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File RZP-1996-136 Name: Monument Highlands Subdivision – So. Camp Road / Monument Road-Rezone Prelim.

ON	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, items are found on the list but are not present in the scanned electronic development file because they are already scanned elsewhere on the system. These scanned documents are denoted with (**) and will be found on the ISYS query system in their designated categories. Documents specific to certain files, not found in the standard checklist materials, are listed at the bottom of the page. Remaining items, (not selected for scanning), will be listed and marked present. This index can serve as a quick guide for the contents of each file.
X	X	**Table of Contents**
		***Review Sheet Summary**
X	X	***Application form**
X		Review Sheets
X		Receipts for fees paid for anything
X	X	***Submittal checklist**
X	X	***General project report**
		Reduced copy of final plans or drawings
X		Reduction of assessor's map.
		Evidence of title, deeds, easements
X	X	***Mailing list to adjacent property owners**
		Public notice cards
		Record of certified mail
X		Legal description
		Appraisal of raw land
		Reduction of any maps – final copy
		***Final reports for drainage and soils (geotechnical reports)**
		Other bound or non-bound reports
		Traffic studies
X	X	***Review Comments**
		***Petitioner's response to comments**
		***Staff Reports**
		***Planning Commission staff report and exhibits**
		***City Council staff report and exhibits**
		***Summary sheet of final conditions**

DOCUMENT DESCRIPTION:

X	X	Correspondence			
X	X	Preliminary Traffic Impact Study – 6/96			
X	X	Preliminary Drainage Report – 5/96			
X	X	Commitment for Title Insurance – 9/1/83			
X	X	Location Map			
X		Construction Details			
X		Topography Map			

DEVELOPMENT APPLICATION

Community Development Department
250 North 5th Street Grand Junction, CO 81501
(303) 244-1430

Receipt _____
Date _____
Rec'd By _____

File No. RZP-96-136

We, the undersigned, being the owners of property situated in Mesa County, State of Colorado, as described herein do hereby petition this:

PETITION	PHASE	SIZE	LOCATION	ZONE	LAND USE
[X] Subdivision Plat/Plan ~~Plat~~/Plan Preliminary	[ ] Minor [X] Major [ ] Resub	70 Ac.	NE1/4 NE1/4 Section 30 and NW1/4 NW1/4 Section 29 T1S	RSF-4 R1W UM	
[ ] Rezone				From: To:	
[ ] Planned Development	[ ] ODP [ ] Prelim [ ] Final				
[ ] Conditional Use					
[ ] Zone of Annex					
[ ] Variance					
[ ] Special Use					
[ ] Vacation					[ ] Right-of-Way [ ] Easement
[ ] Revocable Permit					

[X] PROPERTY OWNER	[X] DEVELOPER	[X] REPRESENTATIVE
Doug Jones	Mitchell Evans & Associates	Western Engineers, Inc.
Name	Name	Name
1441 Winters Avenue	19 Elk Avenue (P.O. Box 1311)	2150 Highway 6 & 50
Address	Address	Address
Grand Junction, CO 81501	Crested Butte, CO 81224	Grand Junction, CO 81505
City/State/Zip	City/State/Zip	City/State/Zip
(970)243-9138	(970)349-5704	(970)242-5202
Business Phone No.	Business Phone No.	Business Phone No.

NOTE: Legal property owner is owner of record on date of submittal.

We hereby acknowledge that we have familiarized ourselves with the rules and regulations with respect to the preparation of this submittal, that the foregoing information is true and complete to the best of our knowledge, and that we assume the responsibility to monitor the status of the application and the review comments. We recognize that we or our representative(s) must be present at all hearings. In the event that the petitioner is not represented, the item will be dropped from the agenda, and an additional fee charged to cover rescheduling expenses before it can again be placed on the agenda.

Matt Lohr — 6-3-96
Signature of Person Completing Application — Date

Doug Jones — 6-3-96
Signature of Property Owner(s) - Attach Additional Sheets if Necessary

SUBMITTAL CHECKLIST

PLANNED DEVELOPMENT MAJOR SUBDIVISION: PRELIMINARY

Location: S. Camp Road & Monument Rd Project Name: _____

Date Received _____

Receipt # _____

File # _____

ITEMS		DISTRIBUTION																														
DESCRIPTION	SSID REFERENCE	● City Community Development	● City Dev. Eng.	● City Utility Eng.	● City Property Agent	● City Parks/Recreation	● City Fire Department	● City Attorney	● City G.J.P.C. (8 sets)	O City Downtown Dev. Auth.	● City Police	● County Planning	O Walker Field	● School District #51	O Irrigation District	● Drainage District - Wetlands	● Water District - UTE	O Sewer District	● U.S. West	● Public Service	O GVRP	O CDOT	O Corps of Engineers	O Colorado Geological Survey	O U.S. Postal Service	O Persigo WWTF	● TCI Cable						TOTAL REQ'D.
● Application Fee	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						
● Application Form*	VII-1	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
● Reduction of Assessor's Map	VII-1	1	1	1	1	1	1	1	8	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																								
● Names and Addresses	VII-2	1																														
● Legal Desdription	VII-2	1			1																											
● General Project Report	X-7	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
● Location Map - full-sized assessor's map	IX-21	1																														
● Preliminary Plan	IX-26	1	2	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
O 11"x17" Reduction of Prelim. Plan	IX-26	1				1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
● Preliminary Drainage Report	X-12	1	2																													
● Traffic Study	X-15	2	2																													

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

PRE-APPLICATION CONFERENCE

Date: 3/26/96
Conference Attendance: M. Prollinger, J. Kliska, T. Prall
Proposal: Residential
Location: CORNER S. CAMP RD & MONUMENT ROAD

Tax Parcel Number: _____
Review Fee: _____
(Fee is due at the time of submittal. Make check payable to the City of Grand Junction.)

Additional ROW required? As per eng.
Adjacent road improvements required? As per eng. & traffic study
Area identified as a need in the Master Plan of Parks and Recreation? ~~Yes~~ NO
Parks and Open Space fees required? Yes Estimated Amount: $225/unit
Recording fees required? At final Estimated Amount: _____
Half street improvement fees/TCP required? As per eng. & traffic study Estimated Amount: _____
Revocable Permit required? —
State Highway Access Permit required? —
On-site detention/retention or Drainage fee required? On-site detention

Applicable Plans, Policies and Guidelines Devel. Code

Located in identified floodplain? FIRM panel # —
Located in other geohazard area? —

Located in established Airport Zone? Clear Zone, Critical Zone, Area of Influence? —
Avigation Easement required? —

While all factors in a development proposal require careful thought, preparation and design, the following "checked" items are brought to the petitioner's attention as needing special attention or consideration. Other items of special concern may be identified during the review process.

● Access/Parking	O Screening/Buffering	● Land Use Compatibility
● Drainage	O Landscaping	● Traffic Generation
O Floodplain/Wetlands Mitigation	● Availability of Utilities	O Geologic Hazards/Soils

O Other _____
Related Files: _____

It is recommended that the applicant inform the neighboring property owners and tenants of the proposal prior to the public hearing and preferably prior to submittal to the City.

PRE-APPLICATION CONFERENCE

WE RECOGNIZE that we, ourselves, or our representative(s) must be present at all hearings relative to this proposal and it is our responsibility to know when and where those hearings are.

In the event that the petitioner is not represented, the proposed item will be dropped from the agenda, and an additional fee shall be charged to cover rescheduling expenses. Such fee must be paid before the proposed item can again be placed on the agenda. Any changes to the approved plan will require a re-review and approval by the Community Development Department prior to those changes being accepted.

WE UNDERSTAND that incomplete submittals will not be accepted and submittals with insufficient information, identified in the review process, which has not been addressed by the applicant, may be withdrawn from the agenda.

WE FURTHER UNDERSTAND that failure to meet any deadlines as identified by the Community Development Department for the review process may result in the project not being scheduled for hearing or being pulled from the agenda.

X _____ X _____

Signature(s) of Petitioner(s) Signature(s) of Representative(s)

REPORT CHECKLIST AND OUTLINE

TRAFFIC IMPACT STUDY

CHECKLIST	OK	NA
Typed text		
Size: 8½ x 11" format		
Bound: Use bar or spiral binder or staple. Do not use a notebook.		
Title Page: a. Name of report and preparer, date of preparation and revision (if any) b. Professional's seal and signature		
Table of Contents: For text and appendices		
Exhibits: Maximum 11" high and 32" wide, bound in report and folded as required to 8½"x11" size		

OUTLINE

A. Introduction
- ✓ Land Use, Site and Study Area Boundaries (provide map)
- ✓ Existing and Proposed Site Uses
- ✓ Existing and Proposed Uses in Vicinity of Site (provide map)
- ✓ Existing and Proposed Roadways and Intersections (provide map)

B. Trip Generation and Design Hour Volumes (provide table)
C. Trip Distribution (provide figure)
D. Trip Assignment (provide figure)
E. Existing and Projected Traffic Volumes (provide figure for each item)
- ✓ A.M. Peak Hour Site Traffic (including turning movements)
- ✓ P.M. Peak Hour Site Traffic (including turning movements)
- ✓ A.M. Peak Hour Total Traffic Including Site Generated Traffic and Projected Traffic
- ✓ P.M. Peak Hour Total Traffic Including Site Generated Traffic and Projected Traffic
- ✓ Any Other Peak Hour Necessary for Complete Analysis
- ✓ Total Daily Existing traffic for Street System in Study Area
- ✓ Total Daily Existing Traffic for Street System in Study Area and New Site Traffic
- ✓ Total Daily Existing Traffic for Street System in Study Area plus New Site Traffic and Projected Traffic from Build-out of Study Area Land Uses

F. Capacity Analysis (Existing and 20 year projection - provide analysis sheets in appendices)
G. Traffic Signal Warrants Study(provide analysis sheets in appendices)
H. Traffic Accidents (optional) Provide collision diagrams and accident rates
I. Conclusions
J. Recommendations
- ✓ Proposed Recommended Improvements (provide sketches of improvements)
- ✓ Volume/Capacity Analysis at Critical Points (provide analysis sheets in appendices)
- ✓ Traffic Volume Proportions
- ✓ Significant Impacts

South Camp & Monument Road – Classified as Minor Arterials 80' Row
Mult-Modal Plan – Construct Walkways on Both Sides S. Camp Rd. Both South Camp & Monument Designated Bike Routes.

Contact Mesa County Traffic For Most Recent Counts, Accidents, MINUTP Projections.

Look At Need For Turn Lanes At Entries To Project

COMMENTS

1. A more detailed discussion of the requirements for this report is provided in the City Transportation Engineering Design Standards (TEDS).

2945-201-00-071 Acres: 9.69
GENIE INC
PO BOX 3299
GRAND JUNCTION, CO 81502-3299

2945-201-00-074 Acres: 56.22
TEMPLE ROCK CAPITAL LLC
5675 DTC BLVD STE 210
ENGLEWOOD, CO 80111-3216

2945-292-00-045 Acres: 1.22
ALICE H HAWORTH
JOHN C
2320 MONUMENT RD
GRAND JUNCTION, CO 81503-2778

2945-292-00-109 Acres: 22.38
RICHARD L PAVEGLIO
TRUSTEE
PO BOX 2775
GRAND JUNCTION, CO 81502-2775

2945-292-00-112 Acres: 3.59
THOMAS E ORRELL
CLEAH T ORRELL
2332 MONUMENT RD
GRAND JUNCTION, CO 81503-2778

2945-201-00-075 Acres: 307.25
TEMPLE ROCK CAPITAL LLC
5675 DTC BLVD STE 210
ENGLEWOOD, CO 80111-3216

2945-201-00-076 Acres: 111.46
TEMPLE ROCK CAPITAL LLC
5675 DTC BLVD STE 210
ENGLEWOOD, CO 80111-3216

Doug Jones
1441 Winters Ave.
Grand Junction, CO 81501

Mitchell Evans & Associates
19 Elk Avenue
P.O. Box 1311
Crested Butte, CO 81224

2945-293-00-071
FRANK NISLEY JR.
PO BOX 3117
GRAND JUNCTION, CO 81502-3117

2945-192-00-115
EUGENE B FLETCHER INC
PO BOX 821
RANCHO SANTA FE, CA 92067

Matt Lohof
Western Engineers
2150 Highway 6 & 50
Grand Junction, CO 81505

City of Grand Junction
Community Development Dept.
250 N 5th Street
Grand Junction, CO 81501

PRELIMINARY DRAINAGE REPORT
FOR
MONUMENT HIGHLANDS SUBDIVISION

MAY, 1996

Prepared By:
Western Engineers, Inc.
2150 Highway 6&50
Grand Junction, CO 81505
(970) 242-5202

LOCATION AND DESCRIPTION:

SITE:

Monument Highlands Subdivision is located in the Southwest part of the City of Grand Junction in the NE 1/4 NE 1/4 Section 30 and West 30 acres of the NW 1/4 NW 1/4 Section 29, Township 1 South, Range 1 West, Ute Meridian. Total area to be developed is 69 acres. Monument Road crosses the Southeast corner of the property. South Camp Road is located to the South of the site. Monument Valley subdivision adjoins South Camp Road to the southwest of the proposed development. One major drainage way traverses the south east portion of the property.

MAJOR BASIN:

The major basin is defined by ridges and elevated terrain that extend southwest from the property boundary into the Colorado National Monument. The entire major basin exhibts vertical relief of about 1100 feet. Total off-site tributary basin area is 365 acres. The majority of the site intended for development consists of gently to moderately steeply inclined slopes ranging from 1 to 50 percent. The on-site vertical relief is nearly 200 feet. The portions of the site to be excluded from consideration for development consist of very steep slopes and shallow sandstone cliffs. 63 acres of the site area are tributary to this major basin with the balance of the site area (drainage basins 3 and 4) contributing runoff to a separate drainage basin located to the nortwest of the subject property. The upper limit of the basin is the ridge through which the Monument Road tunnel is cut. Monument Valley Subdivision Filing Two is located in the lower part of the basin. The primary concentration point is located near the eastern site boundary.

SOILS:

SITE:

The northern portion of the property consists of Badland (Ba) soil, hydrological soil group (HSG) ''D''. Several large hills of Morrison claystone are located in the northwest corner of the site. The soil in the southern part of the property is Glenberg Sandy Loam, 3-8% slope (GIB). This soil is well drained and rapidly permeable (HSG B). Both soils found on this site are fragile and accelerated erosion will occur with minimal disturbance.

MAJOR BASIN:

The lower portion of the major basin, including much of Monument Valley Subdivision Filing Two is Glenberg Sandy Loam, 0-3% slopes, HSG ''B''. The upper basin consists of Rockland soil, HSG ''D'', and bare rock outcrops.

VEGETATION:

SITE:

Ground cover on the site is mainly cheatgrass with isolated clumps of salt brush and rabbit brush. The hillsides in the northern part within the badlands soil are mostly bare.

MAJOR BASIN:

Ground cover on the lower part of major basin is cheat grass with other western desert grasses and shrubs. The steep upper part of the basin has a sparse cover of pinyon pine and juniper trees with a cheat grass understory. The very top of the basin is bare rock.

EXISTING DRAINAGE CONDITIONS:

MAJOR BASIN:

The main fork (basin B) of the major basin begins on the steep slopes of the Colorado National Monument just to the north of Serpents Trail and continues through the Devils Kitchen picnic area. It crosses the park road first through a 36'' CMP and then again through a 7' X 7' box culvert. A second fork (Basin A) originates below the park road tunnel and flows generally northeast. The confluence of these two branches is within filing two of Monument Valley Subdivision. The combined flow is then routed under South Camp Road by 48'' diameter CMP before entering the subject property. The drainageway is dry except during and after precipitation and for a brief time in the spring while the snowmelt runoff occurs.

BASIN DELINEATION:

Major Basin:

Drainage basins and subbasins were delineated from U.S. Geological Survey topographic maps, photorevised 1973. Elevated features (ridges), were utilized as basin boundaries. In order to keep the subbasins as homogeneous as possible, the steep upper reaches of the two tributaries are separate subbasins.

Site:

The site was divided into four subbasins which were delineated from a detailed topographic survey by Western Engineers, Inc (see plate 2). A drainageway carrying storm runoff from the upstream basins traverses the south-east corner of the property. This normally dry channel is referred to as the ''off-site drain'' in this report. The area within the site that contributes runoff directly to this drainageway comprises Basin One. There will be no provisions for runoff detention within this basin. A floodway will be dedicated along the full length of the drainageway within the property. The off-site drain joins the No Thoroughfare Canyon wash northeast of the subject property, near the north-east corner of section 29, which drains into the Colorado River.

Basin Two contains over one-half of the area in this development. Runoff from this basin discharges into the off-site drain near the middle of the east property boundary. A detention facility will be located just upstream of the confluence.

Basin Three is located in the north-east portion of the development. Runoff from this basin discharges into the off-site drain east of the property boundary.

Basin Four is located in the north-west corner of the site and consists of the area to the north of the crests of the steep, barren hills. Runoff from this basin flows north-west and is collected and channeled to the Colorado River by Red Canyon Wash.

PREVIOUS STUDIES:

The only other development within the subject drainage basin is the Monument Valley Subdivision. Mesa County files for Monument Valley Subdivision did not include any hydrological calculations or drainage report. The 100 year flood plain for both drainages had been indicated on a topographic map, but the bases for these delineations were not available for review.

PROPOSED DRAINAGE CONDITIONS:

CHANGES IN DRAINAGE PATTERNS:

Because of the substantial relief exhibited by the site, a significant amount of regrading will be required to provide reasonable surface drainage characteristics. Flows produced by storm events in the major basin will be routed through the site by means of a dedicated floodway provided with erosion protection features as necessary. Flows from smaller established drainages which currently traverse the site will be conveyed through storm drainage elements confined to drainage easements. Flows from the steeper undeveloped portions of the site will be intercepted by ditches, swales and other similar features and directed into the dedicated stormwater collection system. Lot and street runoff will similarly be collected by the stormwater sewer system. As much as is practical, the stormwater runoff generated by the development will be conveyed to a detention facility located near the northeast corner of the property. Detention discharges will be released to the channel for the major basin and will flow downstream to the northeast. This detention facility will be designed to satisfy the requirements of the City of Grand Junction for runoff control.

MAINTENANCE ISSUES:

Maintenance for the floodway which traverses the property will include periodically removing collected debris and repairing erosion damage. The stormwater system including diversion features, interception points, conveyances and detention facilities will also require periodic maintenance. It is anticipated that the maintenance of these items will remain the responsibility of the homeowners' association.

DESIGN CRITERIA AND APPROACH:

GENERAL CONSIDERATIONS:

The City of Grand Junction has established guidelines which require that post development peak discharge from the site for both the 2 and 100 year frequency events shall not exceed the pre-development or historic runoff due to change in site conditions. All drainage structures must safely convey the 100 year storm peak discharge. Pipes shall maintain a minimum velocity of 2.5 feet per second while conveying runoff from the two year storm. These requirements will be satisfied unless other provisions, acceptable to the City of Grand Junction, are made.

An analysis of off-site contributions to the site hydrology will determine the 2 and 100 year peak flows generated by the upstream basins in order to design conveyance facilities within the development. The subject property itself will be analyzed to determine both pre and post development site discharges in order to adequately size a detention facility.

All rainfall values, distributions, soil abstractions and losses, routing, and hydrograph simulations will be performed in accordance with the requirements of the SWMM, unless otherwise noted.

MAJOR BASIN:

Hydrologic and Hydraulic analyses will be performed utilizing the 1990 version of HEC-1, a computerized hydrologic simulation program developed at the U.S. Army Corps of Engineers Hydrologic Engineering Center.

SITE:

Hydrologic analysis inside the proposed development will be performed using HEC-1 where practical. Where greater detail is required, other appropriate methods such as the SCS tabular Unit Hydrograph method for runoff determination will be used. This method has been accepted by the City of Grand Junction on previous projects.

DESIGN STORMS:

Both the 2 hour and 24 hour storms of recurrence intervals of 2 and 100 years will be examined for impact on the project, stormwater features, and downstream flows. The storms with the greatest effect will be chosen as the design storms. In some cases, both durations may control, each for a different portion of the project. For example, the shorter duration storm may govern design of collection and conveyance features while the longer duration storm may be critical for detention analyses.

RAINFALL TO RUNOFF:

The rainfall to runoff transformation will be modeled using the HEC-1 hydrological simulation program as previously noted. The Soil Conservation Service Unit Hydrograph will be utilized to determine specific subbasin precipitation runoff parameters. Subbasin lag times will be determined directly by application of the formula given in figure ''E-4'' in the City of Grand Junction Stormwater Management Manual. (SWMM).

Basin average total precipitation values for the 2 hour storms will be from table A-2 of the SWMM. Infiltration losses will be determined by SCS Runoff Curve Number (CN) method. Weighted average Curve Numbers will be calculated for each sub-basin, using values from appendix ''C'' of the SWMM. The initial abstraction (Ia) will be calculated by the HEC-1 software using the formula:

$$Ia = 0.2*(1000-10*CN)/CN.$$

DETENTION DESIGN:

Hydrographs will be routed through detention basins using the storage routing provisions included in HEC-1. The geometry for detention basins which will be provided as part of this project will be determined using the results of trial HEC-1 simulations.

HYDRAULIC CRITERIA:

Pipe capacity rating curves will be generated using design equations from the U.S. Department of Transportation, Federal Highway Administration, "Hydraulic Design of Highway Culverts" as well as generally accepted methods of balancing energy lost with energy available. Where inflows exceed pipe capacities, storage will be required. The necessary storage volumes and water surface elevations will calculated by HEC-1 from measured incremental areas and pipe rating curves.

Where appropriate, Channel Routing will also be performed by the HEC-1 software, using the Muskingum-Cunge urban channel method. The

geometry of the natural drainageways will be estimated from U.S.G.S mapping or, from field measurements, where appropriate.

PRELIMINARY DRAINAGE REPORT CRITERIA:

This preliminary hydrology report was prepared in accordance with the requirements of the City of Grand Junction "Submittal Standards for Improvements and Development" (SSID) manual. The City of Grand Junction Stormwater Management Manual (SWMM) includes a list of items for the preliminary hydrology report requiring greater detail than is generally possible until the final designs are nearly complete. Therefore, this report was prepared based on the understanding that the greater detail given in the SWMM can be presented during subsequent submittals.

APPENDIX A

BASIN CHARACTERISTIC SUMMARY
UPSTREAM BASINS:

BASIN NAME	AREA SO.MI)	FLOW LENGTH (ft.)	AVERAGE SLOPE (%)	LAG TIME (hours)	WEIGHTED CN
A	0.1095	2890	30.6	0.087	92
B	0.1312	3470	19.9	0.124	92
C	0.1323	3360	4.46	0.453	75.6
D	0.1981	2778	3.96	0.357	80.3

WEIGHTED RUNOFF CURVE NUMBER CALCULATIONS:
OFFSITE,UPSTREAM BASINS.

BASIN A

COVER TYPE	SOIL/HSG	%	CN	%CN
ROCK, PINYON JUNIPER	Rp/''D''	1.0	92	92

BASIN B

COVER TYPE	SOIL/HSG	%	CN	%CN
ROCK, PINYON JUNIPER	Rp/''D''	1.0	92	92

BASIN C

COVER TYPE	SOIL/HSG	%	CN	%CN
HERBACEOUS MIX (FAIR)	GIA/''B''	.58	71	41.2
2.7 ACRE LOTS		.42	82	34.4
				75.6

BASIN D

COVER TYPE	SOIL/HSG	%	CN	%CN
HERBACEOUS MIX (FAIR)	GIA/''B''	.15	89	10.6
2.7 ACRE LOTS		.85	82	69.7
				80.3

APPENDIX C

REFERENCES

HANDBOOK OF STEEL DRAINAGE AND HIGHWAY CONSTRUCTION PRODUCTS. Second Edition. R.R. Donnelly and Sons Company, 1971.

HEC-1 FLOOD HYDROGRAPH PACKAGE USERS MANUAL. Hydrologic Engineering Center U.S. Army Corps of Engineers, 609 Second St. Davis, CA September, 1990.

HYDRAULIC DESIGN OF HIGHWAY CULVERTS. U.S. Department of Transportation Report No. FHWA-IP-85-15. Jerome Norman and Associates, Norfolk, VA. 1985.

STORMWATER MANAGEMENT MANUAL (SWMM). Public Works Department, City of Grand Junction, CO. January, 1996.

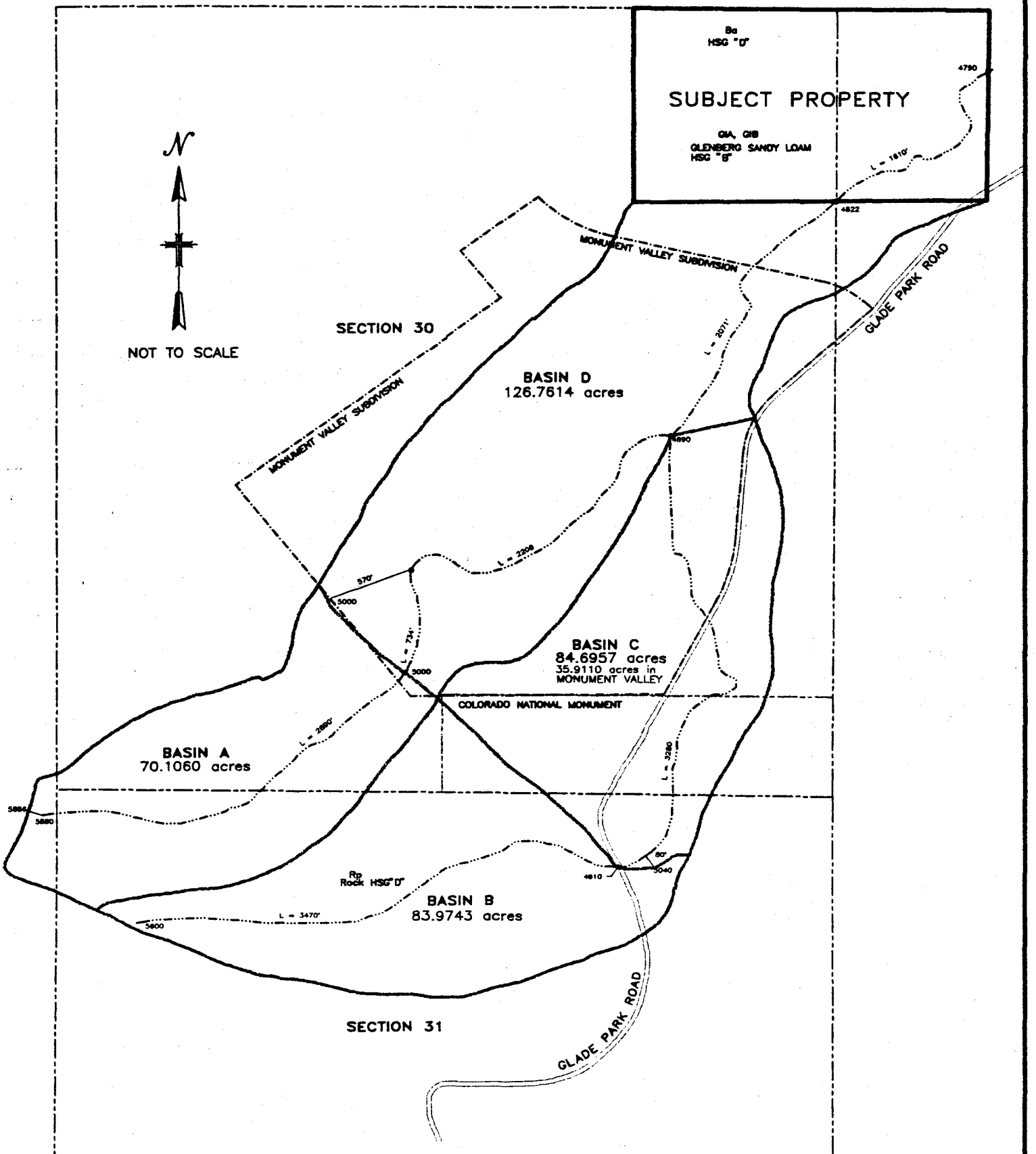


PLATE 1

MAJOR BASIN DRAINAGE MAP

OFF-SITE BASINS
365.53 acres

FLOWLINE/ TIME OF CONCENTRATION PATH

BASIN BOUNDARY

SECTION LINE

BASIN 4
9.4197 ACRES

BASIN 3
12.8965 ACRES

BASIN 2
39.6692 acres
21.7844 Ba SOIL

OFF-SITE DRAIN

BASIN 1
11.4504 acres

MONUMENT ROAD

SOUTH CAMP ROAD

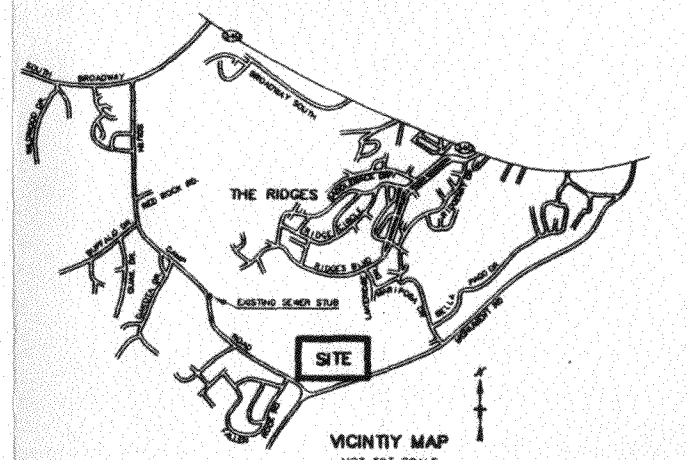
BADLANDS SOIL, HSG "D"

FLOWLINE/ TIME OF CONCENTRATION PATH

BASIN BOUNDARY

N

NOT TO SCALE
CONTOUR INTERVAL = 2.0'



VICINTIY MAP
NOT TOT SCALE

PLATE 2
PRE-DEVELOPMENT
DRAINAGE BASINS

WESTERN ENGINEERS, INC. CONSULTING ENGINEERS / LAND SURVEYORS

TOPOGRAPHY MAP FOR
MONUMENT HIGHLANDS SUBDIVISION
LOCATED IN NE1/4 NE1/4 SECTION 30
AND IN NW1/4 NW1/4 SECTION 29
TOWNSHIP 1 SOUTH, RANGE 1 WEST, U.M.
CITY OF GRAND JCT., MESA COUNTY, COLORADO

SURVEYED MJH DRAWN RJR CHECKED

GENERAL PROJECT REPORT

MONUMENT HIGHLANDS SUBDIVISION

Monument Highlands Subdivision is located within the City of Grand Junction in the NE 1/4 NE 1/4 Section 30 and West 30 acres of the NW 1/4 NW 1/4 Section 29, Township 1 South, Range 1 West, Ute Meridian. Total area to be developed is 69.46 acres. The developer proposes to construct 171 single family dwelling units on this site, at an approximate density of 2.5 lots per acre. The parcel is zoned Residential Single Family, (RSF-4), with a maximum density of four units per acre.

Monument Valley Subdivision is located south and west of the site, Ridges Subdivision (RSF-4) is to the north. Barren shale hills extend from the property north to the Ridges Subdivision.

Monument Road crosses the Southeast corner of the property. South Camp Road is located to the South of the site. Traffic counts compiled by Mesa County indicate that a large majority of eastbound vehicles on South Camp road turn north onto Monument Road. Nearly one-half of southbound traffic on Monument Road turns west onto onto South Camp Road. Approximately 20 percent of northbound traffic on Monument Road turns west onto South Camp Road.

Roughly one-half of the traffic generated from this proposed residential Subdivision is expected to use the Monument Road exit and proceed north on Monument Road. The other half of the Subdivision traffic is expected to utilize the South Camp exit, with 60% of the traffic turning east onto South Camp Road and then north onto Monument Road. The other 40% of the South Camp exit traffic is expected to proceed westbound on South Camp Road and utilize the Redlands Parkway bridge.

The water line located in the South Camp Road Right-of-way that presently terminates at Rimrock Drive will be extended to provide Domestic and irrigation water for the Subdivision. Fire Hydrants will be located as per City standards. A lift station will pump sewage to the existing sewer located in South Camp Road at Dakota Drive. The west 30 acres of this property is currently outside of the Grand Junction 201 sewer boundary. Steps will be taken to expand the 201 sewer district to include the east 30 acres. Electric and Gas Service will be provided from existing lines currently serving Monument Valley Subdivision.

The northern portion of the property consists of Badland (Ba) soil, hydrological soil group (HSG) ''D''. Several large hills of Morrison shale are located in the northwest corner of the site. The soil in the southern part of the property is Glenberg Sandy Loam, 3-8% slope (GIB). This soil is well drained and rapidly permeable (HSG B). Both soils found on this

site are fragile and accelerated erosion will occur with minimal disturbance.

The soils on this site are expected to exhibit significant swell or settlement upon wetting which will require special foundation design considerations, moisture protection provisions, and significantly greater foundation costs than would otherwise be the case. Detailed soil investigations may reveal that construction of buildings on certain lots is not feasible due to soil conditions. Other significant geologic considerations to be made include slope stability, rockfall potential, flood plain encroachments and the possibility of developing groundwater problems after development.

Prepared by:
Western Engineers, Inc.
2150 Hwy 6&50
Grand Junction, CO 81505

Prepared for:
Mitchell Evans & Associates
19 Elk Avenue
Crested Butte, CO 81224

REVIEW COMMENTS

FILE #RZP-96-136 **TITLE HEADING:** Monument Highlands Subdivision

LOCATION: N of South Camp Road at Glade Park Road

PETITIONER: Mitchell Evans & Associates

PETITIONER'S ADDRESS/TELEPHONE: 19 Elk Avenue
P.O. Box 1311
Crested Butte, CO 81224
349-5704

PETITIONER'S REPRESENTATIVE: Matt Lohof, Western Engineers

STAFF REPRESENTATIVE: Michael Drollinger

NOTE: THE PETITIONER IS REQUIRED TO SUBMIT FOUR (4) COPIES OF WRITTEN RESPONSE AND REVISED DRAWINGS ADDRESSING ALL REVIEW COMMENTS ON OR BEFORE 5:00 P.M., JUNE 21, 1996.

CITY COMMUNITY DEVELOPMENT **6/17/96**
Michael Drollinger **244-1439**

See attached comments.

CITY DEVELOPMENT ENGINEER **6/14/96**
Jody Kliska **244-1591**

1. Please note a new City Standard Contract Documents for Capital Improvement Projects has been published and is available for purchase at Public Works for $10. All public improvement construction must be in accordance with these specifications.
2. The street sections shown on the submitted plans do not meet current city standards. These are available at Public Works office as well.
3. Maximum street grades allowed (see SWMM Manual, Grades) are 8%. Two of the cul-de-sacs near the northern boundary of the property appear to be steep. Please provide information on proposed street grades, as well as consideration of driveway accesses from these streets.
4. The plan does not show any proposed trail connections. The Urban Trails Committee has prepared a proposed trail map for the area, and it is possible some of the proposed trails fall within or near this property.
5. The traffic study assumes there will be a street connection to South Camp Road. However, the plan does not show a connection, only a stub out. Please address how this property will acquire the necessary right of way to access South Camp Road.
6. In the traffic study please use Land Use 210, Single Family Detached Housing for calculating trip generation.
7. The traffic study references the 1985 Highway Capacity Manual and associated software. Please note a 1994 edition has been published and the unsignalized intersection chapter has been updated. Please use this for computations.

8. The traffic study assumes directional distribution with 30% coming to/from eastbound South Camp Road. However, this assumption needs to be carried through when distributing the traffic at the Monument Road intersection. The figures for the Monument Road/South Camp intersection do not show any increase in turning movements due to the subdivision, which is incorrect with the assumption of 30% distribution.
9. The traffic study needs to contain recommendations for improvements such as turn lanes. Please use the City TEDS manual for turn lane criteria in making this assessment.
10. Please provide the date of the traffic counts obtained from Mesa County and used in the traffic study.

CITY UTILITY ENGINEER **6/14/96**
Trent Prall **244-1590**

1. PLEASE NOTE: 1996 City of Grand Junction Standard Specifications shall apply for this proposed development. Copies are available for $10 in the Public Works and Utilities office.
2. Petitioner has not followed SSID page..... preliminary alignment of major utilities such as water and sewer are supposed to be submitted.

CITY FIRE DEPARTMENT **6/12/96**
Hank Masterson **244-1414**

1. The entrance to this subdivision from South Camp Road is mentioned in the project report but not shown on the site topography map. Final plan must show details of the South Camp Road entrance.
2. For the Final Plan the petitioner must submit a complete utility composite showing fire hydrant locations and fire line sizes. A looped fire line is required unless the petitioner can demonstrate to the fire department that a looped line is not practicable. In addition, if a dead end line is proposed, petitioner must submit calculations stamped by an engineer showing that the most remote fire hydrant is capable of supplying the minimum fire flow of 500 gallons per minute. Fire hydrants must be located at both entrances to the subdivision, at major intersections, be spaced at 500' intervals, and located so that no lot frontage is more than 250' from a hydrant.

CITY POLICE DEPARTMENT **6/14/96**
Dave Stassen **244-3587**

No comments.

U.S. WEST **6/6/96**
Max Ward **244-4721**

For timely telephone service, as soon as you have a plat. and power drawing for your housing development, please.....

MAIL COPY TO:
U.S. West Communications
Developer Contact Group
P.O. Box 1720
Denver, CO 80201

AND

CALL THE TOLL-FREE NUMBER FOR:
Developer Contact Group
1-800-526-3557

We need to hear from you at least 60 days prior to trenching.

Show easements dimensions.

CITY PARKS & RECREATION **6/13/96**
Shawn Cooper **244-3869**

1. Parks & Open Space fees - 171 @ $225 = $38,475.
2. Anticipate needed hike and bike trail easements within this subdivision. The proposed "Colinas Dev Vaille" bike trail plan does appear to overlay this area.

PUBLIC SERVICE COMPANY **6/6/96**
Gary Lewis **244-2698**

14' multi-purpose easements along all roadways per City of Grand Junction requirements should be sufficient for installation of gas and electric facilities to these lots. Will require facilities to be extended to reach site. Additional easements may be required at time of application for service.

TCI CABLEVISION **6/12/96**
Glen Vancil **245-8777**

1. We require the developers to provide, at no charge to TCI Cablevision, an open trench for cable service where underground service is needed and when a roadbore is required, that too must be provided by the developer. The trench and/or roadbore may be the same one used by other utilities so long as there is enough room to accommodate all necessary lines.
2. We require developers to provide, at no charge to TCI Cablevision, fill-in of the trench once cable has been installed in the trench.
3. We require developers to provide, at no charge to TCI Cablevision, a 4" PVC conduit at all utility road crossings where cable TV will be installed. This 4" conduit will be for the sole use of cable TV.
4. Should your subdivision contain cul-de-sac's the driveways and property lines (pins) must be clearly marked prior to the installation of underground cable. If this is not done, any need to relocate pedestals or lines will be billed directly back to your company.
5. TCI Cablevision will provide service to your subdivision so long as it is within the normal cable TV service area. Any subdivision that is out of the existing cable TV area may require a construction assist charge, paid by the developer, to TCI Cablevision in order to extend the cable TV service to that subdivision.
6. TCI will normally not activate cable service in a new subdivision until it is approximately 30% developed. Should you wish cable TV service to be available for the first home in your subdivision it will, in most cases, be necessary to have you provide a construction assist payment to cover the necessary electronics for that subdivision.

Additionally, you should be aware that Public Service Company of Colorado has not yet provided us with their routing and even when they do so it may not be possible to use all of it to tie into existing cable TV service. As a result of this, there could be additional charges or the necessity of your providing a trench from existing services to your subdivisions tie-in point.

REDLANDS WATER & POWER **6/10/96**
Gregg Strong **243-2173**

This is beyond our system and will have no impact on Redlands Water and Power Company.

UTE WATER **6/13/96**
Gary Mathews **242-7491**

1. The water main located at South Camp Road and East Fallen Rock Road will not supply a sufficient

flow for fire flow requirements and domestic needs Low pressures exist in the elevated areas of Monument Valley and would become worse if the main line feeding Monument Valley was extended to supply Monument Highlands Subdivision. Ute Water has an 18" main line near Heatheridge Subdivision and Monument Road. A line extension is needed from this point to the project.

2. Water mains shall be c-900, class 150.
3. Installation of pipe fittings, valves and services including testing and disinfection shall be in accordance with Ute Water standard specifications and drawings.
4. Developer will install meter pits and yokes. Ute will furnish the pits and yokes.
5. Construction plans required 48 hours before development begins.
6. Policies and fees in effect at the time of application will apply.

CITY PROPERTY AGENT **6/14/96**
Steve Pace **256-4003**
No final plat to review.

TO DATE, COMMENTS NOT RECEIVED FROM:
City Attorney

STAFF COMMENTS

FILE : #RZP-96-136
DATE: June 17, 1996
STAFF: Michael T. Drollinger
PROJECT: Monument Highlands
REQUEST: Rezone/Preliminary Plan
LOCATION: NW Corner S. Camp Road and Monument Road
ZONING: PR-4

COMMENTS:

1. Preliminary Plan incomplete - please use SSID checklist and revise Preliminary Plan to include all information on the checklist. Also, label drawing as "Preliminary Plan", not "topography map." A COMPLETE REVIEW OF THE PRELIMINARY PLAN WILL OCCUR ONCE A REVISED PLAN IS SUBMITTED.

2. Revise and resubmit project narrative identifying the zoning correctly (zoning is PR-4, not RSF-4).

3. Many lots (e.g. 66-74; 78-87) contain an average slope which often exceeds 20%. How will the lots be configured to provide adequate buildable area? The narrative identifies severe soil constraints in this area and notes that "detailed soil investigations may reveal that construction of buildings on certain lots is not feasible due to soil conditions." This is unacceptable; if severe constraints are anticipated then the appropriate studies (geotechnical or otherwise) will be required now at the preliminary plan phase, otherwise the petitioner shall revise the plans to delete all lots in the constrained areas.

4. The issue of "rockfall potential" which was identified by the petitioner in the project narrative shall be addressed with appropriate studies in the preliminary plan phase.

5. Why is only one access shown to the site on the "preliminary plan" when the traffic study assumes two access points; please clarify this significant discrepancy.

6. For cul-de-sacs with a length less than 150 ft. the radius may be reduced; please refer to Exhibit "D" of the standard drawings for further information.

7. Will active open space area be provided with the subdivision?; please identify the location and a general description of the facilities proposed.

8. The Location Map provided is inadequate; see the attached SSID checklist and provide the correct map.

9. Proposed phasing shall be identified on the Preliminary Plan together with a proposed development schedule.

Please refer to Section 7-5-4 of the Zoning and Development Code which provides additional information on the nature of a preliminary plan submittal.

ALL IDENTIFIED ISSUES MUST BE ADDRESSED WITH THE RESUBMITTAL OR THE ITEM WILL BE PULLED FROM THE PLANNING COMMISSION AGENDA. Due to the extent of missing information, staff may require additional time to review the application which will require the removal of the item from the July Planning Commission agenda.

Please contact the Community Development Department (244-1430) if you have any questions or require further explanation of any item.

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RZP-96-136

DRAWING STANDARDS CHECKLIST

PRELIMINARY PLAN

ITEM		GRAPHIC STANDARDS	OK	NA
SECTION VIII	A	Scale: 1" = 20', 30', 40', or 50' – 100 scale NOT ACCEPTABLE		
	B	Sheet size: 24" x 36"		
	C	There are no primary features on this drawing		
	D	Notation: All non-construction text		
	E	Line weights of existing and proposed features per City standards		
	G	Horizontal control: Subdivisions tied to Section aliquot corners		
	H	Vertical control: Benchmarks on U.S.G.S. datum if public facilities other than SW are proposed		
	I	Orientation and north arrow		
	K	Title block with names, titles, preparation and revision dates		
	M	Legend of symbols used		
	N	List of abbreviations used		
	P	Multiple sheets provided with overall graphical key and match lines		
	Q	Contouring interval and extent		
	R	Neatness and legibility		

ITEM		FEATURES	OK	NA
-	1	Name of subdivision and total site acreage		
DRAINAGE INFO.	2	Show subdivision perimeter boundaries		
	3	Identify utility vendors to the site		
	4	Show existing and proposed lots, parcels, tracts, ROW and easements on and adjacent to site. For perimeter streets, show roadway width from curb to curb or edge of pavement to edge of pavement, ROW width and monument or section line		
	5	Show and identify proposed ownership and use of common and public tracts		
	6	Show existing and proposed drainage systems, including retention/detention basins and location of inflow to and outflow from the site, and directional flow arrows on streets and channels		
	7	Show existing contours and any major proposed changes to site grading		
	8	Show location of or reference to arterial and/or collector roads		
	9	Show 100-year floodplains per previous studies or reports		
	10	Show other existing natural or man-made drainageways, wetlands, ponds, etc.		
ADD'L INFO.	11	Indicate land use breakdown by percentage (lots, tracts, ROW), and number of lots		
	12	Show adjacent properties and identify zoning and use		
	13	Show and identify buildings and use which are on and/or immediately adjacent to the site		
	14	Number lots and blocks consecutively		
	15	Show and identify streets, and identify proposed City standard street section		
	16	Show and size existing and proposed water and sewer (not services) and irrigation facilities		
	17	Show other existing utilities, including power, telephone, gas, and cable TV		
DIM.	18	Dimension (approximate only) lot and tract boundaries and street and ROW widths		

COMMENTS

1. Items 1-10 may be used as a base for the Major Basin Drainage Map.
2. Items 1-17 may be used (as subsequently revised) for the Composite Plan.

RZP-96-136

DRAWING STANDARDS CHECKLIST

LOCATION MAP

	ITEM	GRAPHIC STANDARDS	OK	NA
SECTION VIII	A	Scale: Per assessor's map		
	B	Sheet size: 24"x36"		
	I	Orientation and north arrow		
	R	Neatness and legibility		

	ITEM	FEATURES	OK	NA
-	1	Use an assessor's map as a base		
ADDITIONAL INFO	2	Show a minimum of 1/8 mile (660 feet) beyond the project site		
	3	Identify as a "Location Map"		
	4	Delineate tax districts		
	5	Delineate other special districts and zones		
	6	Identify the site on the map		

COMMENTS

1. Additional information may be added with markers, or red or heavy black ink

I, RICHARD CAVALLI of CAVALLI + EVANS, INC
THE DEVELOPER of "MONUMENT HIGHLANDS"
HEREBY REQUEST AND AUTHORIZE CHANGING
THE COMMISSION HEARING DATE FROM
JULY TO AUGUST 1996

Richard Cavalli
6-18-96

PRELIMINARY
TRAFFIC IMPACT STUDY

PROPOSED RESIDENTIAL SUBDIVISION

MONUMENT HIGHLANDS SUBDIVISION

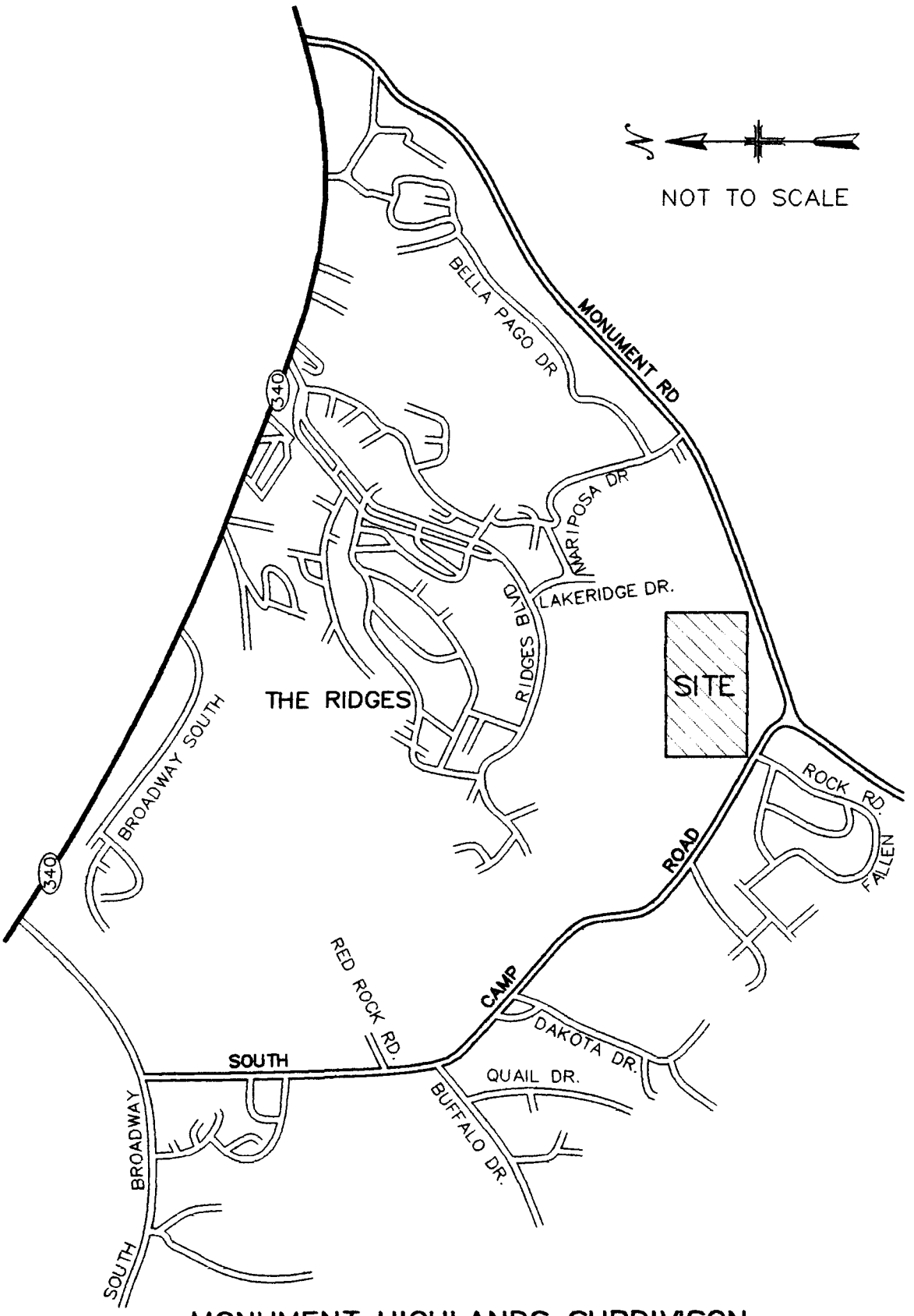
Grand Junction, Colorado

Prepared By:

Western Engineers, Inc.
2150 Hwy. 6 & 50
Grand Junction, CO 81505

JUNE, 1996

INDEX



MONUMENT HIGHLANDS SUBDIVISON
VICINITY MAP
FIGURE 1

WESTERN ENGINEERS, INC.

TR_IDXM.DWG

INTRODUCTION

The following report is a preliminary impact study for traffic volumes generated by the proposed development of a 170 unit residential subdivision.

The subdivision site is located north of the intersection of Monument road and South Camp road near the Colorado National Monument east entrance (See Vicinity map, Figure 1). Access to the site will be provided by one full movement driveway to South Camp road and one full movement driveway to Monument road.

The proposed site is currently vacant and does not influence the existing traffic at either driveway location.

The intersection most directly affected by the increase in traffic is Monument road and South Camp road. The general geometry of this intersection is a three-leg (tee) configuration with Monument road being the main thoroughfare, north and south. South Camp road is a minor street to the west.

In 1985, the City of Grand Junction established a requirement to maintain a Level of Service (LOS) C for all traffic ways in the city. A level of Service A is the most desirable whereas a LOS F is unacceptable (See Appendix A). The proposed facility is expected to have a minor impact on the intersection of Monument road and South camp road.

The scope of this preliminary report was limited to evaluation of the function of intersections proposed as part of the subdivision development and the closest main existing intersection (Monument Road and South Camp Road). The analysis summarized in this report did not include other intersections.

EXISTING VEHICULAR TRAFFIC

Based on instructions received from City of Grand Junction personnel, this preliminary traffic report utilized daily traffic counts obtained from Mesa County Traffic Services for Monument and South Camp roads. No actual field vehicle counts were made for the purposes of this preliminary level study. Directional vehicle movements at the intersection of Monument road and South Camp road were approximated. Peak AM volumes were assumed to be 15% of daily traffic and PM volumes were assumed to be 10% of daily traffic, based on information obtained from Mesa County. (See Table 14, Appendix C).

The volume of traffic and its direction of flows were derived from "Trip Generation", 5th Edition, Institute of

Transportation Engineers. The pertaining section is LAND USE 270 "Residential Planned Unit Development". Weekday AM Peak, Weekday PM Peak and average weekday trip were utilized in calculations (See Appendix C). Traffic volumes were estimated on a residential unit basis.

The directional distribution of project traffic is an identification of the primary routes traffic will take to approach or depart from the site. The directional distribution of project-generated traffic is expected to be as follows:

Northbound Monument Road	50%
Eastbound South Camp Road	30%
Westbound South Camp Road	20%

The resultant traffic pattern and volumes assigned to the proposed site driveways using the above directional distribution are tabulated on Table 1 and shown on the various Figures contained within Appendix B.

PROPOSED VEHICULAR TRAFFIC:

Mesa County provided estimated percentages of increased traffic volumes for the roads in the vicinity through the year 2010. Projected traffic values used in this report were based on the information provided by Mesa County. No detailed evaluations of potential future development in the area or its effect on traffic were made.

VEHICULAR ANALYSIS:

The following vehicular analyses were performed using techniques presented in the "HIGHWAY CAPACITY MANUAL, SPECIAL REPORT 209", 1985, by the Transportation Research Board. Table 15 in Appendix C tabulates and collates the data of existing and projected traffic to calculate the anticipated LOS using the programmed sequences of the 1985 HCM Traffic Analysis software.

VEHICULAR ANALYSIS: AM peak volume, current conditions at Monument and South Camp road intersection.

Data indicated on Figure 2 and HCM Traffic Analysis software produced the following: (See Table 2)

CURRENT LEVEL-OF-SERVICE

1. Left turn from South Camp rd to Monument rd LOS A
2. Right turn from South Camp rd to Monument rd LOS A
3. Left turn from Monument rd to South Camp rd LOS A

VEHICULAR ANALYSIS: AM peak volume, Monument and South Camp road intersection with proposed subdivision.

Data indicated on Figure 3 and HCM Traffic Analysis software produced the following: (See Table 3)

PROJECTED LEVEL-OF-SERVICE

1. Left turn from South Camp rd to Monument rd LOS B
2. Right turn from South Camp rd to Monument rd LOS A
3. Left turn from Monument rd to South Camp rd LOS A

VEHICULAR ANALYSIS: AM peak volume, Monument and South Camp road intersection <u>without</u> proposed subdivision in 2010.

Data indicated on Figure 4 and HCM Traffic Analysis software produced the following: (See Table 4)

PROJECTED LEVEL-OF-SERVICE

1. Left turn from South Camp rd to Monument rd LOS E
2. Right turn from South Camp rd to Monument rd LOS A
3. Left turn from Monument rd to South Camp rd LOS A

VEHICULAR ANALYSIS: AM peak volume, Monument and South Camp road intersection <u>with</u> proposed subdivision in 2010.

Data indicated on Figure 5 and HCM Traffic Analysis software produced the following: (See Table 5)

PROJECTED LEVEL-OF-SERVICE

1. Left turn from South Camp rd to Monument rd LOS E
2. Right turn from South Camp rd to Monument rd LOS A
3. Left turn from Monument rd to South Camp rd LOS A

VEHICULAR ANALYSIS: AM & PM peak volume, Subdivision entrance at Monument road

Data indicated on Figures 6,7 and HCM Traffic Analysis software produced the following: (See Tables 6,7)

PROJECTED LEVEL-OF-SERVICE

1. Left turn from Site Entrance to Monument rd LOS A
2. Right turn from Site Entrance to Monument rd LOS A
3. Left turn from Monument rd to Site Entrance LOS A

VEHICULAR ANALYSIS: AM & PM peak volume, Subdivision entrance at Monument road in 2010

Data indicated on Figures 8,9 and HCM Traffic Analysis software produced the following: (See Tables 8,9)

PROJECTED LEVEL-OF-SERVICE

1. Left turn from Site Entrance to Monument rd LOS D
2. Right turn from Site Entrance to Monument rd LOS A
3. Left turn from Monument rd to Site Entrance LOS A

VEHICULAR ANALYSIS: AM & PM peak volume, Subdivision entrance at South Camp road

Data indicated on Figures 10,11 and HCM Traffic Analysis software produced the following: (See Tables 10,11)

PROJECTED LEVEL-OF-SERVICE

1. Left turn from Site Entrance to South Camp rd LOS A
2. Right turn from Site Entrance to S. Camp rd LOS A
3. Left turn from S. Camp rd to Site Entrance LOS A

VEHICULAR ANALYSIS: AM & PM peak volume, Subdivision entrance at South Camp road in 2010

Data indicated on Figures 12,13 and HCM Traffic Analysis software produced the following: (See Tables 12,13)

PROJECTED LEVEL-OF-SERVICE

1. Left turn from Site Entrance to South Camp rd LOS A
2. Right turn from Site Entrance to S. Camp rd LOS A
3. Left turn from S. Camp rd to Site Entrance LOS A

CONCLUSION

Analyses were performed to identify the expected traffic the proposed housing development will generate, to determine if that traffic would allow the site driveways to operate efficiently and to evaluate if there would be any significant impacts to adjacent roadways or if additional intersection improvements will be warranted.

In general, the traffic volumes contributed by the proposed subdivision development will not increase either the current or the projected future LOS at the intersection of Monument Road and South Camp Road. One exception is the left-turn (northbound) movement from South Camp Road to Monument Road. This movement will change from a LOS of A to a LOS of B as a result of expected traffic contributions from the proposed subdivision. Otherwise, all other movements at this intersection will remain at LOS A after development of the subject subdivision (not including the effects of other traffic impacts in the area). It should be noted that projections of traffic in the year 2010 at this intersection will result in a LOS of E for the left-turn movement from South Camp Road to Monument Road. This is not an acceptable condition, however, the LOS is not improved if the effects of the subject development are removed. Therefore, the anticipated future problems at this intersection are the result of general development in the area rather than the effects of the specific subdivision discussed herein.

For the proposed driveways, all movements remain at LOS of A with the exception of the left-turn movement from the site onto Monument Road, which is expected to worsen to LOS D based on projected future traffic volumes. Again, this is the result of increased traffic loads on Monument Road resulting from general development in the area.

Except for the left-turn movement from the proposed site's east driveway onto Monument Road, the driveway movements are expected to remain at an acceptable LOS and the traffic volumes contributed by the proposed development will not significantly worsen the LOS for any movements at the main intersection of Monument Road and South Camp Road. Consideration may be given to providing intersection improvements for the left-turn movement from the proposed east driveway onto Monument Road to accommodate anticipated future traffic or some other means to reduce the impact.

The preliminary nature of this report necessitated some relatively broad assumptions. If warranted, further refinements could be made based on field traffic counts or additional research.

APPENDIX A

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE CRITERIA

FOR

UNSIGNALIZED INTERSECTIONS

Level-of-service criteria for unsignalized intersections are stated in very general terms, and are related to general delay ranges. Analysis for a stop- or yield-controlled intersection results in solutions for the capacity of each lane on the minor approaches. The level-of-service criteria are then based on the reserve, or unused, capacity of the lane in question, expressed in passenger cars per hour (PCPH).

RESERVE CAPACITY (PCPH)	LEVEL OF SERVICE	EXPECTED DELAY TO MINOR STREET TRAFFIC
3400	A	Little or no delay
300-399	B	Short traffic delays
200-299	C	Average traffic delays
100-199	D	Very long traffic delays
0- 99	E	Very long traffic delays
*	F	*

*When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement to the intersection.

Reference: Highway Capacity Manual. Special Report 209. Transportation Research Board, National Research Council. Washington, D.C. 1985.

APPENDIX B

CAPACITY ANALYSIS WORKSHEETS

Monument Highlands Subdivision

Table 1 Tabulated Peak Volume

	Monument road and South Camp road intersection	Monument road and South Camp road Int. w/ subdivision	Monument road and South Camp road Int. Year 2010	Monument road and South Camp road Int. w/ sub. year 2010	Subdivision Exit at Monument Road	Subdivision Exit at Monument Road	Subdivision Exit at Monument Road year 2010	Subdivision Exit at Monument Road year 2010
	Peak AM	Peak AM	Peak AM	Peak AM	Peak AM	Peak PM	Peak AM	Peak PM
NB through	121	121	242	242	268	178	536	356
SB through	121	121	242	242	280	224	518	310
NB turn left	30	30	60	60	0	0	0	0
NB turn right	---	---	---	---	---	---	---	---
SB turn left	---	---	---	---	---	---	---	---
SB turn right	145	145	290	290	14	46	14	46
Signed turn left	146	173	263	292	46	26	45	26
Signed turn right	30	30	60	60	0	0	0	0

	Subdivision Exit at South Camp Road	Subdivision Exit at South Camp Road	Subdivision Exit at South Camp Road year 2010	Subdivision Exit at South Camp Road year 2010
	Peak AM	Peak PM	Peak AM	Peak PM
WB through	146	97	292	194
EB through	159	143	276	148
WB turn left	---	---	---	---
WB turn right	0	0	0	0
EB turn left	14	46	14	46
EB turn right	---	---	---	---
Signed turn left	27	16	27	16
Signed turn right	18	10	18	10

Information compiled from Tables 14 and 15

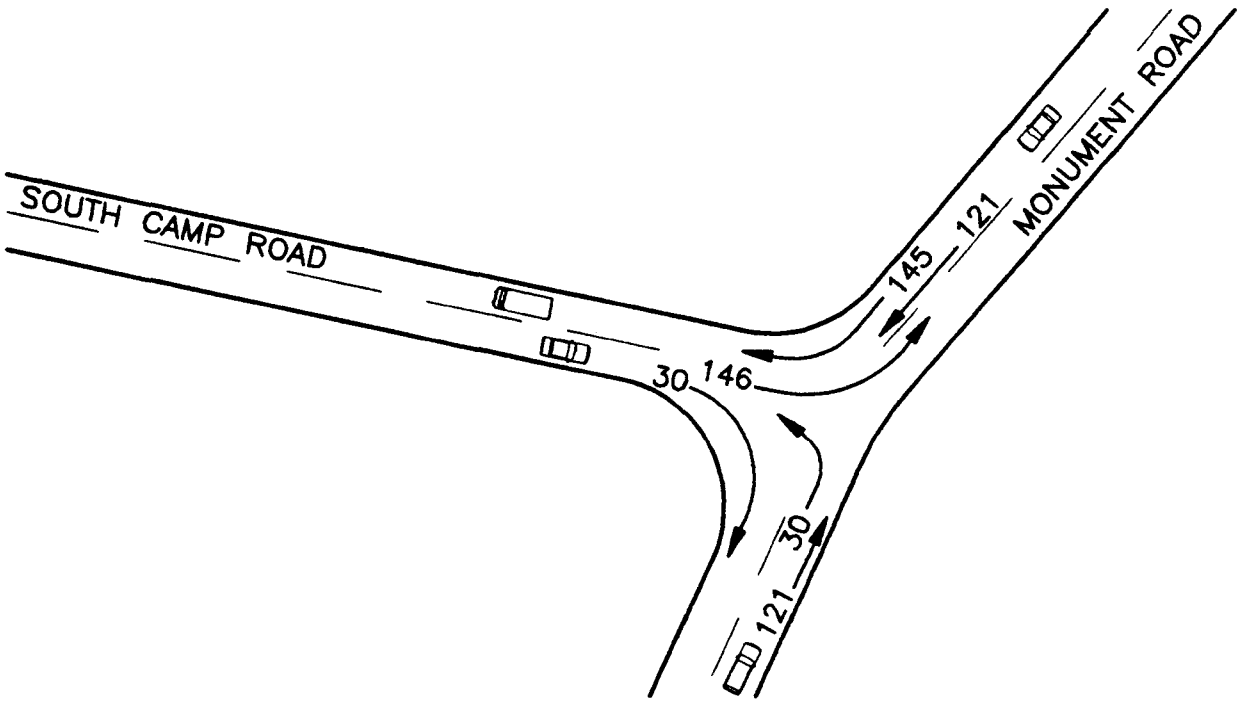


FIGURE 2
AM PEAK VOLUME
CURRENT CONDITION
MONUMENT AND SOUTH CAMP INTERSECTION
YEAR 1996

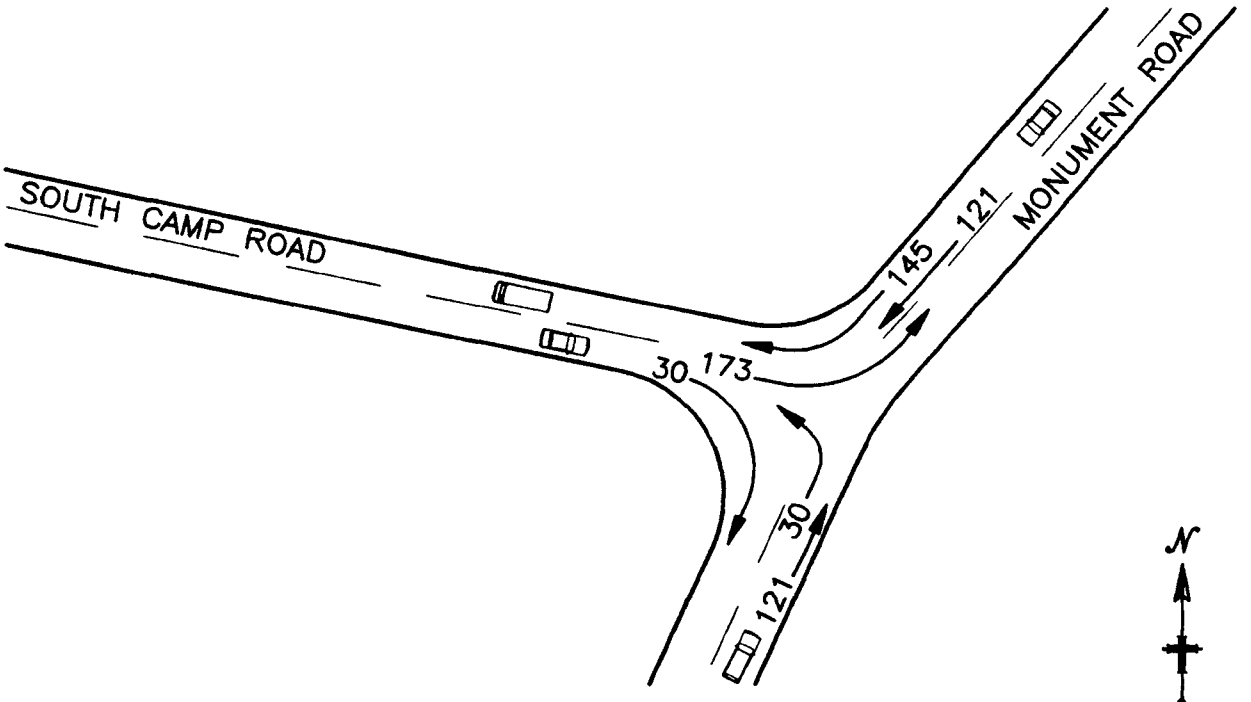


FIGURE 3
AM PEAK VOLUME
WITH SUBDIVISION INCREASE
MONUMENT AND SOUTH CAMP INTERSECTION
YEAR 1996

N

NOT TO SCALE

WESTERN ENGINEERS, INC.

TR_INT5.DWG

Table 2

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	146	--	30	0
THRU	0	--	121	121
RIGHT	30	--	0	145

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	EB	5.50	5.50	0.00	5.50
MAJOR LEFTS	NB	5.00	5.00	0.00	5.00
MINOR LEFTS	EB	6.50	6.50	0.00	6.50

Table 2

CAPACITY AND LEVEL-OF-SERVICE Page-3

MOVEMENT	FLOW-RATE v(pcph)	POTEN-TIAL 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						
EB LEFT	161	602	589	> 589 > 625	> 428 > 432	> A >A
RIGHT	33	897	897	> 897	> 864	> A
MAJOR STREET						
NB LEFT	33	922	922	922	889	A

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	173	--	30	0
THRU	0	--	121	121
RIGHT	30	--	0	145

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

Table 3

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	EB	5.50	5.50	0.00	5.50
MAJOR LEFTS	NB	5.00	5.00	0.00	5.00
MINOR LEFTS	EB	6.50	6.50	0.00	6.50

Table 3

CAPACITY AND LEVEL-OF-SERVICE Page-3

MOVEMENT	FLOW-RATE v(pcph)	POTEN-TIAL 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						
EB LEFT	190	602	589	> 589 > 620	> 398 > 397	B >B
RIGHT	33	897	897	> 897	> 864	A
MAJOR STREET						
NB LEFT	33	922	922	922	889	A

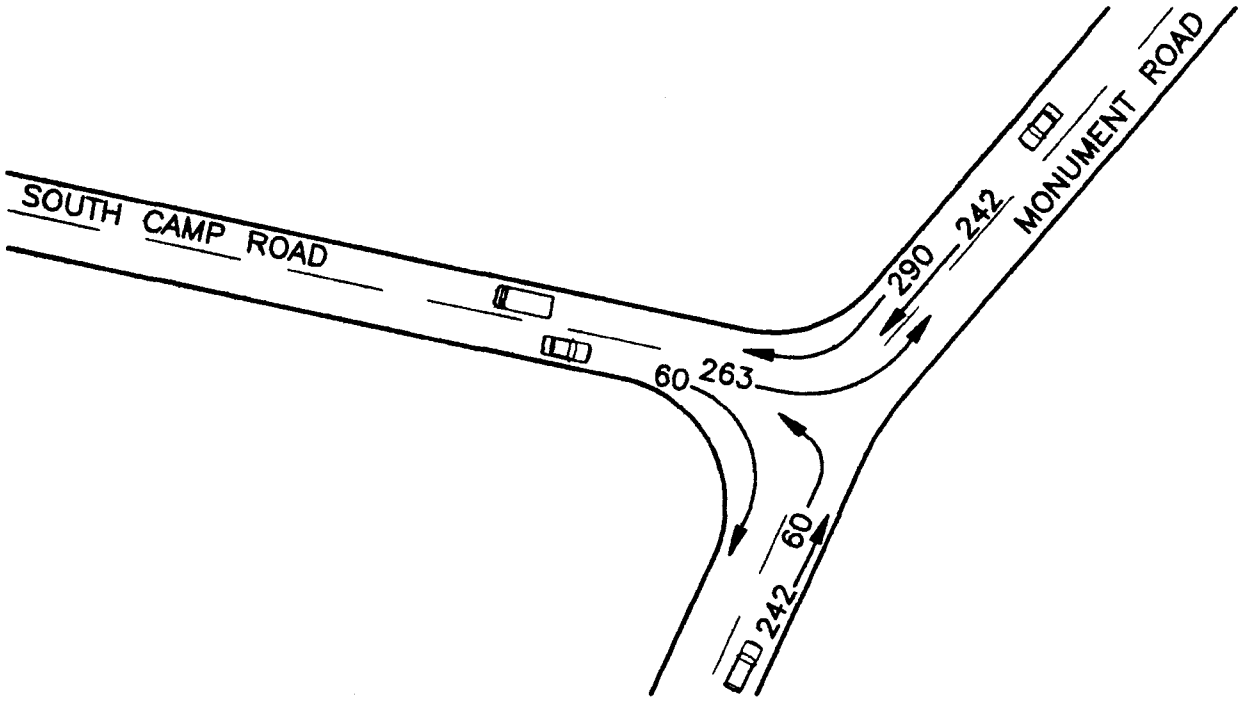


FIGURE 4
AM PEAK VOLUME
WITHOUT SUBDIVISION
MONUMENT AND SOUTH CAMP INTERSECTION
YEAR 2010

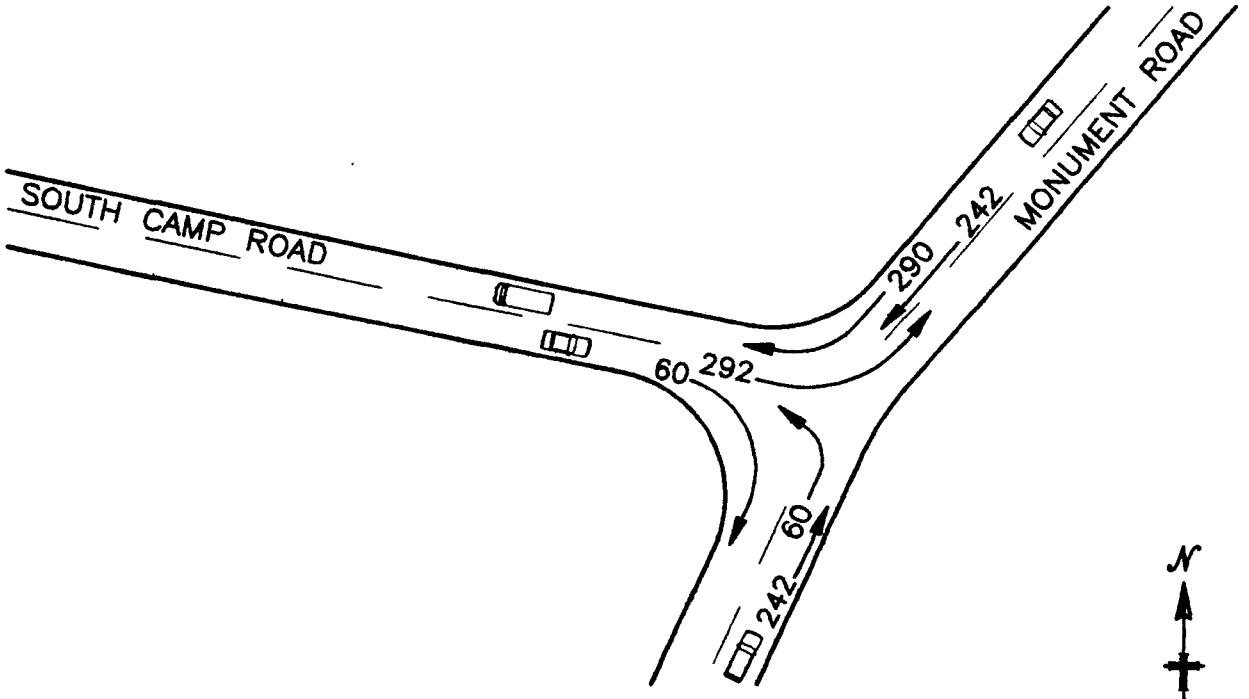


FIGURE 5
AM PEAK VOLUME
WITH SUBDIVISION INCREASE
MONUMENT AND SOUTH CAMP INTERSECTION
YEAR 2010

N

NOT TO SCALE

WESTERN ENGINEERS, INC.

TR_INT6.DWG

Table 4

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	263	--	60	0
THRU	0	--	242	242
RIGHT	60	--	0	290

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

Table 4

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	EB	5.50	5.50	0.00	5.50
MAJOR LEFTS	NB	5.00	5.00	0.00	5.00
MINOR LEFTS	EB	6.50	6.50	0.00	6.50

Table 4

CAPACITY AND LEVEL-OF-SERVICE Page-3

MOVEMENT	FLOW-RATE v(pcph)	POTEN-TIAL 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						
EB LEFT	289	374	352	> 352 > 389	> 63 > 33	E >E
RIGHT	66	712	712	> 712	> 646	> A
MAJOR STREET						
NB LEFT	66	686	686	686	620	A

Table 5

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	292	--	60	0
THRU	0	--	242	242
RIGHT	60	--	0	290

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

Table 5

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	EB	5.50	5.50	0.00	5.50
MAJOR LEFTS	NB	5.00	5.00	0.00	5.00
MINOR LEFTS	EB	6.50	6.50	0.00	6.50

Table 5

CAPACITY AND LEVEL-OF-SERVICE

MOVEMENT	FLOW-RATE v(pcph)	POTEN-TIAL 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									
EB LEFT	321	374	352	>	352	>	31	>	E
				>	385	>	-2	>F	
RIGHT	66	712	712	>	712	>	646	>	A
MAJOR STREET									
NB LEFT	66	686	686		686		620		A

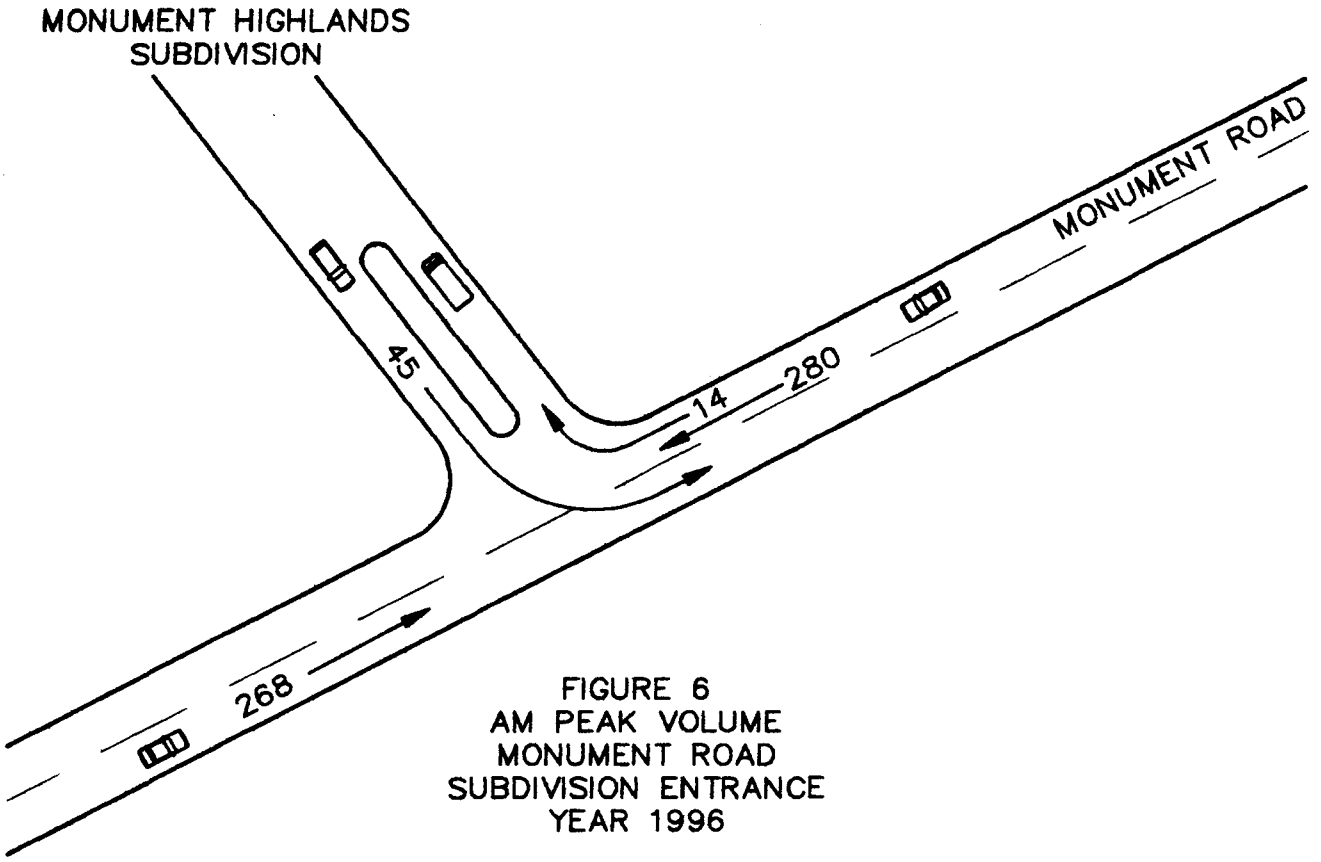


FIGURE 6
AM PEAK VOLUME
MONUMENT ROAD
SUBDIVISION ENTRANCE
YEAR 1996

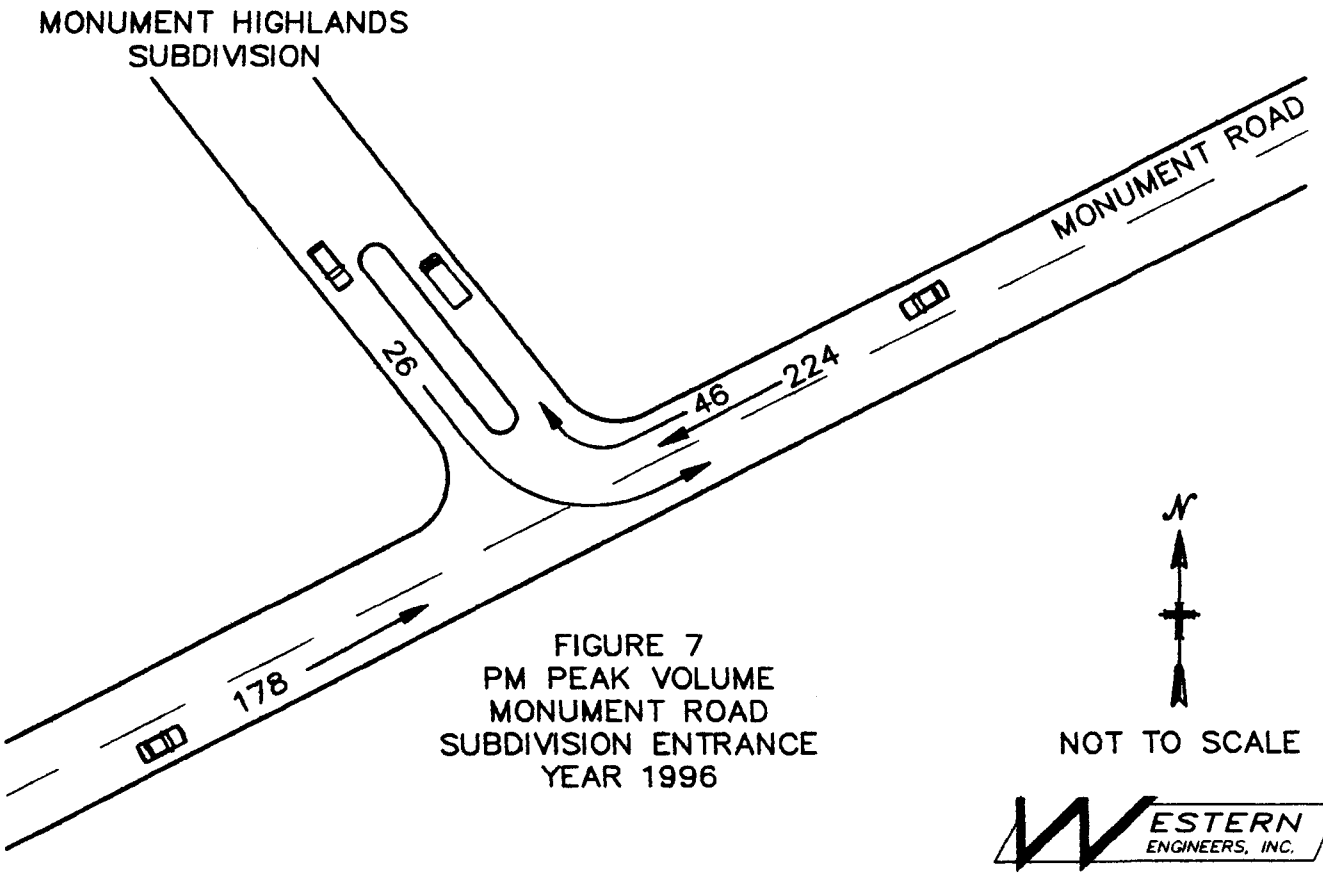


FIGURE 7
PM PEAK VOLUME
MONUMENT ROAD
SUBDIVISION ENTRANCE
YEAR 1996

N

NOT TO SCALE

WESTERN ENGINEERS, INC.

TR_INT1.DWG

Table 6

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SUB. MONUMENT EXIT

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND: STOP SIGN

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	45	--	0	0
THRU	0	--	268	280
RIGHT	0	--	0	14

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

Table 6

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

	TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS EB	5.50	5.50	0.00	5.50
MAJOR LEFTS NB	5.00	5.00	0.00	5.00
MINOR LEFTS EB	6.50	6.50	0.00	6.50

Table 6

CAPACITY AND LEVEL-OF-SERVICE Page-3

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									
EB LEFT	50	455	455	>	455	>	406	>	A
				>	455	>	406	>A	
RIGHT	0	803	803	>	803	>	803	>	A
MAJOR STREET									
NB LEFT	0	896	896		896		896		A

Table 7

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SUB. MONUMENT EXIT

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	26	--	0	0
THRU	0	--	178	224
RIGHT	0	--	0	46

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

Table 7

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	EB	5.50	5.50	0.00	5.50
MAJOR LEFTS	NB	5.00	5.00	0.00	5.00
MINOR LEFTS	EB	6.50	6.50	0.00	6.50

Table 7

CAPACITY AND LEVEL-OF-SERVICE Page-3

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						
EB LEFT	29	543	543	> 543	> 515	> A
RIGHT	0	843	843	> 843	> 843	> A
MAJOR STREET						
NB LEFT	0	919	919	919	919	A

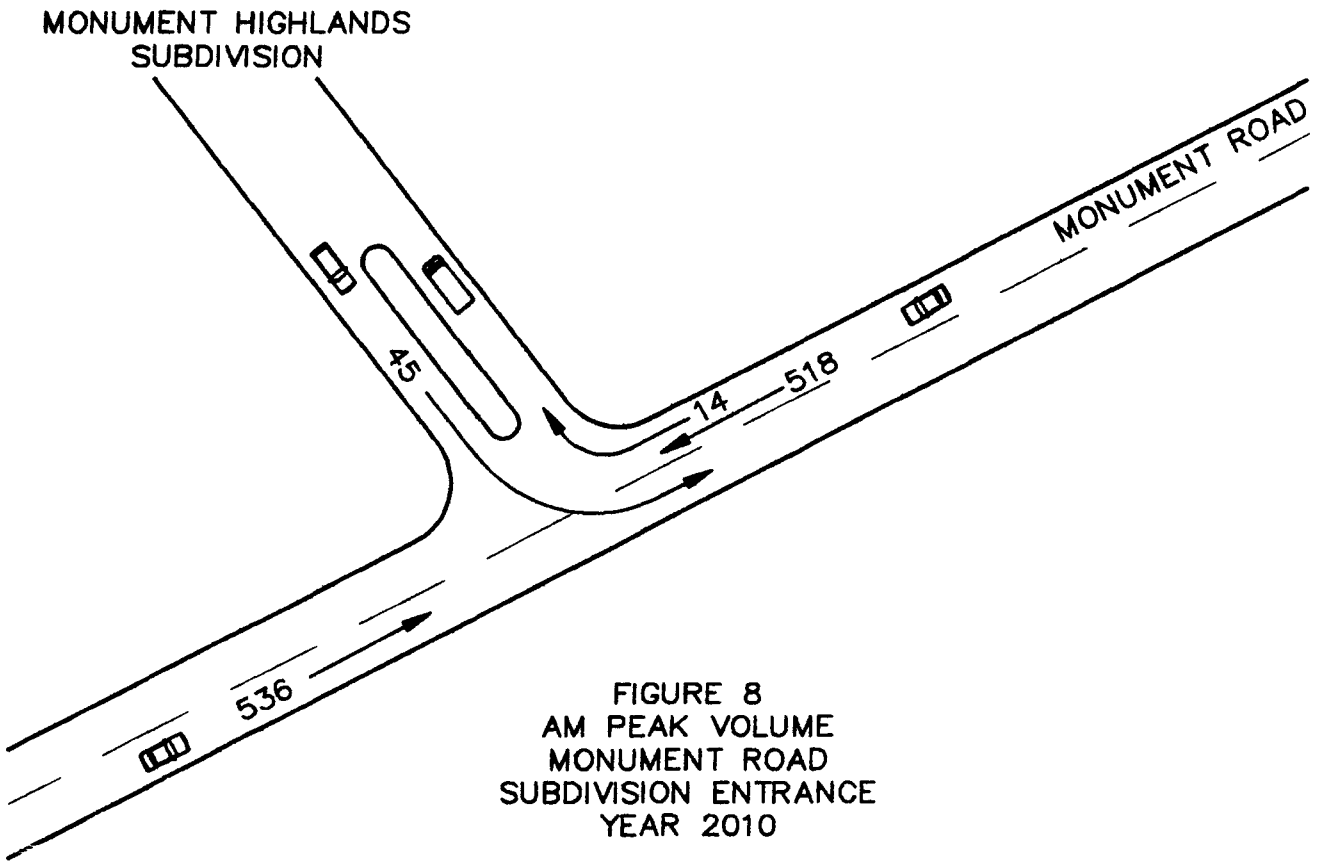


FIGURE 8
AM PEAK VOLUME
MONUMENT ROAD
SUBDIVISION ENTRANCE
YEAR 2010

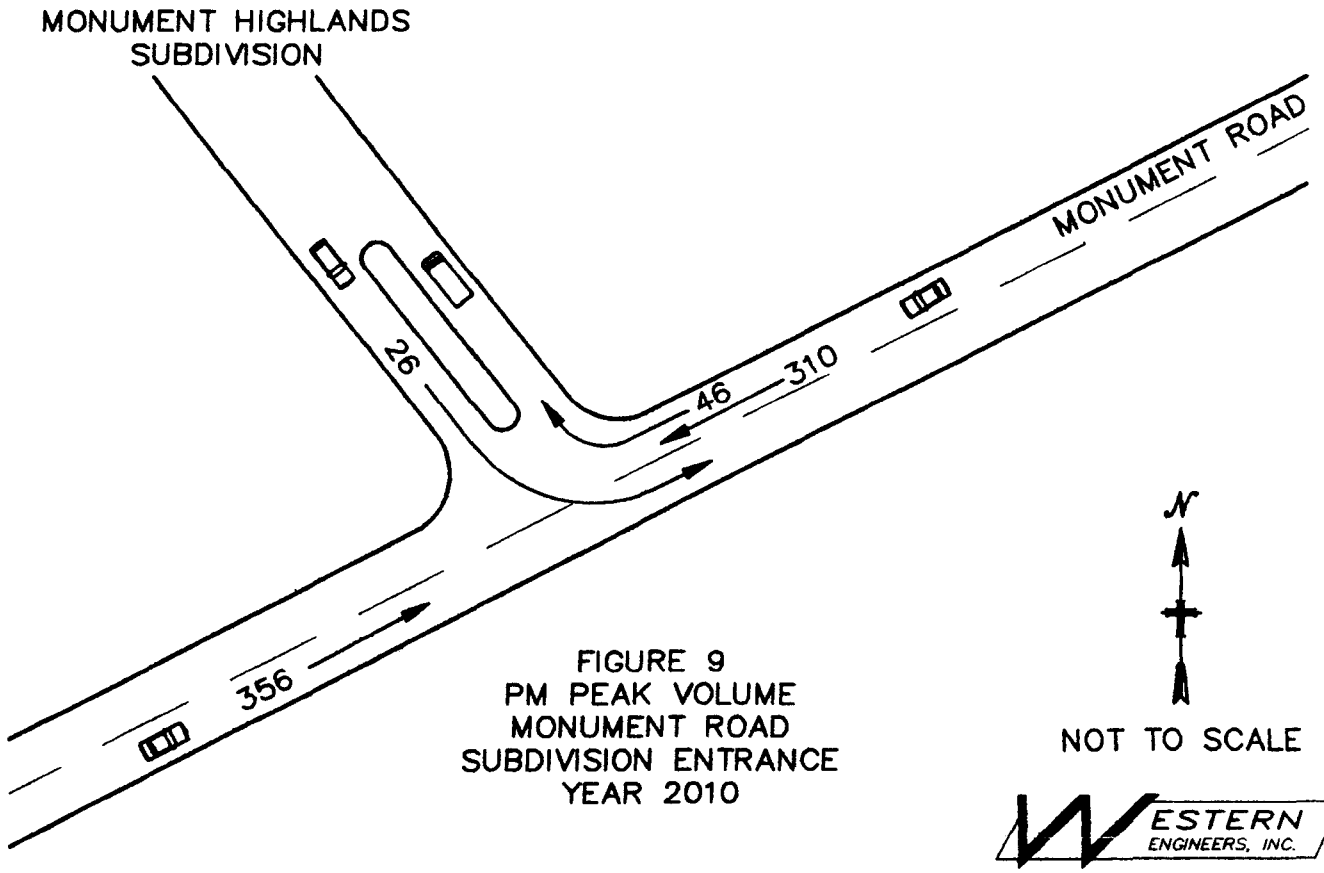


FIGURE 9
PM PEAK VOLUME
MONUMENT ROAD
SUBDIVISION ENTRANCE
YEAR 2010

N

NOT TO SCALE

WESTERN ENGINEERS, INC.

TR_INT2.DWG

Table 8

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SUB. MONUMENT EXIT

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	45	--	0	0
THRU	0	--	536	518
RIGHT	0	--	0	14

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

Table 8

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	EB	5.50	5.50	0.00	5.50
MAJOR LEFTS	NB	5.00	5.00	0.00	5.00
MINOR LEFTS	EB	6.50	6.50	0.00	6.50

Table 8

CAPACITY AND LEVEL-OF-SERVICE Page-3

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						
EB LEFT	50	212	212	> 212	> 162	> D
				> 212	> 162	>D
RIGHT	0	609	609	> 609	> 609	> A
MAJOR STREET						
NB LEFT	0	686	686	686	686	A

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SUB. MONUMENT EXIT

NAME OF THE NORTH/SOUTH STREET..... MONUMENT ROAD

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: NORTH/SOUTH

CONTROL TYPE EASTBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	26	--	0	0
THRU	0	--	356	310
RIGHT	0	--	0	46

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	--	1	1

Table 9

ADJUSTMENT FACTORS Page-2

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	-----	---	---	-
NORTHBOUND	0.00	90	20	N
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	EB	5.50	5.50	0.00	5.50
MAJOR LEFTS	NB	5.00	5.00	0.00	5.00
MINOR LEFTS	EB	6.50	6.50	0.00	6.50

Table 9

CAPACITY AND LEVEL-OF-SERVICE

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						
EB LEFT	29	374	374	> 374	> 345	> B
				> 374	> 345	>B
RIGHT	0	760	760	> 760	> 760	> A
MAJOR STREET						
NB LEFT	0	837	837	837	837	A

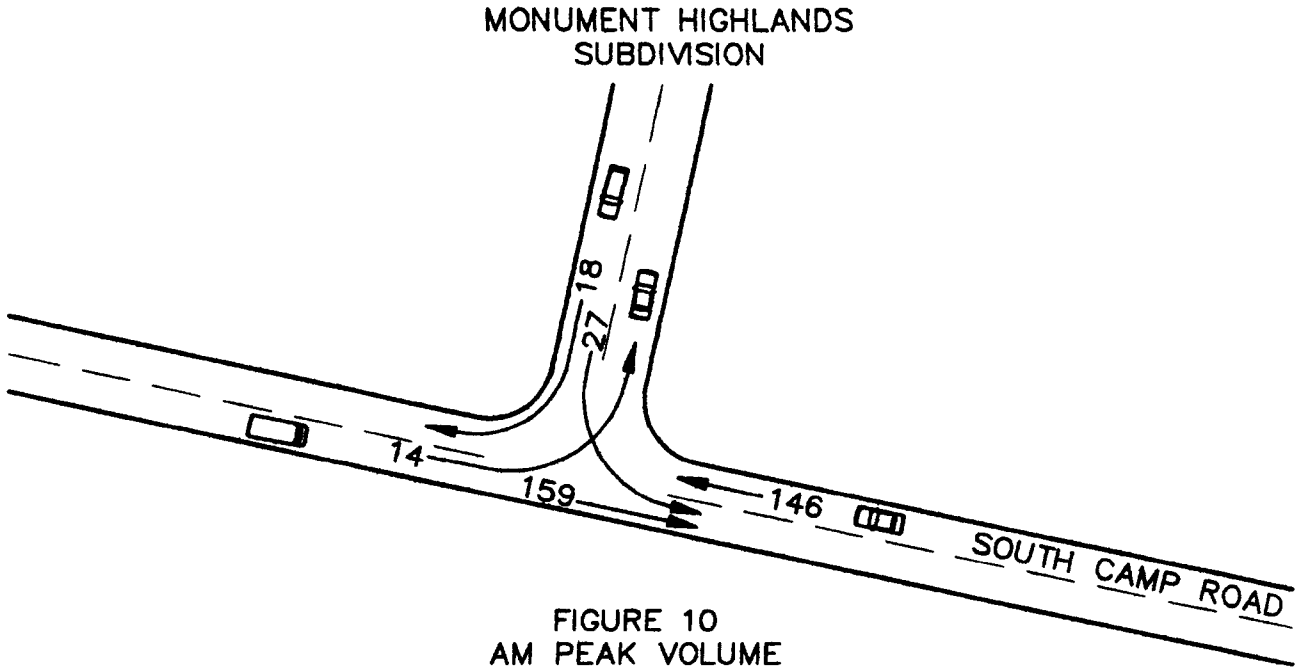


FIGURE 10
AM PEAK VOLUME
SOUTH CAMP ROAD
SUBDIVISION ENTRANCE
YEAR 1996

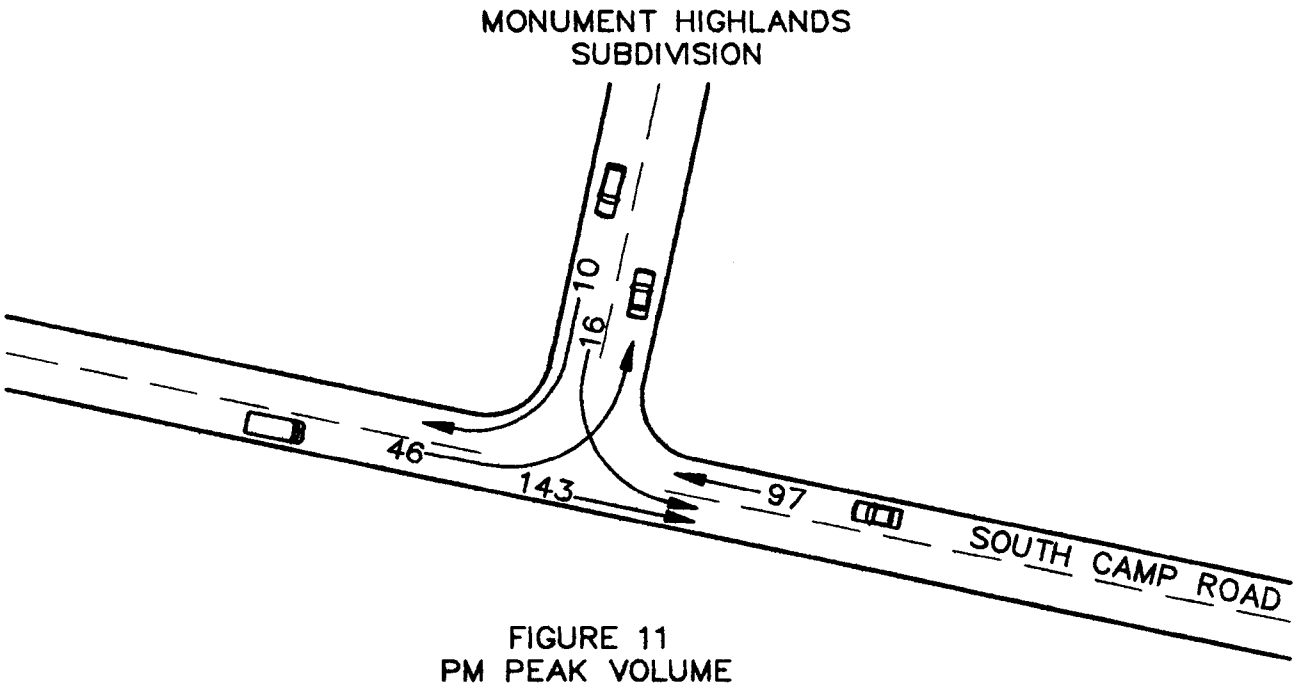


FIGURE 11
PM PEAK VOLUME
SOUTH CAMP ROAD
SUBDIVISION ENTRANCE
YEAR 1996

NOT TO SCALE

WESTERN ENGINEERS, INC.

TR_INT3.DWG

Table 10

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... SUB. S. CAMP EXIT

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

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	14	0	--	27
THRU	159	146	--	
RIGHT	0	0	--	18

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	1	--	1

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	-----	---	---	-
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	SB	5.50	5.50	0.00	5.50
MAJOR LEFTS	EB	5.00	5.00	0.00	5.00
MINOR LEFTS	SB	6.50	6.50	0.00	6.50

Table 10

CAPACITY AND LEVEL-OF-SERVICE

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	30	621	615	> 615	> 585	> A
				> 715	> 666	>A
RIGHT	20	947	947	> 947	> 927	> A
MAJOR STREET						
EB LEFT	15	993	993	993	978	A

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... SUB. S. CAMP EXIT

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK PM

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	46	0	--	16
THRU	143	97	--	
RIGHT	0	0	--	10

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	1	--	1

Table 11

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	-----	---	---	-
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	SB	5.50	5.50	0.00	5.50
MAJOR LEFTS	EB	5.00	5.00	0.00	5.00
MINOR LEFTS	SB	6.50	6.50	0.00	6.50

Table 11

CAPACITY AND LEVEL-OF-SERVICE Page-3

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	18	647	627	> 627 > 731	> 610 > 703	> A >A
RIGHT	11	995	995	> 995	> 984	> A
MAJOR STREET						
EB LEFT	51	1000	1000	1000	949	A

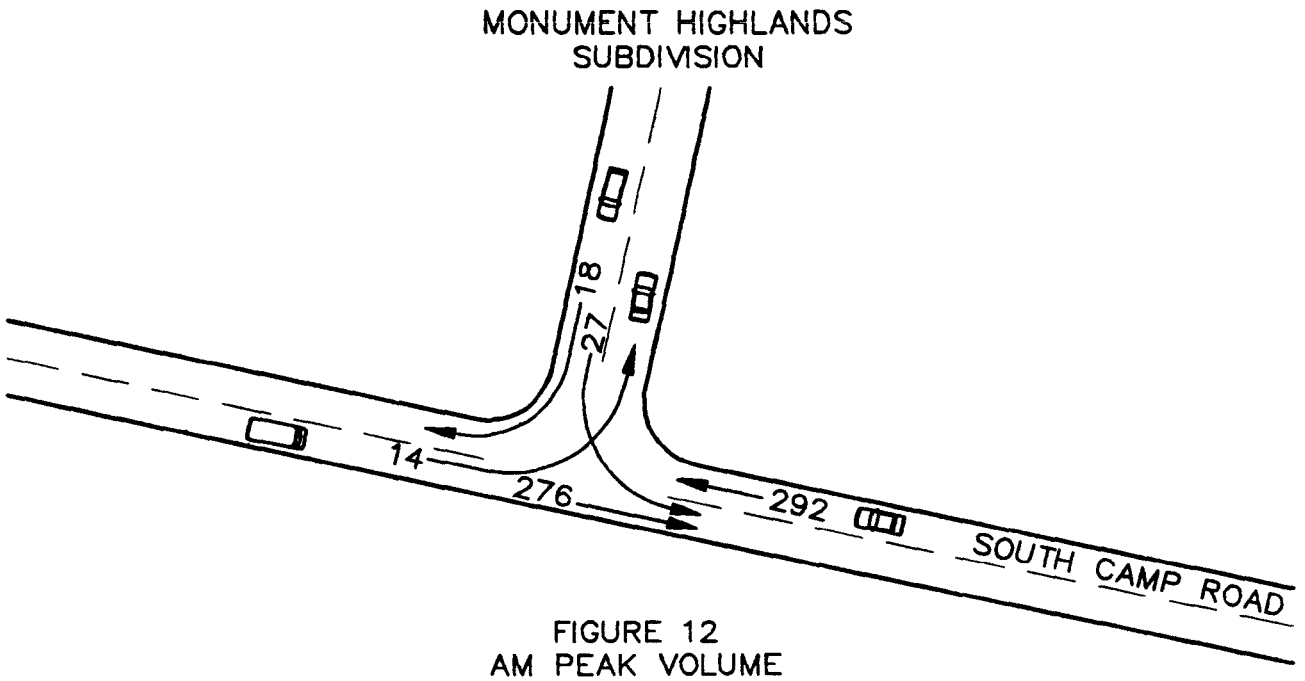


FIGURE 12
AM PEAK VOLUME
SOUTH CAMP ROAD
SUBDIVISION ENTRANCE
YEAR 2010

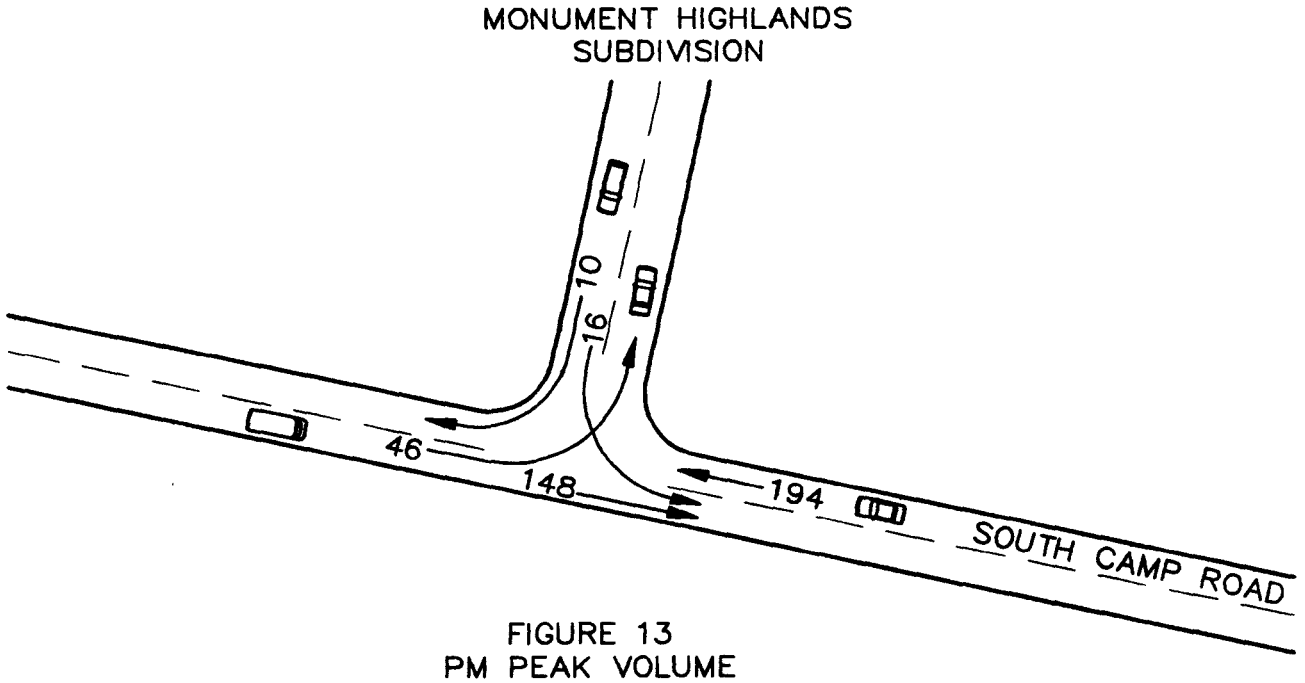


FIGURE 13
PM PEAK VOLUME
SOUTH CAMP ROAD
SUBDIVISION ENTRANCE
YEAR 2010

NOT TO SCALE

WESTERN ENGINEERS, INC.

TR_INT4.DWG

Table 12

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... SUB. S. CAMP EXIT

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK AM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE SOUTHBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	14	0	--	18
THRU	276	292	--	
RIGHT	0	0	--	27

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	1	--	1

Table 12

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	-----	---	---	-
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	SB	5.50	5.50	0.00	5.50
MAJOR LEFTS	EB	5.00	5.00	0.00	5.00
MINOR LEFTS	SB	6.50	6.50	0.00	6.50

Table 12

CAPACITY AND LEVEL-OF-SERVICE Page-3

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	20	437	433	> 433	> 413	> A
				> 597	> 547	>A
RIGHT	30	798	798	> 798	> 768	> A
MAJOR STREET						
EB LEFT	15	898	898	898	882	A

Table 13

1985 HCM: UNSIGNALIZED INTERSECTIONS Page-1

****

IDENTIFYING INFORMATION

AVERAGE RUNNING SPEED, MAJOR STREET..... 30

PEAK HOUR FACTOR..... 1

AREA POPULATION..... 100000

NAME OF THE EAST/WEST STREET..... SOUTH CAMP ROAD

NAME OF THE NORTH/SOUTH STREET..... SUB. S. CAMP EXIT

NAME OF THE ANALYST..... WEI

DATE OF THE ANALYSIS (mm/dd/yy)..... 5-30-96

TIME PERIOD ANALYZED..... PEAK PM

INTERSECTION TYPE AND CONTROL

INTERSECTION TYPE: T-INTERSECTION

MAJOR STREET DIRECTION: EAST/WEST

CONTROL TYPE SOUTHBOUND:

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	46	0	--	10
THRU	148	194	--	
RIGHT	0	0	--	16

NUMBER OF LANES

	EB	WB	NB	SB
LANES	1	1	--	1

Table 13

ADJUSTMENT FACTORS

	PERCENT GRADE	RIGHT TURN ANGLE	CURB RADIUS (ft) FOR RIGHT TURNS	ACCELERATION LANE FOR RIGHT TURNS
EASTBOUND	0.00	90	20	N
WESTBOUND	0.00	90	20	N
NORTHBOUND	-----	---	---	-
SOUTHBOUND	0.00	90	20	N

VEHICLE COMPOSITION

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

CRITICAL GAPS

		TABULAR VALUES (Table 10-2)	ADJUSTED VALUE	SIGHT DIST. ADJUSTMENT	FINAL CRITICAL GAP
MINOR RIGHTS	SB	5.50	5.50	0.00	5.50
MAJOR LEFTS	EB	5.00	5.00	0.00	5.00
MINOR LEFTS	SB	6.50	6.50	0.00	6.50

Table 13

CAPACITY AND LEVEL-OF-SERVICE

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	11	569	551	> 551	> 540	> A
				> 723	> 694	>A
RIGHT	18	896	896	> 896	> 879	> A
MAJOR STREET						
EB LEFT	51	986	986	986	935	A

APPENDIX C

TRAFFIC CALCULATIONS

Table 14 Existing Road Peak Hour Calculations

		Current Flow		100 % Projected increase for 2010	
Monument Road	Daily Flow	Peak AM	Peak PM	Peak AM	Peak PM
North of South Camp road	(vehicles)	(VPH)	(VPH)	(VPH)	(VPH)
North bound	1784	**268**	**178**	**536**	**356**
South bound	1775	**266**	**178**	**532**	**356**
At South Camp intersection					
NB through	806	**121**	**81**	**242**	**162**
SB through	808	**121**	**81**	**242**	**162**
NB turn to South Camp Road	200	**30**	**20**	**60**	**40**
SB turn to South Camp Road	967	**145**	**97**	**290**	**194**

		Current Flow		100 % Projected increase for 2010	
South Camp Road	Daily Flow	Peak AM	Peak PM	Peak AM	Peak PM
West of Monument road	(vehicles)	(VPH)	(VPH)	(VPH)	(VPH)
East bound	967	**145**	**97**	**290**	**194**
West bound	973	**146**	**97**	**292**	**194**
EB turn to NB Monument Road	973	**146**	**97**	**292**	**194**
EB turn to SB Monument Road	200	**30**	**20**	**60**	**40**

Table 15 Peak Vehicle Generation
Proposed Monument Highlands Subdivision

		Peak Flow (VPH)	
number of units	170		
AM Peak value	117		See Table 16
% entering	23	27	
% exiting	77	90	
PM Peak value	142		See Table 17
% entering	64	91	
% exiting	36	51	
Total number of trips	**1507**	(vehicles)	See Table 18
% entering	50	**754**	
% exiting	50	**754**	

		Peak Flow AM	Peak Flow PM	Total daily flow
South Camp exit		(VPH)	(VPH)	(vehicles)
% utilized	50	45	26	377
% exiting (left turn)	60	**27**	**16**	226
% exiting (right turn)	40	**18**	**10**	151
# interring from EB South Camp	--	**14**	**46**	377
Monument road exit		(VPH)	(VPH)	
% utilized	50	45	26	377
% exiting (left turn)	100	**45**	**26**	377
% exiting (right turn)	0	**0**	**0**	0
# interring from SB Monument road	--	**14**	**46**	377

Residential Planned Unit Development
(270)

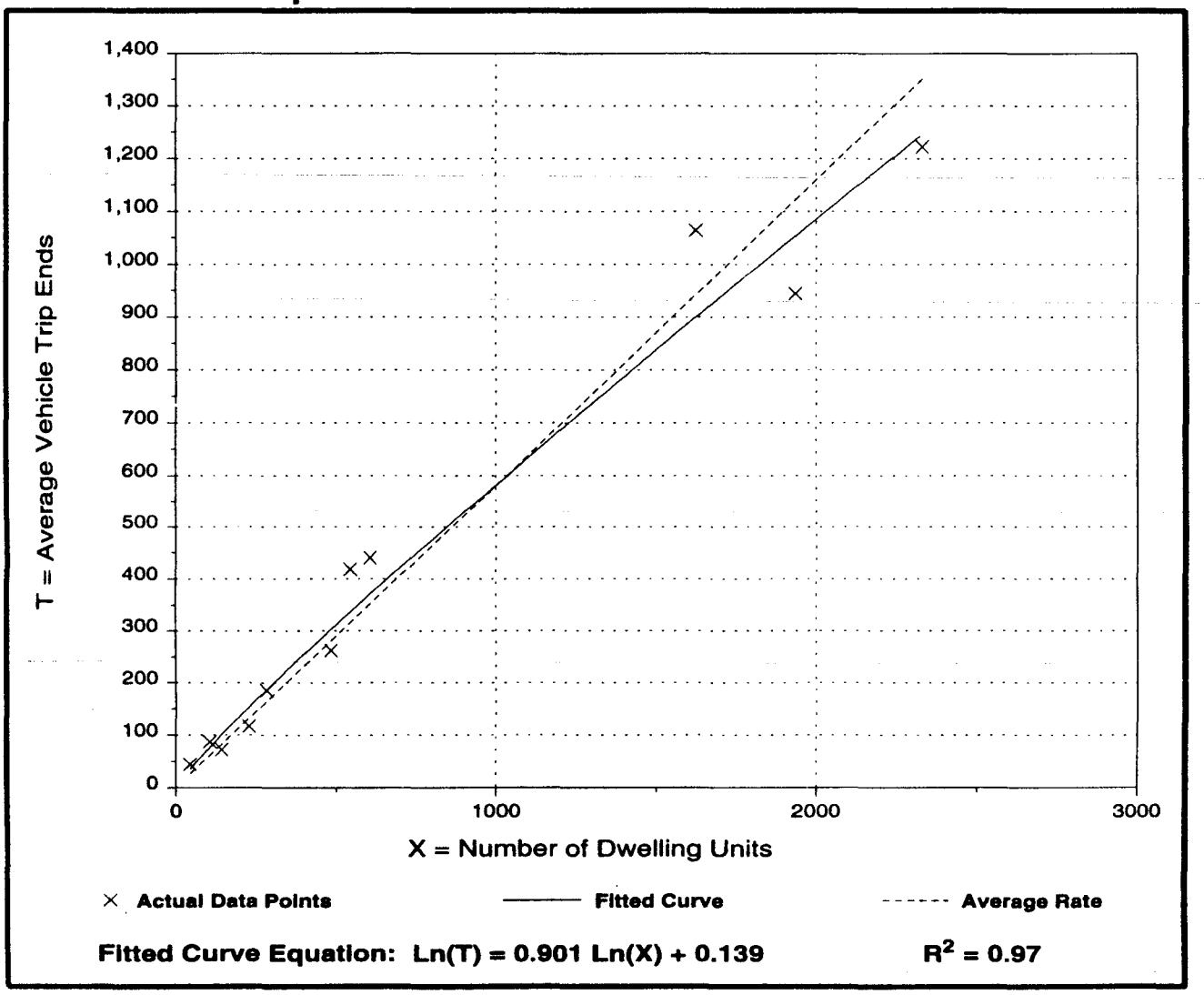
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
A.M. Peak Hour of Generator

Number of Studies: 11
Average Number of Dwelling Units: 757
Directional Distribution: 23% entering, 77% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.58	0.49 - 0.98	0.77

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.901 Ln(X) + 0.139 **R^2 = 0.97**

Residential Planned Unit Development
(270)

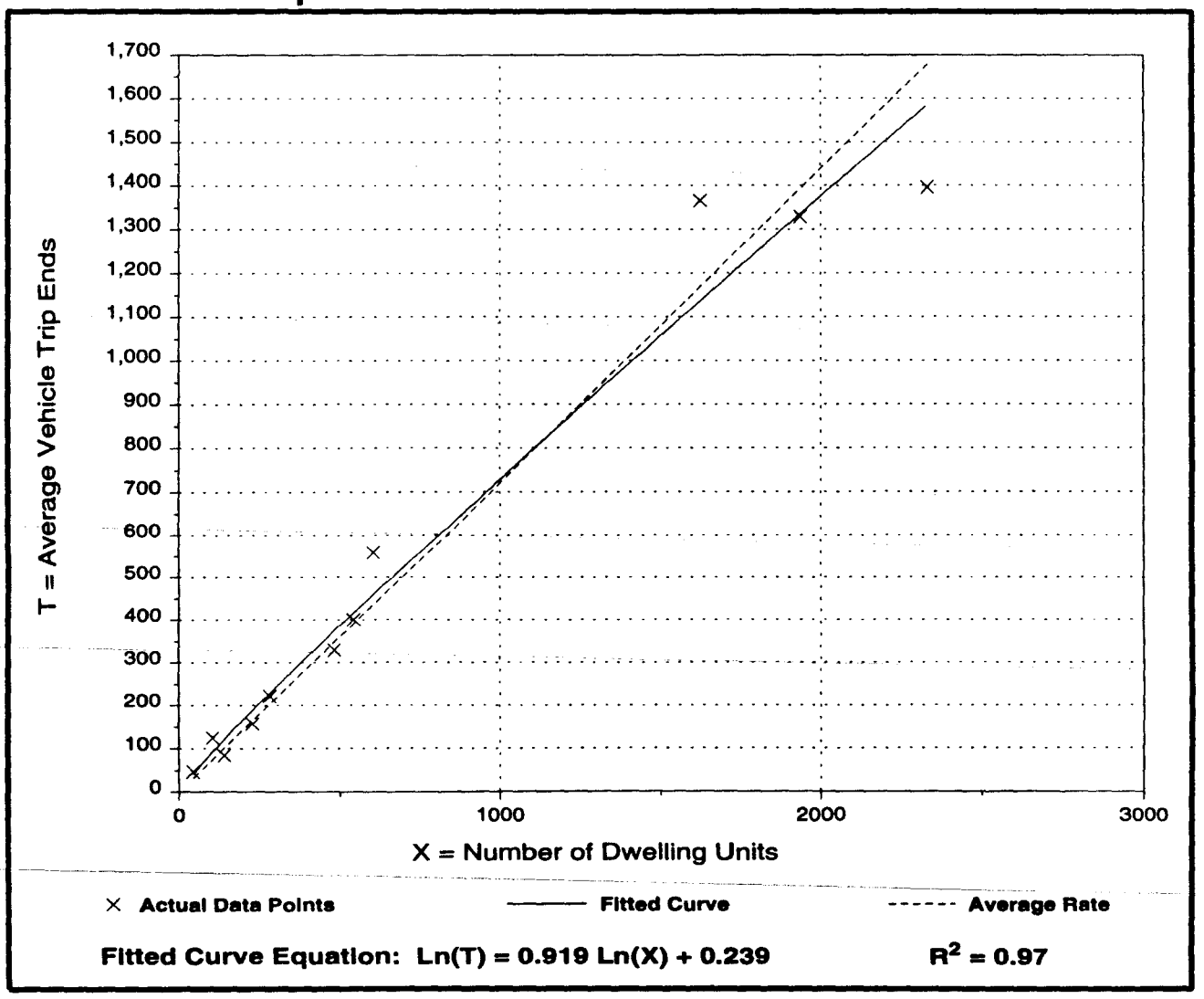
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
P.M. Peak Hour of Generator

Number of Studies: 10
Average Number of Dwelling Units: 784
Directional Distribution: 64% entering, 36% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.72	0.59 - 1.17	0.86

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.919 Ln(X) + 0.239 **R^2 = 0.97**

Residential Planned Unit Development
(270)

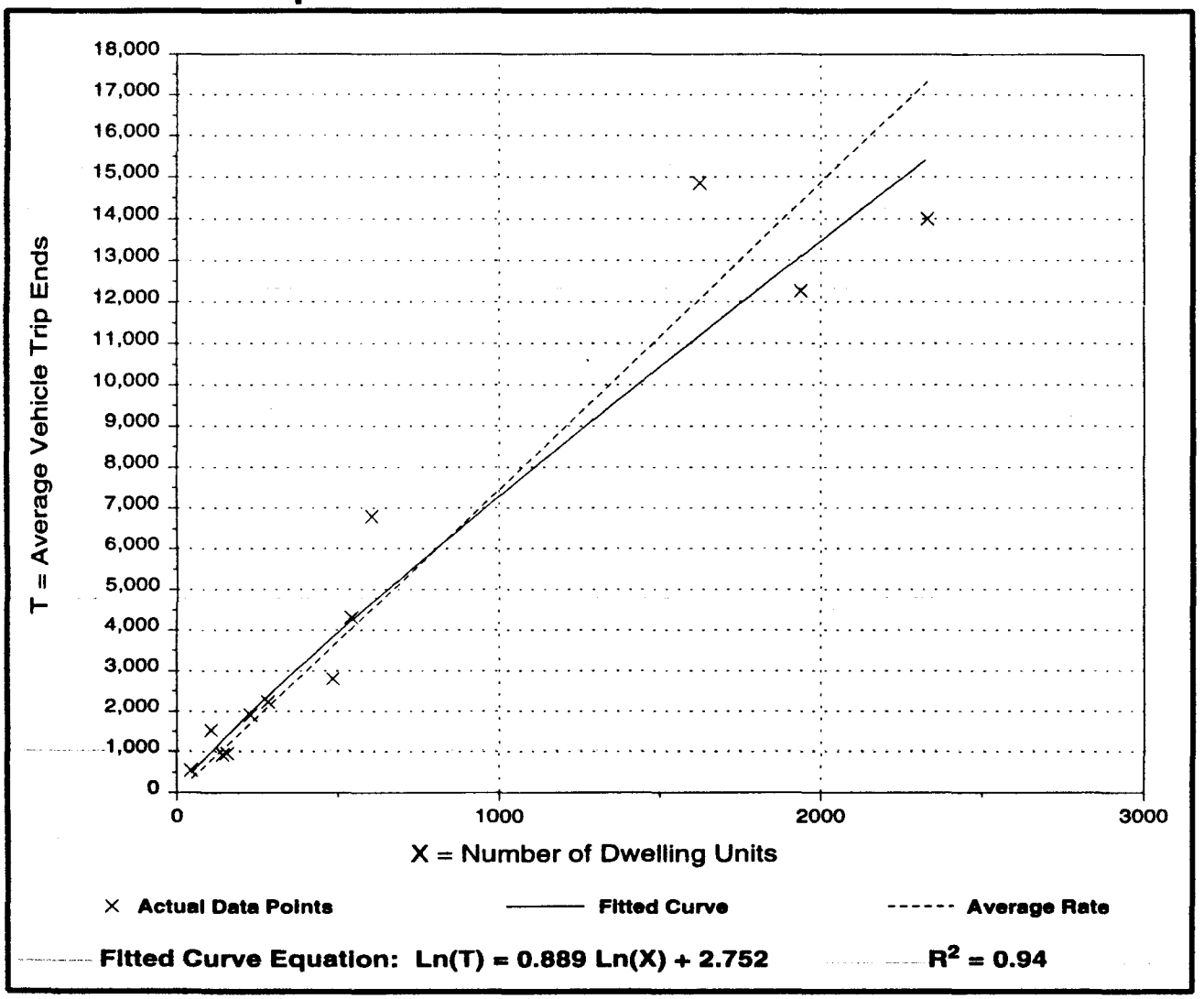
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Number of Studies: 12
Average Number of Dwelling Units: 707
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.44	5.79 - 14.38	3.29

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.889 Ln(X) + 2.752 **R^2 = 0.94**

Richard Cavalli
225 Redstone Boulevard
Redstone, CO 81623
970-963-8265
970-963-8268 FAX

June 4, 1996

City of Grand Junction
Community Development Department
Michael T. Drollinger, AICP
Senior Planner
250 North 5th Street
Grand Junction, CO 81501

Re: Redlands Project, "Monument Highlands"

Dear Mr. Drollinger:

Enclosed, please find my check in the amount of $1,745.00 for the required fees for our preliminary submittal filing. My understanding from Matt Lohof is that we filed on June 3rd and these fees are due now. Thank you.

Sincerely,

Richard Cavalli
RAC/mac

cc: Mitchell Evans

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

June 20, 1996

Richard Cavalli
225 Redstone Boulevard
Redstone CO 81623

RE: Monument Highlands (Our File # RZP-96-136)

Dear Mr. Cavalli:

Below please find a revised schedule for response to review comments for the Monument Highlands Subdivision based on our phone conversation yesterday. The schedule should allow sufficient time for us to review the resubmittal and allow your consultants time for resolution of outstanding issues. Please understand that if all issues are not resolved prior to the August Planning Commission meeting the item may be removed from the agenda.

The revised schedule is as follows:

Response to comments due: July 15, 1996
City re-review of application complete, outstanding issues to petitioner: July 23, 1996
Response to re-review due: July 26, 1996

Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely yours,

Michael T. Drollinger
Senior Planner

cc: Jody Kliska, City Development Engineer
Matt Lohof, Western Engineers (via FAX)

h:\cityfil\1996\96-136.ltl

Richard Cavalli
Cavalli & Evans, Inc.
225 Redstone Boulevard
Redstone, CO 81623

July 22, 1996

Michael Drollinger
City of Grand Junction
Community Development Department
250 North 5th Street
Grand Junction, CO 81501

Re: Monument Highlands

Dear Michael:

We would like to proceed with our Preliminary Submittal based on your review comments on June 17, 1996 whereby we will delete those lots in question from our plans. Your comments identified 19 lots numbered as 66-74 and 78-87.

Western feels that those 19 lots identified in your comments are probably the worst case. In any event, we would like you to identify those lots that you would require to be deleted from our plan in order to proceed with the Preliminary Submittal. I look forward to hearing from you.

Sincerely,

Richard Cavalli
RAC/mac

cc: Doug Jones
Western Engineers
Mitchell Evans

SHOCKWAVE

FAX COVER SHEET

Mon, Jul 22, 1996 9:32 AM

To: COMMUNITY DEVELOPMENT DEPT

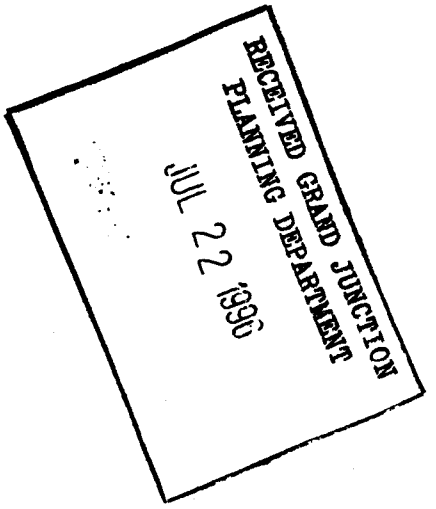
Attn: MICHAEL DROLLINGER
Fax #: 1-970-244-1599

From: RICHARD CAVALLI

Fax #: 970-963-8268

Voice #: 970-963-8265

Fax: 1 page and a cover page.



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

July 26, 1996

Richard Cavalli
Cavalli & Evans, Inc.
225 Redstone Boulevard
Redstone CO 81623

RE: Monument Highlands (Our File #RZP-96-136)

Dear Richard:

This letter is in response to your letter dated July 22, 1996 and our phone conversation of July 23, 1996. As we had discussed, the geotechnical report for the above project must be prepared and resubmitted with your response to comments. Staff will require adequate time to review the resubmittal and will only schedule the project for a public hearing once all review comments have been adequately addressed.

Regarding the timing of the resubmittal, I would ask that you give us an estimate of when the response to comments (including the geotechnical report) will be resubmitted. Resubmittal of the materials by that date will not require payment of additional fees. Failure to meet the deadline will require resubmittal of the project and payment of the appropriate application fees. I am expecting that the resubmittal date will not be more than two months from now. Once I receive the date I will be able to advise you of when the project will be tentatively scheduled for hearing. We will need enough copies of the response to comments to cover all review agencies.

Please do not hesitate to contact me should you have any questions or if you require clarification of any items.

Sincerely yours,

Michael T. Drollinger
Senior Planner

cc: Jody Kliska, City Development Engineer
File RZP-96-136

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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

August 1, 1996

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

ATTN: Jodi Kliska

RE: Monument Highlands Subdivision.

Jodi:

As you know, we have performed some preliminary engineering for the above project. The developers are currently trying to decide how to proceed on the project. The major issue is whether the full geotechnical investigation will be required for the preliminary submittal review. Comments on the preliminary submittal by Michael Drollinger indicated that the preliminary information must either include the geotechnical investigation or be revised to exclude lots in the "constrained areas". Because this area has some potentially very problematic soil conditions, the geotechnical investigation is relatively costly (on the order of $30,000). Even at this, the result will be only a feasibility level investigation. We anticipate that detailed geotechnical investigations will be required for each individual lot prior to construction of each house. As you can imagine, the developer is quite reluctant to incur the cost of the geotechnical investigation in the preliminary phase of the project when there are numerous other issues, unrelated to the geotechnical considerations, which could render the project not feasible. The developer has asked that we clarify the technical concerns and requirements because he is a little unsure of the intent of the review comments related to these issues. Even though these issues were raised in review comments by Michael Drollinger, Michael has indicated to the developer that these matters would need to be discussed with the engineering department because of the technical nature of the questions. Following are the items which we would like to clarify.

1. During a phone conversation with Michael on July 9, we discussed the difficulty in identifying subsurface conditions which would practically preclude construction on a lot until the final detailed investigation for that lot is performed. In most, if not all, cases we would expect that stable foundations can be provided to accommodate the soil conditions assuming that the foundations are adequately designed and constructed. However, this will likely substantially increase the cost of the foundations. Michael indicated that he understood that all subsurface constraints cannot be identified and quantified until the detailed investigations are performed. His primary concerns were related to rockfall potential and slope stability. These two issues can be

addressed in the geologic hazards portion of the geotechnical information which is based on surface observations. The cost of the geologic hazards report is not great and it would be reasonable to provide that information with a preliminary submittal. Would it be possible to submit the geologic hazards report or some other information short of a full geotechnical investigation to address the issues of concern for the preliminary submittal?

2. The comments by Michael indicated that it would be possible to eliminate the lots of concern in order to address the issues. It in uncertain how those lots should be identified. We certainly can identify lots which could experience rockfall or slope stability hazards. However, lots with difficult subsurface soil conditions could only identified based on the detailed lot-specific investigations. Is there a suggested method for identifying these lots?

In general, our client has asked that we clarify these matters as well as explore any possibility of addressing the concerns of the City Development/Engineering staff regarding geotechnical issues without incurring the expense of the full geotechnical investigation during the preliminary submittal.

Please call me if you would like to meet to discuss these items. Thank you for your attention to these matters.

Submitted by:
WESTERN ENGINEERS, INC.

Bruce D. Marvin P.E.

xc: Mitch Evans
Richard Cavalli
Michael Drollinger

Richard Cavalli
Cavalli & Evans, Inc.
225 Redstone Boulevard
Redstone, CO 81623
970-963-8265

August 18, 1996

Larry Timms
City of Grand Junction
Community Development Department
250 North 5th Street
Grand Junction, CO 81501

Re: "Monument Highlands"

Dear Mr. Timms:

Cavalli & Evans, Inc. is the developer of the project known as "Monument Highlands". We filed our preliminary submittal on June 3 this year and have run into what appears to be a serious communication problem.

Rather than going into all the details at this point, I am simply enclosing a copy of a letter from our engineer, Western Engineers, to Jodi Kliska of your office. The letter is self explanatory. Also enclosed is a copy of Mr. Drollinger's written comments to our filing.

It is now approaching three weeks since the date of this letter and we still have not received a reply from your office. Ms. Kliska has not even returned our phone calls.

We, therefore, have no choice, but to make one last effort with your office to ascertain an adequate response to our letter of August 1, 1996. I would appreciate at the very least a written response to Western Engineers so that we can proceed with our development in a timely and cost-effective manner.

Thank you very much for your attention to this matter.

Sincerely,
Cavalli & Evans, Inc.

By: Richard Cavalli
RAC/mac

cc: Williams, Turner & Holmes. P.C.
Western Engineers, Inc.
Mitchell Evans
Doug Jones