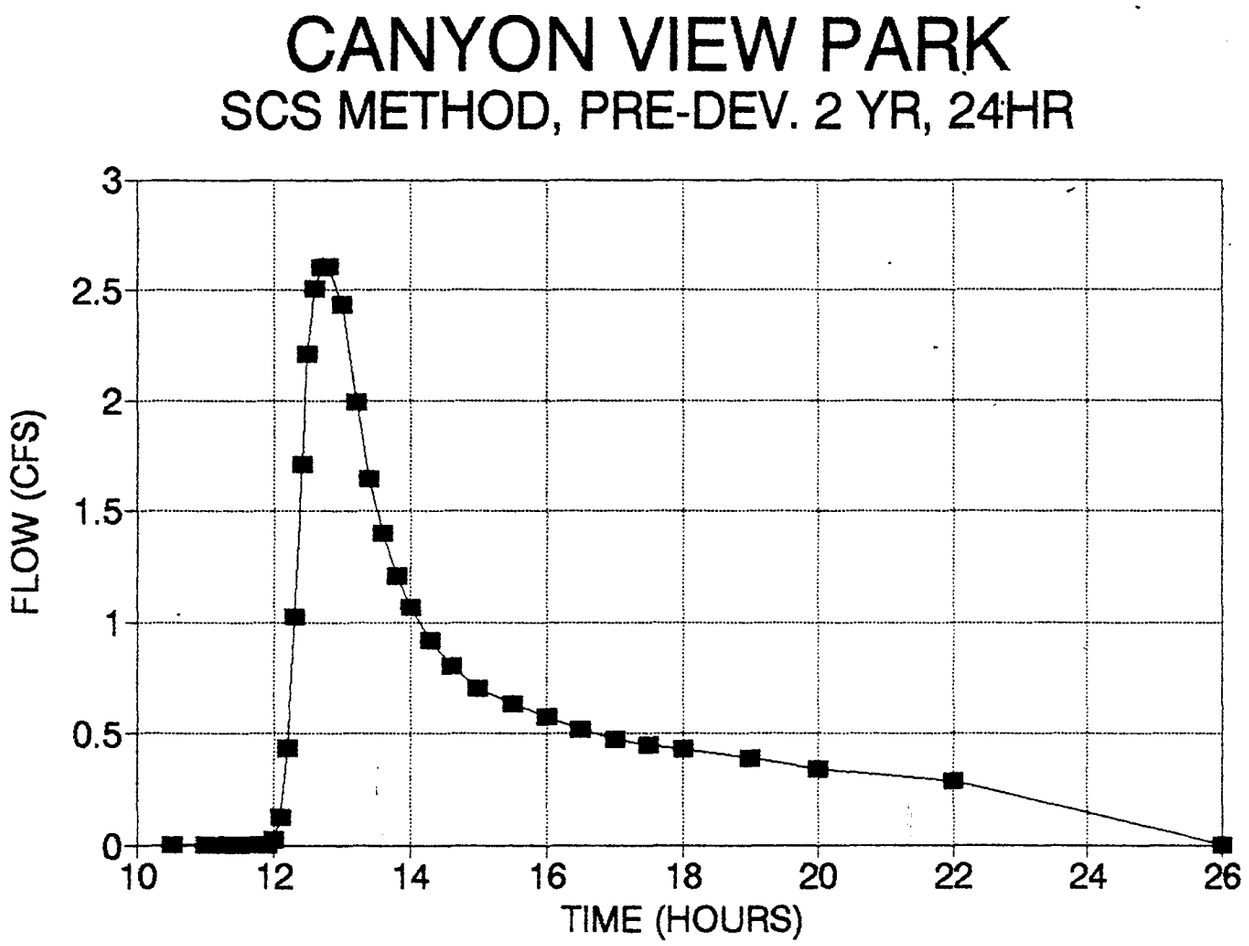

CANYON VIEW PARK
SCS METHOD, PRE-DEV. 2 YR, 24HR
FLOW (CFS)
3
2.5
2
1.5
1
0.5
0
10
12
14
16
18
20
22
24
26
TIME (HOURS)

FIG. 2

CANYON VIEW PARK
2 YEAR PRE-DEVELOPMENT HYDROLOGY

TIME	BASIN 2 FLOW	BASIN 3 FLOW	TOTAL FLOW
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.30	0.00	0.00	0.00
11.60	0.00	0.00	0.00
11.90	0.00	0.00	0.00
12.00	0.02	0.00	0.02
12.10	0.11	0.01	0.12
12.20	0.38	0.05	0.43
12.30	0.88	0.15	1.03
12.40	1.40	0.31	1.71
12.50	1.67	0.54	2.21
12.60	1.71	0.80	2.51
12.70	1.57	1.03	2.60
12.80	1.41	1.19	2.61
13.00	1.08	1.36	2.44
13.20	0.85	1.15	1.99
13.40	0.70	0.95	1.65
13.60	0.60	0.80	1.40
13.80	0.53	0.68	1.21
14.00	0.48	0.60	1.07
14.30	0.42	0.50	0.91
14.60	0.37	0.43	0.80
15.00	0.34	0.37	0.70
15.50	0.31	0.32	0.63
16.00	0.28	0.29	0.57
16.50	0.25	0.26	0.52
17.00	0.23	0.24	0.47
17.50	0.22	0.22	0.45
18.00	0.21	0.21	0.43
19.00	0.19	0.20	0.39
20.00	0.17	0.17	0.34
22.00	0.15	0.14	0.29

TABLE 3

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

CANYON VIEW PARK MESA,CO JKE 07-25-95
PRE-DEVELOPMENT CONDITION, 100 YEAR STORM

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN2	.0608	88	.64	....	BASN3	.7
BASN3	.059	88	.98	....	.....	.7
.....	.....	..	....	....	.....	.7
.....	.....	..	....	....	.....	.7
.....	.....	..	....	....	.....	.7
.....	.....	..	....	....	.....	.7
.....	.....	..	....	....	.....	.7
.....	.....	..	....	....	.....	.7
.....	.....	..	....	....	.....	.7
.....	.....	..	....	....	.....	.7

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN CAPS F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	12.2	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
BASN2	0	0	1	1	1	2	2	1	1	1
BASN3	0	0	0	1	1	1	1	1	1	1
TOTAL	0	0	1	2	2	3	3	2	2	2

Esc exit compute process Display earlier time Display later time

TABLE 4

POST-DEVELOPMENT HYDROGRAPHS

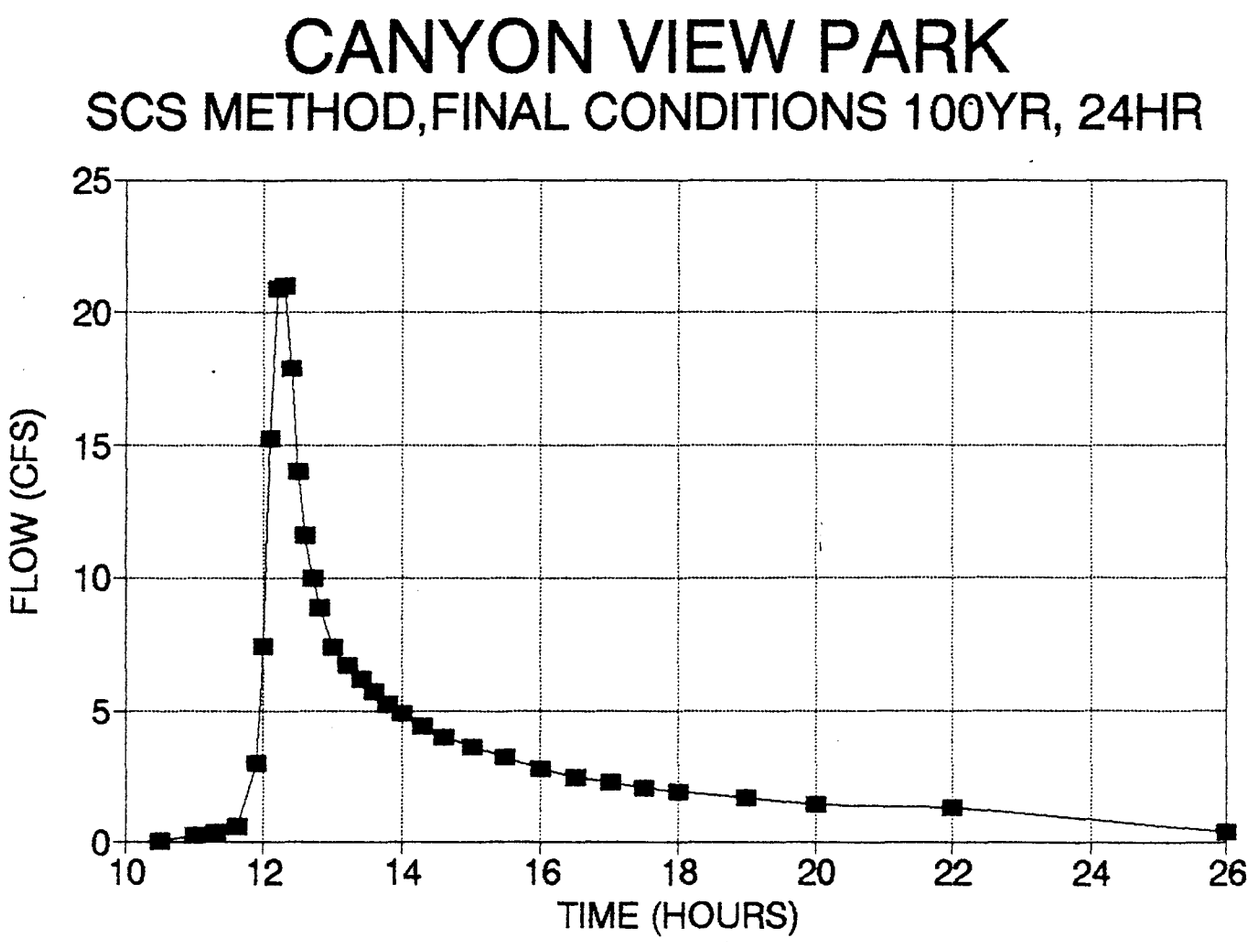

CANYON VIEW PARK
SCS METHOD,FINAL CONDITIONS 100YR, 24HR
FLOW (CFS)
25
20
15
10
5
0
10
12
14
16
18
20
22
24
26
TIME (HOURS)

FIG. 3

CANYON VIEW PARK
100 YEAR POST DEVELOPMENT HYDROLOGY SUMMARY

NOTE: THESE HYDROGRAPHS ARE NOT LAGGED BY THEIR TRAVEL TIMES.

TIME (hours)	BASIN A TOTAL (cfs)	BASIN B TOTAL (cfs)	IRRIG PONDS OUTFLOW (cfs)	BASIN F FLOW (cfs)	BASIN G FLOW (cfs)	BASIN H FLOW (cfs)	BASIN I FLOW (cfs)	GRAND TOTAL FLOW (cfs)
10.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.00	0.08	0.17	0.00	0.00	0.00	0.00	0.00	0.26
11.30	0.12	0.24	0.00	0.00	0.00	0.00	0.00	0.36
11.60	0.19	0.35	0.02	0.00	0.00	0.00	0.00	0.56
11.90	1.73	1.07	0.06	0.08	0.00	0.01	0.02	2.96
12.00	4.34	2.39	0.11	0.44	0.04	0.06	0.09	7.46
12.10	7.10	5.44	0.15	1.74	0.21	0.24	0.35	15.23
12.20	4.68	10.31	0.28	3.64	0.62	0.64	0.73	20.90
12.30	2.57	10.88	0.53	3.98	1.24	1.04	0.80	21.03
12.40	2.20	8.19	0.96	3.14	1.71	1.07	0.63	17.91
12.50	1.85	5.46	1.52	2.10	1.73	0.89	0.42	13.98
12.60	1.47	4.06	2.08	1.53	1.49	0.66	0.31	11.60
12.70	1.19	3.20	2.52	1.20	1.18	0.51	0.24	10.03
12.80	1.01	2.61	2.78	0.97	0.93	0.40	0.20	8.91
13.00	0.81	1.95	2.91	0.72	0.63	0.27	0.15	7.44
13.20	0.69	1.66	2.99	0.61	0.46	0.22	0.12	6.75
13.40	0.61	1.46	2.94	0.53	0.37	0.18	0.11	6.20
13.60	0.54	1.33	2.79	0.48	0.32	0.16	0.10	5.73
13.80	0.50	1.22	2.61	0.44	0.28	0.14	0.09	5.28
14.00	0.45	1.12	2.42	0.40	0.26	0.13	0.08	4.86
14.30	0.41	0.99	2.25	0.35	0.22	0.12	0.07	4.41
14.60	0.38	0.91	2.00	0.33	0.20	0.11	0.07	3.99
15.00	0.35	0.86	1.78	0.30	0.18	0.10	0.06	3.64
15.50	0.31	0.78	1.53	0.28	0.17	0.09	0.06	3.22
16.00	0.28	0.69	1.29	0.25	0.15	0.08	0.05	2.79
16.50	0.25	0.63	1.10	0.22	0.13	0.07	0.04	2.46
17.00	0.24	0.60	0.95	0.21	0.12	0.07	0.04	2.23
17.50	0.23	0.57	0.82	0.20	0.12	0.06	0.04	2.04
18.00	0.22	0.54	0.72	0.19	0.11	0.06	0.04	1.89
19.00	0.19	0.48	0.64	0.17	0.10	0.05	0.03	1.67
20.00	0.16	0.41	0.54	0.15	0.09	0.05	0.03	1.42
22.00	0.15	0.38	0.47	0.13	0.07	0.04	0.03	1.27
26.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.37

TABLE 5

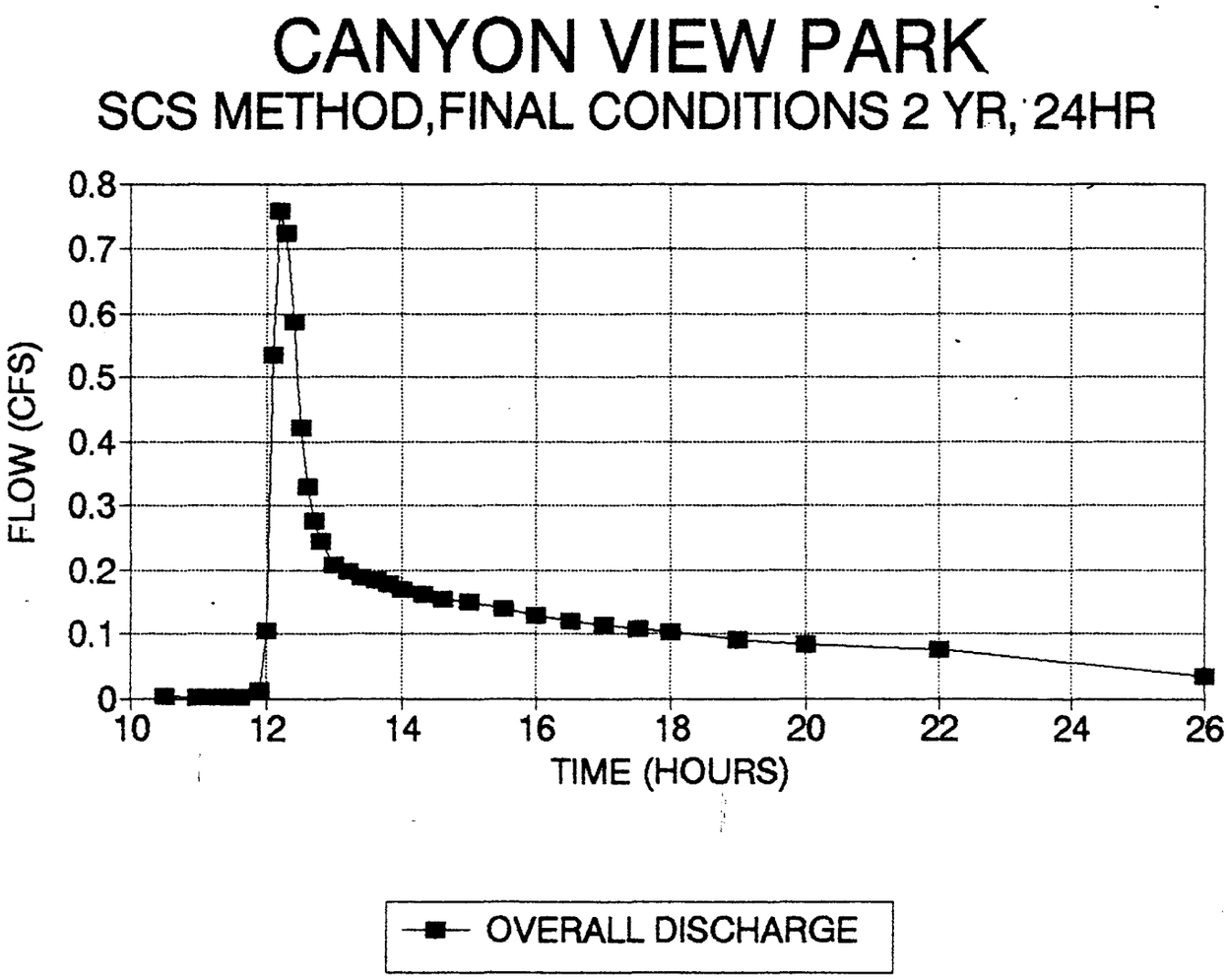

CANYON VIEW PARK
SCS METHOD,FINAL CONDITIONS 2 YR, 24HR
FLOW (CFS)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
10
12
14
16
18
20
22
24
26
TIME (HOURS)
OVERALL DISCHARGE

FIG. 4

CANYON VIEW PARK
2 YEAR POST DEVELOPMENT HYDROLOGY SUMMARY

NOTE: THESE HYDROGRAPHS ARE NOT LAGGED BY THEIR TRAVEL TIMES.

TIME (hours)	BASIN A TOTAL (cfs)	BASIN B TOTAL (cfs)	IRRIG PONDS OUTFLOW (cfs)	BASIN F FLOW (cfs)	BASIN G FLOW (cfs)	BASIN H FLOW (cfs)	BASIN I FLOW (cfs)	GRAND TOTAL FLOW (cfs)
10.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11.90	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
12.00	0.03	0.07	0.00	0.00	0.00	0.00	0.00	0.10
12.10	0.26	0.27	0.00	0.00	0.00	0.00	0.00	0.53
12.20	0.19	0.57	0.00	0.00	0.00	0.00	0.00	0.76
12.30	0.10	0.62	0.00	0.00	0.00	0.00	0.00	0.72
12.40	0.09	0.49	0.01	0.00	0.00	0.00	0.00	0.59
12.50	0.08	0.33	0.01	0.00	0.00	0.00	0.00	0.42
12.60	0.07	0.24	0.02	0.00	0.00	0.00	0.00	0.33
12.70	0.06	0.19	0.02	0.00	0.00	0.00	0.00	0.28
12.80	0.06	0.15	0.03	0.00	0.00	0.00	0.00	0.24
13.00	0.05	0.11	0.04	0.00	0.00	0.00	0.00	0.21
13.20	0.05	0.10	0.05	0.00	0.00	0.00	0.00	0.20
13.40	0.04	0.08	0.06	0.00	0.00	0.00	0.00	0.19
13.60	0.04	0.08	0.06	0.00	0.00	0.00	0.00	0.18
13.80	0.04	0.07	0.07	0.00	0.00	0.00	0.00	0.18
14.00	0.03	0.06	0.07	0.00	0.00	0.00	0.00	0.17
14.30	0.03	0.06	0.07	0.00	0.00	0.00	0.00	0.16
14.60	0.03	0.05	0.07	0.00	0.00	0.00	0.00	0.15
15.00	0.03	0.05	0.07	0.00	0.00	0.00	0.00	0.15
15.50	0.03	0.04	0.07	0.00	0.00	0.00	0.00	0.14
16.00	0.02	0.04	0.06	0.00	0.00	0.00	0.00	0.13
16.50	0.02	0.03	0.06	0.00	0.00	0.00	0.00	0.12
17.00	0.02	0.03	0.06	0.00	0.00	0.00	0.00	0.11
17.50	0.02	0.03	0.05	0.00	0.00	0.00	0.00	0.11
18.00	0.02	0.03	0.05	0.00	0.00	0.00	0.00	0.10
19.00	0.02	0.03	0.05	0.00	0.00	0.00	0.00	0.09
20.00	0.02	0.02	0.04	0.00	0.00	0.00	0.00	0.08
22.00	0.01	0.02	0.04	0.00	0.00	0.00	0.00	0.08
26.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.03

TABLE 6

IRRIGATION PONDS
INFLOW/OUTFLOW HYDROGRAPHS

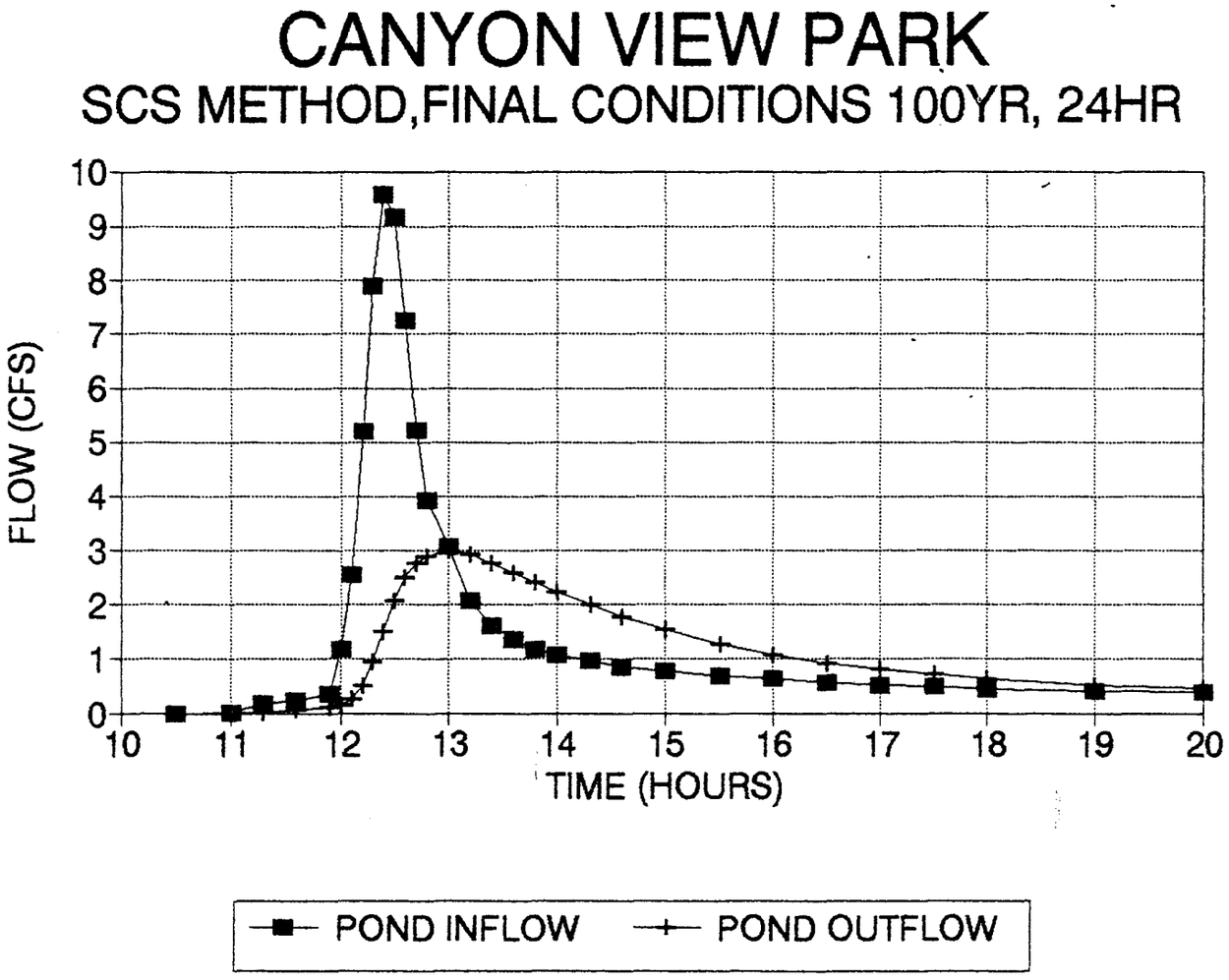

CANYON VIEW PARK
SCS METHOD,FINAL CONDITIONS 100YR, 24HR
FLOW (CFS)
0
1
2
3
4
5
6
7
8
9
10
10
11
12
13
14
15
16
17
18
19
20
TIME (HOURS)
POND INFLOW
POND OUTFLOW

FIG. 5

DETENTION BASIN RATING:

BASIN RATING (ONLY 6 PTS

DEPTH	VOLUME
0	0
0.1	16760
0.2	33773
0.3	51162
0.4	68915
0.5	87049

DISCHARGE RATING:
(6 POINTS ONLY)

DEPTH	FLOW
0	0.00
0.1	3.45
0.2	3.84
0.3	4.25
0.4	4.50
0.5	4.88

100 YEAR STORM
IRRIGATION LAKES INFLOW
SUM OF BASINS C1,C2,D, AND E

TIME (HOURS)	BSN C1 INFLOW (cfs)	BSN C2 INFLOW (cfs)	BSN D INFLOW (cfs)	BSN E INFLOW (cfs)	TOTAL PONDS INFLOW (cfs)	INCREMENT INFLOW VOLUME (CU FT)	INITIAL WATER ELEVATION	INITIAL STORAGE VOLUME (CU FT)	INITIAL OUTFLOW (CFS)	FINAL STORAGE VOLUME (CU FT)	FINAL WATER ELEVATIO	FINAL OUTFLOW (CFS)
10.50	0.00	0.00	0.00	0.00	0.00			0.00	0.00		0.000	0.000
11.00	0.00	0.00	0.00	0.00	0.00	2.70	0.000	0.00	0.00	2	0.000	0.000
11.30	0.03	0.00	0.01	0.13	0.18	98.96	0.000	2.28	0.00	91	0.001	0.019
11.60	0.04	0.00	0.02	0.17	0.23	224.00	0.001	90.88	0.02	274	0.002	0.056
11.90	0.07	0.00	0.03	0.27	0.36	323.69	0.002	274.29	0.06	511	0.003	0.105
12.00	0.29	0.01	0.29	0.60	1.19	279.66	0.003	510.72	0.11	744	0.004	0.153
12.10	0.56	0.04	0.72	1.24	2.56	674.91	0.004	743.88	0.15	1342	0.008	0.276
12.20	1.02	0.16	1.16	2.86	5.20	1396.40	0.008	1341.52	0.28	2592	0.015	0.534
12.30	1.11	0.41	0.68	5.69	7.89	2355.44	0.015	2592.17	0.53	4678	0.028	0.963
12.40	0.67	0.66	0.26	7.99	9.57	3142.49	0.028	4678.22	0.96	7374	0.044	1.518
12.50	0.35	0.68	0.19	7.96	9.18	3374.74	0.044	7374.14	1.52	10101	0.060	2.079
12.60	0.23	0.57	0.16	6.29	7.25	2956.50	0.060	10101.37	2.08	12230	0.073	2.518
12.70	0.18	0.42	0.14	4.50	5.23	2246.32	0.073	12230.42	2.52	13523	0.081	2.784
12.80	0.14	0.32	0.11	3.35	3.93	1649.36	0.081	13522.53	2.78	14147	0.084	2.912
13.00	0.12	0.26	0.10	2.60	3.08	2522.41	0.084	14146.67	2.91	14543	0.087	2.994
13.20	0.10	0.17	0.09	1.72	2.08	1857.49	0.087	14543.04	2.99	14266	0.085	2.937
13.40	0.08	0.14	0.08	1.32	1.62	1332.70	0.085	14265.66	2.94	13538	0.081	2.787
13.60	0.07	0.12	0.07	1.10	1.36	1071.35	0.081	13537.97	2.79	12667	0.076	2.608
13.80	0.07	0.10	0.06	0.96	1.20	918.65	0.076	12667.37	2.61	11775	0.070	2.424
14.00	0.06	0.09	0.06	0.86	1.08	817.84	0.070	11774.73	2.42	10911	0.065	2.246
14.30	0.06	0.08	0.05	0.78	0.98	1108.07	0.065	10911.42	2.25	9726	0.058	2.002
14.60	0.05	0.07	0.05	0.69	0.86	989.38	0.058	9725.54	2.00	8670	0.052	1.785
15.00	0.05	0.07	0.05	0.62	0.78	1176.76	0.052	8670.10	1.78	7457	0.044	1.535
15.50	0.04	0.06	0.04	0.57	0.71	1340.44	0.044	7456.72	1.53	6257	0.037	1.288
16.00	0.04	0.06	0.04	0.51	0.65	1221.72	0.037	6256.60	1.29	5331	0.032	1.097
16.50	0.03	0.05	0.03	0.46	0.58	1103.00	0.032	5331.48	1.10	4595	0.027	0.946
17.00	0.03	0.05	0.03	0.41	0.52	985.35	0.027	4595.40	0.95	3990	0.024	0.821
17.50	0.03	0.04	0.03	0.39	0.49	902.16	0.024	3990.16	0.82	3504	0.021	0.721
18.00	0.03	0.04	0.03	0.37	0.46	851.82	0.021	3503.94	0.72	3127	0.019	0.644
19.00	0.02	0.04	0.03	0.34	0.43	1605.43	0.019	3127.25	0.64	2608	0.016	0.537
20.00	0.02	0.03	0.02	0.31	0.39	1472.23	0.016	2607.73	0.54	2272	0.014	0.468
22.00	0.02	0.03	0.02	0.26	0.33	2564.24	0.014	2271.92	0.47	1811	0.011	0.373
26.00	0.02	0.03	0.02	0.23	0.29	4458.67	0.011	1810.72	0.37	1445	0.009	0.297

TABLE 7

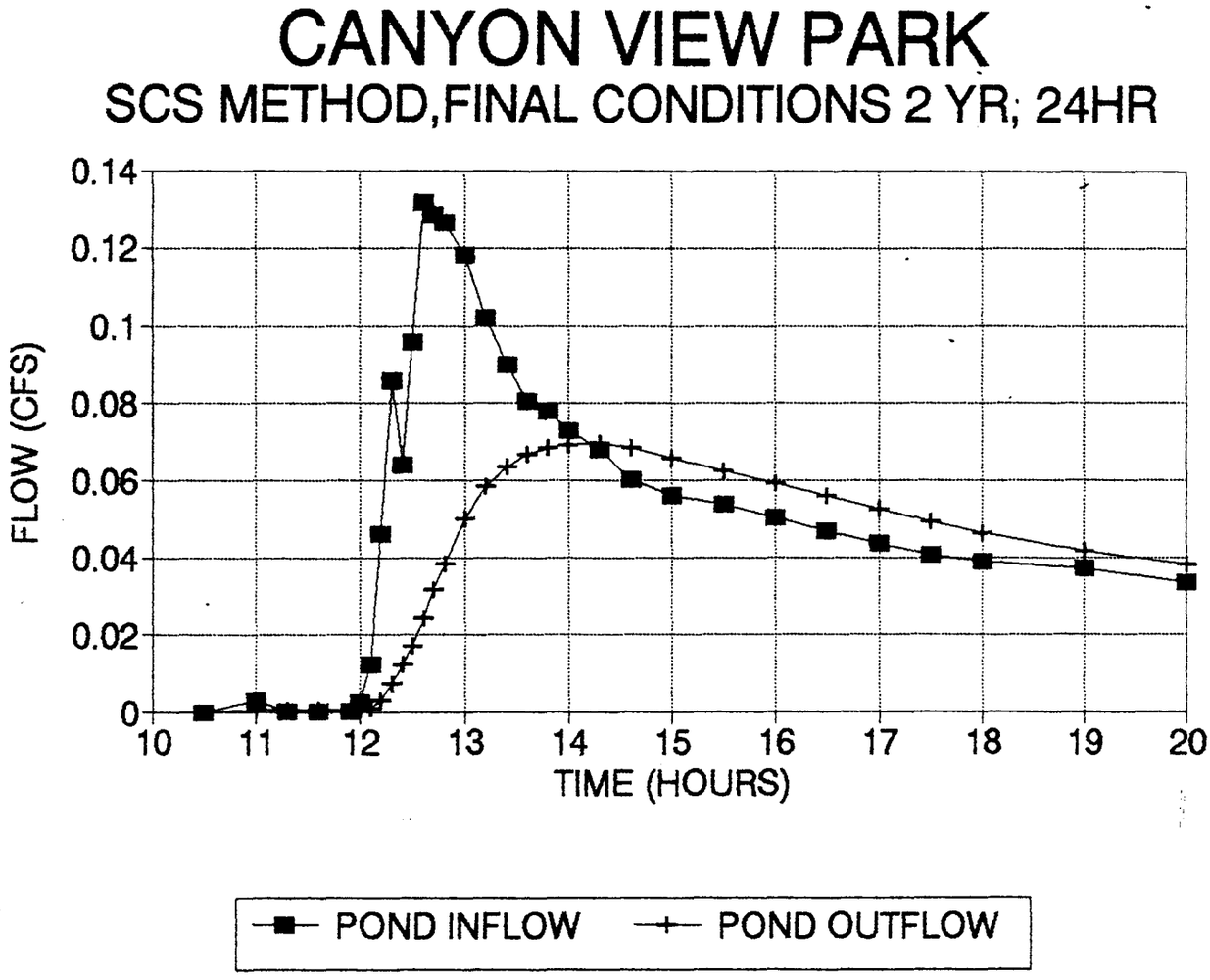

CANYON VIEW PARK
SCS METHOD,FINAL CONDITIONS 2 YR; 24HR
FLOW (CFS)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
10
11
12
13
14
15
16
17
18
19
20
TIME (HOURS)
POND INFLOW
POND OUTFLOW

FIG. 6

DETENTION BASIN RATING:

BASIN RATING (ONLY 6 POI

DEPTH	VOLUME
0	0
0.1	16760
0.2	33773
0.3	51162
0.4	68915
0.5	87049

DISCHARGE RATING:
(6 POINTS ONLY)

DEPTH	FLOW
0	0.00
0.1	3.45
0.2	3.84
0.3	4.25
0.4	4.50
0.5	4.88

IRRIGATION LAKES INFLOW
SUM OF BASINS C1,C2,D, AND E
2 YEAR STORM

TIME (HOURS)	BSN C1 INFLOW (cfs)	BSN C2 INFLOW (cfs)	BSN D INFLOW (cfs)	BSN E INFLOW (cfs)	TOTAL PONDS INFLOW (cfs)	INCREMENT INFLOW VOLUME (CU FT)	INITIAL WATER ELEVATION	INITIAL STORAGE VOLUME (CU FT)	INITIAL OUTFLOW (CFS)	FINAL STORAGE VOLUME (CU FT)	FINAL WATER ELEVATION	FINAL OUTFLOW (CFS)
10.50	0.00	0.00	0.00	0.00	0.00			0.00	0.00		0.000	0.000
11.00	0.00	0.00	0.00	0.00	0.00	2.70	0.000	0.00	0.00	2	0.000	0.000
11.30	0.00	0.00	0.00	0.00	0.00	1.62	0.000	2.28	0.00	3	0.000	0.001
11.60	0.00	0.00	0.00	0.00	0.00	0.00	0.000	3.28	0.00	3	0.000	0.001
11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.000	2.62	0.00	2	0.000	0.000
12.00	0.00	0.00	0.00	0.00	0.00	0.46	0.000	2.10	0.00	2	0.000	0.000
12.10	0.01	0.00	0.00	0.00	0.01	2.68	0.000	2.40	0.00	5	0.000	0.001
12.20	0.04	0.00	0.00	0.00	0.05	10.52	0.000	4.81	0.00	15	0.000	0.003
12.30	0.07	0.00	0.02	0.00	0.09	23.74	0.000	14.61	0.00	36	0.000	0.008
12.40	0.05	0.00	0.01	0.00	0.06	26.94	0.000	36.46	0.01	60	0.000	0.012
12.50	0.03	0.00	0.01	0.05	0.10	28.82	0.000	59.84	0.01	83	0.000	0.017
12.60	0.03	0.00	0.01	0.10	0.13	41.10	0.000	83.35	0.02	117	0.001	0.024
12.70	0.02	0.00	0.01	0.10	0.13	46.97	0.001	117.03	0.02	154	0.001	0.032
12.80	0.02	0.00	0.01	0.10	0.13	45.97	0.001	153.96	0.03	187	0.001	0.039
13.00	0.02	0.00	0.01	0.10	0.12	88.14	0.001	187.28	0.04	243	0.001	0.050
13.20	0.01	0.00	0.01	0.08	0.10	79.45	0.001	243.49	0.05	284	0.002	0.058
13.40	0.01	0.00	0.00	0.07	0.09	69.29	0.002	283.86	0.06	309	0.002	0.064
13.60	0.01	0.00	0.00	0.07	0.08	61.45	0.002	309.21	0.06	324	0.002	0.067
13.80	0.01	0.00	0.00	0.06	0.08	57.12	0.002	323.75	0.07	332	0.002	0.068
14.00	0.01	0.00	0.00	0.06	0.07	54.37	0.002	332.26	0.07	337	0.002	0.069
14.30	0.01	0.00	0.00	0.06	0.07	76.05	0.002	337.04	0.07	338	0.002	0.070
14.60	0.01	0.00	0.00	0.05	0.06	69.33	0.002	338.06	0.07	333	0.002	0.069
15.00	0.01	0.00	0.00	0.05	0.06	83.79	0.002	332.82	0.07	320	0.002	0.066
15.50	0.01	0.00	0.00	0.04	0.05	98.90	0.002	319.88	0.07	303	0.002	0.062
16.00	0.01	0.00	0.00	0.04	0.05	93.97	0.002	303.33	0.06	288	0.002	0.059
16.50	0.01	0.00	0.00	0.04	0.05	87.49	0.002	287.79	0.06	272	0.002	0.056
17.00	0.01	0.00	0.00	0.04	0.04	81.32	0.002	271.64	0.06	255	0.002	0.053
17.50	0.00	0.00	0.00	0.03	0.04	75.62	0.002	255.33	0.05	239	0.001	0.049
18.00	0.00	0.00	0.00	0.03	0.04	71.34	0.001	239.31	0.05	225	0.001	0.046
19.00	0.00	0.00	0.00	0.03	0.04	136.63	0.001	224.69	0.05	203	0.001	0.042
20.00	0.00	0.00	0.00	0.03	0.03	127.34	0.001	202.90	0.04	186	0.001	0.038
22.00	0.00	0.00	0.00	0.02	0.03	229.61	0.001	186.10	0.04	160	0.001	0.033
26.00	0.00	0.00	0.00	0.02	0.03	421.17	0.001	159.56	0.03	139	0.001	0.029

TABLE 8

100 YEAR, POST DEVELOPMENT

INDIVIDUAL BASIN HYDROGRAPHS

BASIN A SUMMARY

TIME (hours)	BASIN A-1 FLOW (cfs)	BASIN A-2 FLOW (cfs)	BASIN A-3 FLOW (cfs)	BASIN A TOTAL (cfs)
10.50	0.00	0.00	0.00	0.00
11.00	0.00	0.01	0.08	0.08
11.30	0.00	0.01	0.11	0.12
11.60	0.00	0.01	0.17	0.19
11.90	0.01	0.13	1.59	1.73
12.00	0.06	0.31	3.97	4.34
12.10	0.25	0.50	6.36	7.10
12.20	0.64	0.29	3.75	4.68
12.30	1.04	0.11	1.42	2.57
12.40	1.07	0.08	1.04	2.20
12.50	0.90	0.07	0.89	1.85
12.60	0.66	0.06	0.75	1.47
12.70	0.51	0.05	0.63	1.19
12.80	0.40	0.04	0.57	1.01
13.00	0.28	0.04	0.50	0.81
13.20	0.22	0.03	0.43	0.69
13.40	0.18	0.03	0.39	0.61
13.60	0.16	0.03	0.36	0.54
13.80	0.15	0.03	0.33	0.50
14.00	0.13	0.02	0.30	0.45
14.30	0.12	0.02	0.27	0.41
14.60	0.11	0.02	0.25	0.38
15.00	0.10	0.02	0.23	0.35
15.50	0.09	0.02	0.21	0.31
16.00	0.08	0.01	0.19	0.28
16.50	0.07	0.01	0.17	0.25
17.00	0.07	0.01	0.16	0.24
17.50	0.06	0.01	0.15	0.23
18.00	0.06	0.01	0.15	0.22
19.00	0.05	0.01	0.13	0.19
20.00	0.05	0.01	0.11	0.16
22.00	0.04	0.01	0.10	0.15
26.00	0.00	0.00	0.00	0.00

TABLE 9

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concentration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
A1+2	.0058	77	.372			2.01
A3	.008	86	.11			2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.0	11.3	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5
A1+2	0	0	0	0	0	0	1	1	1	1
A3	0	0	0	2	4	7	4	1	1	1
TOTAL	0	0	0	2	4	7	5	2	2	2

Esc exit compute process Display earlier time Display later time

TABLE 10

BASIN B SUMMARY

TIME (hours)	BASIN B-1 FLOW (cfs)	BASIN B-2 FLOW (cfs)	BASIN B-3 FLOW (cfs)	BASIN B TOTAL (cfs)
10.50	0.00	0.00	0.00	0.00
11.00	0.00	0.00	0.17	0.17
11.30	0.00	0.00	0.24	0.24
11.60	0.00	0.00	0.35	0.35
11.90	0.01	0.01	1.01	1.03
12.00	0.07	0.08	2.01	2.16
12.10	0.31	0.39	3.83	4.53
12.20	0.92	1.15	5.79	7.86
12.30	1.68	2.09	5.79	9.57
12.40	1.92	2.39	3.93	8.24
12.50	1.74	2.16	2.42	6.33
12.60	1.35	1.67	1.68	4.70
12.70	1.09	1.35	1.25	3.70
12.80	0.91	1.13	0.98	3.01
13.00	0.66	0.82	0.69	2.17
13.20	0.54	0.67	0.57	1.78
13.40	0.47	0.58	0.49	1.54
13.60	0.42	0.52	0.44	1.38
13.80	0.38	0.48	0.39	1.26
14.00	0.35	0.44	0.36	1.15
14.30	0.31	0.39	0.32	1.02
14.60	0.29	0.36	0.28	0.93
15.00	0.27	0.34	0.27	0.88
15.50	0.25	0.31	0.24	0.79
16.00	0.23	0.29	0.21	0.73
16.50	0.20	0.25	0.19	0.64
17.00	0.19	0.24	0.17	0.60
17.50	0.18	0.23	0.16	0.57
18.00	0.17	0.22	0.15	0.54
19.00	0.16	0.19	0.14	0.49
20.00	0.14	0.17	0.11	0.41
22.00	0.12	0.15	0.10	0.38
26.00	0.00	0.00	0.00	0.00

TABLE 11

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
B1····	.0145	74	.412	.021	B2····	2.01
B2····	.0182	74	.382	.011	B3····	2.01
B3····	.0079	90	.275	····	·····	2.01
·····	·····	··	····	····	·····	2.01
·····	·····	··	····	····	·····	2.01
·····	·····	··	····	····	·····	2.01
·····	·····	··	····	····	·····	2.01
·····	·····	··	····	····	·····	2.01
·····	·····	··	····	····	·····	2.01
·····	·····	··	····	····	·····	2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7
B1	0	0	0	0	1	2	2	2	1	1
B2	0	0	0	1	2	3	3	2	2	1
B3	0	1	2	4	6	6	4	2	2	1
TOTAL	0	1	2	5	9	11	9	6	5	3

Esc exit compute process Display earlier time Display later time

TABLE 12

0 BASIN C SUMMARY Tc=.2 HR.Tc=.4 HR.

TIME (HOURS)	BASIN C1 INFLOW (CFS)	BASIN C2 INFLOW (CFS)	SUMMARY BASIN C INFLOW (CFS)
10.50	0.00	0.00	0.00
11.00	0.03	0.00	0.03
11.30	0.04	0.00	0.04
11.60	0.07	0.00	0.07
11.90	0.29	0.01	0.30
12.00	0.56	0.04	0.59
12.10	1.02	0.16	1.18
12.20	1.11	0.41	1.52
12.30	0.67	0.66	1.33
12.40	0.35	0.68	1.03
12.50	0.23	0.57	0.80
12.60	0.18	0.42	0.60
12.70	0.14	0.32	0.46
12.80	0.12	0.26	0.37
13.00	0.10	0.17	0.27
13.20	0.08	0.14	0.22
13.40	0.07	0.12	0.19
13.60	0.07	0.10	0.17
13.80	0.06	0.09	0.15
14.00	0.06	0.08	0.14
14.30	0.05	0.07	0.12
14.60	0.05	0.07	0.11
15.00	0.04	0.06	0.10
15.50	0.04	0.06	0.09
16.00	0.03	0.05	0.08

TABLE 13

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BSN C1	.0015	87	.203	....	BSN C2	2.01
BSN C2	.0033	76	.362	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN CAPS F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7
BSN C1	0	0	0	1	1	1	0	0	0	0
BSN C2	0	0	0	0	0	1	1	1	0	0
TOTAL	0	0	0	1	1	2	1	1	0	0

Esc exit compute process Display earlier time Display later time

TABLE 14

BASIN D 100 yr
Ia/P = .2
SCS TR 20: FOR Tc=0.1,

AREA (SQ MI)	CN
0.00179	82.19

TIME (HOURS)	INFLOW (CFS)
10.50	0.00
11.00	0.01
11.30	0.02
11.60	0.03
11.90	0.29
12.00	0.72
12.10	1.16
12.20	0.68
12.30	0.26
12.40	0.19
12.50	0.16
12.60	0.14
12.70	0.11
12.80	0.10
13.00	0.09
13.20	0.08
13.40	0.07
13.60	0.06
13.80	0.06
14.00	0.05
14.30	0.05
14.60	0.05
15.00	0.04
15.50	0.04
16.00	0.03
16.50	0.03
17.00	0.03
17.50	0.03
18.00	0.03
19.00	0.02
20.00	0.02
22.00	0.02
26.00	0.00

TABLE 15

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN D	.0018	82	.1			2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01
						2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.0	11.3	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5
BASN D	0	0	0	0	1	1	1	0	0	0
TOTAL	0	0	0	0	1	1	1	0	0	0

Esc exit compute process Display earlier time Display later time

TABLE 16

BASIN E 100 yr

Ia/P = .2
SCS TR 20: FOR Tc=0.4,

AREA (SQ MI)	CN
0.0221	82.41

TIME (HOURS)	INFLOW (CFS)
10.5	0.00
11.0	0.13
11.3	0.17
11.6	0.27
11.9	0.60
12.0	1.24
12.1	2.86
12.2	5.69
12.3	7.99
12.4	7.96
12.5	6.29
12.6	4.50
12.7	3.35
12.8	2.60
13.0	1.72
13.2	1.32
13.4	1.10
13.6	0.96
13.8	0.86
14.0	0.78
14.3	0.69
14.6	0.62
15.0	0.57
15.5	0.51
16.0	0.46
16.5	0.41
17.0	0.39
17.5	0.37
18.0	0.34
19.0	0.31
20.0	0.26
22.0	0.23
26.0	0.00

TABLE 17

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN E	.0221	82	.38	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7
BASN E	0	0	1	3	5	8	8	6	4	3
TOTAL	0	0	1	3	5	8	8	6	4	3

Esc exit compute process Display earlier time Display later time

TABLE 18

BASIN F 100 yr

Ia/P = .3
SCS TR 20: FOR Tc=0.4,

AREA (SQ MI)	CN
0.0181	74.9

TIME (HOURS)	INFLOW (CFS)
10.50	0.00
11.00	0.00
11.30	0.00
11.60	0.00
11.90	0.03
12.00	0.18
12.10	0.78
12.20	2.05
12.30	3.32
12.40	3.43
12.50	2.86
12.60	2.12
12.70	1.62
12.80	1.29
13.00	0.88
13.20	0.69
13.40	0.58
13.60	0.51
13.80	0.46
14.00	0.42
14.30	0.37
14.60	0.34
15.00	0.31
15.50	0.28
16.00	0.26
16.50	0.23
17.00	0.21
17.50	0.20
18.00	0.19
19.00	0.17
20.00	0.15
22.00	0.13
26.00	0.00

TABLE 19

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN F	.0181	75	.38	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7
BASN F	0	0	0	1	2	3	3	3	2	2
TOTAL	0	0	0	1	2	3	3	3	2	2

Esc exit compute process Display earlier time Display later time

TABLE 20

BASIN G 100 yr

Ia/P = .3
SCS TR 20: FOR Tc=0.6,

AREA (SQ MI)	CN
0.0108	74.33

TIME (HOURS)	INFLOW (CFS)
10.50	0.00
11.00	0.00
11.30	0.00
11.60	0.00
11.90	0.00
12.00	0.02
12.10	0.13
12.20	0.42
12.30	0.88
12.40	1.30
12.50	1.46
12.60	1.41
12.70	1.25
12.80	1.08
13.00	0.76
13.20	0.56
13.40	0.44
13.60	0.36
13.80	0.31
14.00	0.28
14.30	0.24
14.60	0.21
15.00	0.19
15.50	0.17
16.00	0.15
16.50	0.14
17.00	0.12
17.50	0.12
18.00	0.11
19.00	0.10
20.00	0.09
22.00	0.07
26.00	0.00

TABLE 21

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN G	.0108	74	.56	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7
BASN G	0	0	0	0	0	1	1	1	1	1
TOTAL	0	0	0	0	0	1	1	1	1	1

Esc exit compute process Display earlier time Display later time

TABLE 22

BASIN H 100 yr
Ia/P = .3
SCS TR 20: FOR Tc=0.4,

AREA (SQ MI)	CN
0.0061	74

TIME (HOURS)	INFLOW (CFS)
10.50	0.00
11.00	0.00
11.30	0.00
11.60	0.00
11.90	0.01
12.00	0.06
12.10	0.24
12.20	0.64
12.30	1.04
12.40	1.07
12.50	0.89
12.60	0.66
12.70	0.51
12.80	0.40
13.00	0.27
13.20	0.22
13.40	0.18
13.60	0.16
13.80	0.14
14.00	0.13
14.30	0.12
14.60	0.11
15.00	0.10
15.50	0.09
16.00	0.08
16.50	0.07
17.00	0.07
17.50	0.06
18.00	0.06
19.00	0.05
20.00	0.05
22.00	0.04
26.00	0.00

TABLE 23

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN H	.0061	74	.35	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.3	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
BASN H	0	0	0	0	0	1	1	1	1	0
TOTAL	0	0	0	0	0	1	1	1	1	0

Esc exit compute process Display earlier time Display later time

TABLE 24

BASIN I 100 yr
Ia/P = .3
SCS TR 20: FOR Tc=0.3,

AREA (SQ MI)	CN
0.0025	79.76

TIME (HOURS)	INFLOW (CFS)
10.50	0.00
11.00	0.00
11.30	0.00
11.60	0.00
11.90	0.02
12.00	0.09
12.10	0.35
12.20	0.73
12.30	0.80
12.40	0.63
12.50	0.42
12.60	0.31
12.70	0.24
12.80	0.20
13.00	0.15
13.20	0.12
13.40	0.11
13.60	0.10
13.80	0.09
14.00	0.08
14.30	0.07
14.60	0.07
15.00	0.06
15.50	0.06
16.00	0.05
16.50	0.04
17.00	0.04
17.50	0.04
18.00	0.04
19.00	0.03
20.00	0.03
22.00	0.03
26.00	0.00

TABLE 25

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

canyon view park jke 10-31-95
detailed post development hydrology for pipe sizing

>>>>> Subarea Data <<<<<

Subarea Name	Drainage Area (sq mi)	Runoff Curve Number	Time of Concen-tration (hrs)	Travel Thru Subarea (hrs)	Downstream Subarea Name	24-Hour Rain (in)
BASN I	.0025	80	.35	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01
.....	.....	..	....	....	.....	2.01

F1Help F2Print F3Load F4Save F5DOS F6Zero F7Compute F9RCN F10TCTT

TR-55 TABULAR HYDROGRAPH METHOD VERSION 1.11

SUBAREA CONTRIBUTIONS AND TOTAL DISCHARGE (CFS) AT OUTLET

	Time									
Subarea	11.3	11.6	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6
BASN I	0	0	0	0	0	1	1	1	0	0
TOTAL	0	0	0	0	0	1	1	1	0	0

Esc exit compute process Display earlier time Display later time

TABLE 26

CD comments addressed - 2/16/96
Packets sent to Dev. Eng., Utility
Eng. & G.J. Drainage. 2/16/96

February 7, 1996

Katherine Portner, AICP
Planning Supervisor
Community Development Department
City of Grand Junction
250 North 5th Street
Grand Junction, CO 81501

Re: Response to Site Plan Review Comments for Canyon View Park - File #SPR-95-108(2)

Dear Katherine,

This letter is to serve as the response to the Site Plan Review comments received from your office and other referral agencies. We will address each comment point by point, either in this letter or in the attached materials from Western Engineers.

Grand Junction Drainage District

Comments 1, 2, 3 and 4 — See Western's 1/3/96 letter

City Property Agent

No comments

City Parks and Recreation

No response required

Ute Water Conservancy District

Comment 1, 2, 3, 4 and 5 — See Western's 1/3/96 letter

City Attorney

1. No response required

2. Evidences of ownership: Evidences of ownership will be submitted by the Parks Department un~~der separate co~~ver. is attached.

Grand Junction Fire Department

No response required

Community Development Department

1. Typical parking standards: Prior to beginning design work on Canyon View Park, the Design Team undertook extensive phone research on current standards for parking requirements for competitive sports facilities. The findings of that research are as follows:

   A. The City's traffic engineering department was unable to locate trip generation numbers for this *specific* type of facility. References only included information on the typical "park" facility and not a competitive sports complex such as this.

   B. We were unable to locate a City which has completed detailed traffic studies for this type of facility. All of the communities and individuals we spoke with (including a front range traffic engineer; the Cities of Boulder, Lakewood, Longmont and Westminster; and Jefferson County) developed their standards based on past experience with existing facilities.

   C. Actual parking lot counts were made at Front Range facilities.

   This research revealed a range of 45 to 55 parking spaces per softball/soccer field. Most municipalities used 45 to 50 parking spaces per field. Additional parking was often included if other park facilities were present. Also, the larger the complex, the lower the number of spaces per field.

   The City Traffic Engineering staff took traffic counts on existing parks and the results of their findings generally confirmed our research. A brief summary has been submitted to your office by the Traffic Department under separate cover.

   Based on this research, the number of parking spaces for Canyon View Park was set at 50 spaces per field. Additional parking for other park uses is included in each parking lot and along the interior park roadways (a total of 37 parking spaces).

2. Proposed locations for signage: Details showing the locations and designs of the park signage are attached.

3. Blow-up of a typical parking lot island: A blow-up of a typical parking lot island is attached.

Please note we have provided a generous setback from the curb to all planting where beds are adjacent to parking. This was provided in response to the City's requirement for a 2'- 6" paved area in islands next to parking spaces. We have not included the paved area for the following reasons:

A. The beds will be mulched with 4" to 5" of wood chip mulch which will tolerate foot traffic but not add to the amount of impermeable surfaces in the park.
B. Because this is a park, the goal was to *avoid* hard surface paving wherever possible, especially in parking lots which are already quite large.
C The plants will benefit from the reduced amount of paving due to increased opportunities for oxygen exchange with the soil and reduced reflected glare from the paving.

Therefore, we request that the requirement for the 2'-6" paved area for car door overhangs be waived in this instance.

4. Boundary treatment for parking: Standard curb and gutter will be used on all parking lot boundaries except at handicap ramps. No curbs are used at handicap parking spaces which allows continuous handicap access to walkways. Parking blocks are used to define the ends of parking spaces in these areas.

5. Hard surface walk throughs in planting islands: During the design process, we considered including hard surface walk through on the large south parking lot island, but we are unable to adequately predict pedestrian patterns. We suggest the Parks Department be allowed to add sidewalks in the median as the traffic patterns are defined by use.

6. Parking lot lighting design: Public Service will be providing lighting design for the parking lots in the park using fixtures approved by PSC. We have spoken with John Price at PSC and he is aware of the City's requirements. John will submit detailed plans and isofootcandle diagrams once PSC has completed their designs (in the next four to eight weeks). The footcandle levels will meet or exceed the City's minimum requirements.

City Utility Engineer

1. The amount the developer of the Fountainhead is due to be reimbursed for sewer and water has been determined with assistance from Public Works. A total of $16,000 has been set aside from the project budget for this cost. A formal agreement will be reached prior to hook-up.

Comments 2, 3 and 4 — See Western's 1/3/96 letter

City Development Engineer

See Western Engineer's 1/3/96 letter and the attached 24 x 36" engineering drawings and final drainage report.

The Development Engineer noted we neglected to mention the bike route along 24 Road designated in the Multi-Modal Plan. We were aware of the proposed bike route and have made provisions to extend it into the park site in the final designs. In addition, there will be an 8'-0" concrete loop trail around the entire site once the park reaches full build-out.

This should resolve any outstanding issues with the referral agencies. We are available to answer any additional questions or supply additional information if required.

Sincerely,
WINSTON ASSOCIATES, INC.

Paul M. Kuhn
Senior Associate

WESTERN ENGINEERS, INC. SINCE 1952
CONSULTING ENGINEERS / LAND SURVEYORS
2150 Hwy. 6 & 50, Grand Junction, CO 81505-9422 • 970/242-5202 • FAX 970/242-1672

M E M O

TO: Paul Kuhn, Winston Associates

FROM: Gayle Lyman, Western Engineers, Inc.

RE: Canyon View Park, Site Plan Review, to Review Comments.

DATE: January 3, 1996

Following are responses to review comments issued by City of Grand Junction Community Development. Responses are provided for comments which address Western's scope of work.

GRAND JUNCTION DRAINAGE DISTRICT

1. Drawing C3-2 (Mitchell Drain Culvert Relocation) was provided to the GJDD, per their request, for review and comment. Review comments were returned to Western's office. There were several revisions the district required, if the GJDD is to retain operation and maintenance control of the Mitchell Drain culvert relocation. The suggested revisions are listed below:

   a) The type of pipe shall be reinforced concrete pipe (RCP) conforming to ASTM C-76.
   b) The head/end walls shall utilize a CDOT modified design with grate. GJDD provided a sample of the headwall design.
   c) A 6 inch sump is required in the manhole.
   d) Gabion basket should replace the 12" of compacted pitrun at the discharge into Corcoran Wash.

   Western incorporated revisions a, b and c. The gabion baskets were not included with the final design. However, they will be included with an addendum.

2. The information provided to Western during initial survey research indicated the name of the wash paralleling 24 Road north of G Road is refered to as Leach Creek, even though it is not the main stem of Leach Creek. The name of this particular channel is not identified on maps.

3. No response required.

4. No response required.

UTE WATER CONSERVANCY DISTRICT

1. The City does not view the extension of the main water line to the west side of 24 Road as a benefit to this project nor as being necessary to alleviate the impact of

park water demand on the Ute Water system. Since the extension will likely require boring, it will be a relatively expensive item and cannot be fit within the City's budget constraints. Therefore, the line termination is shown on the drawings to remain on the east side of Leach Creek.

2. The main that runs east and west through the park property has been changed to a 10" size.

3. Tentative locations of three water meters within the park property have been discussed with Ute Water representatives and approved. The drawings identify locations of the water meters.

4. The City Property Agent has indicated during earlier conversations that he will be responsible for providing any necessary easements for Canyon View Park. A copy of a letter informing Mr. Woodmansee of Utes easement request is enclosed.

5. No response required.

CITY UTILITY ENGINEER

2. Invert elevations for MH CP-10 have been corected.

3. The line between MH CP-15 and MH CP-19 has been upsized to 8 inches.

4. MH CP-19 has been omited from this line. The section of 8 inch pipe extends between MH CP-20 and MH CP-10. The Utility Drawings have been revised to reflect this information.

CITY DEVELOPMENT ENGINEER

Grading and Drainage

1. Table 1 in the Drainage Study summarizes drainage structures. A comparative analysis between the 100 year runoff and calculated capacity of the pipe and/or valley pans is provided in this table. The governing type of equation is also listed for each drainage feature. The length of pipe and elevation differences were obtained from the Utility Composite. Attached are more detailed summaries of storm runoff conveyance capacities.

2. The references to detail sheets on the plans have been completed.

3. Sheet C4-1, Overall Grading Plan, has been revised to make the text more legible. We were unaware that the C3 drawings, (Corcoran Wash and Mitchell Drain Realignments) and the CS drawings, (24 Road Bridge), were required for the Site Plan Review. Copies of the referenced drawings are included with the final design drawings.

24 Road Plans

1. A typical road cross-section has been included on the drawings. The fill slopes have been indicated on the plans. The AASHTO "ROADSIDE DESIGN GUIDE", October 1988 was utilized for selection and placement of guard rail.

2. The design pavement section for 24 Road is 4 inches CDOT Grade C HBP, 6 inches CDOT Class 6 ABC, 12 inches CDOT Class 1 ABC over compacted subgrade. The design pavement section for the internal road is 3 inches CDOT Grade C HBP, 9 inches CDOT Class 6 ABC, 4 inches of 1/2" clean gravel, stabilization fabric over compacted subgrade.

3. The guard rail satisfies M-606-1 Standards. CDOT and AASHTO design manuals were used to determine locations requiring guardrails.

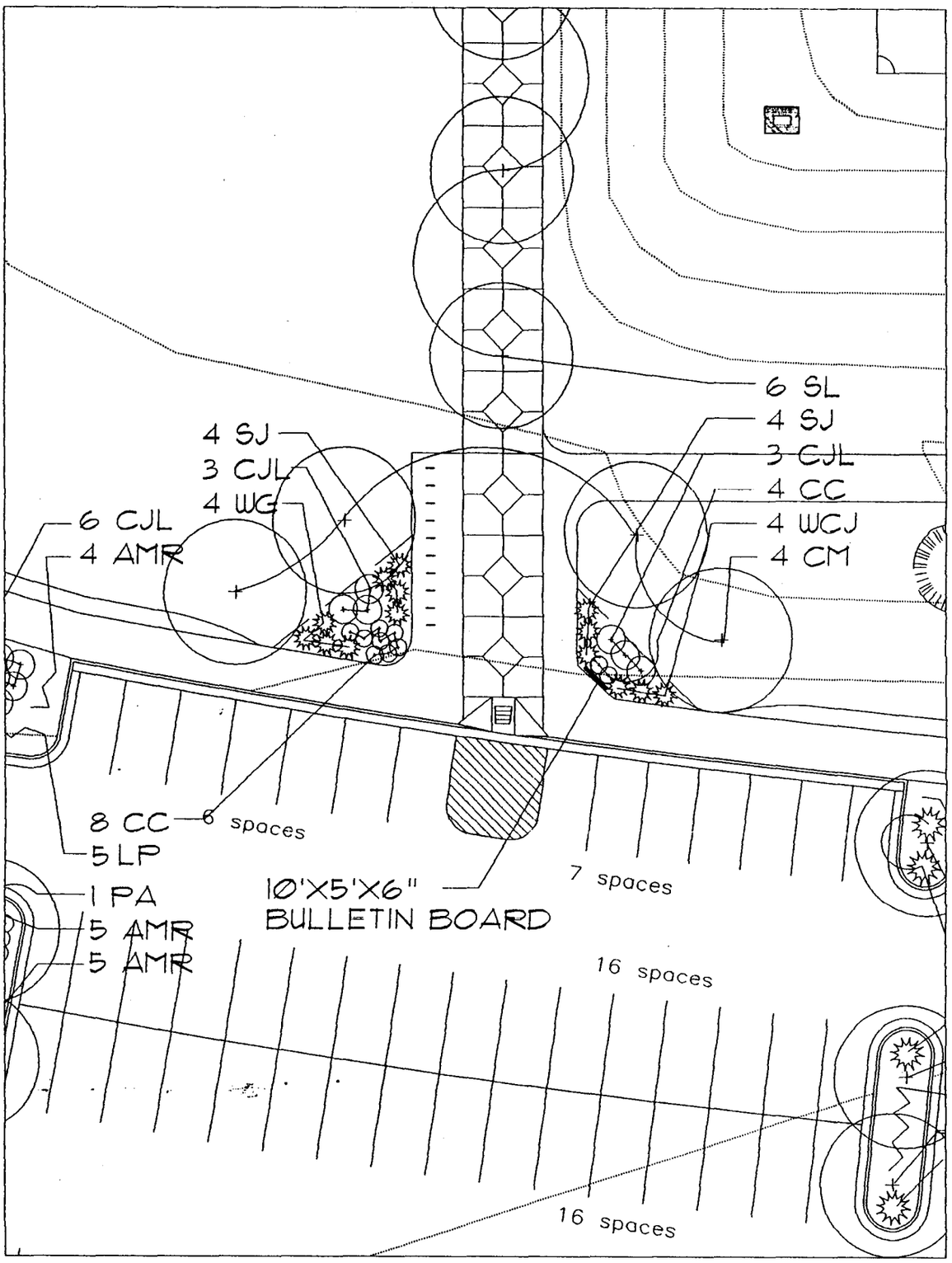
4. An aditional drawing identifying pavement markings will be submitted to the City for review prior to commencement of this part of the project.

5. Information has been added to the sheets to reflect the existing pipes and whether they are to be relocated or removed.

6. The radius at the park entrance is 18.77 feet to edge of asphalt. Due to the limiting existing features within the area of the main park entrance, the radius had to be shortened slightly to obtain a tangent curve at both the bridge and the existing road.

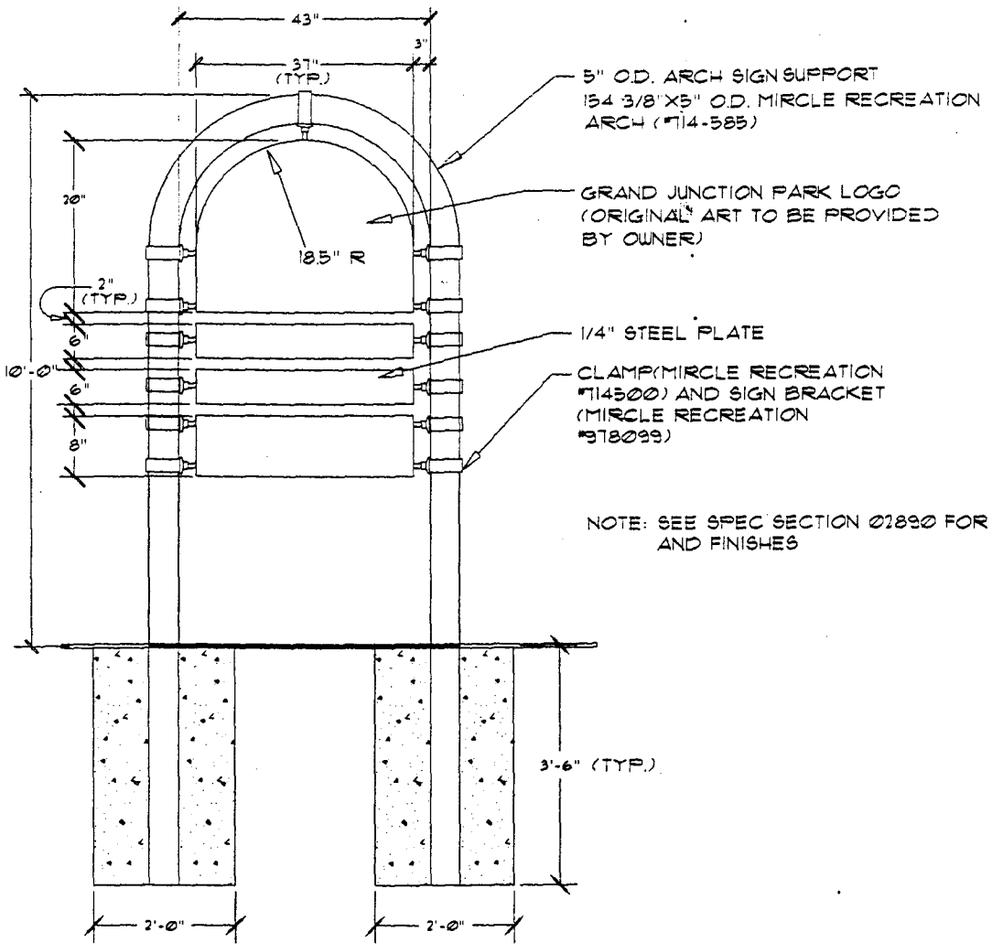
7. Parking stall and aisle dimensions are indicated on sheets C2-2.1 (Soccer Field Parking Lot) and C2-5.1 (Softball Field Parking Lot).

8. No response required.

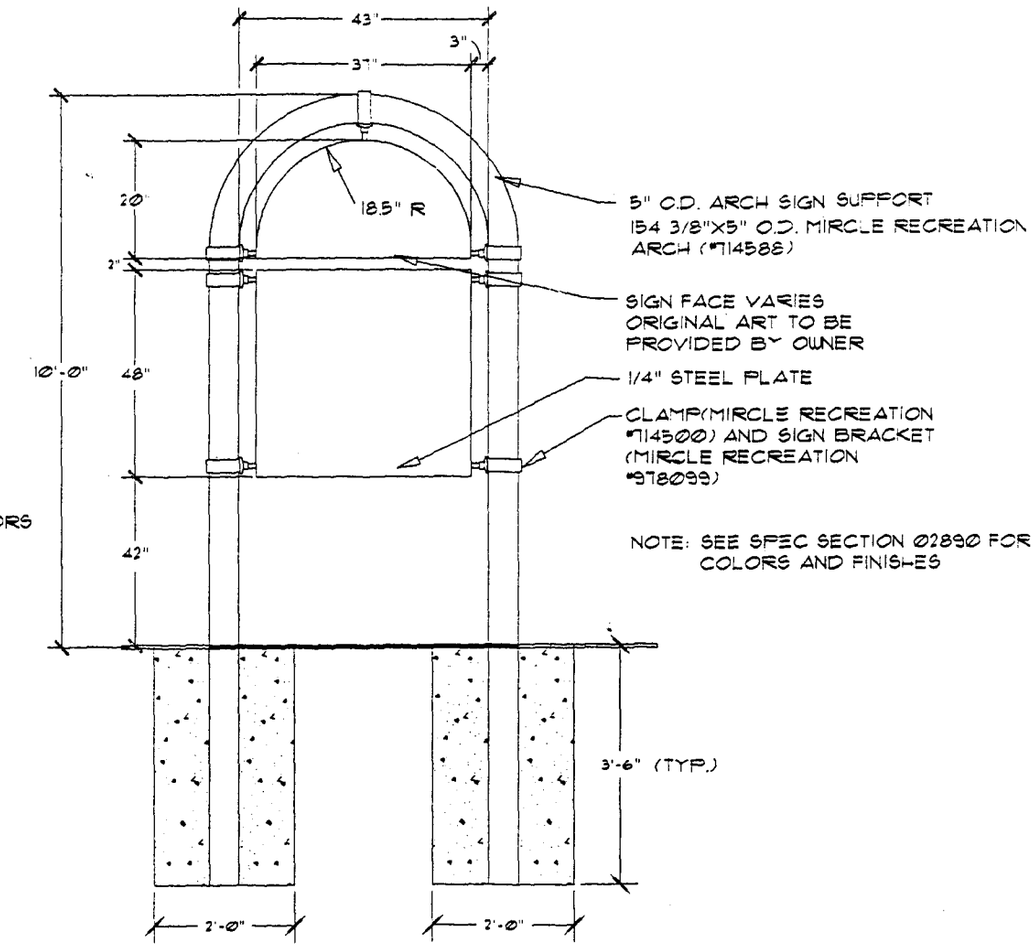


SOCCER COMPLEX ENTRY

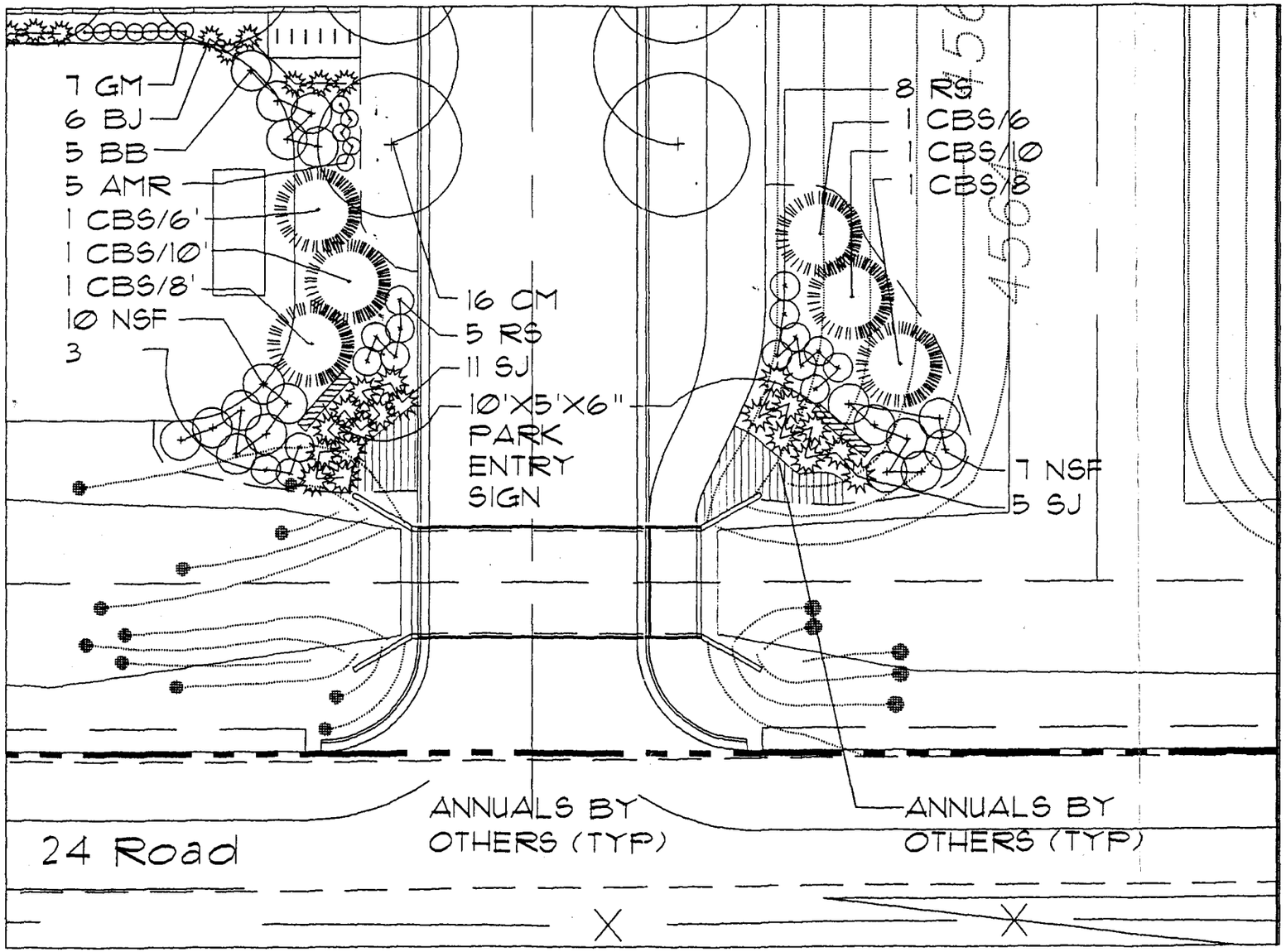
SCALE: 1"=20'



PARK ENTRY SIGN ELEVATION
SCALE: 1/2"=1'

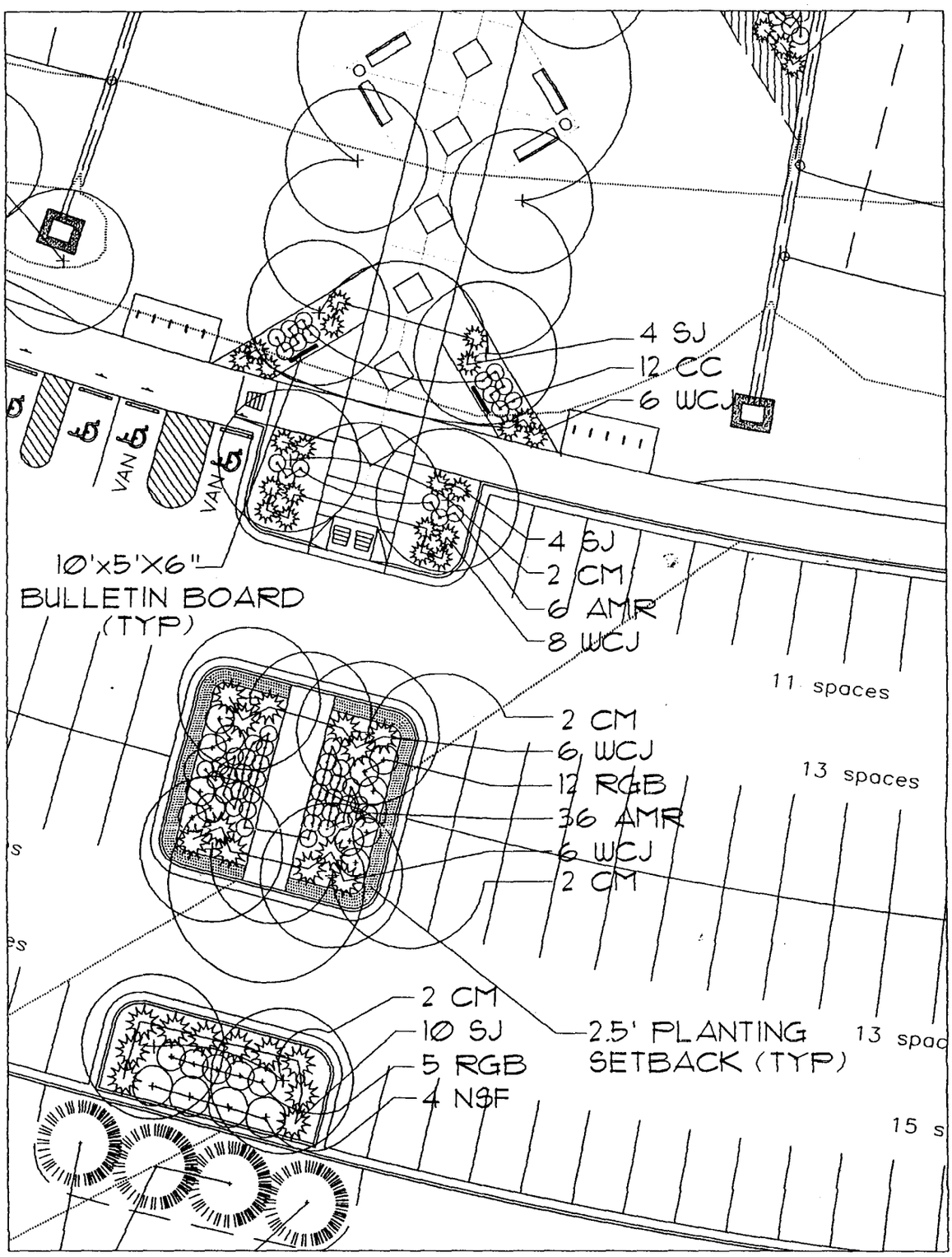


BULLETIN BOARD ELEVATION
SCALE: 1/2"=1'



PARK ENTRY

SCALE: 1"=20'



SOFTBALL COMPLEX ENTRY

SCALE: 1"=20'

NOTE: SHRUB BEDS TO BE MULCHED WITH 4" OF WOODCHIP MULCH (MIN.).

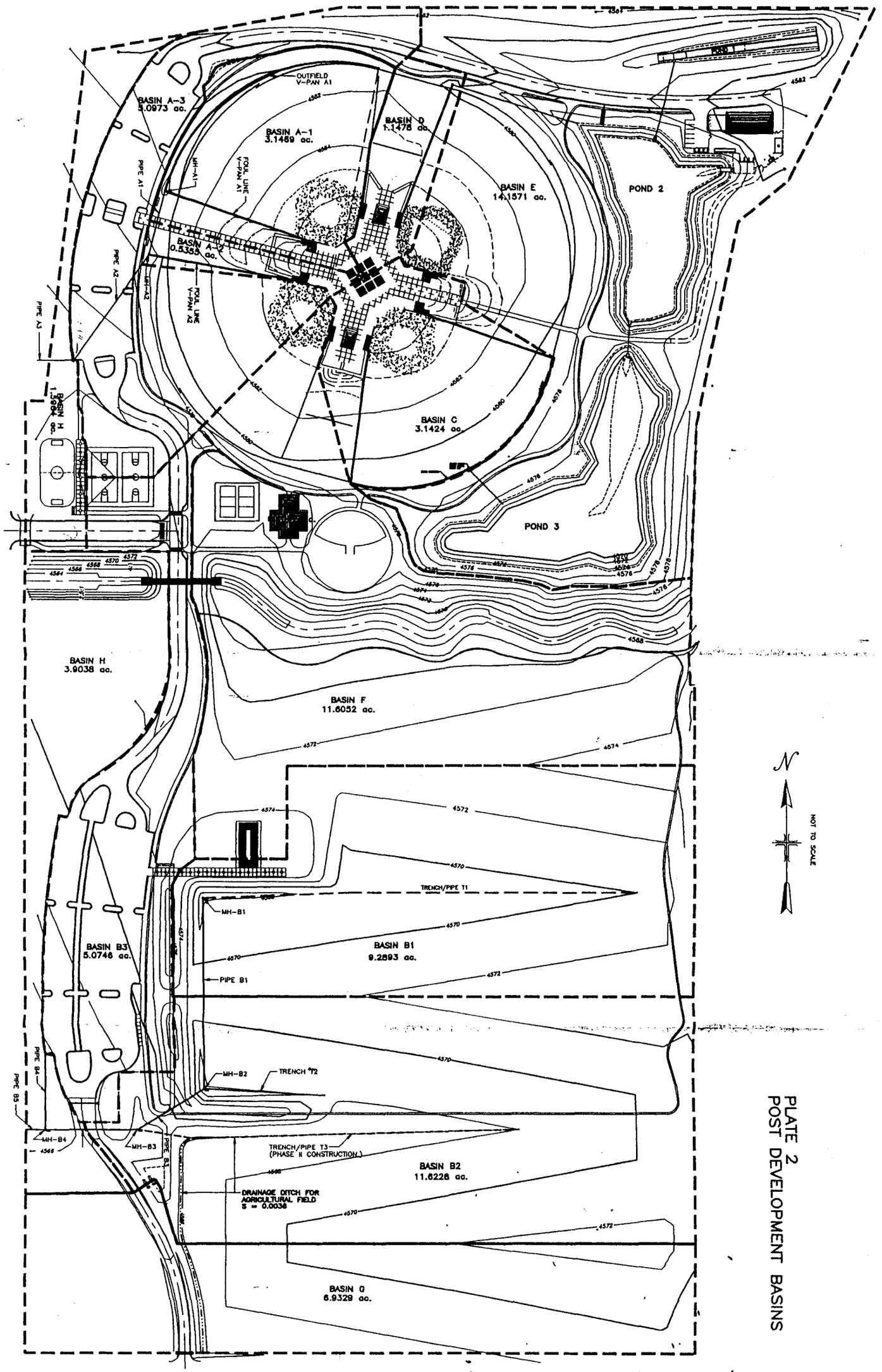


PLATE 2
POST DEVELOPMENT BASINS

CANYON VIEW PARK

PRECONSTRUCTION MEETING

AGENDA:

1. Designation and introduction of responsible personnel and/or representatives of all parties to the contract.
   a. Western Engineers is Owner's Representative.
   b. Western represents ARCHITECT as referenced in the Contract Documents.
   c. Contractor's project manager or superintendent
   d. Identify all subcontractors.

2. Construction Schedule
   a. Construction schedule is very agressive.
   b. Is schedule realistic?

3. Schedule of Values.
   a. City needs to know project schedule to have funds available

4. Sequencing of critical portions of the Work (Milestones)
   a. Seeding of softball and soccer field by September 1, 1996.
   b. Substantial Completion - May 1, 1997.
   c. Final Completion - June 1, 1997.

5. Procedures for Project communications.
   a. All correspondence and/or communication related to this Project must be directed through Western Engineers.
   b. Subcontractors must direct their correspondence through the General Contractor.

6. Procedures for processing changes to the Work (Field and Change Orders).
   a. Field Orders: Minor changes in Work not involving a change in the Contract price or in Contract Time and not inconsistent with the intent of the Contract.
   b. Change Order: A Change Order will be issued when a change in Work is made which will affect the Contract Price.
   c. Bond Requirements:The Bond amount will be adjusted as required to reflect any adjustments in the Contract Price
   d. Change order #1 will include modifications to the Long irrigation system, west irrigation box, irrigation diversion box, addition of gate to intake structure and corrections to quantities.

7. Procedures for processing applications for payment.
   a. Contractor shall submit request for progress payment to Owner's Representative no later than the 25th day of each month. The application for payment must be signed by the Contractor.
   b. Payment request will be reviewed by Architect and will certify to the City the amount properly owing to the Contractor.
   c. The City will normally make partial payments on the Contract price within 15 days following the Architect's receipt of each Application for Payment.
   d. Retainage: The amount to be retained from partial payments will be 10% of the value of the completed work, but not greater than 5% of the amount of the contract price. This includes adjustments made to the contract price by Change Orders.

8. Procedures for submittal of shop drawings, product data, samples and other required submittals, submittal schedule.
   a. Contractor will review shop and erection drawings, product data, and samples for compliance with Contract Documents prior to submittal to Architect.
   b. If not previously submitted, within 10 days after the date of the Notice to Proceed, the Contractor shall submit a preliminary Submittal and Mock-up Schedule for the Architects review.

9. Testing and inspection procedures, testing schedule
   a. Testing Schedule.
   b. Contractor to notify and coordinate with Building Department for appropriate inspections.

10. Preparation and maintenance of Record Documents.
   a. The Contractor shall have on the project a Record set of documents which shall be maintained as the Project progresses. Any markings shall be with a red pencil.
   b. Design Team will do As-Builts. Contractor is still required to maintain record set of drawings at site.

11. Access to Site
   a. The City and the Architect shall have access to the Work at all times During Project Construction.
   b. Sign-in procedures.

12. Use of the premises, including parking for construction personnel.
   a. Construct and maintain temporary all-weather surfaced parking areas to accommodate construction personnel.
   b. Limitations on staging or parking.

13. Temporary utilities and services, including location of field offices, storage sheds or trailers and signs (staging plan).

14. Haul Roads and maintenance plan.
    a. Grand Junction Drainage District requires access along Mitchell Drain. Must maintain accessability during construction and upon completion of the project, the road along Mitchell Drain must be returned to original condition.

15. Delivery of materials and equipment.
    a. Contractor must notify suppliers of designated access to site.

16. Erosion and dust control, noise abatement procedures, environmental.
    a. Contractor must have an approved (by Architect) Erosion Control Plan prior to commencing any excavation or grading work. This is to be implemented at beginning of site excavation/development and maintained throughout the construction period in order to protect adjacent properties, streams and streets.
    b. Provide dust control as required for alleviation or prevention of dust nuisance on or about site.
    c. The Contractor is also required to provide dust control at any off site locations (such as when loading cobble at the DPW maintenance yard).
    d. Blasting is not permitted.
    e. Employ jackhammering and other loud noises and methods sparingly.
    f. Onsite burning is not allowed.

17. Safety procedures, first aid, and fire protection.
    a. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.
    b. The Architect or Owner is not responsible for implementation of safety plans, but will notify Contractor of any unsafe conditions.

18. Security.
    a. Watchman or security at various stages of project completion.

19. Housekeeping and disposal of trash and debris.
    a. Debris should be collected to prevent blowing onto adjacent properties.

20. Working hours.

a. No Work shall be done on Sundays or City Holidays without the written consent of the City.
b. No Work, other than preparation and cleanup, shall be done outside the hours of 7:00 a.m. and 7:00 p.m. without written consent of the City.
c. Request for such work shall be made a minimum of 48 hours prior to the day or days for which this request is being made.

21. Maintaining irrigation flow to Long property.
    a. West irrigation box and Long irrigation line has been revised to provide irrigation water during construction.

22. Schedule of weekly meetings. (Job progress meetings.)
    a. Schedule meetings for Monday (or Friday) in order to review previous weeks work and make schedule adjustments for upcoming weeks work.

23. Schedule of undergrounding of overhead power line running east/west through site.
    a. Discussions with Public Service indicate that plans are complete for relocation of overhead power line.
    b. PSC will contact M.A. Concrete regarding contracting them to perform installation of conduit for relocated power line.
    c. Contractor to coordinate with PSC for installation of conduit and transformers.

24. Contractor's daily reports.
    a. Submit copy of daily report to Owner's representative on a weekly basis, Submittal shall include copy of each daily report from previous week.

25. Discrepancies: The Contractor should notify the Architect of any discrepancies between the drawings or survey control as given by stakes or instructions.

26. The Contractor is responsible for identifying and securing all applications and permits required for construction of the project as required by the Contract Documents. See Addendum #1 for list of permits.

27. Wetlands restoration
    a. The Contractor shall comply with all requirements identified in Appendix I of the Specifications.
        1. Sediment control at designated locations
        2. Provide fencing around areas not to be disturbed.
        3. Haybales around base of stockpiles.

28. Excess Muck
    a. Stockpile procedures vs haul off site.
    b. If hauled off-site, Contractor burdens cost to import additional fill.
    c. Protection of top soil if muck is stockpiled.

29. Compaction requirement in lawn area.
    a. Revise from 90% min. to 85% to 90%.

30. Removal of topsoil.
    a. Removal of corn stalks.
    b. Mulch remaining corn stalks prior to removal of existing topsoil.

Park Impact Study

This Traffic Impact Study addresses the capacity, geometric control of the proposed park access on 24 Road, approximately 700 feet South of Interstate 70 & G Road, approximately 300 feet east of 24 Road.

- **Proposed Site Use:**

  The site will consist of 63 acres. A further expansion at sometime in the future to 103 acres is expected. The initial expansion is referred to as phase 1 in this study, and is assumed to be completed in the year 1995.

- **Access to the Site:**

  Two access points are proposed. One on 24 Road and one on G Road. Access to the Site will require both 11 feet wide left turn lanes and an 11 feet wide right turn lanes. The North and South bound Through lanes of 24 Road will also be 11 feet wide. As will the east and west bound lanes on G Road.

  The Park access points will consist of a 12 feet wide West bound, right turn lane with a 30 feet radius. Also a 12 feet wide West bound left turn lane and a East bound 12 feet wide through lane with a 4 foot median and a 30 feet radius.

- **Trip Generation:**

  Trip generation was provided by an existing Grand Junction Park:

  > The Columbine Park Facilities used included two ball fields, picnic facilities, and 156 parking stalls. 12 acres total. Columbine Park facilities also revealed that 54 parking stalls were needed per ball field.

  During the highest peak hour (6:45 to 7:45 pm), Columbine Park generated 147 vehicles. There were 72 vehicles exiting and 75 vehicles entering.

  This proposed 24 Road Park has nine ball fields, therefore a portion has been made based on Columbine Park. 324 vehicles exiting and 337 entering will be assumed for 24 Road Park.

Park Impact Study (cont.)

The site generated traffic was combined and distributed with the background traffic of year 2015 to determine total projected traffic.

24 Road peak hour volumes for year 2015 and at 6:45 to 7:45 p.m. are 162 vehicles per/hour South bound, and 210 vehicles same hour for North bound,

G Road Volumes for year 2015 and at 6:45 to 7:45 p.m. are 48 vehicles per/hour westbound and 57 vehicles same hour eastbound.

- **Operational Analysis**

The un-signalized Intersection Analysis techniques, were used in the Highway Capacity Manual 1985.

Traffic analyses was completed for total traffic in the year 2015.

Year 2015		**24 Road**	**Level of Service**
Park Access	*	West bound - left	D
Park Access	*	West bound - right	A
24 Road	*	South bound - left	A

Year 2015		**G Road**	
Park Access	*	South bound - left	A
Park Access	*	South bound- right	A
G Road	*	East bound - left	A

- **Left Turn Storage**

24 Road southbound left turn storage length should be 100 feet, based upon 115 southbound left turn vehicles per/hour. Use 3.83 vehicles per/2 minutes times 25 feet per/vehicles.

Park Impact Study (cont.)

G Road eastbound left turns were 40 per hour. This calculates to 1.33 vehicles per/2 minutes. Use 100 feet of storage

- **Conclusion:**

Impact and vehicle counts were used for the year 2015. Analysis reveals both proposed access to the park will work now and in the future.

Columbine Park

2 fields. 156 Parking Stalls. 26 stalls occupied and 132 stalls empty

July 18TH 1995

5:45 - 6:00		6:00 – 6:15		615 - 630		630 – 645	
E	X	E	X	E	X	E	X
37	2	15	3	2	2	1	1
39		18		4		2	

645 - 700		700 - 715		715 - 730		730 - 745	
E	X	E	X	E	X	E	X
39	4	24	33	7	28	5	7
43		57		35		12	

$26 + 37 + 15 + 2 + 1 + 39 - 2 - 3 - 2 - 1 - 4 = \frac{108}{2} = 54$

G R.d.

645 - 745

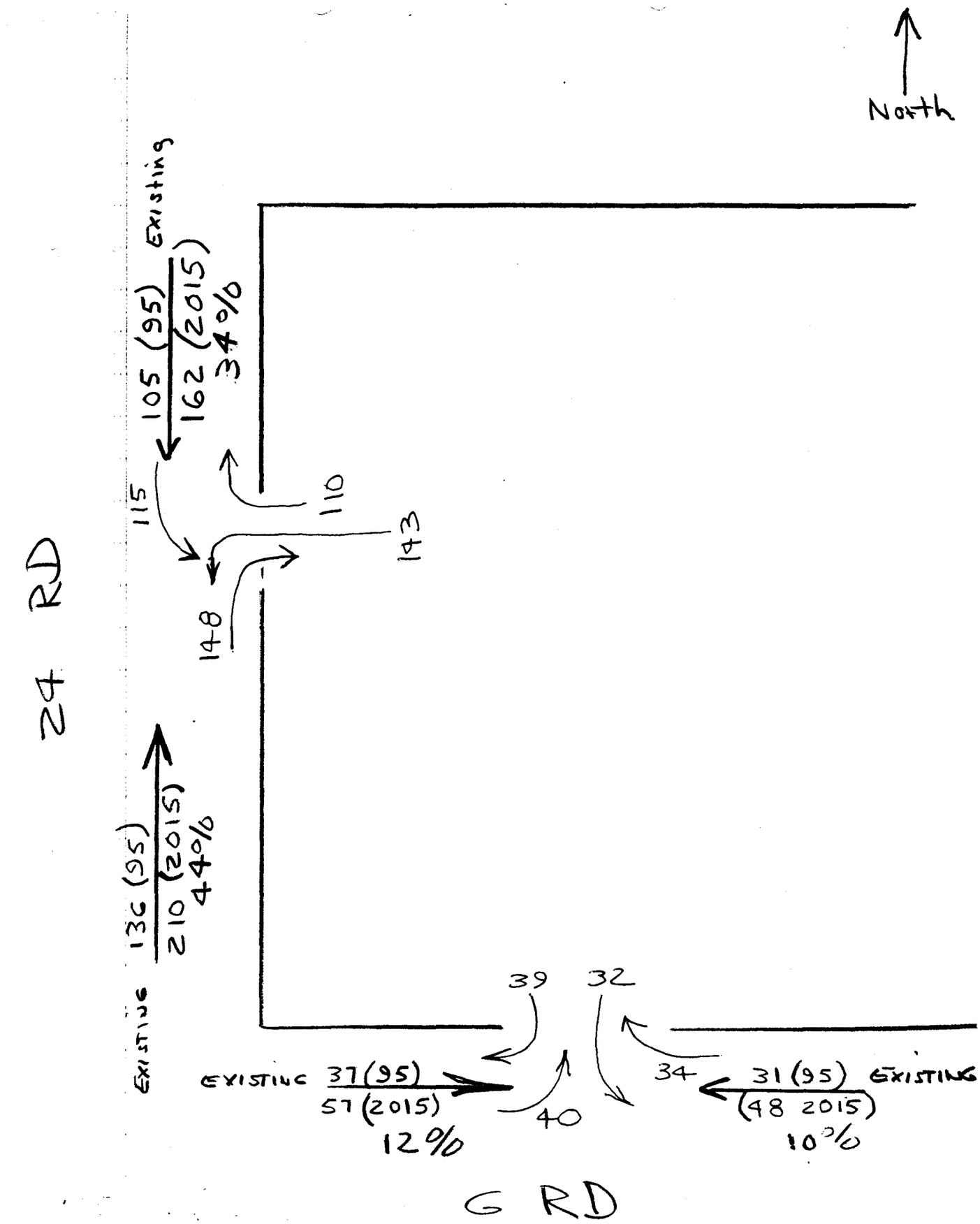
WB 1995 -year
31 Vehicles
2015 -year
48

EB 1995
37 Vehicles
2015 -year
57

645 - 745 24 Rd

NB 136 Vechicles
2015 -year
210

SB 105 Vechicles
2015 -year
162



324 Exit generated
337 enter generated

24 Rd.

Year 2015

Existing + Proposed

6 45 to 7 45 P.M.

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 45

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 30000

NAME OF THE EAST/WEST STREET..... PARK ACCESS

NAME OF THE NORTH/SOUTH STREET..... 24 RD

NAME OF THE ANALYST..... DT

DATE OF THE ANALYSIS (mm/dd/yy)..... 8/02/95

TIME PERIOD ANALYZED..... 6:45 TO 7:45 P M

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE WESTBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	---	143	0	115
THRU	---	0	210	162
RIGHT	---	110	148	0

NUMBER OF LANES

	EB	WB	NB	SB
LANES	--	2	1	1

	EB	WB	NB	SB
LEFT	--	143	0	115
THRU		0	210	162
RIGHT	--	110	148	0

NUMBER OF LANES

	EB	WB	NB	SB
LANES	--	2	1	1

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERA FOR RIG
EASTBOUND				

WESTBOUND	0.00	90	30	N
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	---	---	---
WESTBOUND	5	5	0
NORTHBOUND	5	5	0
SOUTHBOUND	5	5	0

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	WB	6.10	6.10	0.00	6.10
MAJOR LEFTS	SB	5.30	5.30	0.00	5.30
MINOR LEFTS	WB	7.40	7.40	0.00	7.40

MOVEMENT	FLOW-RATE v (pcph)	POTENTIAL CAPACITY c_p (pcph)	ACTUAL MOVEMENT CAPACITY c_M (pcph)	SHARED CAPACITY c_{SH} (pcph)	RESERVE CAPACITY $c_R = c_{SH} - v$	LOS
MINOR STREET						
SB LEFT	35	696	670	670	643	A
RIGHT	43	932	932	932	889	A
MAJOR STREET						
EB LEFT	44	1000	1000	1000	956	A

G Rd

Existing + Proposed

Year 2015

6:45 to 7:45 P.M.

1985 HCM: UNSIGNALIZED INTERSECTIONS

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 40

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 300

NAME OF THE EAST/WEST STREET..... G RD

NAME OF THE NORTH/SOUTH STREET..... PARK ACCESS

NAME OF THE ANALYST..... DT

DATE OF THE ANALYSIS (mm/dd/yy)..... 8/02/95

TIME PERIOD ANALYZED..... 6:45 TO 7:45 P

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE SOUTHBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	40	0	--	32
THRU	57	48	--	0
RIGHT	0	34	---	39

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	1	--	2

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION L FOR RIGHT TU
EASTBOUND	0.00	90	20	N

WESTBOUND 0.00 90 20 N

NORTHBOUND				
SOUTHBOUND	0.00	90	30	N

VEHICLE COMPOSITION

	% SU TRUCKS AND RV'S	% COMBINATION VEHICLES	% MOTORCYCLES
EASTBOUND	5	5	0
WESTBOUND	5	5	0
NORTHBOUND			
SOUTHBOUND	5	5	0

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS					
	SB	5.90	5.90	0.00	5.90
MAJOR LEFTS					
	EB	5.20	5.20	0.00	5.20
MINOR LEFTS					
	SB	7.10	7.10	0.00	7.10

MOVEMENT	FLOW-RATE v (pcph)	POTENTIAL CAPACITY c_p (pcph)	ACTUAL MOVEMENT CAPACITY c_M (pcph)	SHARED CAPACITY c_{SH} (pcph)	RESERVE CAPACITY $c_R = c_{SH} - v$	LOS
MINOR STREET						
WB LEFT	157	354	313	313	156	D
RIGHT	121	724	724	724	603	A
MAJOR STREET						
SB LEFT	127	738	738	738	611	A

REVIEW COMMENTS

FILE #SPR-95-108(2) **TITLE HEADING:** Site Plan Review - Canyon View Park

LOCATION: NE corner of 24 & G Roads

PETITIONER: Parks and Recreation Department

PETITIONER'S ADDRESS/TELEPHONE: City of Grand Junction
1340 Gunnison Avenue
Grand Junction, CO 81501
244-1542

PETITIONER'S REPRESENTATIVE: Winston Associates/Western Engineers

STAFF REPRESENTATIVE: Kathy Portner

NOTE: WRITTEN RESPONSE (4 COPIES) BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED. A PLANNING CLEARANCE WILL NOT BE ISSUED UNTIL ALL ISSUES HAVE BEEN RESOLVED.

GRAND JUNCTION DRAINAGE DISTRICT **11/30/95**
John Ballagh **242-4343**

1. The site plans have been reviewed for phase 1. The engineer provided copies of pages not sent to the District. Phase Ii adjoins the District's Mitchell Drain. It is of immediate interest to the District how Mitchell Drain is to be rerouted into the relocated Corcoran Wash. Technical comments were set to Western Engineers on November 30, 1995. Their drainage report is generally the best quality and detail seen locally.
2. The drainage parallel to 24 Road north of G Road is not Leach Creek.
3. The idea of endwalls at the points of discharge is a good one.
4. The two wash channels are not Grand Junction Drainage District facilities. The District has no authority to say what goes on within those washes.

CITY PROPERTY AGENT **12/4/95**
Steve Pace **244-1542**

No final plat to review.

CITY PARKS & RECREATION DEPARTMENT **12/8/95**
Shawn Cooper **244-3869**

The project appears to be extremely worthwhile and well thought out. The parking and traffic planning is very effective and efficient and goes beyond current guidelines and expectations. The site layout is unique and creative allowing multiple uses within the site to take place simultaneously, sure to be an award winner. The wetlands area is to be commended for furthering the Grand Valley's efforts of environmental conservation and preserving wildlife habitat. The site landscaping and amenities are to be a stand out in the area and should help create new standards in the area for developments.

UTE WATER **12/8/95**
Gary R. Mathews **242-7491**

1. The 8" termination at 24 Road needs moved to the west side of 24 Road.
2. The 8" main that runs east and west through the property will be changed to a 10" main.
3. Contact with Ute Water is needed for water meter locations.
4. Ute Water needs a 20' easement for the proposed 10" main which runs east and west across the property.
5. Policies and fees in effect at the time of application will apply.

CITY ATTORNEY **12/8/95**
John Shaver **244-1501**

1. The narrative refers to the City having a "Life Estate" on the property at 24 & G. Ownership by the City is in fee with a life estate having been granted by the City.
2. Evidences of ownership should be provided.

GRAND JUNCTION FIRE DEPARTMENT **12/12/95**
Hank Masterson **244-1414**

The Fire Department has no problems with this proposal.

COMMUNITY DEVELOPMENT DEPARTMENT **12/13/95**
Kathy Portner **244-1446**

See attached comments.

CITY UTILITY ENGINEER **12/13/95**
Trent Prall **244-1590**

WATER - UTE WATER

Please call Ralph Ohm at Ute Water regarding potential payback agreement for waterline tie in.

SEWER - CITY OF GRAND JUNCTION

1. Payback agreement to the developer of Fountainhead for sewer is required prior to sewer hookup. Amount yet to be determined.
2. Correction required on invert elevations for MH CP-10. Invert out is 0.10' higher than inverts in.
3. Please upsize proposed 6" lines to 8" lines between MH CP-15 and MH CP-19.
4. Plan and Profile sheet calls for 8" pipe between MH CP-19 and MH CP-10. Please update Utility Composite.

CITY DEVELOPMENT ENGINEER **12/14/95**
Jody Kliska **244-1591**

See attached comments.

TO DATE, COMMENTS NOT RECEIVED FROM:

Mesa County Planning
Grand Valley Irrigation
Corps of Engineers

December 14, 1995

REVIEW COMMENTS FOR: **Canyon View Park SPR-95-108**

TYPE OF REVIEW: **Site Plan**

REVIEWED BY: **Jody Kliska**

Grading and Drainage

The report mentioned sizing the pipes, but did not include calculations for pipe sizing.

There are references to detail sheets on the plans which do not have the blanks filled in.

The storm drain line slopes, pipe sizes and lengths are for the most part, illegible on the grading plan. I did not receive the C3 or CS plan sheets, which evidently contain the details for the bridge, culverts. These need to be submitted for review.

24 Road Plans

No typical cross section was shown for the 24 road widening. What kind of fill slopes are proposed? What criteria was used in the selection of the guard rail section?

What is the pavement design for 24 Road and for the internal roadway system?

The guard rail does not appear to meet all the M-606-1 standards. Sheet 1 General Notes requires a minimum 2' guard rail to paved shoulder edge. The detail shown for the end section in the Roadway Details plans is appropriate for the departure end of the guard rail, but not for the approach end. It is not clear if the approach end of the guard rail is intended to tie in with the existing driveway. If it is, use the details on Sheet 8 of 12 of M-606-1 for intersecting roadways. If not, then either a flared end section or an end treatment with an attenuation device is required. Was the fill slope criteria as spelled out in the CDOT Design Manual followed to determine the area requiring guard rail?

On the 24 Road Entrance Plan, it may be helpful to prepare a separate striping plan.

Several pipes are shown on the drawing along 24 Road. It is not specified if they are existing and what happens to them when widening occurs.

#SPR-95-108(2)
Site Plan Review--Canyon View Park
Community Development--12/12/95

1. Parks' Staff has indicated that the proposed number of parking spaces meets or exceeds the accepted standards and conforms to the demand observed at similar facilities as Columbine Park. Please specify what those typical standards are and the results of the existing park surveys.

2. I cannot find the proposed locations of the Park Entry sign and Bulletin Board sign on the site plan. Please clarify those locations.

3. Please provide a blow-up of a typical parking lot landscaped island. A 2 1/2 foot paved overhang must be provided on planting islands where vehicle or door overhang is anticipated (section 5-5-1.F.2 of the Zoning and Development Code).

4. Clarify the proposed treatment of the boundary of the parking lots. Is curbing proposed? Are parking blocks proposed? Does the design provide for a 2 1/2 foot vehicle overhang that will not interfere with proposed landscaping?

5. We suggest you consider hard surface walk throughs on the south parking lot through the landscaped tree row.

6. A lighting plan must be submitted which details the location and specifications of all lighting provided in the parking lots. An isofootcandle diagram shall also be provided to indicate the level and extent of proposed lighting (section 5-5-1.F.2.i of the Zoning and Development Code).

To: Kathy Portner
Cc: Joe Stevens,Larry Timm,Shawn Cooper,Michael Drollinger
From: Don Hobbs
Subject: Canyon View Lighting
Date: 5/6/96 Time: 9:17AM

John Price has completed the redesign of the Canyon View parking lot and roadway lighting. The submittal should be ready tomorrow.

In summary, John was able to special order the 25' poles and because the price got better with the more he bought they will be using the 25' for the roadways as well. Originally the project was to cost $36,473 with a corba head fixture. The redesign uses the 250 watt Curvilinear fixture and will cost cost $39,326 (This includes one spare pole). Changing the head style and using the special order pole would have made the bottom line substancially higher but we were able to take advantage of a $200/fixture increase in their construction allowance that went into effect today.

I will forward the submittal upon receipt.

file

Grand Junction Community Development Department
Planning • Zoning • Code Enforcement
250 North Fifth Street
Grand Junction, Colorado 81501-2668
(970) 244-1430 FAX (970) 244-1599

March 6, 1996

Joe Stevens, Director
Parks and Recreation Department
City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Dear Joe:

As you know, the Special Use Permit for Canyon View Park was approved by Planning Commission on July 11, 1995 (File #VR-95-108 and SPR-95-108-2). The details of the site plan have been reviewed and response to staff comments have been received. The plans meet all City requirements. We need the following items to make the file complete:

1. Two full sets of plans, including 24 Road improvement plans, for Public Works.

2. A parking lot lighting plan for our file.

Any structures requiring a Building Permit will also require a Planning Clearance and fencing will require a Fence Permit. Planning Clearances and Fence Permits can be obtained from our office. The contractor will also be required to obtain a permit from Public Works for work in the right-of-way. The Grand Junction Drainage District must be notified at least one day in advance of any work on the Mitchell Drain so they can have an inspector on site.

We appreciate the cooperation of the Parks Department and design consultants throughout the planning review process.

Sincerely,

Katherine M. Portner
Planning Supervisor

xc: Gayle Lyman, Western Engineers
Paul Kuhn, Winston Associates

For Comm. Devlopm.

Public Service®

Public Service
Company of Colorado

PO Box 849
Grand Junction, CO
81502

May 7, 1996

City of Grand Junction
Parks & Recreation Department
1340 Gunnison Ave.
Grand Junction, CO 81501
Attn.; Mr. Don Hobbs.

RE: Parking Lot Lighting for Canyon View Park.

Dear Don,

I have completed the revised design and estimate for the installation of parking lot lighting for the project known as Canyon View Park. I have designed this using 25' steel poles & 250 watt curvilinear lights that meet PSCo specifications and, hopefully , the City of Grand Junction Planning Department requirements. Attached is the insofootcandle diagram for the parking area. The diagram is modeled using the 250 watt lights mounted at 25 feet.

The new cost to the City of Grand Junction for these fixtures is $38,754.00. This does include a credit of $19,840.00, (this credit is a free construction allowance allowed for each luminaire). As we discussed on the phone, PSCo will order and stock one extra 25' pole to use as a replacement in case of a knock down. The City of Grand Junction will pay for this replacement pole (material only) on this work order billing. This cost is $572.00.

If these fixture styles and the insofootcandle ratings are approved, please sign the bottom of this letter and return a copy to me. These poles are a special order item. If you have any questions or comments please call me at 244-2693.

Jon Price
PSCo

To: Don Hobbs,Joe Stevens
Cc: Kathy Portner,Michael Drollinger
From: Larry Timm
Subject: Fwd: Parking Lot Lighting
Date: 5/16/96 Time: 4:23PM

Originated by: DONH @ CITYHALL on 5/9/96 1:26PM
Forwarded by: LARRYT @ CITYHALL on 5/16/96 4:23PM (CHANGED)

In reviewing some of the material upon which we based our standard, the term "minimum average" is used. I assume this is a lighting industry term. Hopefully the use of this term will take care of Public Services' problem. Let us know. Thanks.
********** ORIGINAL MESSAGE FOLLOWS **********

As we work at meeting the lighting requirements for Canyon View Park I have been ask several times how the .06 minimum footcandle was decided upon and why a minimum rather than an average. I know that that whenever I have dealt with lighting for sports complexes the industry standard requirements are based upon maintaining an average footcandle delivery. I am sure you have done extensive research into what other communities are doing but according one of the PSCo representatives from Denver who has been working on Canyon View most of the front range communities use the average level rather than the minimum. Is this the case and re we perhaps being to stringent in our code and causing undo expense and frustration to the developers? I know in our case the lighting cost is going to climb because we have to meet a "minimum" rather than an "average."

Memorandum

DATE: June 21, 1996

TO: Kathy Portner

FROM: Michael T. Drollinger

RE: Canyon View Park Lighting Plan

I have reviewed the attached lighting plan and find that it conforms with the minimum lighting intensities required by Section 5-5-1F2i(1) of the Zoning and Development Code. We still need confirmation from the Parks Department that the light poles will not exceed the 25 foot maximum permitted.

SPR-95-108(2)

file in Canyon View Park SPR file

RECEIVED JUL 16 1996

WESTERN ENGINEERS, INC. SINCE 1952
CONSULTING ENGINEERS / LAND SURVEYORS
2150 Hwy. 6 & 50, Grand Junction, CO 81505 • 970/242-5202 • FAX 970/242-1672

RECEIVED GRAND JUNCTION PLANNING DEPARTMENT JUL 16 1996

xc: M Jody

July 13, 1996

City of Grand Junction
Department of Public Works
250 North 5th Street
Grand Junction, CO 81501

ATTN: Don Newton, City Engineer

RE: Canyon View Park, Phase II, Baseball field, 24 1/2 Road Access.

Don:

This is to follow up our phone conversation of July 11, 1996 concerning the above project. As we discussed, the baseball field is an initial part of the phase II development of the park. This field is expected to be constructed within the next two years, while the remaining features to be constructed in the northeast portion of the Phase II area (tennis, softball, soccer) are not likely to proceed until much later. Phase II traffic circulation will be connected to the rest of the park by a loop road along the northern perimeter of the park crossing Corcoran Wash and an entrance to Phase II will be eventually provided from 24 1/2 Road. Enclosed are copies of a map showing the Phase I/Phase II areas along with three conceptual plans for development of the Phase II area. The Parks Department is trying to determine the least costly method for providing short-term access and parking for just the baseball field, which is anticipated to consist of a single access either from the northern loop road or from a new entrance on 24 1/2 Road. A major consideration is the level of improvements required on the 24 1/2 Road entrance. We would, therefore, like to get an initial impression from you concerning the requirements for the 24 1/2 Road entrance improvements both to serve just the baseball field prior to development of the total Phase II area, and for the overall development of the Phase II area. Short-term parking to meet the needs of the baseball field will consist of 100 spaces. The completed Phase II parking will include from 330 to 400 spaces depending on the final plan selected. The baseball field will be used primarily for high school games. The hours of use will therefore be 2:00 P.M. to 6:00 P.M on weekdays and 10:00 A.M. to 7:00 P.M on Saturdays. Peak traffic hours will be 2:00 P.M. to 3:00 P.M. entering and 5:00 P.M. to 6:00 P.M. exiting on weekdays and 3:00 P.M. to 4:00 P.M. entering and 6:00 P.M. to 7:00 P.M. exiting on Saturdays. Following is a list of the traffic counts obtained from Mesa County for 24 1/2 Road north of G Road:

DATE	TRAFFIC VOLUME (ADT)
July, 1991	307
March, 1992	193
July, 1995	446
April, 1996	440

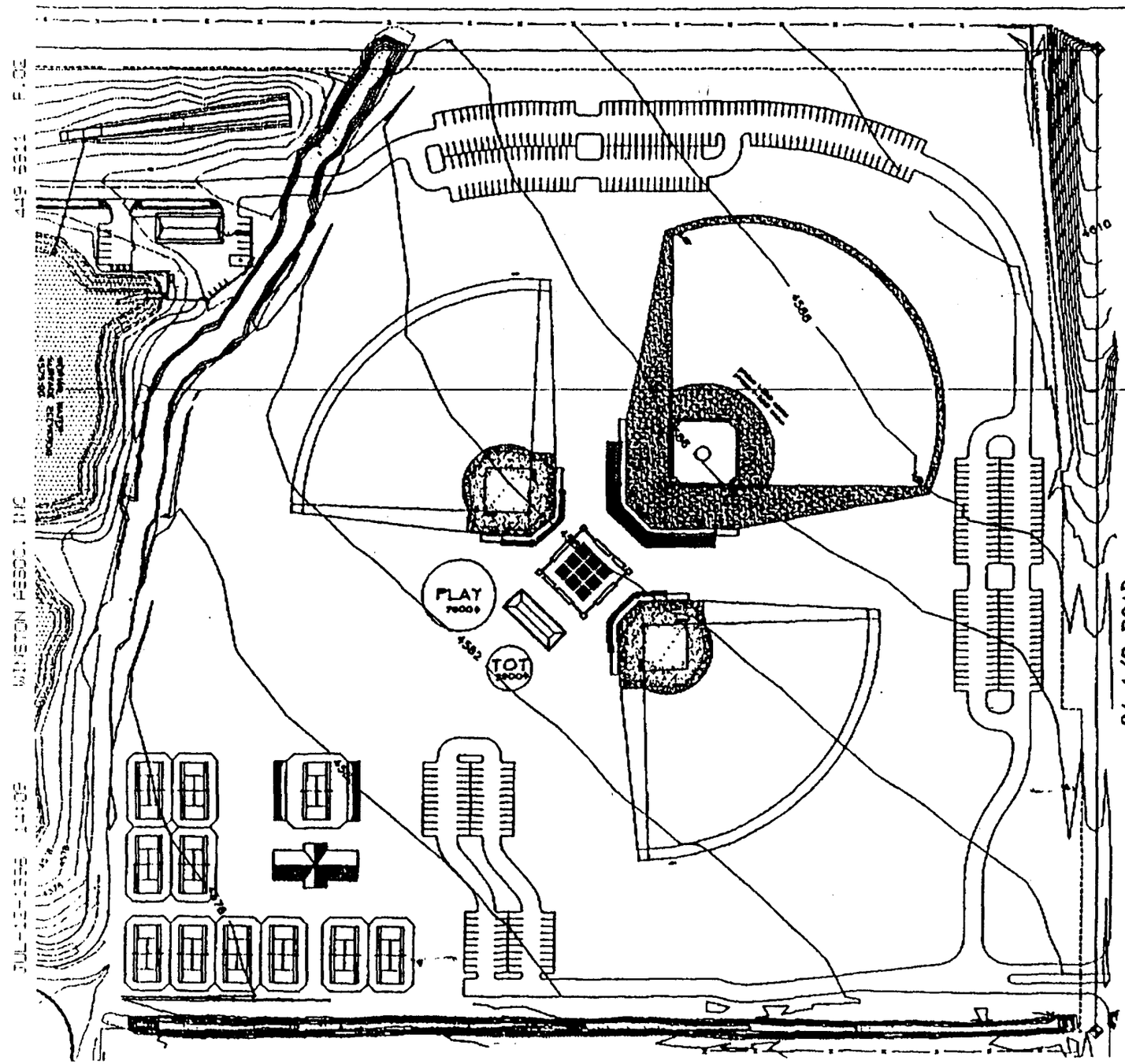
Mesa County anticipates less than 1000 ADT by the year 2010, not including traffic generated by the Park.

Please call if you have any questions or need additional information. Thank you for your help.

Submitted by:
WESTERN ENGINEERS, INC.

Bruce D. Marvin P.E.

xc: Ken Simms, Mesa County Traffic
Paul Kuhn, Winston Associates



OPTION I

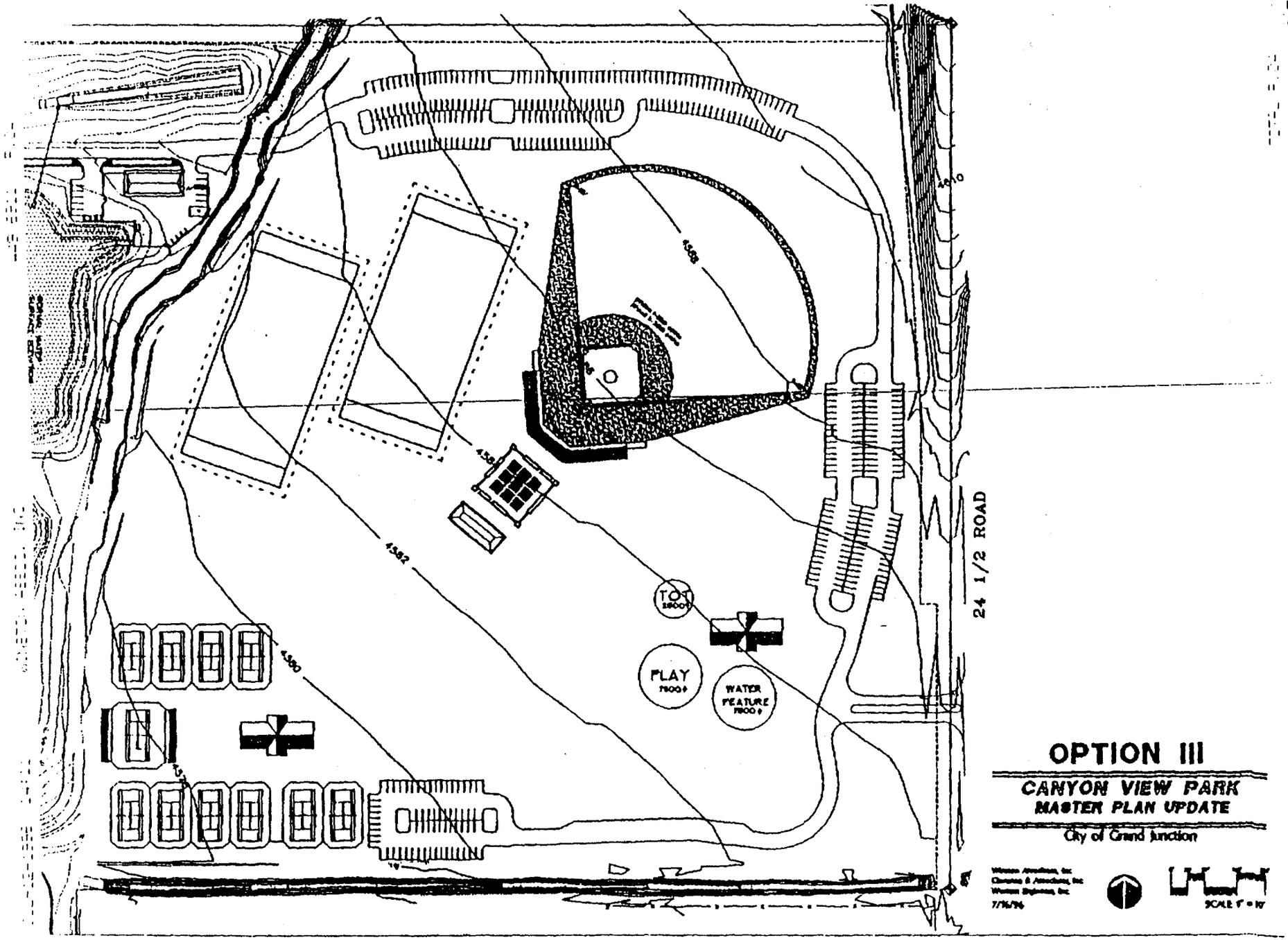
CANYON VIEW PARK
MASTER PLAN UPDATE

City of Grand Junction

OPTION II

CANYON VIEW PARK
MASTER PLAN UPDATE

City of Grand Junction


24 1/2 ROAD
TOT
PLAY
WATER FEATURE
OPTION III
CANYON VIEW PARK
MASTER PLAN UPDATE
City of Grand Junction
7/15/96