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File FP-1996-115 Name: Niagara Village – Filing #2 – Final Plan

Present	Scanned	A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, 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
		Receipts for fees paid for anything
X	X	***Submittal checklist**
X	X	***General project report**
		Reduced copy of final plans or drawings
		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
		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**
X	X	***Petitioner's response to comments**
X	X	***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		Commitment for Title Ins. – Chicago Title Ins. Co. – 4/25/96
X		E-mails	X		Application for Authority – 8/2/195
X	X	Drainage Fee Calculations	X	X	Subsurface Soils Exploration – 9/28/95
X	X	Aerial Photograph	X	X	Stormwater Management Plan – 8/95
X	X	Certification of Plat	X	X	Master Drainage Report – Niagara Village Subdivision – 8/95
X		Subdivision Bond – Bk 2267 / Pg 659	X	X	Amended Stormwater Management Plan – 5/22/96
X	X	Correspondence	X	X	Planning Commission Minute – 6/11/96
X	X	Development Improvement Agreement – Bk 2267 / Pg 662	X	X	Settlement Agreement and Release of Claims – 7/13/99
X	X	Subsurface Soils Report	X		Preliminary Plans – (not final – not scanned)
X	X	Release of Improvements Agreement – Bk 2619 / Pg 749			
X	X	Posting of Public Notice Signs – 5/21/96			
X	X	Commitment for Title Insurance – First American Title Ins. Co. 6/16/95			

DEVELOPMENT APPLICATION

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

Receipt _____
Date _____
Rec'd By _____

File No. _____

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
☐ Subdivision Plat/Plan	☐ Minor ☐ Major ☐ Resub				
☐ Rezone				From: To:	
☒ Planned Development	☐ ODP ☐ Prelim ☒ Final	9.285 Ac.	Niagara Village Circle		
☐ Conditional Use					
☐ Zone of Annex					
☐ Variance					
☐ Special Use					
☐ Vacation					☐ Right-of Way ☐ Easement
☐ Revocable Permit					

☒ PROPERTY OWNER	☒ DEVELOPER	☒ REPRESENTATIVE
Waterloo Nevada Ltd	per Phone Conversation	LANDesign LLC
Name	Name	Name
P.O. Box 98, Station L		259 Grand Avenue
Address	Address	Address
Winnipeg, Manitoba, R3H 024 Canada		Grand Junction, CO 81501
City/State/Zip	City/State/Zip	City/State/Zip
204-772-8665		245-4099
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 required 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.

x _____ 05/01/96
Signature of Person Completing Application — Date

x _____ 05/01/96
Signature of Property Owner(s) - attach additional sheets if necessary — Date

per Phone Conversation

2943-182-00-007
CENTENNIAL SAVINGS BANK
PO BOX 1590
DURANGO, CO 81302-1590

2943-182-00-009
H J KENDRICK
J D KENDRICK
1705 CRESTVIEW DR
GRAND JUNCTION, CO 81506-5227

2943-182-00-010
JAMES A HUDSON
SUZANNE I
493 28 1/4 RD
GRAND JUNCTION, CO 81501-5164

2943-182-00-060
SHELDON J MANDELL
C/O KMART #7000 - TAX DEPARTMNT
700 S ORANGE AVE
WEST COVINA, CA 91790-2613

2943-182-00-063
STUART K SIDNEY
MILLIE E
PO BOX 1568
VICTORVILLE, CA 92393-1568

2943-182-00-072
RM 18 CORP
C/O PENNINGTON & C0 INC
4006 BELT LINE RD STE 240
DALLAS, TX 75244-2329

2943-182-00-073
AZTEX CORPORATION / FURR'S CAFETERIA #18
C/O P E PENNINGTON CO INC
4006 BELT LINE RD STE 240
DALLAS, TX 75244-2329

2943-182-00-075
EDWARD E DERRYBERRY
552 ROSA ST
PALISADE, CO 81526

2943-182-00-951
WORLD HARVEST CHURCH
2825 NORTH AVE
GRAND JUNCTION, CO 81501-5105

2943-182-00-046
MESA DEVELOPMENT COMPANY
C/O CHANDLER + ASSO INC
475 17TH ST
DENVER, CO 80202-4011

2943-182-00-049
JAMES F SQUIRRELL
67595 HIGHWAY 50
MONTROSE, CO 81401-9708

2943-182-00-051
WM BRUCE CARMAN
JANE R
2606 ARROYO DR
DURANGO, CO 81301-5833

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JOANNE DURAN
C/O JOANNE BELL
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GRAND JUNCTION, CO 81501-7936

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LEROY
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GRAND JUNCTION, CO 81506-5201

2943-182-00-928
STATE OF COLORADO NATIONAL GUARD
482 28 RD
GRAND JUNCTION, CO 81501-7936

2945-131-01-026
T ETAL POMERERANZ
C/O UNITED ARTISTS THEATRE INC
PO BOX 5227
ENGLEWOOD, CO 80155-5227

2945-131-01-038
STEPHEN GORDON
ETAL % MESA-DENVER ASSOC
140 GRAPE ST
DENVER, CO 80222-1159

2945-131-06-001
GARDEN VILLAGE
C/O MONFRIC, INC
1915 MORENA BLVD
SAN DIEGO, CA 92110

2943-182-16-001
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2943-182-08-005
EDWARD E DERRYBERRY
552 ROSA ST
PALISADE, CO 81526

2943-182-08-006
HILLTOP FOUNDATION INC
1100 PATTERSON RD
GRAND JUNCTION, CO 81506-8219

2943-182-09-001
CAHOOTS PARTNERSHIP
490 28 1/4 RD
GRAND JUNCTION, CO 81501-5182

2943-182-09-002
FLORENCE D WILCOX
2700 G RD APT 8C
GRAND JUNCTION, CO 81506-1408

LANDesign, LLC
259 Grand Ave.
Grand Junction, CO 81501

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

SUBMITTAL CHECKLIST

PLANNED DEVELOPMENT ~~MAJOR SUBDIVISION~~: FINAL

Location: NIAGARA CIRCLE DRIVE Project Name: NIAGARA VILLAGE FILING #2

Date Received 5-1-96

Receipt # 3943

File # FP-96-115

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	O County Planning	O County Building Department	~~O County Surveyor~~	O Walker Field	● School Dist. #51	● Irrigation District - GVIC	● Drainage District - GVDD	● Water District - UTE	● Sewer District - Fruitvale San	● U.S. West	● Public Service	O GVRP	O CDOT	● Corps of Engineers	● Colorado Geologic Survey	● U.S. Postal Service	~~O Mesa County Weed~~	● TCI Cable			TOTAL REQ'D.
● Application Fee - see attached	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	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	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	1	1			
● Evidence of Title	VII-2	1			1			1																								
O Appraisal of Raw Land	VII-1	1			1	1																										
● Names and Addresses*	VII-2	1																														
● Legal Description*	VII-2	1			1																											
O Deeds	VII-1	1			1			1																								
O Easements	VII-2	1	1	1	1			1													1	1	1						1			
O Avigation Easement	VII-1	1			1			1							1																	
O ROW	VII-2	1	1	1	1			1													1	1	1						1			
O Covenants, Conditions & Restrictions	VII-1	1	1					1																								
O Common Space Agreements	VII-1	1	1					1																								
● County Treasurer's Tax Cert.	VII-1	1																														
● Improvements Agreement/Guarantee*	VII-2	1	1	1				1																								
O CDOT Access Permit	VII-3	1	1																													
O 404 Permit	VII-3	1	1																													
O Floodplain Permit*	VII-4	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	2	1	1	1	1	1	1	1			
● Composite Plan	IX-10	1	2	1	1																											
● 11"x17" Reduction Composite Plan	IX-10	1				1	1	1	8	1	1	1	1				1	1	1	1	1	1	1	1	1	1		1	1			
● Final Plat	IX-15	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	1	1			
O 11"X17" Reduction of Final Plat	IX-15	1							8	1	1	1			1	1	1	1	1	1	1	1	1				1		1			
● Cover Sheet	IX-11	1	2																													
● Grading & Stormwater Mgmt Plan	IX-17	1	2															1							1	1			1			
● Storm Drainage Plan and Profile	IX-30	1	2															1			1	1	1						1			
● Water and Sewer Plan and Profile	IX-34	1	2	1			1												1	1	1	1	1					1	1			
● Roadway Plan and Profile	IX-28	1	2															1														
O Road Cross-sections	IX-27	1	2																													
● Detail Sheet	IX-12	1	2																													
● Landscape Plan - for common open space	IX-20	2	1	1					8																							
● Geotechnical Report	X-8	1	1																						1							
O Phase I & II Environmental Report	X-10,11	1	1																													
● Final Drainage Report	X-5,6	1	2															1														
O Stormwater Management Plan	X-14	1	2															1							1							
O Sewer System Design Report	X-13	1	2	1																1												
O Water System Design Report	X-16	1	2	1															1													
O Traffic Impact Study	X-15	1	2																					1								
O Site Plan	IX-29	1	2	1	1		1		8																							

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

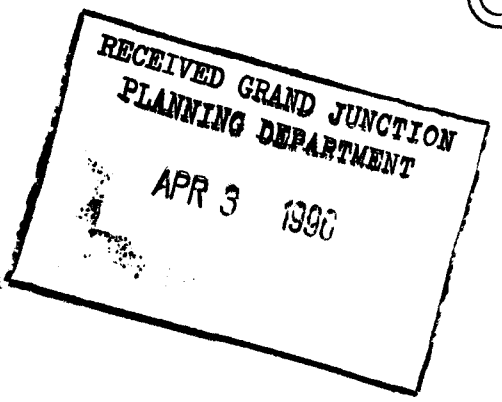
GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP
ATTORNEYS AT LAW
NORWEST BANK BUILDING, SUITE 400
2808 NORTH AVENUE
P.O. BOX 398
GRAND JUNCTION, COLORADO 81502

JAMES GOLDEN
KEITH G. MUMBY
K.K. SUMMERS
J. RICHARD LIVINGSTON
WILLIAM M. KANE

AREA CODE 970
TELEPHONE 242-7322
FAX 242-0698

April 2, 1996

COPY



Major John Gallegos
Department of Military Affairs
Colorado National Guard
6868 S. Reserve Parkway
Englewood, CO 80112

Re: Niagara Village Subdivision

Dear Major Gallegos:

Enclosed please find the original easement deed and agreement executed by my client. Also enclosed is our check for $500.00. Please return the document to me for recording after it has been executed by the State.

The public hearing for Filing 2 will be in June. I will let you know the date and time. I will also provide you with a copy of the covenants for Filing 2 upon their completion. Lastly, my client will instruct his contractor to contact the Guard before working in the easement and to remove and replace all fencing the same day.

Please call if you have any questions.

Sincerely,

GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP

J. Richard Livingston

JRL:jlc

Enclosures

cc: Sidney J. Spivak, Q.C., w/enc.
LanDesign, w/enc.
Michael T. Drollinger, City Planning, w/enc.

K:\LIV\NIANEV\MILITARY.3LT

EASEMENT DEED AND AGREEMENT

This EASEMENT DEED AND AGREEMENT ("Agreement") is made effective as of the _____ day of _____ 199__, by and between STATE OF COLORADO, DEPARTMENT OF MILITARY AFFAIRS, 6868 S. Revere Parkway, Englewood, CO 80112, hereinafter referred to as "Grantor," and NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC., c/o P.O. Box 398, Grand Junction, CO 81502, hereinafter referred to as "Grantee."

The parties agree as follows:

SECTION ONE
CONVEYANCE OF EASEMENT

Grantor, for and in consideration of the sum of $500.00 and other good and valuable consideration the receipt and sufficiency of same being hereby acknowledged, hereby grants and conveys to Grantee without warranty an easement as more particularly described on Exhibit "A" attached hereto subject to all current and subsequent real property taxes and assessments, restrictions and reservations of record. The easement is and shall be perpetual and nonexclusive.

SECTION TWO
DESCRIPTION OF EASEMENT

An easement over and across the property of Grantor described on Exhibit "A" attached hereto for the use and benefit of Grantee, their employees, agents and contractors, or any of their successors in title. The easement is for the sole and exclusive purpose of installation, maintenance and operation of an underground sewer and storm drain line serving Niagara Village Subdivision.

SECTION THREE
CONDITIONS

(a) Grantee agrees and understands that Grantor has no responsibility for the repair and maintenance of any use made by Grantee in the easement;

(b) Grantee shall promptly repair any damage it shall do to Grantor's real property and shall keep the easement in good repair free of unsightly trash, rubbish or debris;

(c) Grantee shall indemnify and hold Grantor harmless from and against any and all loss and damage of any kind or nature including reasonable attorneys' fees and costs and including but not limited to that caused by the exercise of the rights granted herein or by any wrongful or negligent act or omission of Grantee or of their agents in the course of their employment;

(d) Grantee shall improve the low spot in the southwest corner of Grantor's property and install a grated manhole into the storm sewer to be installed by Grantee;

(e) Grantor reserves the right to use the easement for purposes that will not interfere with Grantee's full enjoyment of the rights granted by this instrument; provided that Grantor shall not erect or construct any building or other structure, or construct any other obstruction on the easement.

(f) Grantee shall be responsible for procuring comprehensive general liability insurance for the easement at its sole cost and expense. Grantee shall have Grantor endorsed as an additional insured and shall annually provide Grantor with a certificate of such insurance.

SECTION FOUR
EASEMENT TO RUN WITH LAND

This grant of easement shall run with the land and shall be binding on and shall inure to the benefit of the parties to this Agreement, their respective heirs, successors, or assigns. Upon the dissolution of Grantee at law this easement shall revert to Grantor.

SECTION FIVE
NOTICES

Any notice provided for or concerning this agreement shall be in writing and be deemed sufficiently given when sent by certified or registered mail if sent to the respective address of each party as set forth at the beginning of this agreement.

SECTION SIX
GOVERNING LAW

It is agreed that this agreement shall be governed by, construed, and enforced in accordance with the laws of the State of Colorado.

SECTION SEVEN
ENTIRE AGREEMENT

This Agreement shall constitute the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this Agreement shall not be binding upon either party except to the extent incorporated in this Agreement.

SECTION EIGHT
MODIFICATION OF AGREEMENT

Any modification of this Agreement or additional obligation assumed by either party in connection with this Agreement shall be

binding only if evidenced in writing signed by each party or an authorized representative of each party.

IN WITNESS WHEREOF, each party to the Agreement has caused it to be executed as of the date and year first above written.

"GRANTOR"

STATE OF COLORADO

By: _____
Roy Romer, Governor

By: _____
Name: _____
Title: The Adjutant General

"GRANTEE"

NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC.

By: _____
Title: President

STATE OF COLORADO)
) ss.
COUNTY OF ARAPAHOE)

The foregoing instrument was acknowledged before me this _____ day of _____ 1996, by the State of Colorado, by _____ as _____.

WITNESS my hand and official seal.
My commission expires:

_____
Notary Public

COUNTRY OF CANADA)
) ss.
PROVIDENCE OF MANITOBA)

The foregoing instrument was acknowledged before me this 29th day of MARCH 1996 by Sidney J. Spivak as President of Niagara Village Homeowners Association, Inc.

WITNESS my hand and official seal.
My commission expires:

_____
Notary Public

A NOTARY PUBLIC
In and for the Province of Manitoba

EASEMENT DESCRIPTION

COMMENCING at the Southwest Corner of the Northwest Quarter of the Northwest Quarter (NW1/4 NW1/4) of Section 18, Township 1 South, Range 1 East of the Ute Meridian , from whence the Northwest Corner of said Section 18 bears North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 1318.47 feet;thence North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 204.29 feet; thence North 89 degrees 58 minutes 24 seconds East (N 89°58'24" E), a distance of 50.00 feet to the POINT OF BEGINNING; thence North 89 degrees 58 minutes 24 seconds East (N 89°58'24" E), a distance of 279.90 feet; thence North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 20.00 feet; thence South 89 degrees 58 minutes 24 seconds West (S 89°58'24" W), a distance of 279.90 feet; thence South 00 degrees 08 minutes 30 seconds East (S 00°08'30" E), a distance of 20.00 feet to the POINT OF BEGINNING.
Said easement for utility and drainage purposes containing 0.129 acres, as described.

EXHIBIT "A"

POSTING OF PUBLIC NOTICE SIGNS

The posting of the Public Notice Sign is to make the public aware of development proposals. The requirement and procedure for public notice sign posting are required by the City of Grand Junction Zoning and Development Code.

To expedite the posting of public notice signs the following procedure list has been prepared to help the petitioner in posting the required signs on their properties.

1. All petitioners/representatives will receive a copy of the Development Review Schedule for the month advising them of the date by which the sign needs to be posted. **IF THE SIGN HAS NOT BEEN PICKED UP AND POSTED BY THE REQUIRED DATE, THE PROJECT WILL NOT BE SCHEDULED FOR THE PUBLIC HEARING.**
2. A deposit of $50.00 per sign is required at the time the sign is picked up.
3. You must call for utility locates before posting the sign. Mark the location where you wish to place the sign and call 1-800-922-1987. You must allow two (2) full working days after the call is placed for the locates to be performed.
4. Sign(s) shall be posted in a location, position and direction so that:
   a. It is accessible and readable, and
   b. It may be easily seen by passing motorists and pedestrians.
5. Sign(s) MUST be posted at least **10 days** before the Planning Commission hearing date and, if applicable, shall stay posted until after the City Council Hearing(s).
6. **After the Public Hearing(s) the sign(s) must be taken down and returned to the Community Development Department within FIVE (5) working days to receive a full refund of the sign deposit.** For each working day thereafter the petitioner will be charged a $5.00 late fee. After eight working days Community Development Department staff will retrieve the sign and the sign deposit will be forfeited in its' entirety.

The Community Development Department staff will field check the property to ensure proper posting of the sign. If the sign is not posted, or is not in an appropriate place, the item will be pulled from the public hearing agenda.

I have read the above information and agree to its terms and conditions.

Mary Folks — 5-21-96

SIGNATURE — DATE

FILE #/NAME FP-96-115 - Niagara Village #2 RECEIPT #

PETITIONER/REPRESENTATIVE: Landesign PHONE # 245-4099

DATE OF HEARING: 6/11/96 **POST SIGN(S) BY:** 5/31/96

DATE SIGN(S) PICKED-UP 5/20/96 **RETURN SIGN(S) BY:** 6/18/96

DATE SIGN(S) RETURNED Mary Folks RECEIVED BY:

Missing in Action 10/10/96 SLC

WestWater Engineering
Consulting Engineers

2516 FORESIGHT CIRCLE, #1 GRAND JUNCTION, COLORADO 81505 (970) 241-7076 FAX (970) 241-7097

May 21, 1996

Michael Drollinger
Community Development Department
250 North 5th Street
Grand Junction, Colorado 81501

RE: Fruitvale Sanitation District Review of Proposed Developments

Dear Michael,

Our office received three submittals for proposed development within the Fruitvale Sanitation District service area on May 20, 1996 as listed below. Two of the submittals had a City of Grand Junction Review Agency Comment Sheet, one did not. Typically, the District requires a 30 day period in order to review and comment on each submittal. Unfortunately, one of the submittal comment periods had expired prior to our receipt of the proposed development, and one is due within a two day period. We will make every effort to send review comments on the past-due submittal as well as the near-due submittal as soon as possible.

The proposed developments include:

Identification	File No.	Comments Due
Niagara Village Filing #2	FP-96-115	5-16-96
Retail Center	SPR-96-121	5-22-96
James Park	None	None

We will send our comments regarding each submittal in the order listed above. Thank for accepting our comments.

Respectfully,

C. Kellie Knowles

C. Kellie Knowles, P.E.

cc: Art Crawford, District Manager

RECEIVED GRAND JUNCTION PLANNING DEPARTMENT
MAY 23 1996

SUBSURFACE SOILS EXPLORATION

NIAGARA VILLAGE SUBDIVISION

GRAND JUNCTION, COLORADO

Prepared For:

SIDNEY J. SPIVAK Q.C.
Box 98 Sta. L
Winnipeg, Manitoba, Canada R3H0Z4

Prepared By:

LINCOLN-DeVORE, INC.
1441 Motor Street
Grand Junction, CO 81505

September 28, 1995

Lincoln DeVore, Inc.
Geotechnical Consultants
1441 Motor St.
Grand Junction, CO 81505

TEL: (303) 242-8968
FAX: (303) 242-1561

September 28, 1995

SIDNEY J. SPIVAK, Q.C.
Box 98 Sta. L
Winnipeg, Manitoba, Canada R3HoZ4

Re: SUBSURFACE SOILS EXPLORATION

NIAGARA VILLAGE SUBDIVISION

Grand Junction, Colorado

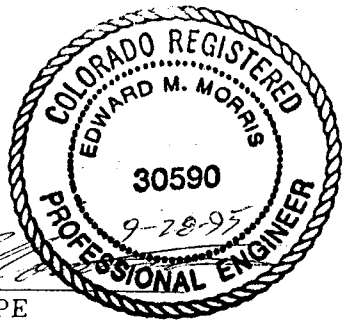
Dear Sir:

Transmitted herein are the results of a Subsurface Soils Exploration for the proposed Niagara Village Subdivision.

If you have any questions after reviewing this report, please feel free to contact this office at any time. This opportunity to provide Geotechnical Engineering services is sincerely appreciated.

Respectfully submitted,

LINCOLN-DeVORE, INC.



By: _____
Edward M. Morris, PE
Western Slope Branch Manager
Grand Junction, Office

LDTL Job No. 84110-J

EMM/bh

TABLE OF CONTENTS

INTRODUCTION

PROJECT DESCRIPTION

This report presents the results of our geotechnical evaluation performed to determine the general subsurface conditions of the site applicable to construction of a residential subdivision. A vicinity map is included in the Appendix of this report.

To assist in our exploration, we were provided with a site plan and drainage basin map prepared by LANDesign of Grand Junction, Colorado. The Boring Location Plan attached to this report is based on that plan provided to us.

We understand that the proposed structures will consist of single story, wood framed stick built and manufactured residential structures with no basements and either concrete floor slabs on grade or crawl-space type construction. Lincoln DeVore has not seen a full set of building plans, but structures of this type typically develop wall loads on the order of 300-900 plf and column loads on the order of 4-12 kips.

The characteristics of the subsurface materials encountered were evaluated with regard to the type of construction described above. Recommendations are included herein to match the described construction to the soil characteristics found. The information contained herein may or may not be valid for other purposes. If the proposed site use is changed or types of construction proposed, other than noted herein, Lincoln DeVore should be contacted to determine if the information in this report can be used for the new construction without further

field evaluations.

PROJECT SCOPE

The purpose of our exploration was to evaluate the surface and subsurface soil and geologic conditions of the site and, based on the conditions encountered, to provide recommendations pertaining to the geotechnical aspects of the site development as previously described. The conclusions and recommendations included herein are based on an analysis of the data obtained from our field explorations, laboratory testing program, and on our experience with similar soil and geologic conditions in the area.

Specifically, the intent of this study is to:

1. Explore the subsurface conditions to the depth expected to be influenced by the proposed construction.
2. Evaluate by laboratory and field tests the general engineering properties of the various strata which could influence the development.
3. Define the general geology of the site including likely geologic hazards which could have an effect on site development.
4. Develop geotechnical criteria for site grading and earthwork.
5. Identify potential construction difficulties and provide recommendations concerning these problems.
6. Recommend an appropriate foundation system for the anticipated structure and develop criteria for foundation design.

FIELD EXPLORATION AND LABORATORY TESTING

A field evaluation was performed on 9-22-95, and consisted of a site reconnaissance by our geotechnical personnel and the drilling of 3 shallow exploration borings. These shallow exploration borings were drilled within the proposed building areas near the locations indicated on the Boring Location Plan. The exploration borings were located to obtain a reasonably good profile of the subsurface soil conditions. All exploration borings were drilled using a CME 45-B, truck mounted drill rig with continuous flight auger to depths of approximately 15-32 feet. Samples were taken with a standard split spoon sampler, lined California sampler, think walled Shelby tubes, and by bulk methods. Logs describing the subsurface conditions are presented in the attached figures.

The boring logs and related information show subsurface conditions at the date and location of this exploration. Soil conditions may differ at locations other than those of the exploratory borings. If the structure is moved any appreciable distance from the locations of the borings, the soil conditions may not be the same as those reported here. The passage of time may also result in a change in the soil conditions at the boring locations.

The lines defining the change between soil types or rock materials on the attached boring logs and soil profiles are determined by interpolation and therefore are approximations. The transition between soil types may be abrupt or may be gradual.

Laboratory tests were performed on representative soil samples to determine their relative engineering properties. Tests were performed in accordance with test methods of the American Society for Testing and Materials or other accepted standards. The results of our laboratory tests are included in this report. The in-place soil density, moisture content and the standard penetration test values are presented on the attached drilling logs.

FINDINGS

SITE DESCRIPTION

The project site is located in the Northwest Quarter of the Northwest Quarter of Section 18, Township 1 South, Range 1 East of the Ute Principal Meridian, Mesa County, Colorado. More specifically the site is located West of 28 1/4 Road and North of the Gunnison Avenue extension within the Corporate limits of the City of Grand Junction.

The topography of the site is relatively flat, with a very slight overall gradient to the South. The exact direction of surface runoff on this site will be controlled by the proposed construction and therefore will be variable. In general, surface runoff is expected to travel along the proposed interior roadways and East to 28 1/4 Road and an existing drainage or to the Southwest into a holding basin with ultimate discharge to the Southwest. The drainage on the site will probably be directed either to the Indian Wash drainage feature along 28 Road or to the Mesa County Ditch along 28 1/4 Road and ultimately into the Colorado River to the South. Surface and subsurface drainage on this site would be described as poor.

GENERAL GEOLOGY AND SUBSURFACE DESCRIPTION

The geologic materials encountered under the site consist of moderately thick sequence of unconsolidated alluvial soils which are deposited over a thick sequence of sedimentary rocks. The geologic and engineering properties of the materials found in our 3 shallow exploration borings will be

discussed in the following sections.

The soils on this site consist of an alluvial deposit placed by the action of the Colorado River, covered with approximately 30'-32' alluvium/ colluvium transported by mudflows from the hills to the North and Northeast. This stratification of upper soils results in a layered system of silts and clays with thin, interbedded sand lenses overlying a sand/gravel deposit. Generally, the silts and clays are soft, wet and of low density. Soil density decreases and the moisture content increases with increasing depth. The upper 2-8 feet of the soil profile are stiffer and relatively dry due to surface desiccation and some reworking of the ground surface due to previous uranium mill tailings remediation.

The surface soils on this site consisted of essentially 1 soil type which is designated Soil Type I for purposes of this report. This soil type was found to be approximately 32' thick. These soils will probably be somewhat stratified with some clayey silts and possibly sandy silts.

This Soil Type was classified as a silty clay (CL) under the Unified Classification System. This material is of low plasticity, of low to moderate permeability, and was encountered in a low density, wet condition below approximately 6-12'. This soil is found to be relatively dry and of medium density in the upper 3'-6' of the soil profile and may undergo mild expansion with the entry of small amounts of moisture. This soil will exhibit minor expansive properties in the upper few feet of the soil profile and will settle in the lower portions of

the soil profile. The maximum allowable bearing capacity for this soil was found to be 1800 psf, with 750 minimum dead load pressure required for foundations placed in the upper 4' of the soil profile over the majority of the site. If foundations are placed below 4' of the existing ground surface, or if low density soils are encountered in the excavations, the maximum allowable bearing capacity should be reduced to 1000 psf, with 100 psf minimum deadload pressure required. The finer grained portion of Soil Type No. I contains sulfates in detrimental quantities.

These soils were found to contain large amounts of soluble sulfate salts. In general, the sulfate salt content was found to range from 2000 parts per million to as high as 10,000 parts per million (1%). Landscaping using these soils may require some plant types which can tolerate the high soluble salt contents. Any landscaping plans for this project should follow the recommendations found in the Drainage and Gradient portion of this report.

The coarse grained alluvial sandy gravels and cobbles of the Ancient Colorado River Terrace were encountered at a depth of 32' below the ground surface. If heavy structures are anticipated for this project, these gravels and the underlying Mancos Shale would probably be utilized as foundation bearing for either driven piles or drilled piers. Information presently available to Lincoln DeVore indicates that the proposed structures are to be light weight and should not require a deep foundation system. If information regarding deep foundations are required for this site, Lincoln DeVore can provide additional information.

GROUND WATER:

A free water table came to equilibrium during drilling at 7 1/2 feet to 14 1/2 feet below the present ground surface. This is probably not a true phreatic surface but is an accumulation of subsurface seepage moisture (perched water). In our opinion the subsurface water conditions shown are a permanent feature on this site. The depth to free water would be subject to fluctuation, depending upon external environmental effects.

Because of capillary rise, the soil zone within a few feet above the free water level identified in the borings will be quite wet. Pumping and rutting may occur during the excavation process, particularly if the bottom of the foundations are near the capillary fringe. Pumping is a temporary, quick condition caused by vibration of excavating equipment on the site. If pumping occurs, it can often be stopped by removal of the equipment and greater care exercised in the excavation process. In other cases, geotextile fabric layers can be designed or cobble sized material can be introduced into the bottom of the excavation and worked into the soft soils. Such a geotextile or cobble raft is designed to stabilize the bottom of the excavation and to provide a firm base for equipment.

In general, the Northwest portion of the tract appears to exhibit a higher water table. The cause of this relatively high water table are not known but, may be related to area drainage practices and runoff discharge from the K-Mart store to the North and parking lot drainage to the West.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL DISCUSSION

No geologic conditions were apparent during our reconnaissance which would preclude the site development as planned, provided the recommendations contained herein are fully complied with. Based on our investigation to date and the knowledge of the proposed construction, the site condition which would have the greatest effect on the planned development is the slightly expansive soils encountered near the existing ground surface.

Since the exact magnitude and nature of the foundation loads are not precisely known at the present time, the following recommendations must be somewhat general in nature. Any special loads or unusual design conditions should be reported to Lincoln DeVore so that changes in these recommendations may be made, if necessary. However, based upon our analysis of the soil conditions and project characteristics previously outlined, the following recommendations are made.

OPEN FOUNDATION OBSERVATION

Since the recommendations in this report are based on information obtained through random borings, it is possible that the subsurface materials between the boring points could vary. Therefore, prior to placing forms or pouring concrete, an open excavation observation should be performed by representatives of Lincoln DeVore. The purpose of this observa-

tion is to determine if the subsurface soils directly below the proposed foundations are similar to those encountered in our exploration borings. If the materials below the proposed foundations differ from those encountered, or in our opinion, are not capable of supporting the applied loads, additional recommendations could be provided at that time.

EXCAVATION:

Site preparation in any areas to receive structural fill should begin with the removal of all topsoil, vegetation, and other deleterious materials. Prior to placing any fill, the subgrade should be observed by representatives of Lincoln DeVore to determine if the existing vegetation has been adequately removed and that the subgrade is capable of supporting the proposed fills. The subgrade should then be scarified to a depth of 10 inches, brought to near optimum moisture conditions and compacted to at least 90% of its maximum modified Proctor dry density [ASTM D-1557]. The moisture content of this material should be within + or - 2% of optimum moisture, as determined by ASTM D-1557.

In general, we recommend all structural fill in the area beneath any proposed structure or roadway be compacted to a minimum of 90% of its maximum modified Proctor dry density (ASTM D1557). This structural fill should be placed in lifts not to exceed six (6) inches after compaction. We recommend that fill be placed and compacted at approximately its optimum moisture content (+/-2%) as determined by ASTM D 1557. Structural fill should be a granular, non-expansive soil.

Allowable slope angle for cuts in the native soils is dependent on soil conditions, slope geometry, the moisture content and other factors. Should deep cuts be planned for this site, we recommend that a slope stability analysis be performed when the location and depth of the cut is known.

No major difficulties are anticipated in the course of excavating into the surficial soils on the site. It is probable that safety provisions such as sloping or bracing the sides of excavations over 4 feet deep will be necessary. Any such safety provisions shall conform to reasonable industry safety practices and to applicable OSHA regulations. The OSHA Classification for excavation purposes on this site is Soil Class C.

DRAINAGE AND GRADIENT:

Adequate site drainage should be provided in the foundation area both during and after construction to prevent the ponding of water and the saturation of the subsurface soils. We recommend that the ground surface around the structure be graded so that surface water will be carried quickly away from the building. The minimum gradient within 10 feet of the building will depend on surface landscaping. We recommend that paved areas maintain a minimum gradient of 2%, and that landscaped areas maintain a minimum gradient of 8%. It is further recommended that roof drain downspouts be carried across all backfilled areas and discharged at least 10 feet away from the structure. Proper discharge of roof drain downspouts may require the use of subsur-

face piping in some areas. Planters, if any, should be so constructed that moisture is not allowed to seep into foundation areas or beneath slabs or pavements.

To give the buildings extra lateral stability and to aid in the rapidity of runoff, it is recommended that all backfill around the building and in utility trenches in the vicinity of the building be compacted to a minimum of 85% of its maximum Proctor dry density, ASTM D 698. The native soils on this site may be used for such backfill. We recommend that all backfill be compacted using mechanical methods. No water flooding techniques of any type may be used in placement of fill on this site.

Should an automatic lawn irrigation system be used on this site, we recommend that the sprinkler heads be installed no less than 5 feet from the building. In addition, these heads should be adjusted so that spray from the system does not fall onto the walls of the building and that such water does not excessively wet the backfill soils.

It is recommended that lawn and landscaping irrigation be reasonably limited, so as to prevent undesirable saturation of subsurface soils or backfilled areas. Several methods of irrigation water control are possible, to include, but not limited to:

* Metering the Irrigation water.
* Sizing the irrigation distribution service piping to limit on-site water usage.
* Encourage efficient landscaping practices.
* Enforcing reasonable limits on the size of high water usage landscaping for each lot and any park areas.

FOUNDATIONS

We recommend the use of a conventional shallow foundation system consisting of continuous spread footings beneath all bearing walls and isolated spread footings beneath all columns and other points of concentrated load. Such a shallow foundation system, resting on the native alluvial and possibly reworked surface soils, may be designed on the basis of an allowable bearing capacity of 1800 psf maximum. A minimum dead load of 750 psf must be maintained. If soft soils are encountered in the excavation or if the excavations are deeper than 4' below the existing ground surface, the maximum allowable bearing capacity should be reduced to 1000 psf and a minimum deadload of 100 psf must be maintained.

Contact stresses beneath all continuous walls should be balanced to within + or -150 psf at all points. Isolated interior column footings should be designed for contact stresses of about 150 psf less than the average used to balance the continuous walls. The criterion for balancing will depend somewhat upon the nature of the structure. Single-story, slab on grade structures may be balanced on the basis of dead load only. Multi-story structures may be balanced on the basis of dead load plus 1/2 live load, for up to 3 stories.

It should be noted that the term "footings" as used above includes the wall on grade or "no footing" type of foundation system. On this particular site, the use of a more conventional footing, the use of a "no footing", or the use of voids will depend entirely upon the foundation loads exerted

by the structure. We would anticipate the use of a relatively narrow standard footing or possibly a no-footing type foundation on this site.

Stem walls for a shallow foundation system should be designed as grade beams capable of spanning at least 12 feet. These "grade beams" should be horizontally reinforced both near the top and near the bottom. The horizontal reinforcement required should be placed continuously around the structure with no gaps or breaks. A foundation system designed in this manner should provide a rather rigid system and, therefore, be better able to tolerate differential movements associated with the relatively low expansive pressures exerted by the native soils and possible areas of settlement associated with low density soils.

SETTLEMENT:

We anticipate that total and/or differential settlements for the proposed structures may be considered to be within tolerable limits, provided the recommendations presented in this report are fully complied with. In general, we expect total settlements for the proposed structure to be less than 1 inch.

FROST PROTECTION

We recommend that the bottom of all foundation components rest a minimum of 1 1/2 feet below finished grade or as required by the local building codes. Foundation components must not be placed on frozen soils.

CONCRETE SLABS ON GRADE

Slabs could be placed directly on the natural soils or on a structural fill. We recommend that all slabs on grade be constructed to act independently of the other structural portions of the building. One method of allowing the slabs to float freely is to use expansion material at the slab-structure interface.

If the slab is to be placed directly on the expansive soils or on a thin fill overlying these soils, the risk of slab movement is high and stringent mitigation techniques are recommended. No design method known at this time will prevent slab movement should moisture enter the expansive soils below. Therefore, to mitigate the effects of slab movement should they occur, we recommend the following:

1. Control joints should be placed in such a manner that no floor area exceeding 400 square feet remains without a joint. Additional joints should be placed at columns and at inside corners. These control joints should minimize cracking associated with expansive soils by controlling location and direction of cracks.

2. We recommend that all slabs on grade be isolated from all structural members of the building. This is generally accomplished by an expansion joint at the floor slab / foundation interface. In addition, positive separation should be maintained between the slab and all interior columns, pipes and mechanical systems extending through the slab.

3. The slab subgrade should be kept moist 3 to 4 days prior to placing the slab. This is done by periodically sprinkling the subgrade with water. However, under no circumstances should the subgrade be kept wet by the flooding or ponding water.

4. Any partitions which will rest on the slabs on grade should be constructed with a minimum void space of 1-

1/2 inches at the bottom of the wall (see figure in the Appendix). This base should allow for future upward movement of the floor slabs and minimize movement and damage in walls and floors above the slabs. This void may require rebuilding after a period of time, should heave exceed 1-1/2 inches.

Problems associated with slab 'curling' are usually minimized by proper curing of the placed concrete slab. This period of curing usually is most critical within the first 5 days after placement. Proper curing can be accomplished by continuous water application to the concrete surface or, in some instances by the placement of a 'heavy' curing compound, formulated to minimize water evaporation from the concrete. Curing by continuous water application must be carefully undertaken to prevent the wetting or saturation of the subgrade soils.

EARTH RETAINING STRUCTURES

The active soil pressure for the design of earth retaining structures may be based on an equivalent fluid pressure of 62 pounds per cubic foot. The active pressure should be used for retaining structures which are free to move at the top (unrestrained walls). For earth retaining structures which are fixed at the top, such as basement walls, an equivalent fluid pressure of [illegible] pounds per cubic foot may be used. It should be noted that the above values should be modified to take into account any surcharge loads, sloping backfill or other externally applied forces. The above equivalent fluid pressures should also be modified for the effect of free water, if any.

The passive pressure for resistance to lateral movement may be considered to be 180 pcf per foot of depth. The coefficient of friction for concrete to soil may be assumed to be 0.2 for resistance to lateral movement. When combining frictional and passive resistance, the latter must be reduced by approximately 1/3.

REACTIVE SOILS

Since groundwater in the Grand Junction area typically contains sulfates in quantities detrimental to a Type I cement, a Type II or Type I-II or Type II-V cement is recommended for all concrete which is in contact with the subsurface soils and bedrock. Calcium chloride should not be added to a Type II, Type I-II or Type II-V cement under any circumstances.

LIMITATIONS

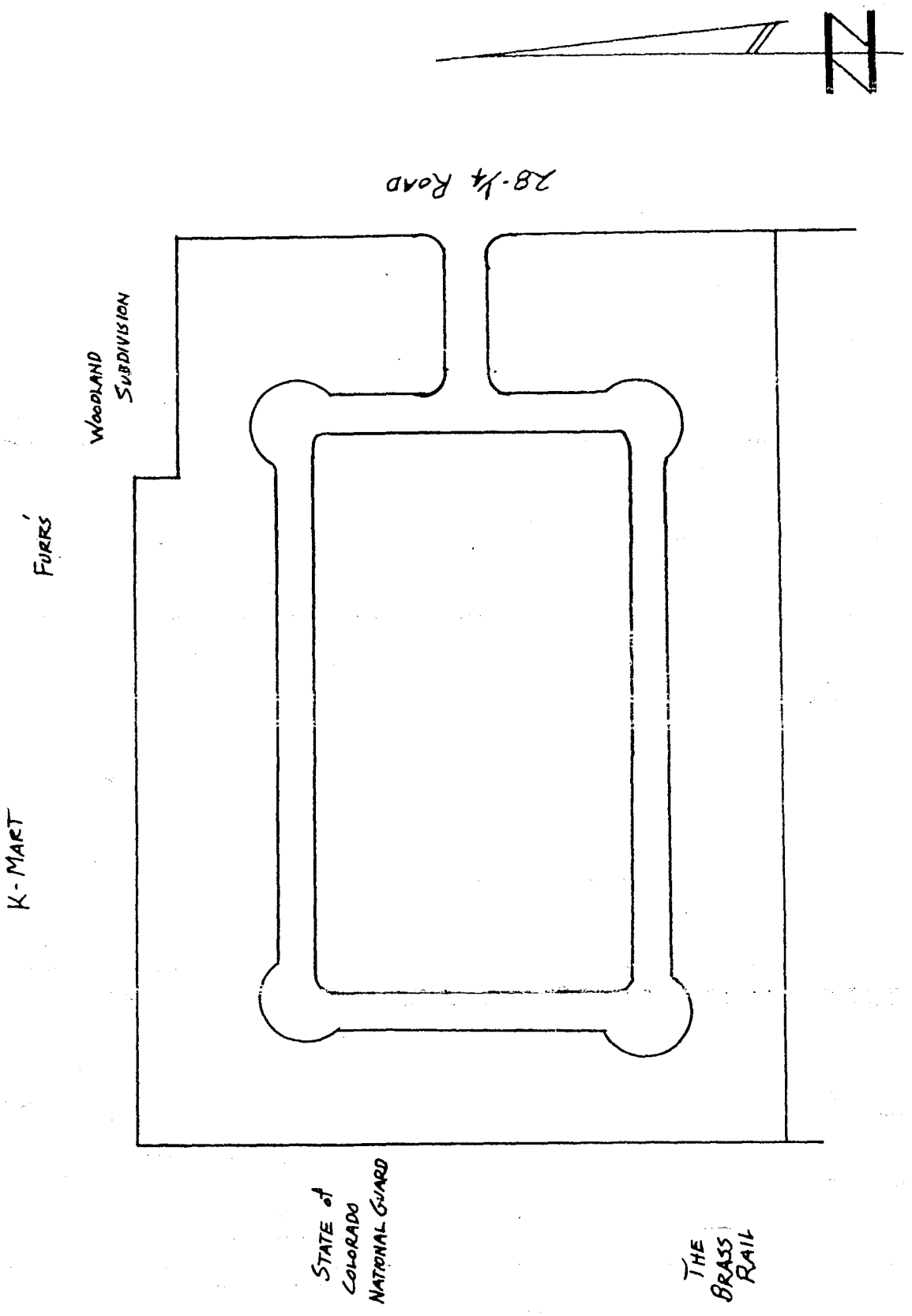
This report is issued with the understanding that it is the responsibility of the owner, or his representative to ensure that the information and recommendations contained herein are brought to the attention of the individual lot purchasers for the subdivision. In addition, it is the responsibility of the individual lot owners that the information and recommendations contained herein are brought to the attention of the architect and engineer for the individual projects and the necessary steps are taken to see that the contractor and his subcontractors carry out the appropriate recommendations during construction.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. In addition, changes in acceptable or appropriate standards may occur or may result from legislation or the broadening of engineering knowledge. Accordingly, the findings of this report may be invalid, wholly or partially, by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of 3 years.

The recommendations of this report pertain only to the site investigated and are based on the assumption that the soil conditions do not deviate from those described in this report. If any variations or undesirable conditions are encountered during construction or the proposed

construction will differ from that planned on the day of this report, Lincoln DeVore should be notified so that supplemental recommendations can be provided, if appropriate.

Lincoln DeVore makes no warranty, either expressed or implied, as to the findings, recommendations, specifications or professional advice, except that they were prepared in accordance with generally accepted professional engineering practice in the field of geotechnical engineering.



Lincoln DeVore, Inc.
Geotechnical Consultants

NIAGARA VILLAGE - GRAND JUNCTION, CO.		
MR. SIDNEY SPIVAK, Q.C.		DATE 10-3-95
JOB NO. 84110-J	DRAWN EMM	NO SCALE

SOILS DESCRIPTIONS:

SYMBOL	USCS	DESCRIPTION
		Topsoil
		Man-made Fill
	GW	Well-graded Gravel
	GP	Poorly-graded Gravel
	GM	Silty Gravel
	GC	Clayey Gravel
	SW	Well-graded Sand
	SP	Poorly-graded Sand
	SM	Silty Sand
	SC	Clayey Sand
	ML	Low-plasticity Silt
	CL	Low-plasticity Clay
	OL	Low-plasticity Organic Silt and Clay
	MH	High-plasticity Silt
	CH	High-plasticity Clay
	OH	High-plasticity Organic Clay
	Pt	Peat
	GW/GM	Well-graded Gravel, Silty
	GW/GC	Well-graded Gravel, Clayey
	GP/GM	Poorly-graded Gravel, Silty
	GP/GC	Poorly-graded Gravel, Clayey
	GM/GC	Silty Gravel, Clayey
	GC/GM	Clayey Gravel, Silty
	SW/SM	Well-graded Sand, Silty
	SW/SC	Well-graded Sand, Clayey
	SP/SM	Poorly-graded Sand, Silty
	SP/SC	Poorly-graded Sand, Clayey
	SM/SC	Silty Sand, Clayey
	SC/SM	Clayey Sand, Silty
	CL/ML	Silty Clay

ROCK DESCRIPTIONS:

SYMBOL	DESCRIPTION
	SEDIMENTARY ROCKS
	CONGLOMERATE
	SANDSTONE
	SILTSTONE
	SHALE
x x x x x x	CLAYSTONE
	COAL
	LIMESTONE
	DOLOMITE
	MARLSTONE
	GYPSUM
	Other Sedimentary Rocks
	IGNEOUS ROCKS
	GRANITIC ROCKS
	DIORITIC ROCKS
	GABBRO
	RHYOLITE
	ANDESITE
	BASALT
	TUFF & ASH FLOWS
	BRECCIA & Other Volcanics
	Other Igneous Rocks
	METAMORPHIC ROCKS
	GNEISS
	SCHIST
	PHYLLITE
	SLATE
	METAQUARTZITE
	MARBLE
	HORNFELS
	SERPENTINE
	Other Metamorphic Rocks

SYMBOLS & NOTES:

SYMBOL	DESCRIPTION
	9/12 Standard penetration drive Numbers indicate 9 blows to drive the spoon 12" into ground.
	ST 2-1/2" Shelby thin wall sample
	W_o Natural Moisture Content
	W_x Weathered Material
Free water	Free water table
	γ^o Natural dry density
	T.B. – Disturbed Bulk Sample
②	Soil type related to samples in report
15' W_x Form.	Top of formation
	Test Boring Location
	Test Pit Location
	Seismic or Resistivity Station. Lineation indicates approx. length & orientation of spread (S = Seismic, R = Resistivity)

Standard Penetration Drives are made by driving a standard 1.4" split spoon sampler into the ground by dropping a 140 lb. weight 30". ASTM test des. D-1586.

Samples may be bulk, standard split spoon (both disturbed) or 2-1/2" I.D. thin wall ("undisturbed") Shelby tube samples. See log for type.

The boring logs show subsurface conditions at the dates and locations shown, and it is not warranted that they are representative of subsurface conditions at other locations and times.

LINCOLN DeVORE INC.

COLORADO SPRINGS
PUEBLO – GRAND JUNCTION

EXPLANATION OF BOREHOLE LOGS AND LOCATION DIAGRAMS

BORING NO. 1

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION		BLOW COUNT	SOIL DENSITY pcf	WATER %
		Sulfates on Ground Surface				
		COMPACTED				
		LOW EXPANSION	VERY HIGH SULFATES			
	CL	Very SILTY CLAY	ST		104.4	9.0%
5	I	ALLUVIAL	SI. MOIST 5			
		LOW DENSITY				
		Occ. MEDIUM DENSITY STRATA				
	CL	Very SILTY CLAY SLIGHTLY EXPANSIVE	CS	9/6	103	19.0%
10	I	INCREASING MOISTURE	10	20/12		
		ALLUVIAL CLAYS		32/18		
		VERY HIGH SULFATES				
		VERY SOFT to DRILL				
	CL	COMPRESSIBLE	SPT	2/6		22.6%
15		Free Water ▽	15	5/12		
	I	Very SILTY CLAY	COMPRESSIBLE	8/18		
		HOLE IS SQUEEZING SHUT				
20		VERY SOFT	20			
		COMPRESSIBLE				
25			25			
30			BULK 30			25.7%
		Blow Counts are cumulative for each				
	GM	6 inches of sampler penetration.				
	Sandy Gravel	**Free Water @ 14-1/2'**				
		During Drilling 9-22-95				

LOG OF SUBSURFACE EXPLORATION

NIAGARA VILLAGE SUBDIVISION
Gunnison & 28-1/4 Road, Grd. Jct, Co.

LINCOLN - DeVORE, Inc.
Geotechnical Consultants
Grand Junction, Colorado

Mr. Sidney Spivak Q.C.
LANDesign Consultants

Date **9-26-95**

Job No. 84110-J

Drawn **EMM**

BORING NO. **2**

BORING ELEVATION:

DEPTH (FT.)	SOIL LOG	DESCRIPTION			BLOW COUNT	SOIL DENSITY pcf	WATER %
		6" of MAN-MADE FILL 'PITRUN'					
		COMPACTED VERY HIGH SULFATES					
		LOW EXPANSION					
	CL	Very SILTY CLAY	ALLUVIAL	SPT	6/6		15.9%
5	I	SILT STRATA	MOIST	5	11/12		
			VERY HIGH SULFATES		17/18		
		Occ. MEDIUM DENSITY STRATA					
	CL	Very SILTY CLAY	SLIGHTLY EXPANSIVE	ST		109.3	15.6%
10	I		INCREASING MOISTURE	10			
		ALLUVIAL CLAYS					
			DECREASING DENSITY				
	CL	Very SILTY CLAY	COMPRESSIBLE	CT	4/6	97.4	21.4%
15	I	SILT STRATA		15	9/12		
			VERY SOFT to DRILL		14/18		
		Free Water					
20				20			
25				25			
30				30			

Blow Counts are cumulative for each 6 inches of sampler penetration.

Free Water @ 12'

During Drilling 9-22-95

LOG OF SUBSURFACE EXPLORATION

NIAGARA VILLAGE SUBDIVISION

Gunnison & 28-1/4 Road, Grd. Jct, Co.

LINCOLN - DeVORE, Inc.

Geotechnical Consultants

Grand Junction, Colorado

Mr. Sidney Spivak Q.C.
LANDesign Consultants

Date **9-26-95**

Job No. **84110-J**

Drawn **EMM**

BORING NO. 3

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION		BLOW COUNT	SOIL DENSITY pcf	WATER %
		COMPACTED GROUND SURFACE				
		EXPANSIVE VERY HIGH SULFATES				
		MEDIUM to HIGH DENSITY				
	CL	Very SILTY CLAY SLIGHTLY EXPANSIVE MOIST	CT	7/6	119.8	11.2%
5	I	INCREASING MOISTURE	5	17/12		
		ALLUVIAL CLAYS HIGH SULFATES		26/18		
		DECREASING DENSITY				
		Free Water ▽				
	CL	Very SILTY CLAY COMPRESSIBLE	SPT	2/6		25.5%
10	I	SILT STRATA	10	3/12		
		VERY SOFT to DRILL		4/18		
	CL	Very SILTY CLAY	ST		92.3	24.1%
15	I	COMPRESSIBLE	15			
20			20			
25			25			
30			30			

Blow Counts are cumulative for each 6 inches of sampler penetration.

Free Water @ 7-1/2'

During Drilling 9-22-95

LOG OF SUBSURFACE EXPLORATION

NIAGARA VILLAGE SUBDIVISION
Gunnison & 28-1/4 Road, Grd. Jct, Co.

Mr. Sidney Spivak Q.C.
LANDesign Consultants

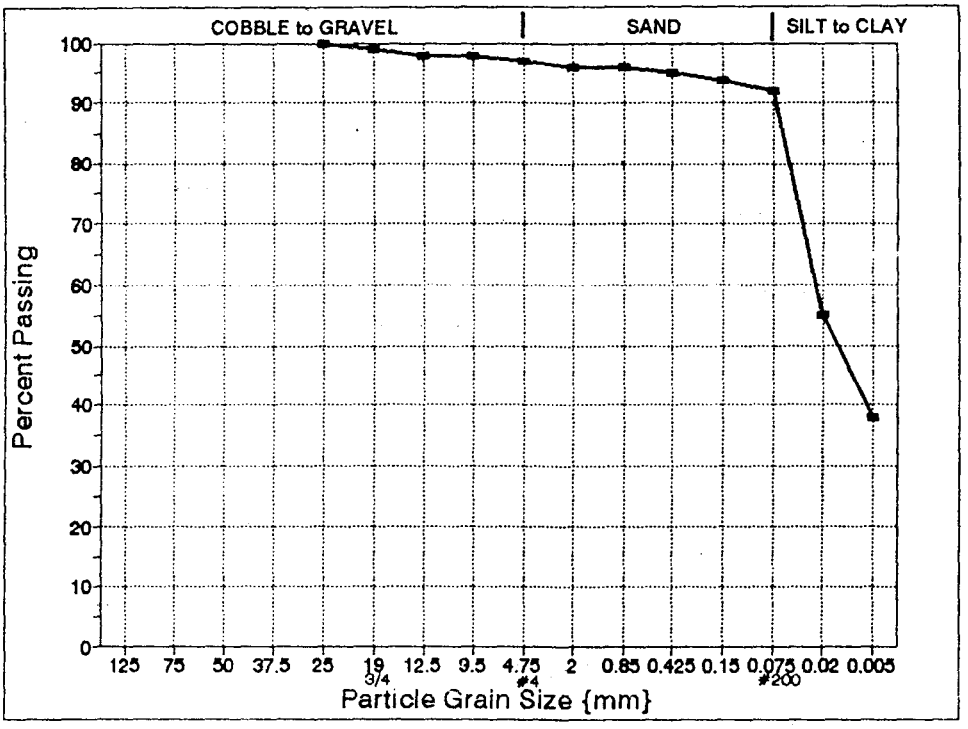
Date **9-26-95**

LINCOLN - DeVORE, Inc.
Geotechnical Consultants
Grand Junction, Colorado

Job No. **84110-J**

Drawn **EMM**

Soil Sample:	**Very Silty Clay (CL)**	Sample No.:	**(Typical)**	2
Location:	**Niagara Village, Grand Junction**	Test by:	**LRS**	
Natural Water Content (w):	**15.6%**	Boring No.: **2**	Depth: **8'**	
Soil Specific Gravity (Gs):	**2.66**	In-Place Density (pcf):	**109.3**	



Effective size		mm
Cu		
Cc		
Plastic Limit (PL)	21	%
Liquid Limit (LL)	31	%
Plasticity Index (PI)	10	%
Shrinkage Limit (SL)		%
Shrinkage Ratio		%

DIRECT SHEAR:

Shear Angle:	deg.
Tan Shear Angle:	
Cohesion:	psf

Sieve	(mm)	% Passing
5"	125	
3"	75	
2'	50	
1-1/2"	37.5	
1"	25	100
3/4"	19	99
1/2"	12.5	98
3/8"	9.5	98
# 4	4.75	97
#10	2	96
#20	0.85	96
#40	0.425	95
#100	0.15	94
#200	0.075	92.1
	0.02	55
	0.005	38

MOISTURE/DENSITY RELATIONSHIP:

ASTM Method:

Max. Dry Density pcf:

Optimum Moisture %:

HVEEM-CARMANY:		**FHA Soil Swell:**
'R' Value @ 300 psi:	9	% Swell
Displacement 300 psi:	4.57	psf
Expansion @ 300 psi:	17.3	

ALLOWABLE BEARING (net):

Standard Penetration (SPT):			1800	psf
Unconfined Compression (qu):				psf
CONSOLIDATION:	0.44	%	901	psf
	1.02	%	2007	psf
SULFATE SALTS:	+2000	ppm		

PERMEABILITY:

K (20 C): Void Ratio:

SOIL ANALYSIS and SUMMARY

LINCOLN - DeVORE, Inc.

Geotechnical Consultants

Grand Junction, Colorado

NIAGARA VILLAGE SUBDIVISION

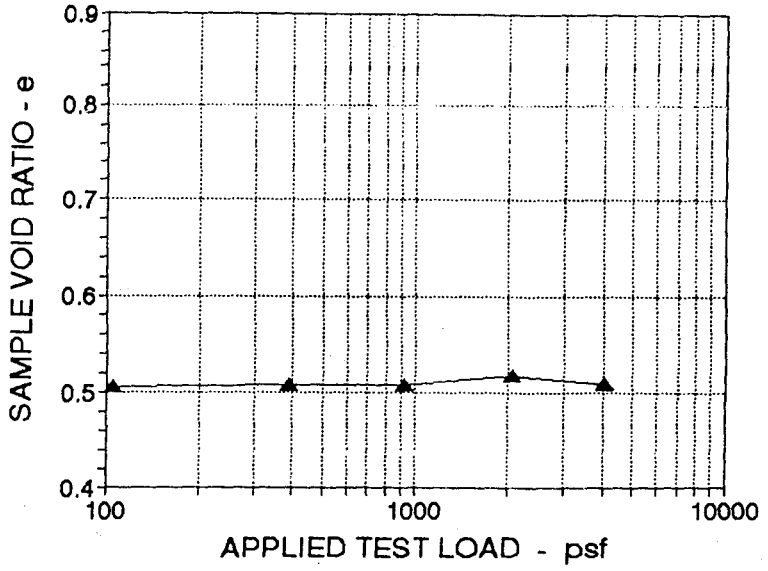
Gunnison & 28-1/4 Road, Grd. Jct, Co.

Mr. Sidney Spivak Q.C.
LANDesign Consultants

Date **9-26-95**

Job No. **84110-J**

Drawn **EMM**



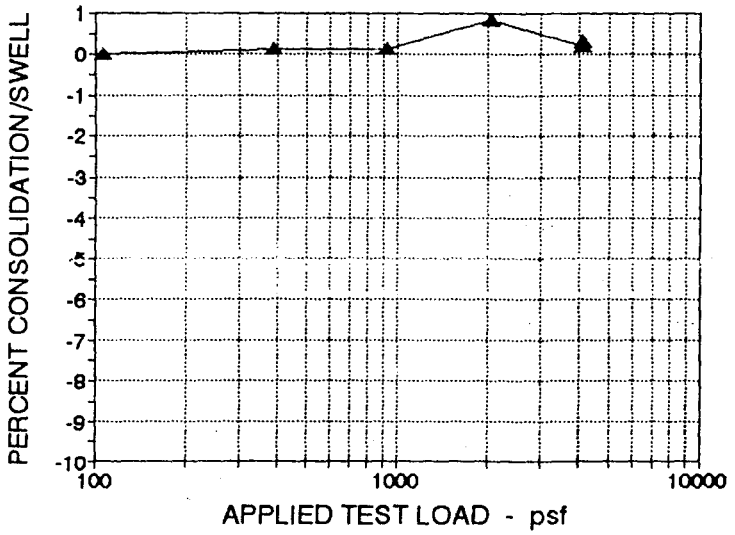
The Consolidation Test (ASTM D-2435) Was Run By First Subjecting The Soil Specimen To A 'Seating' Load.

The 'Seating' Load Is To Remove Slack From The Apparatus And To Provide An Accurate Point of Beginning.

The Test Begins With The Specimen At Approximately Natural Moisture Content.

The Sample is Loaded to Approximately 4069 psf And Then Saturated With Water.

The Constant Swelling Of The Specimen Is Noted And The Loading Is Continued.



LOAD SUMMARY

106	*psf SEATING LOAD*
4069	*psf SAMPLE SATURATED*
0	*% SOIL COLLAPSE*
0.84	*% SOIL EXPANSION/SWELL*
-0.3	*% SAMPLE REBOUND @ UNLOAD*
0	*% MAXIMUM CONSOLIDATION*
4069	*psf MAXIMUM TEST LOAD*

	INITIAL	MAXIMUM LOAD	FINAL LOAD
SOIL DENSITY (pcf)	110.2	110.0	109.9
SOIL MOISTURE (%)	13.5%	19.1%	19.2%
CONSOLIDATION (%)	-0-	-0.30%	0.00%
VOID RATIO (e)	0.506	0.509	0.510
SATURATION (%)	71%	100%	100%

SOIL #:	I
SOIL TYPE:	CL
TEST HOLE #:	#1 @ 3'
SAMPLE Gs:	2.66
DIAMETER:	2.5"
AREA inchs:	.03409

SOIL CONSOLIDATION ASTM D-2435

LINCOLN - DeVORE, Inc.

Geotechnical Consultants

Grand Junction, Colorado

NIAGARA VILLAGE SUBDIVISION

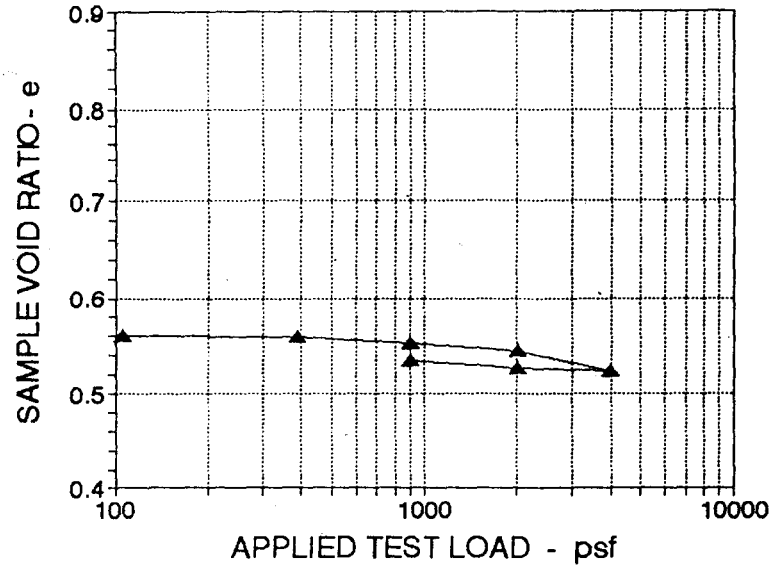
Gunnison & 28-1/4 Road, Grd. Jct, Co.

Mr. Sidney Spivak Q.C.
LANDesign Consultants

Date 9-26-95

Job No. **84110-J**

Drawn **EMM**



The Consolidation Test (ASTM D-2435) Was Run By First Subjecting The Soil Specimen To A 'Seating' Load.

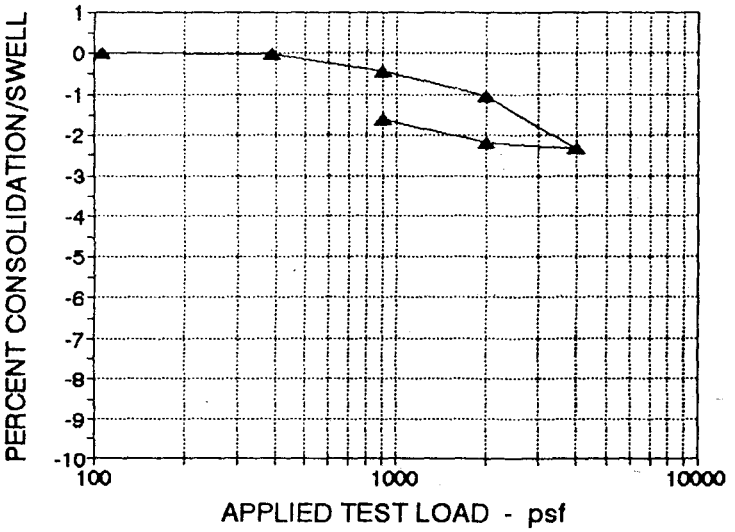
The 'Seating' Load Is To Remove Slack From The Apparatus And To Provide An Accurate Point of Beginning.

The Test Begins With The Specimen At Approximately Natural Moisture Content.

The Sample is Loaded to Approximately 900 psf And Then Saturated With Water.

Any Swell Or Collapse Of The Specimen Is Noted And The Loading Is Continued.

After The Maximum Test Load, The Soil Specimen Is Unload, To Measure Rebound And Swelling Potential, After Consolidation.



LOAD SUMMARY

106	*psf SEATING LOAD*
901	*psf SAMPLE SATURATED*
	% SOIL COLLAPSE
	% SOIL EXPANSION/SWELL
0.72	*% SAMPLE REBOUND @ UNLOAD*
2.33	*% MAXIMUM CONSOLIDATION*
3990	*psf MAXIMUM TEST LOAD*

	INITIAL	MAXIMUM LOAD	FINAL LOAD
SOIL DENSITY (pcf)	106.0	108.5	107.7
SOIL MOISTURE (%)	18.1%	19.8%	20.2%
CONSOLIDATION (%)	-0-	2.33%	1.61%
VOID RATIO (e)	0.560	0.524	0.535
SATURATION (%)	86%	100%	100%

SOIL #:	I
SOIL TYPE:	CL
TEST HOLE #:	#2 @ 8'
SAMPLE Gs:	2.65
DIAMETER:	2.5"
AREA inchs:	.03409

SOIL CONSOLIDATION ASTM D-2435

LINCOLN - DeVORE, Inc.

Geotechnical Consultants

Grand Junction, Colorado

NIAGARA VILLAGE SUBDIVISION

Gunnison & 28-1/4 Road, Grd. Jct, Co.

Mr. Sidney Spivak Q.C.
LANDesign Consultants

Date **9-26-95**

Job No. **84110-J**

Drawn **EMM**

MASTER DRAINAGE REPORT FOR:

NIAGARA VILLAGE SUBDIVISION

August, 1995

Prepared For:

Irving Nacht
950 Borebank Street
Winnipeg, Manitoba, Canada R3C 3H9

Prepared By:

LANDesign
200 North 6th Street, Grand Junction, Colorado 81501
(303) 245-4099

Prepared By: _____
Monty D. Stroup

"I hereby certify that this report for the preliminary drainage design of the Niagara Village Subdivision was prepared under my direct supervision."

Reviewed By: _____
Philip M. Hart, P.E.
State of Colorado, #19346

I. General Location and Description

A. Site and Major Basin Location:

Niagara Village Subdivision contains approximately 14.5 acres and is located within the City of Grand Junction. The property is located in the NW 1/4 of the NW 1/4 of Section 18, Township One South, Range One East, of the Ute Meridian.

Streets in the vicinity include 28 1/4 Road which defines the east boundary of the site, North Avenue 600 feet to the north, and 28 Road 280' to the west. Access to the site is attained from 28 1/4 Road.

Development in the vicinity is mixed use in nature. To the north lies K-Mart, Furr's Cafeteria and Appliance Repair. To the south and east are vacant lands. To the west is The Colorado National Guard Armory, The Brass Rail Lounge, a Convenience Store and a Shop Building.

B. Site and Major Basin Description:

The project site contains approximately 14.5 acres. The site is vacant of structures and is in a fallow state. Recent agricultural production has not occurred on the property.

Based on the "Soil Survey, Mesa County Area" (Reference 4, Exhibit 3.0) onsite soils are defined as (Bc), Billings silty clay loam, 0 to 2 percent slopes, hydrological soil group "C".

II. Existing Drainage Conditions

A. Major Basin:

Onsite and offsite lands drain generally from the northeast to the southwest towards the southwest corner of the site where it is conveyed westerly via an existing ditch towards Indian Wash (Exhibit 2.0). Runoff from areas east of the site is intercepted and convey south via an existing drainageway known as the Goodwill Drain.

Indian Wash is maintained by The City of Grand Junction. The Goodwill Drain is operated and maintained by The Grand Junction Drainage District.

There are no wetlands on the site. The site is nearly void of ground cover with the exception of isolated pockets of natural grasses.

The subject site is within Zone X as determined by the FIRM Flood Insurance Rate Map and is not within the 100 and 500 year flood plain of Indian Wash (Exhibit 1.0).

B. Site:

Approximately 100 percent of the onsite historic sub-basin drains from the northeast to the southwest in a sheetflow fashion towards an existing ditch along the south property line of the site. The flow within this ditch is conveyed west to Indian Wash.

The site is affected by offsite runoff from a small sub-basin northeast of site. Runoff from areas north of the site including K-Mart and Furr's is intercepted by parking lot grading elements and is directed west away from the site towards 28 Road. Topography of the property is flat in nature and slopes from the northeast to the southwest at approximately 0.75 percent.

III. Proposed Drainage Conditions

A. Changes in Drainage Patterns:

Historic offsite drainage patterns will be not altered. Runoff from offsite sub-basin OF1 will continue to be directed through the site via proposed roadways towards the southwest corner of the site. Runoff from areas east of the site shall continue to be intercepted by the Goodwill Drain.

The site is planned for a 83 single family manufactured home sites. Improvements to 28 1/4 Road shall include curb, gutter and sidewalk on the west side of the road and one lane of pavement. Improvements to the Goodwill Drain shall include the extension of the existing 18" CMP storm sewer under 28 1/4 Road with 18" RCP to the south end of the development.

There is 1 offsite tributary sub-basin OF1 (2.15 Ac.) which affects the subject property (Exhibit 2.0). Offsite drainage runoff from this sub-basin shall be directed towards the proposed storm sewer located at the southwest corner of the development and subsequently to Indian Wash.

All of the future onsite drainage will be directed by lot grading, swales and the proposed roadway system to a single low point in the southwest portion of the site where it is to be collected and conveyed by a proposed 30" RCP storm sewer directly to Indian Wash. The proposed site plan divides the site into 2 sub-basins labeled A1(5.28 Ac.) and B1(10.26 Ac.). Sub-basins A1 and B1 are to be graded to direct runoff to the proposed roadways and subsequently to the aforementioned storm sewer. A single combination inlet will be installed on the east side of the south end of West Niagara Circle to capture the runoff from Basin A-1 and a double combination inlet will be installed on the west side of the road to receive the remaining runoff from the development. All inlets and storm sewers have been designed to convey the 100 year developed flows. The developer will pay a fee in lieu of detention.

B. Maintenance Issues:

Access to and through the site shall be by a fully improved roadway section.

Ownership and responsibility for maintenance of the proposed storm sewer to Indian Wash shall be that of the City of Grand Junction. The storm sewer is to be located within a proposed dedicated easement along the south boundary line of the Colorado National Guard Property.

Ownership and responsibility for maintenance of the proposed storm sewer improvements to the Goodwill Drain shall be that of the Grand Junction Drainage District.

IV. Design Criteria & Approach

A. Hydrology:

The Soil Conservation Service's TR-55 method was used as the basis for analysis and facility design for determination of historic and developed flow rates for the 2 and 100 year storm events.

Due to the site's close proximity to Indian Wash, onsite detention requirements are considered mitigated. Developed runoff is to be discharged unabated to Indian Wash.

Runoff Coefficients to be used in the computations shall be based on Table 2-2a of the TR-55 manual and shown at the back of this report. The Soil Conservation Service defines site soils as being (Bc) Billings silty clay loam, 0 to 2 percent slopes (Reference 4, Exhibit 3.0). This soils falls within the Hydrologic Soil Group C .

The Intensity values (Ia) tabulated and shown in the back of this report have been used for design and analysis.

Times of Concentration shall be calculated based on the Average Velocities For Overland Flow and the Overland Flow Curves as provided.

B. Hydraulics:

All site facilities and conveyance elements are to be designed in accordance with the City of Grand Junction as provided in Reference 1.

V. Conclusions

Because the development of this project will result in the disturbance of more than five acres of land a "Construction Stormwater Discharge Permit" shall be required.

This Master Drainage Report has been prepared to address site-specific drainage concerns in accordance with the requirements of the City of Grand Junction, Colorado. The Appendix of this report includes criteria, exhibits, tables and calculations to be used in the design and analysis.

References

1. Stormwater Management Manual (SWMM), City of Grand Junction, Colorado, Department of Public Works, June 1994.

2. Urban Hydrology for Small Watersheds, Soil Conservation Service, Washington D.C. June, 1986.

3. Flood Insurance Rate Map, City Of Grand Junction, Colorado, Mesa County, Community Panel Number 080117 0007 E, Federal Emergency Management Agency, Map Revised July 15th, 1992.

4. Soil Survey, Mesa County Area, Colorado, , U.S. Department of Agriculture, issued November, 1955.

APPENDIX

PROJECT LOCATION

BUNTING AVE

NORTH

KENNEDY

ZONE X

COURT RD

28 1/4

28½

PEAR

MORNING GLORY

PEAR ST

AVE

BELFORD AVE

TELLER AVE

HILL AVE

GLEN RD

LANE

STREET

Wash

Indian

28TH

Culvert

Bank

Bridge

4614

4613

4612

4611

4610

4609

4607

4602

4601

BELFORD AVE

TELLER AVE

HILL AVE

AVE

23 RD ST

24TH ST

25 TH ST

26 TH ST

27TH AVE

23TH ST

24TH ST

25TH ST

26TH ST

ST

LIMIT OF FLOODWAY

ZONE X

ZONE AE

24TH CT

ROUTES 6 & 24

513

(EL 987)

RM7 X

*Referenced to the

This map is for
Program; it does
particularly from
features outside

Areas of special
AE, AH, AO, A99,

Certain areas no
flood control stru

Boundaries of th
interpolated betw
hydraulic consid
Emergency Mana

Floodway widths
Floodway widths

Coastal base flooc

For adjoining map

(Maps ava

FLOOD H

FLOOD I

FLOOD I

Map revised JUL
base flood elevatio
hazard areas, to c
format, to add roac
information.

To determine if flo
agent or call the
638-6620.

APP

400

JOINS PANEL 0008

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A — No base flood elevations determined.

ZONE AE — Base flood elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.

ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X — Areas determined to be outside 500-year flood plain.

ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

RM7 X — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
GRAND JUNCTION,
COLORADO
MESA COUNTY

PANEL 7 OF 9
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
080117 0007 E

MAP REVISED:
JULY 15, 1992

Federal Emergency Management Agency

EXHIBIT 1.0

HISTORIC BASIN MAP

EXHIBIT 2.0

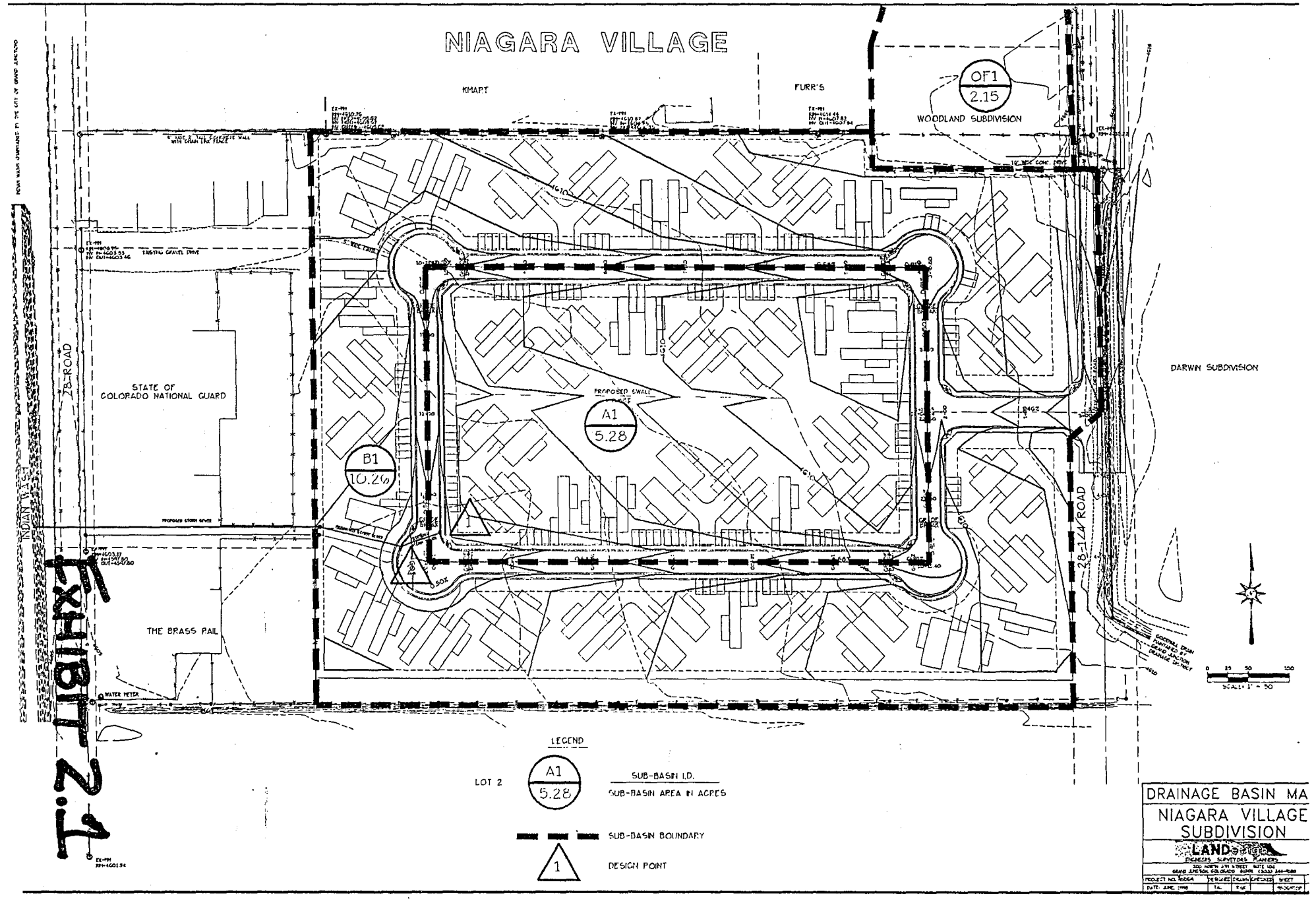
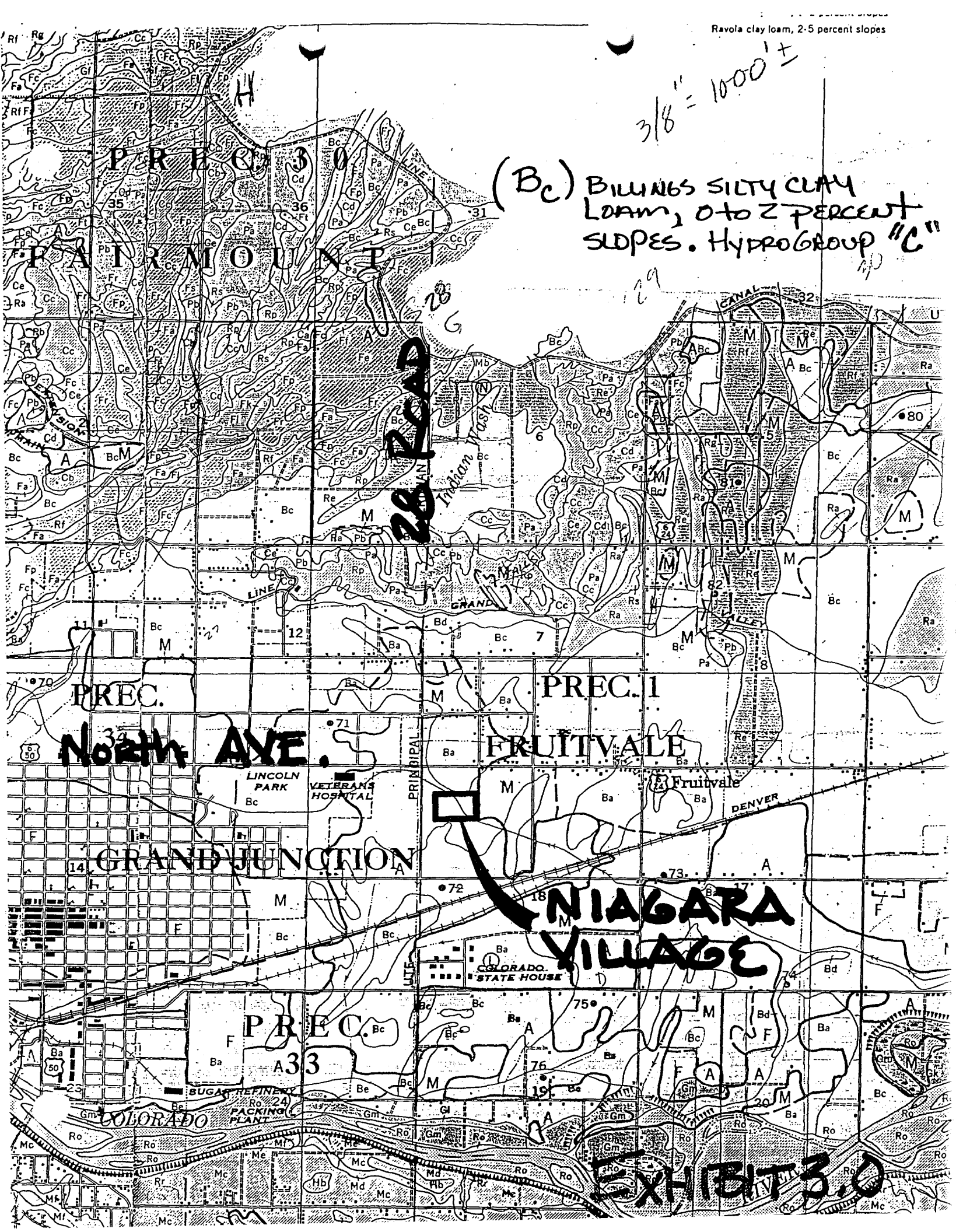

NIAGARA VILLAGE
KMART
FURR'S
WOODLAND SUBDIVISION
OF1
2.15
DARWIN SUBDIVISION
STATE OF
COLORADO NATIONAL GUARD
28 ROAD
INDIAN WASH
A1
5.28
B1
10.26
28 1/4 ROAD
THE BRASS RAIL
PROPOSED SWALE
LEGEND
LOT 2
A1
5.28
SUB-BASIN I.D.
SUB-BASIN AREA IN ACRES
SUB-BASIN BOUNDARY
1
DESIGN POINT
DRAINAGE BASIN MA
NIAGARA VILLAGE
SUBDIVISION
LAND SOLUTIONS
ENGINEERS SURVEYORS PLANNERS
SCALE: 1" = 50

EXHIBIT 2.1


Ravola clay loam, 2-5 percent slopes
3/16" = 1000' ±
(Bc) BILLINGS SILTY CLAY LOAM, 0 to 2 PERCENT SLOPES. HYDROGROUP "C"
PREC. 30
PARMOUNT
PREC. 1
FRUITVALE
PREC. A33
GRAND JUNCTION
North AVE.
NIAGARA VILLAGE
LINCOLN PARK
VETERANS HOSPITAL
COLORADO STATE HOUSE
SUGAR REFINERY
PACKING PLANT
COLORADO
Indian Wash
GRAND VALLEY CANAL
PRINCIPAL
DENVER
Fruitvale
EXHIBIT 3.0

LAND USE OR SURFACE CHARACTERISTICS	SCS HYDROLOGIC SOIL GROUP (SEE APPENDIX "C" FOR DESCRIPTIONS)											
	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
UNDEVELOPED AREAS Bare ground	.10 - .20 .14 - .24	.16 - .26 .22 - .32	.25 - .35 .30 - .40	.14 - .22 .20 - .28	.22 - .30 .28 - .36	.30 - .38 .37 - .45	.20 - .28 .26 - .34	.28 - .36 .35 - .43	.36 - .44 .40 - .48	.24 - .32 .30 - .38	.30 - .38 .40 - .48	.40 - .48 .50 - .58
Cultivated/Agricultural	.08 - .18 .14 - .24	.13 - .23 .18 - .28	.16 - .26 .22 - .32	.11 - .19 .16 - .24	.15 - .23 .21 - .29	.21 - .29 .28 - .36	.14 - .22 .20 - .28	.19 - .27 .25 - .33	.26 - .34 .34 - .42	.18 - .26 .24 - .32	.23 - .31 .29 - .37	.31 - .39 .41 - .49
Pasture	.12 - .22 .15 - .25	.20 - .30 .25 - .35	.30 - .40 .37 - .47	.18 - .26 .23 - .31	.28 - .36 .34 - .42	.37 - .45 .45 - .53	.24 - .32 .30 - .38	.34 - .42 .42 - .50	.44 - .52 .52 - .60	.30 - .38 .37 - .45	.40 - .48 .50 - .58	.50 - .58 .62 - .70
Meadow	.10 - .20 .14 - .24	.16 - .26 .22 - .32	.25 - .35 .30 - .40	.14 - .22 .20 - .28	.22 - .30 .28 - .36	.30 - .38 .37 - .45	.20 - .28 .26 - .34	.28 - .36 .35 - .43	.36 - .44 .44 - .52	.24 - .32 .30 - .38	.30 - .38 .40 - .48	.40 - .48 .50 - .58
Forest	.05 - .15 .08 - .18	.08 - .18 .11 - .21	.11 - .21 .14 - .24	.08 - .16 .10 - .18	.11 - .19 .14 - .22	.14 - .22 .18 - .26	.10 - .18 .12 - .20	.13 - .21 .16 - .24	.16 - .24 .20 - .28	.12 - .20 .15 - .23	.16 - .24 .20 - .28	.20 - .28 .25 - .33
RESIDENTIAL AREAS 1/8 acre per unit	.40 - .50 .48 - .58	.43 - .53 .52 - .62	.46 - .56 .55 - .65	.42 - .50 .50 - .58	.45 - .53 .54 - .62	.50 - .58 .59 - .67	.45 - .53 .53 - .61	.48 - .56 .57 - .65	.53 - .61 .64 - .72	.48 - .56 .56 - .64	.51 - .59 .60 - .68	.57 - .65 .69 - .77
1/4 acre per unit	.27 - .37 .35 - .45	.31 - .41 .39 - .49	.34 - .44 .42 - .52	.29 - .37 .38 - .46	.34 - .42 .42 - .50	.38 - .46 .47 - .55	.32 - .40 .41 - .49	.36 - .44 .45 - .53	.41 - .49 .52 - .60	.35 - .43 .43 - .51	.39 - .47 .47 - .55	.45 - .53 .57 - .65
1/3 acre per unit	.22 - .32 .31 - .41	.26 - .36 .35 - .45	.29 - .39 .38 - .48	.25 - .33 .33 - .41	.29 - .37 .38 - .46	.33 - .41 .42 - .50	.28 - .36 .36 - .44	.32 - .40 .41 - .49	.37 - .45 .48 - .56	.31 - .39 .39 - .47	.35 - .43 .43 - .51	.42 - .50 .53 - .61
1/2 acre per unit	.16 - .26 .25 - .35	.20 - .30 .29 - .39	.24 - .34 .32 - .42	.19 - .27 .28 - .36	.23 - .31 .32 - .40	.28 - .36 .36 - .44	.22 - .30 .31 - .39	.27 - .35 .35 - .43	.32 - .40 .42 - .50	.26 - .34 .34 - .42	.30 - .38 .38 - .46	.37 - .45 .48 - .56
1 acre per unit	.14 - .24 .22 - .32	.19 - .29 .26 - .36	.22 - .32 .29 - .39	.17 - .25 .24 - .32	.21 - .29 .28 - .36	.26 - .34 .34 - .42	.20 - .28 .28 - .36	.25 - .33 .32 - .40	.31 - .39 .40 - .48	.24 - .32 .31 - .39	.29 - .37 .35 - .43	.35 - .43 .46 - .54
MISC. SURFACES Pavement and roofs	.93 .95	.94 .96	.95 .97	.93 .95	.94 .96	.95 .97	.93 .95	.94 .96	.95 .97	.93 .95	.94 .96	.95 .97
Traffic areas (soil and gravel)	.55 - .65 .65 - .70	.60 - .70 .70 - .75	.64 - .74 .74 - .79	.60 - .68 .68 - .76	.64 - .72 .72 - .80	.67 - .75 .75 - .83	.64 - .72 .72 - .80	.67 - .75 .75 - .83	.69 - .77 .77 - .85	.72 - .80 .79 - .87	.75 - .83 .82 - .90	.77 - .85 .84 - .92
Green landscaping (lawns, parks)	.10 - .20 .14 - .24	.16 - .26 .22 - .32	.25 - .35 .30 - .40	.14 - .22 .20 - .28	.22 - .30 .28 - .36	.30 - .38 .37 - .45	.20 - .28 .26 - .34	.28 - .36 .35 - .43	.36 - .44 .42 - .52	.24 - .32 .30 - .38	.30 - .38 .40 - .48	.40 - .48 .50 - .58
Non-green and gravel landscaping	.30 - .40 .34 - .44	.36 - .46 .42 - .52	.45 - .55 .50 - .60	.45 - .55 .50 - .60	.42 - .50 .48 - .56	.50 - .58 .57 - .65	.40 - .48 .46 - .54	.48 - .56 .55 - .63	.56 - .64 .64 - .72	.44 - .52 .50 - .58	.50 - .58 .60 - .68	.60 - .68 .70 - .78
Cemeteries, playgrounds	.20 - .30 .24 - .34	.26 - .36 .32 - .42	.35 - .45 .40 - .50	.35 - .45 .40 - .50	.32 - .40 .38 - .46	.40 - .48 .47 - .55	.30 - .38 .36 - .44	.38 - .44 .45 - .53	.46 - .54 .54 - .62	.34 - .42 .40 - .48	.40 - .48 .50 - .58	.50 - .58 .60 - .68

NOTES:
1. Values above and below pertain to the 2-year and 100-year storms, respectively.
2. The range of values provided allows for engineering judgement of site conditions such as basic shape, homogeneity of surface type, surface depression storage, and storm duration. In general, during shorter duration storms (Tc ≤ 10 minutes), infiltration capacity is higher, allowing use of a "C" value in the low range. Conversely, for longer duration storms (Tc) 30 minutes), use a ""C value in the higher range.
3. For residential development at less than 1/8 acre per unit or greater than 1 acre per unit, and also for commercial and industrial areas, use values under MISC SURFACES to estimate "C" value ranges for use.

RATIONAL METHOD RUNOFF COEFFICIENTS
(Modified from Table 4, UC-Davis, which appears to be a modification of work done by Rawls)

TABLE "B-1"

Exhibit A.7

Table 2-2a.—Runoff curve numbers for urban areas[1]

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area[2]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.)[3]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only)[4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation)[5]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1]Average runoff condition, and $I_a = 0.2S$.
[2]The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.
[3]CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.
[4]Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.
[5]Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

EXHIBIT 50

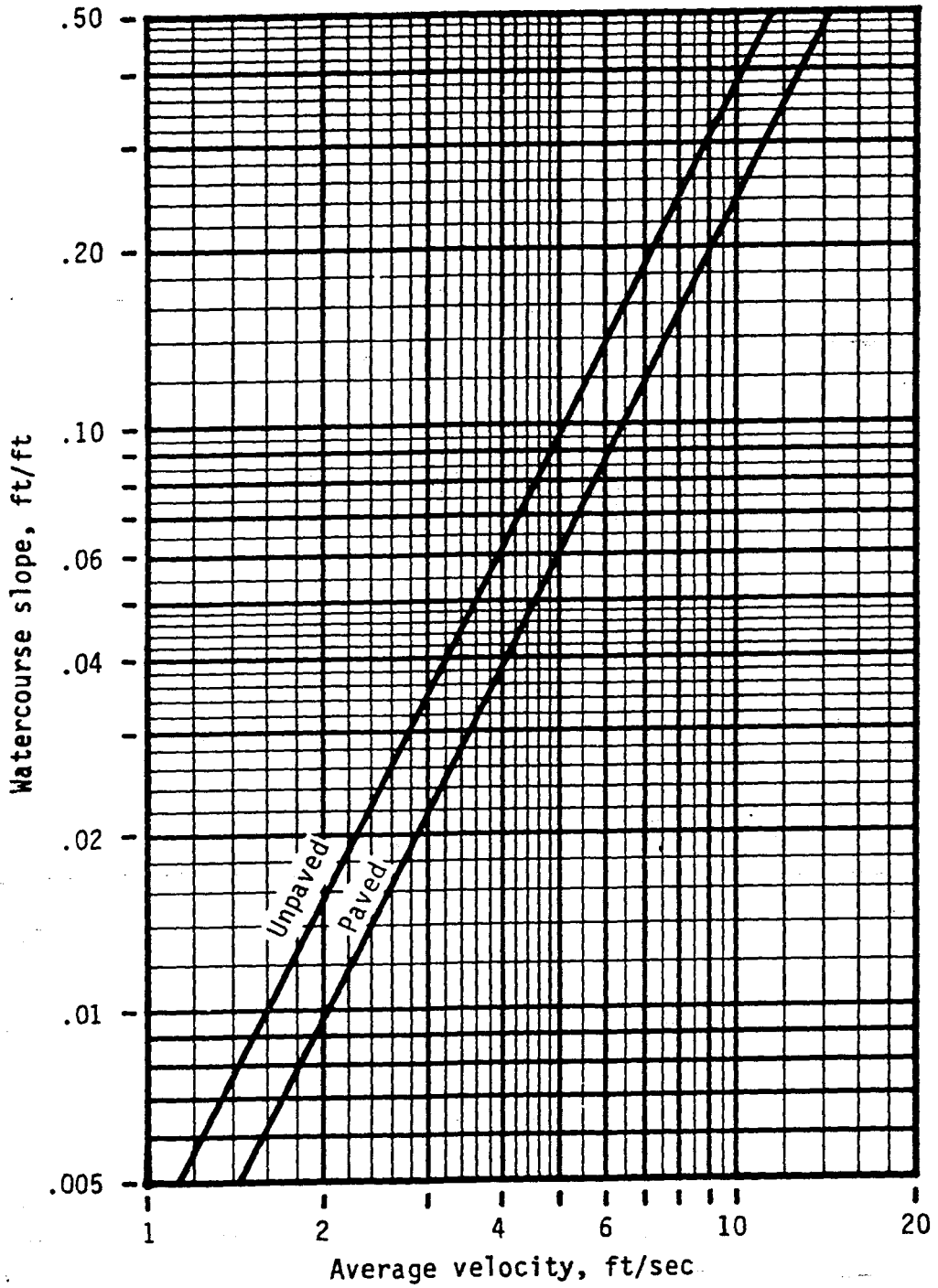


Figure 3-1.—Average velocities for estimating travel time for shallow concentrated flow.

EXHIBIT 6.0

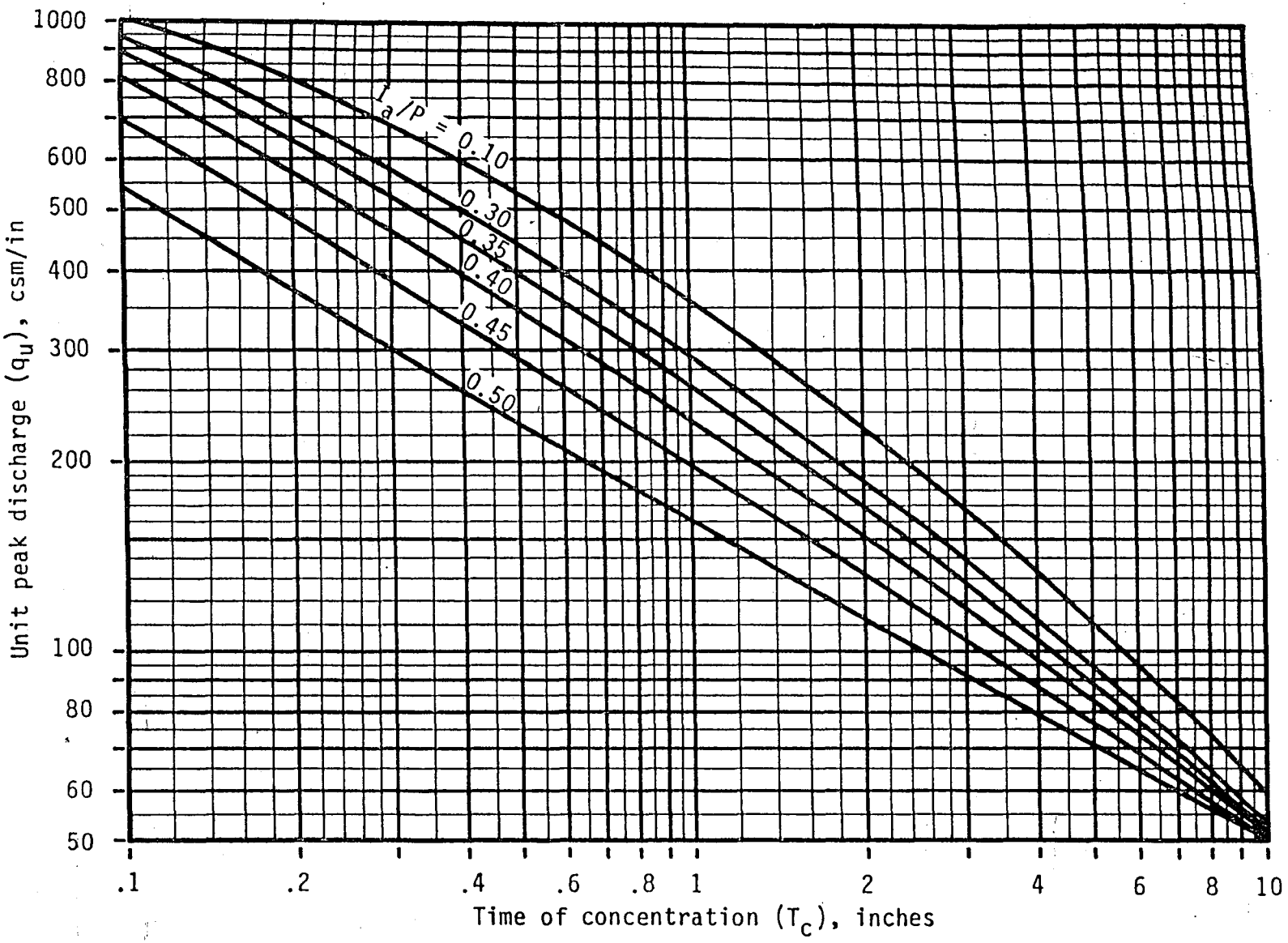
Table 4-1.—I_a values for runoff curve numbers

Curve number	I_a (in)	Curve number	I_a (in)
40	3.000	70	0.857
41	2.878	71	0.817
42	2.762	72	0.778
43	2.651	73	0.740
44	2.545	74	0.703
45	2.444	75	0.667
46	2.348	76	0.632
47	2.255	77	0.597
48	2.167	78	0.564
49	2.082	79	0.532
50	2.000	80	0.500
51	1.922	81	0.469
52	1.846	82	0.439
53	1.774	83	0.410
54	1.704	84	0.381
55	1.636	85	0.353
56	1.571	86	0.326
57	1.509	87	0.299
58	1.448	88	0.273
59	1.390	89	0.247
60	1.333	90	0.222
61	1.279	91	0.198
62	1.226	92	0.174
63	1.175	93	0.151
64	1.125	94	0.128
65	1.077	95	0.105
66	1.030	96	0.083
67	0.985	97	0.062
68	0.941	98	0.041
69	0.899		

EXHIBIT 7.0

EXHIBIT 8.0

Exhibit 4-II: Unit peak discharge (q_u) for SCS type II rainfall distribution



STREET CARRYING CAPACITY (2 & 100 YEAR)

PROJECT: NIAGAGRA VILLAGE
LOCATION: CITY OF GRAND JUNCTION, COLORADO
DATE: Aug-95

Street Information:					
	R.O.W. Width =	44.00	FT.	Flow Area =	3.76 SF.
	Flowline Width =	31.00	FT.		
	Classification =	URBAN			
	Mannings =	0.015			
	Max. Depth =	0.42	FT.	Above Gutter Flowline	
	Str/ X-Slope =	1.00	%		
	Gutter Slope =	8.33	%	Drive Over Curb, Gutter and Walk	
	Sidewalk Slope =	2.08	%	1/4" / FT.	
	Roadside Slope =	2.08	%	1/4" / FT.	

SLOPE OF STREET %	REDUCTION FACTOR FOR SLOPE	ALLOWABLE CAPACITY C.F.S.	VELOCITY F.P.S.
0.50	1.00	9.72	2.59
0.58	1.00	10.47	2.79
0.91	1.00	13.12	3.49

Formula: $Qa = F \times (1.49/N) \times R^{2/3} \times S^{1/2} \times A$

F = Reduction Factor For Slope
N = Mannings Coefficient = 0.0150
R = Hydraulic Radius = A/WP = 0.2234
A = Cross Sectional Area Sq.Ft. = 3.760
WP = Wetted Perimeter Ft. = 16.83
S = Street Slope FT./FT.

EXHIBIT 9.0

Worksheet 2: Runoff curve number and runoff

Project NIAGARA VILLAGE By JR Date 8/28/95

Location 28 1/4 ROAD, SOUTH OF NORTH AV. Checked _____ Date _____

Circle one: (Present) Developed

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area ☒ acres ☐ mi² ☐ %	Product of CN x area
BILLINGS	NATURAL DESERT LANDSCAPING	85			15.5	1317.5
BILLINGS	IMPERVIOUS AREA WOODLAND SUBDIVISION	98			2.2	215.6
1/ Use only one CN source per line.		Totals =			17.7	1533.1

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{1533.1}{17.7} = 86.6$; Use CN = 85

2. Runoff

	Storm #1	Storm #2	Storm #3
Frequency ..... yr	100	2	
Rainfall, P (24-hour) ..... in	2.01	1.40	
Runoff, Q ..... in (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)	0.8	0.39	

EXHIBIT 10.0

Worksheet 3: Time of concentration (T_c) or travel time (T_t)

Project NIAGARA VILLAGE By QPC Date 8/28/95

Location 28 1/4 ROAD Checked _____ Date _____

Circle one: (Present) Developed _____

Circle one: (T_c) T_t through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only)		Segment ID		
1. Surface description (table 3-1)		FALLOW		
2. Manning's roughness coeff., n (table 3-1)		0.06		
3. Flow length, L (total L ≤ 300 ft)	ft	300		
4. Two-yr 24-hr rainfall, P_2	in	1.4		
5. Land slope, s	ft/ft	.01		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t	hr	.38	+	= .38

Shallow concentrated flow		Segment ID		
7. Surface description (paved or unpaved)		UNPAVED		
8. Flow length, L	ft	915		
9. Watercourse slope, s	ft/ft	.01		
10. Average velocity, V (figure 3-1)	ft/s	1.6		
11. $T_t = \frac{L}{3600\ V}$ Compute T_t	hr	.16	+	= .16

Channel flow		Segment ID		
12. Cross sectional flow area, a	ft^2			
13. Wetted perimeter, p_w	ft			
14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r	ft			
15. Channel slope, s	ft/ft			
16. Manning's roughness coeff., n				
17. $V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V	ft/s			
18. Flow length, L	ft			
19. $T_t = \frac{L}{3600\ V}$ Compute T_t	hr		+	=
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr	.54		

EXHIBIT 11.0

Worksheet 4: Graphical Peak Discharge method

Project NIAGARA VILLAGE By JPC Date 8/28/95

Location 28¼ ROAD Checked ____ Date ____

Circle one: (Present) Developed

1. Data:

   Drainage area ..... A_m = .028 mi^2 (acres/640)

   Runoff curve number .... CN = 85 (From worksheet 2)

   Time of concentration .. T_c = .54 hr (From worksheet 3)

   Rainfall distribution type = II (I, IA, II, III)

   Pond and swamp areas spread throughout watershed ..... = 0 percent of A_m (____ acres or mi^2 covered)

			Storm #1	Storm #2	Storm #3
2.	Frequency	yr	100	2	
3.	Rainfall, P (24-hour)	in	2.01	1.4	
4.	Initial abstraction, I_a ..... (Use CN with table 4-1.)	in	.353	.353	
5.	Compute I_a/P		.176	.252	
6.	Unit peak discharge, q_u ..... (Use T_c and I_a/P with exhibit 4-II)	csm/in	480	450	
7.	Runoff, Q ..... (From worksheet 2).	in	.8	.39	
8.	Pond and swamp adjustment factor, F_p .... (Use percent pond and swamp area with table 4-2. Factor is 1.0 for zero percent pond and swamp area.)		1	1	
9.	Peak discharge, q_p ..... (Where $q_p = q_u A_m Q F_p$)	cfs	11	5	

EXHIBIT 12.0

Worksheet 2: Runoff curve number and runoff

Project NIAGARA VILLAGE By glc Date 8/28/95

Location 28 1/4 ROAD, SOUTH OF NORTH AV. Checked ____ Date ____

Circle one: Present (Developed)

1. Runoff curve number (CN)

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
BILLINGS	RESIDENTIAL DISTRICT 1/8 AC. OR LESS	90			17.7	1593

1/ Use only one CN source per line. Totals = 17.7 1593

CN (weighted) = $\frac{\text{total product}}{\text{total area}}$ = ____ = ____; Use CN = 90

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency	yr	100	2	
Rainfall, P (24-hour)	in	2.01	1.40	
Runoff, Q (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)	in	1.09	0.61	

EXHIBIT 13.0

Worksheet 3: Time of concentration (T_c) or travel time (T_t)

Project NIAGARA VILLAGE By JPC Date 8/28/95

Location 28 1/4 ROAD Checked _____ Date _____

Circle one: Present (Developed)

Circle one: (T_c) T_t through subarea

NOTES: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only)		Segment ID	WOODLAND SUBD.	
1. Surface description (table 3-1)			SMOOTH	
2. Manning's roughness coeff., n (table 3-1) ..			.011	
3. Flow length, L (total L ≤ 300 ft)	ft		260	
4. Two-yr 24-hr rainfall, P_2	in		1.4	
5. Land slope, s	ft/ft		.01	
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t	hr		.09 +	= .09

Shallow concentrated flow		Segment ID		
7. Surface description (paved or unpaved)			UNPAVED	
8. Flow length, L	ft		100	
9. Watercourse slope, s	ft/ft		.01	
10. Average velocity, V (figure 3-1)	ft/s		1.6	
11. $T_t = \frac{L}{3600\ V}$ Compute T_t	hr		.017 +	= .017

Channel flow		Segment ID		
12. Cross sectional flow area, a	ft^2		3.76	
13. Wetted perimeter, p_w	ft		16.83	
14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r	ft		0.223	
15. Channel slope, s	ft/ft		.0058	
16. Manning's roughness coeff., n			.015	
17. $V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V	ft/s		2.79	
18. Flow length, L	ft		970	
19. $T_t = \frac{L}{3600\ V}$ Compute T_t	hr		.097 +	= .097
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr			.204

EXHIBIT 14.0

Worksheet 4: Graphical Peak Discharge method

Project NIAGARA VILLAGE By JPC Date 8/28/95

Location 28 1/4 ROAD Checked ____ Date ____

Circle one: Present (Developed)

1. Data:

   Drainage area ..... A_m = 0.028 mi^2 (acres/640)

   Runoff curve number .... CN = 90 (From worksheet 2)

   Time of concentration .. T_c = .204 hr (From worksheet 3)

   Rainfall distribution type = II (I, IA, II, III)

   Pond and swamp areas spread throughout watershed ..... = 0 percent of A_m (____ acres or mi^2 covered)

			Storm #1	Storm #2	Storm #3
2.	Frequency	yr	100	2	
3.	Rainfall, P (24-hour)	in	2.01	1.4	
4.	Initial abstraction, I_a ..... (Use CN with table 4-1.)	in	.222	.222	
5.	Compute I_a/P		.11	.16	
6.	Unit peak discharge, q_u ..... (Use T_c and I_a/P with exhibit 4-II)	csm/in	800	750	
7.	Runoff, Q ..... (From worksheet 2).	in	1.09	.61	
8.	Pond and swamp adjustment factor, F_p .... (Use percent pond and swamp area with table 4-2. Factor is 1.0 for zero percent pond and swamp area.)		1	1	
9.	Peak discharge, q_p ..... (Where $q_p = q_u A_m Q F_p$)	cfs	24	13	

EXHIBIT 15.0

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: INLET 1 TO INLET 2

Comment: INLET 1 TO INLET 2

Solve For Full Flow Capacity

Given Input Data:

Diameter.....	1.00 ft	12"Ø
Slope.....	0.0407 ft/ft	4.07%
Manning's n.....	0.015	RCP
Discharge.....	6.23 cfs	< 7.16 CFS Q100C ⚠1

0.93CFS SPILLS OVER TO INLET # 2

Computed Results:

Full Flow Capacity.....	6.23 cfs
Full Flow Depth.....	1.00 ft
Velocity.....	7.93 fps
Flow Area.....	0.79 sf
Critical Depth....	0.96 ft
Critical Slope....	0.0355 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	6.23 cfs
QMAX @.94D.....	6.70 cfs
Froude Number.....	FULL

EXHIBIT 16.0

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: INLET 2 TO OUTLET

Comment: INLET 2 TO OUTLET AT INDIAN WASH

Solve For Full Flow Slope

Given Input Data:

Diameter.....	2.50 ft	30" Ø
Manning's n.....	0.015	RCP
Discharge.....	24.00 cfs	Q_{100}

Computed Results:

Full Flow Channel Slope	0.0046 ft/ft	0.46% MIN ALLOWABLE SLOPE
Full Flow Depth.....	2.50 ft	
Velocity.....	4.89 fps	
Flow Area.....	4.91 sf	
Critical Depth....	1.67 ft	
Critical Slope....	0.0074 ft/ft	
Percent Full.....	100.00 %	
Full Capacity.....	24.00 cfs	
QMAX @.94D.....	25.82 cfs	> Q_{100} OK
Froude Number.....	FULL	

Open Channel Flow Module, Version 3.16 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

EXHIBIT 17.0

ROAD TYPE	COMBINATION INLET CAPACITY (CFS)					
	SINGLE		DOUBLE		TRIPLE	
	2-YR	100-YR	2-YR	100-YR	2-YR	100-YR
Urban Residential (local)	6.4	13	9.5	22	12.7	31
Residential Collector, Commercial and Industrial Streets	3.2	13	4.9	22	6.5	31
Collector Streets (3000 - 8000 ADT)	2.7	13	4.0	22	5.3	31
Principal and Minor Arterials	6.0	13	9.0	22	12.0	31

Inlet capacities shown above are based upon: 1) use of non-curved vane grates (similar to HEC-12 P-1⅞-4 grates; 2) HEC-12 procedures; 3) clogging factors per Section VI; and 4) City/County standard inlets with 2-inch radius on curb face and type C grates. Capacities shown for 2-year storms are based upon depths allowed by maximum street inundation per Figure "G-3". The 100-year capacities are based upon a ponded depth of 1.0 foot. Note that only combination inlets are allowed in sag or sump conditions.

MAXIMUM INLET CAPACITIES: SUMP OR SAG CONDITION — TABLE "G-1"

Q_{100} TO INLET #1 = 7.16 CFS — 13 CFS ALLOWED

Q_{100} TO INLET #2 = 16.84 CFS — 22 CFS ALLOWED

TOTAL 24 CFS

INLET #1 USE SINGLE

INLET #2 USE DOUBLE

EXHIBIT 18.0

STORMWATER MANAGEMENT PLAN

FOR

NIAGARA VILLAGE SUBDIVISION

August, 1995

Prepared For:

Irving Nacht
950 Borebank Street
Winnipeg, Manitoba, Canada R3C 3H9

Prepared By:

LANDesign
200 North 6th Street, Grand Junction, Colorado 81501
(303) 245-4099

Prepared by:_____
Monty D. Stroup

Reviewed and Approved by:_____
Philip M. Hall P.E.
State of Colorado, #19346

A. Site and Project Description

1. Site Location:

Niagara Village Subdivision contains approximately 14.5 acres and is located within the City of Grand Junction. The property is located in the NW 1/4 of the NW 1/4 of Section 18, Township One South, Range One East, of the Ute Meridian.

Streets in the vicinity include 28 1/4 Road which defines the east boundary of the site, North Avenue 600 feet to the north, and 28 Road 280' to the west. Access to the site is attained from 28 1/4 Road.

Development in the vicinity is mixed use in nature. To the north lies K-Mart, Furr's Cafeteria and Appliance Repair. To the south and east are vacant lands. To the west is The Colorado National Guard Armory, The Brass Rail Lounge, a Convenience Store and a Shop Building.

2. Description of Property:

The project site contains approximately 14.5 acres. The site is vacant of structures and is in a fallow state. Recent agricultural production has not occurred on the property.

Approximately 100 percent of the onsite historic sub-basin drains from the northeast to the southwest in a sheetflow fashion towards an existing ditch along the south property line of the site. The flow within this ditch is conveyed west to Indian Wash.

The site is affected by offsite runoff from a small sub-basin northeast of site. Runoff from areas north of the site including K-Mart and Furr's is intercepted by parking lot grading elements and is directed west away from the site towards 28 Road. Topography of the property is flat in nature and slopes from the northeast to the southwest at approximately 0.75 percent.

3. Description of Proposed Construction Activity:

Activity shall include the construction of roadway, water, sanitary sewer, storm sewer, irrigation, dry utility infrastructures followed by the construction of 83 single family manufactured residential structures and associated landscaping.

4. Proposed Sequence of Major Construction Activities:

Phase I Clearing and grubbing of proposed roadway alignments and disposal of construction debris.

Phase II Construction of roadways to proposed subgrade elevations including cut and fill activities as required. Excess embankment material to be stockpiled in designated areas.

Phase III Utility infrastructures to be installed including storm sewers and culverts, swales and permanent erosion control features.

Phase IV Curb, gutter and sidewalks installed.

Phase V Clearing, Grubbing and overlot grading of single or multiple lots as sales and market conditions allow.

Phase VI Construction of building structures as sales and market conditions allow.

Phase VII Final landscaping of individual lots as required by the project Covenants, Conditions and Restrictions.

5. Estimate of Areas Subject to Clearing, Grubbing and Excavation:

Niagra Village contains a total of 14.5 acres. Construction Phases I will consist of approximately 5.1 acres. Phases II will consist of the residual area of 9.4 acres.

6. Preconstruction and Postconstruction Runoff Coefficients:

As defined in the Master Drainage Report For Niagara Village (References 8) the historic runoff coefficients for the 2 year and 100 year storm events respectively are 0.20 and 0.26.
With the construction of proposed roadways coefficients are expected to increase to 0.45 and 0.53 respectively.

7. Soil Erosion Potential:

Based on the "Soil Survey, Mesa County Area" (Reference 4, Exhibit 3.0) onsite soils are defined as (Bc), Billings silty clay loam, 0 to 2 percent slopes, hydrological soil group "C".

8. Existing Vegetation:

There are no wetlands on the site. The site is nearly void of ground cover with the exception of isolated pockets of natural grasses.

9. Storage of Fuel Oils, Chemicals, Fertilizers or Other Potential Pollution Sources:

The storage of fuel oils, chemicals, fertilizers or other potential pollutants is prohibited without prior written notice to the owner by the contractor, subcontractor or other persons doing work on the site. In the event in becomes necessary to store such items, storage areas shall be designated. Storage areas shall be located above and away from drainages, waterways and other apparent conveyance elements. Appropriate measures shall be taken to protect such areas from spills or vandalism including but not limited to spill control berms and fencing.

10. Anticipated Non-Stormwater Components of Discharge:

There are no anticipated non-stormwater components of discharge.

11. Name and Location of Receiving Waters:

Onsite and offsite lands drain generally from the northeast to the southwest towards the southwest corner of the site where it is conveyed westerly via an existing ditch towards Indian Wash (Exhibit 2.0). Runoff from areas east of the site is intercepted and convey south via an existing drainageway known as the Goodwill Drain.

Indian Wash is maintained by The City of Grand Junction. The Goodwill Drain is operated and maintained by The Grand Junction Drainage District.

The subject site is within Zone X as determined by the FIRM Flood Insurance Rate Map and is not within the 100 and 500 year flood plain of Indian Wash (Exhibit 1.0).

B. Management During Construction

1. Anticipated Problems and Corrective (BMPs) Best Management Practices:

Structural Erosion Control Areas within the proposed roadways shall be protected from erosion by the installation of prefabricated silt fences as shown on the Drainage and Grading Plan.

Non-Structural Erosion Control Disturbed areas not designated for immediate construction or permanent landscaping shall be temporarily re-vegetated. In the event construction activity ceases for a period of 60 calendar days disturbed areas including

cut and fill slopes shall be revegitated with a annual and perennial seed mixture.

Dust Abatement The contractor shall be required to provide a consistent and reliable source of construction water. Watering to prevent dust shall be ongoing for the duration of the project. In the event high winds and heavy traffic loads create a situation where watering by itself is not sufficient the contractor is to apply an approved dust palliative other than or in addition to water.

Soil Tracking Where construction traffic enters or exits unimproved areas onto asphalted public roadways a crushed rock construction staging pad shall be installed to minimize soil tracking.

Waste Disposal Construction debris shall be stockpiled in a central location. Debris shall be removed from the site and disposed of at appropriate locations secured by the contractor.

Sedimentation Control The contractor shall be responsible for inspecting the entire site on a weekly basis to ensure compliance and identify existing or potential sedimentation problems.

Final Stabilization and Long Term Management

The project's Covenants Conditions and Restrictions obligate each lot owner to fully landscape front yard within 60 days and the rear yard within 1 year from the issuance of a Certificate of Occupancy. Other areas including open-space are to be landscaped by the developer and maintained by the Homeowners Association.

Permanent structural BMP's include pipe outlet protection, rip-rap over filter fabric and grassed swales as shown on the Drainage and Grading Plan.

Inspection and Maintenance

The Contractor shall be ultimately responsible for compliance and maintenance during construction. The owners representative and the contractor shall make weekly inspections of the site to assure compliance and implementation of the proposed BMPs.

V. References

1. Mesa County Storm Drainage Criteria Manual, Final Draft, Mesa County, Colorado, March 1992.

2. Flood Hazard Information, Colorado River and Tributaries, Grand Junction, Colorado, prepared for the City of Grand Junction and Mesa County, by The Department Of The Army, Sacramento District, Corps Of Engineers, Sacramento, California, November, 1976.

3. Flood Insurance Rate Map, Mesa County, Colorado, (Unincorporated Areas), Community Panel Number 080115 0480 C, Federal Emergency Management Agency, Map Revised July 15th, 1992.

4. Soil Survey, Grand Junction Area, Colorado, Series 1940, No. 19, U.S. Department of Agriculture, issued November, 1955.

5. Urban Storm Drainage Criteria Manual, Urban Drainage and Flood Control District, prepared by Wright-McLaughlin Engineers, March 1969, Revised May, 1984.

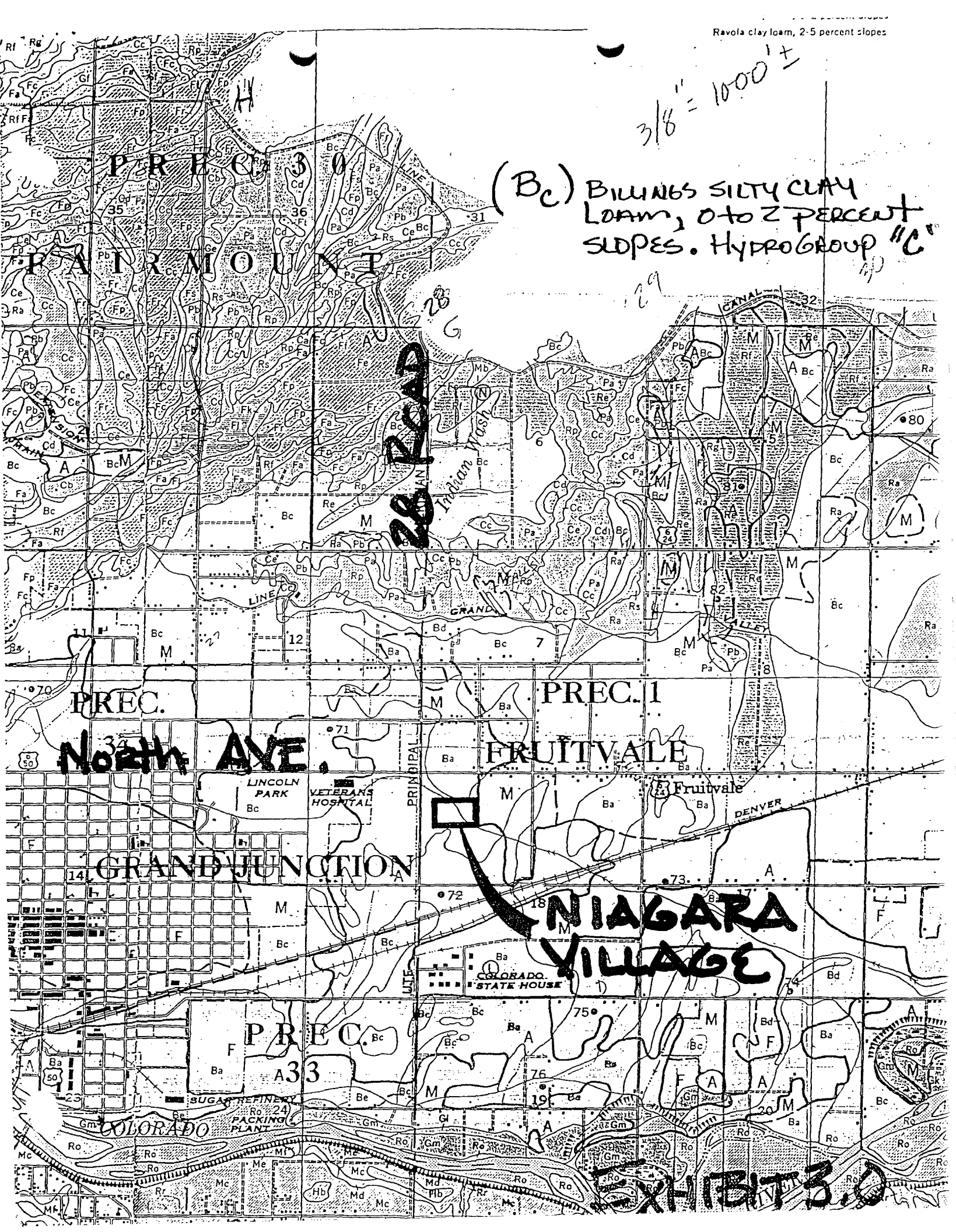
6. Interim Outline of Grading and Drainage Criteria, City of Grand Junction, July 1992.

7. Douglas County Storm Drainage Design and Technical Criteria, Addendum A, Erosion Control Criteria, prepared by HydroDynamics Incorporated, Parker, Colorado, October, 1992.

8. Master Drainage Report for: Niagara Village Subdivision, prepared by LANDesign, LLC, August 1995.

9. Colorado Department of Transportation, Erosion Control and Stormwater Quality Guide, Draft version, November 27, 1992.

APPENDIX


Ravola clay loam, 2-5 percent slopes
3/8" = 1000' ±
(Bc) BILLINGS SILTY CLAY LOAM, 0 to 2 PERCENT SLOPES. HYDROGROUP "C"
PREC. 30
PARMOUNT
PREC. 1
FRUITVALE
PREC. A33
GRAND JUNCTION
North AVE.
28 ROAD
Indian Wash
CANAL
GRAND VALLEY
LINCOLN PARK
VETERANS HOSPITAL
PRINCIPAL
DENVER
Fruitvale
NIAGARA VILLAGE
COLORADO STATE HOUSE
SUGAR REFINERY
COLORADO
PACKING PLANT
EXHIBIT 3.0

Post-it® Fax Note 7671	Date 5/20/96	# of pages ▶ 4
To Monty	From Beth	
Co./Dept. Landesign	Co. Lincoln DeVore	
Phone #	Phone #	
Fax #	Fax #	

Lincoln DeVore, Inc.
Geotechnical Consultants
1441 Motor St.
Grand Junction, CO 81505

TEL: (303) 242-8968
FAX: (303) 242-1561

September 15, 1995

Mr. Mike Best
LANDesign
200 North 6th Street
Grand Junction, Colorado 81501

Re: Proposed Pavement Sections
NIAGARA VILLAGE SUB., Grand Junction

Dear Mr. Best,

At your request, the proposed interior road section at Niagara Village Sub. was drilled and sampled by personnel of LINCOLN-DeVORE, INC.. The samples were subjected to Laboratory Testing and appropriate road sections were computed. Following are our findings and recommendations.

Samples of the surficial native soils at this property that may be required to support pavements have been evaluated using the Hveem-Carmany method (ASTM D-2844) to determine their support characteristics. The results of the laboratory testing are as follows:

AASHTO Classification - A-4(5) Unified Classification - CL

R =	9
Expansion @ 300 psi =	17.3 psf
Displacement @ 300 psi =	4.57

Displacement values higher than 4.00 generally indicate the soil is unstable and may require confinement for proper performance.

No estimates of traffic volumes were provided to Lincoln DeVore. We assume that the roads will be classified as Residential, with a daily EAL of 5. Two methods of design were utilized for this project. The design procedures utilized are first, The Asphalt Institute (MS-1) and second, those recognized by the Colorado Department of Highways and the 1986 AASHTO design procedure. A design life of 20 years was used.

ASPHALT INSTITUTE Method

The Mean Annual Air Temperature (**MAAT**) of 60°F was chosen to characterize the environmental conditions.

Residential Roadway, 18k EAL = 5:
Asphalt-Base Coarse

3 inches of asphaltic concrete pavement
on 6 inches of aggregate base coarse
on 8 inches of recompacted native material

Due to the Soft subgrade soils and instability of these soils, as indicated by the Hveem-Carmany Test, It is recommended that a minimum of 8 inches of Aggregate Base Course (ABC) be placed beneath the Asphalt Matte.

Full Depth Asphalt:

5 inches of asphaltic concrete pavement
on 12 inches of recompacted native material

1986 AASHTO Method

Based upon the existing topography, the anticipated final road grades and the anticipated future irrigation practices in the local area, a Drainage Factor of 0.7 (1986 AASHTO procedure) has been utilized for the section analysis.

The terminal Serviceability Index of 2.0, a Reliability of 70 and a design life of 20 years have been utilized.

Residential Roadway, 18k EAL = 5 :
Asphalt-Base Course

3 inches of asphaltic concrete pavement
on 8 inches of aggregate base course
on 8 inches of recompacted native material

Full Depth Asphalt:

5 inches of asphaltic concrete pavement
on 12 inches of recompacted native material

Rigid Concrete:

Doweled, not tied to shoulder slabs or curbing

6 inches of portland cement pavement
on 4 inches of aggregate base course
on 8 inches of recompacted native material

PAVEMENT SECTION CONSTRUCTION

Due to the possibility of very high soil moisture in the subgrade soils, the use of a Geotextile Fabric for separation and minor reinforcement (such as Mirafi 500-X or 140-N), placed beneath the Aggregate Base Course, may be required in some areas on this site.

We recommend that the asphaltic concrete pavement meet the State of Colorado requirements for a Grade C mix. In addition, the asphaltic concrete pavement should be compacted to a minimum of 95% of its maximum Hveem density. The aggregate base course should meet the requirements of State of Colorado Class 5 or Class 6 material, and have a minimum R value of 78. We recommend that the base course be compacted to a minimum of 95% of its maximum Modified Proctor dry density (ASTM D-1557), at a moisture content within + or -2% of optimum moisture. The native subgrade shall be scarified and recompacted to a minimum of 90% of their maximum Modified Proctor day density (ASTM D-1557) at a moisture content within + or -2% of optimum moisture.

All pavement should be protected from moisture migrating beneath the pavement structure. If surface drainage is allowed to pond behind curbs, islands or other areas of the site and allowed to seep beneath pavement, premature deterioration or possibly pavement failure could result.

Concrete Pavement

We recommend that the rigid concrete pavement have a minimum flexural strength (F_t) of 650 psi at 28 days. This strength requirement can be met using Class P or AX or A or B Concrete as defined in Section 600 of the Standard Specifications for Road and Bridge Construction, Colorado DOT. It is recommended that field control of the concrete mix be made utilizing compressive strength criteria.

Flexural Strength should **only** be used for the design process. Concrete with a lower flexural strength may be allowed by the

agency having jurisdiction however, the design section thicknesses should be confirmed. In addition, the final durability of the pavement should be carefully considered.

Control joints should be placed at a minimum distance of 12 feet in all directions. If it is desired to increase the spacing of control joints, then 66-66 welded wire fabric should be placed in the mid-point of the slab. If the welded wire fabric is used, the control joint spacing can be increased to 40 feet. Construction joints to be designed so that positive joint transfer is maintained by the use of dowels.

The concrete should be placed at the lowest slump practical for the method of placement. In all circumstances, the maximum slump should be limited to 4 inches. Proper consolidation of the plastic concrete is important. The placed concrete must be properly protected and cured.

It is believed that all pertinent points have been addressed. If any further questions arise regarding this project or if we can be of any further assistance, please do not hesitate to contact this office at any time.

Respectfully Submitted,

LINCOLN DeVORE, Inc.

COLORADO REGISTERED EDWARD M. MORRIS 30590 12-19-95 PROFESSIONAL ENGINEER

by: Edward M. Morris
Engineer/Western Slope Manager

LD Job No.: 84110-J

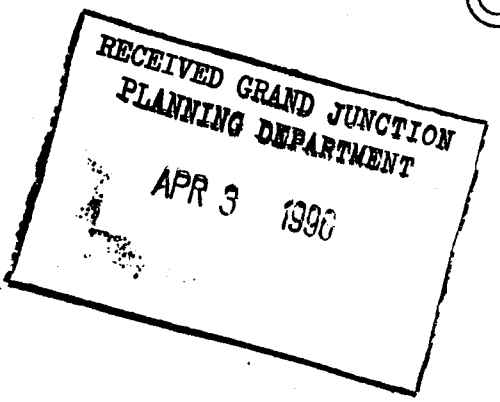
GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP
ATTORNEYS AT LAW
NORWEST BANK BUILDING, SUITE 400
2808 NORTH AVENUE
P.O. BOX 398
GRAND JUNCTION, COLORADO 81502

JAMES GOLDEN
KEITH G. MUMBY
K.K. SUMMERS
J. RICHARD LIVINGSTON
WILLIAM M. KANE

AREA CODE 970
TELEPHONE 242-7322
FAX 242-0698

April 2, 1996

COPY



Major John Gallegos
Department of Military Affairs
Colorado National Guard
6868 S. Reserve Parkway
Englewood, CO 80112

Re: Niagara Village Subdivision

Dear Major Gallegos:

Enclosed please find the original easement deed and agreement executed by my client. Also enclosed is our check for $500.00. Please return the document to me for recording after it has been executed by the State.

The public hearing for Filing 2 will be in June. I will let you know the date and time. I will also provide you with a copy of the covenants for Filing 2 upon their completion. Lastly, my client will instruct his contractor to contact the Guard before working in the easement and to remove and replace all fencing the same day.

Please call if you have any questions.

Sincerely,

GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP

J. Richard Livingston

JRL:jlc

Enclosures

cc: Sidney J. Spivak, Q.C., w/enc.
LanDesign, w/enc.
Michael T. Drollinger, City Planning, w/enc.

K:\LIV\NIANEV\MILITARY.3LT

EASEMENT DEED AND AGREEMENT

This EASEMENT DEED AND AGREEMENT ("Agreement") is made effective as of the _____ day of _____ 199__, by and between STATE OF COLORADO, DEPARTMENT OF MILITARY AFFAIRS, 6868 S. Revere Parkway, Englewood, CO 80112, hereinafter referred to as "Grantor," and NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC., c/o P.O. Box 398, Grand Junction, CO 81502, hereinafter referred to as "Grantee."

The parties agree as follows:

SECTION ONE
CONVEYANCE OF EASEMENT

Grantor, for and in consideration of the sum of $500.00 and other good and valuable consideration the receipt and sufficiency of same being hereby acknowledged, hereby grants and conveys to Grantee without warranty an easement as more particularly described on Exhibit "A" attached hereto subject to all current and subsequent real property taxes and assessments, restrictions and reservations of record. The easement is and shall be perpetual and nonexclusive.

SECTION TWO
DESCRIPTION OF EASEMENT

An easement over and across the property of Grantor described on Exhibit "A" attached hereto for the use and benefit of Grantee, their employees, agents and contractors, or any of their successors in title. The easement is for the sole and exclusive purpose of installation, maintenance and operation of an underground sewer and storm drain line serving Niagara Village Subdivision.

SECTION THREE
CONDITIONS

(a) Grantee agrees and understands that Grantor has no responsibility for the repair and maintenance of any use made by Grantee in the easement;

(b) Grantee shall promptly repair any damage it shall do to Grantor's real property and shall keep the easement in good repair free of unsightly trash, rubbish or debris;

(c) Grantee shall indemnify and hold Grantor harmless from and against any and all loss and damage of any kind or nature including reasonable attorneys' fees and costs and including but not limited to that caused by the exercise of the rights granted herein or by any wrongful or negligent act or omission of Grantee or of their agents in the course of their employment;

(d) Grantee shall improve the low spot in the southwest corner of Grantor's property and install a grated manhole into the storm sewer to be installed by Grantee;

(e) Grantor reserves the right to use the easement for purposes that will not interfere with Grantee's full enjoyment of the rights granted by this instrument; provided that Grantor shall not erect or construct any building or other structure, or construct any other obstruction on the easement.

(f) Grantee shall be responsible for procuring comprehensive general liability insurance for the easement at its sole cost and expense. Grantee shall have Grantor endorsed as an additional insured and shall annually provide Grantor with a certificate of such insurance.

SECTION FOUR
EASEMENT TO RUN WITH LAND

This grant of easement shall run with the land and shall be binding on and shall inure to the benefit of the parties to this Agreement, their respective heirs, successors, or assigns. Upon the dissolution of Grantee at law this easement shall revert to Grantor.

SECTION FIVE
NOTICES

Any notice provided for or concerning this agreement shall be in writing and be deemed sufficiently given when sent by certified or registered mail if sent to the respective address of each party as set forth at the beginning of this agreement.

SECTION SIX
GOVERNING LAW

It is agreed that this agreement shall be governed by, construed, and enforced in accordance with the laws of the State of Colorado.

SECTION SEVEN
ENTIRE AGREEMENT

This Agreement shall constitute the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this Agreement shall not be binding upon either party except to the extent incorporated in this Agreement.

SECTION EIGHT
MODIFICATION OF AGREEMENT

Any modification of this Agreement or additional obligation assumed by either party in connection with this Agreement shall be

binding only if evidenced in writing signed by each party or an authorized representative of each party.

IN WITNESS WHEREOF, each party to the Agreement has caused it to be executed as of the date and year first above written.

"GRANTOR" STATE OF COLORADO

By: _____
Roy Romer, Governor

By: _____
Name: _____
Title: The Adjutant General

"GRANTEE" NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC.

By: _____
Title: President

STATE OF COLORADO)
) ss.
COUNTY OF ARAPAHOE)

The foregoing instrument was acknowledged before me this _____ day of _____ 1996, by the State of Colorado, by _____ as _____.

WITNESS my hand and official seal.
My commission expires:

_____
Notary Public

COUNTRY OF CANADA)
) ss.
PROVIDENCE OF MANITOBA)

The foregoing instrument was acknowledged before me this 29th day of MARCH 1996 by Sidney J. Spivak as President of Niagara Village Homeowners Association, Inc.

WITNESS my hand and official seal.
My commission expires:

_____
Notary Public

A NOTARY PUBLIC
In and for the Province of Manitoba

EASEMENT DESCRIPTION

COMMENCING at the Southwest Corner of the Northwest Quarter of the Northwest Quarter (NW1/4 NW1/4) of Section 18, Township 1 South, Range 1 East of the Ute Meridian , from whence the Northwest Corner of said Section 18 bears North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 1318.47 feet;thence North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 204.29 feet; thence North 89 degrees 58 minutes 24 seconds East (N 89°58'24" E), a distance of 50.00 feet to the POINT OF BEGINNING; thence North 89 degrees 58 minutes 24 seconds East (N 89°58'24" E), a distance of 279.90 feet; thence North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 20.00 feet; thence South 89 degrees 58 minutes 24 seconds West (S 89°58'24" W), a distance of 279.90 feet; thence South 00 degrees 08 minutes 30 seconds East (S 00°08'30" E), a distance of 20.00 feet to the POINT OF BEGINNING.
Said easement for utility and drainage purposes containing 0.129 acres, as described.

EXHIBIT "A"

Final Plan Narrative For:

NIAGARA VILLAGE FILING NO. TWO

May 1, 1996

Prepared For;

Waterloo Nevada Limited
P.O. Box 98, Station L
Winnipeg, Manitoba, R3H OZ4 Canada

Prepared By;

LANDesign L.L.C.
259 Grand Ave.
Grand Junction, Colorado 81501
(303) 245-4099

LOCATION - The entire Niagara Village development contains approximately 14.5 acres. The Phase II portion of the development contains approximately 9.3 Acres. The subject property is located in the east/central area of Grand Junction, Colorado, west of 28 1/4 Road and one quarter mile south of North Avenue. The property is located in part of the NW 1/4 of Section 18, Township One South, Range One East, of the Ute Meridian.

EXISTING LAND USE - The Phase II site is currently vacant of any structures and is in a fallow state. No recent agricultural production has occurred on the property. Topography of the property is considered to be "flat" in nature. The land within Niagara Village slopes towards the southwest at a average rate of one percent. Several years ago the City zoned the property PR-20 for multi-family dwellings, and PB (Planned Business). The property is currently zoned PR-6.

SURROUNDING LAND USE - The Surrounding land use in the vicinity of the subject property is considered to be of high intensity. Predominately nonresidential uses, which includes:

NORTH
Kmart
Furr's Cafeteria
Appliance Repair

SOUTH
Vacant Undeveloped Land

EAST
Niagara Village Filing One

WEST
National Guard Armory
The Brass Rail Lounge
Convenience Store
Shop Building
Indian Wash

A Location Map at the end of the narrative statement illustrates the location of Niagara Village in relationship to the surrounding land ownership. A reproduction from the City of Grand Junction Zoning Map can be found in the appendix of this narrative.

PROPOSED LAND USE - The Phase II proposal calls for the development of 55 manufactured home sites/individual lots on 9.3 acres. The resulting density is 5.9 dwelling units per acre. The first phase of development consisted of 27 individual lots. The accompanying site plan for Filing No. Two depicts the proposed minimum setback requirements for individual lots as building envelopes.

In addition to the individual lot development standards presented herein, strict controls will be instigated to protect the development from undesirable influences. To achieve this, a set of Covenants, Conditions and Restrictions has been recorded to insure ongoing protection to the future residents of Niagara Village and surrounding property owners. Additionally a set of Landscape Guidelines will be provided to each lot owner. These guidelines will include minimum landscape, fencing, and storage requirements.

LAND USE SUMMARY CHART

Use	Area	% of total
Streets	1.432	15
Open Space	0.445	5
Lots	7.408	80
Total	9.285	100
Total Sites	55	
Density	5.92 du/ac	

ACCESS - Primary access to Niagara Village will be from 28 1/4 Road which is designated as a collector by the City. Review of the accompanying Location Map reveals that existing access is available to North Avenue, a major east/west arterial. 28 Road, a collector, is located 300 feet west of the subject site. It can be assumed that as the undeveloped area south of Niagara Village develops, additional access points will be available.

Proposed roadway improvements call for the construction of approximately 1294 lineal feet of 44 foot wide new public street within the project site.

According to Trip Generation studies by the Institute of Transportation Engineers, approximately 830 average total daily trips would occur after site development is complete.

OPEN SPACE- Approximately 0.445 acres of private open space is to be dedicated with this phase of development. The open space is to be owned and maintained by the Niagara Village Homeowners Association.

UTILITY SERVICE-

DOMESTIC WATER - All lots within Niagara Village will be served by a domestic water distribution system. An existing 8-inch water main located adjacent to the northeast property corner has been extended into the site to provide water service to lots within the development. The 8-inch main has be extended westerly across the site to an existing 24-inch main in 28 Road and will provide water for fire protection. The existing water mains are owned and maintained by the City of Grand Junction. Sufficient flows and pressure should exist to provide adequate water supply for fire protection.

SANITARY SEWER - A new 8-inch sanitary sewer collection system will be constructed to serve all lots within Niagara Village. The Fruitvale Sanitation District will own and maintain sewer the new lines and provide service to the development from an existing 10 - inch main which is located in 28 Road. It is estimated that peak sewage flows generated by the lots within the development will be 26,145 gallons per day.

ELECTRIC, GAS PHONE AND CTV - Electric, gas and communication lines will be extended to each site within the development from existing lines located adjacent to the proposed development.

DRAINAGE - A Drainage Report which evaluated the impacts on existing drainage patterns has been submitted to the City's Engineering and Community Development departments under separate cover. Future drainage will be carried on the ground surface to the proposed street system to a point near the southwest corner of the development. A new storm sewer pipeline will be constructed to discharge stormwater directly into the Indian Wash located adjacent to 28 Road. The construction of the new storm sewer is considered the developers contribution towards area wide drainage improvements.

DEVELOPMENT SCHEDULE - The rate at which development of Niagara Village will occur is dependent upon the City's future growth and housing needs. At this point in time it is anticipated that site development for this second phase will begin upon the City's acceptance of the Final Plant and Plan. The second phase will consist of 55 lots to be located west of and contiguous with Phase I.

Rev. Date: 24-May-96

Prepared By: LANDesign LTD

Project: **NIAGARA VILLAGE (Phase I & II Improvements)**

Subject: Drainage Fee / Composite "C" Value Calculations

Project Area = 14.500 Ac. (AREA OF PROPOSED CONCRETE SLAB)
Soil Type : (Bc) Billings Silty Clay Loam, 0 to 2 percent slopes.
Soil Clasification : Hydrological Soil Group "C".

Historic 100 Year "C" Value: 0.260 Natural Ground

Developed 100 Year "C" Value:

Surface	Area Ac.	"C" Value	"C" x A
Concrete Slab	14.500	0.530	7.685
Summation			7.685

Composite "C" = $\frac{7.685}{14.500}$ = 0.530

Drainage Fee $: $10{,}000\ (C100d - C100h)\ A^{0.7}$

$10{,}000\ (0.530 - 0.260)\ A^{0.7}$

$17,551.79 In Lue of Onsite Detention.

Note: The "C" values and Drainage Fee formula shown hereon are taken from Table "B-1" and page VIII-4 of the "Stormwater Management Manual (SWMM), Department of Public Works", City of Grand Junction, June 1994.

Rev. Date: 24-May-96

Prepared By: LANDesign LTD

Project: **NIAGARA VILLAGE (Phase I & II Improvements)**

Subject: Drainage Fee / Composite "C" Value Calculations

Project Area = 14.500 Ac. (AREA OF PROPOSED CONCRETE SLAB)
Soil Type : (Bc) Billings Silty Clay Loam, 0 to 2 percent slopes.
Soil Clasification : Hydrological Soil Group "C".

Historic 100 Year "C" Value: 0.260 Natural Ground

Developed 100 Year "C" Value:

Surface	Area Ac.	"C" Value	"C" x A
Concrete Slab	14.500	0.530	7.685
Summation			7.685

Composite "C" = $\frac{7.685}{14.500}$ = 0.530

Drainage Fee $: $10{,}000\ (C100d - C100h)^{0.7}\ A$

$10{,}000\ (0.530 - 0.260)^{0.7}\ A$

$17,551.79 In Lue of Onsite Detention.

Note: The "C" values and Drainage Fee formula shown hereon are taken from Table "B-1" and page VIII-4 of the "Stormwater Management Manual (SWMM), Department of Public Works", City of Grand Junction, June 1994.

REVIEW COMMENTS

FILE #FP-96-115 **TITLE HEADING:** Niagara Village Subdivision, Filing #2

LOCATION: Niagara Village Circle

PETITIONER: Waterloo Nevada, Ltd.

PETITIONER'S ADDRESS/TELEPHONE: Box 98, Station L
Winnipeg, Manitoba
Canada R3H 024
204-772-8665

PETITIONER'S REPRESENTATIVE: Monty Stroup, LANDesign LLC

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., MAY 23, 1996.

CITY POLICE DEPARTMENT **5/6/96**
Dave Stassen **244-3587**
No additional comments.

U.S. WEST **5/8/96**
Max Ward **244-4721**
U.S. West will need a 5' easement on the west side of Lot 34 and 5' on east side of Lot 33, Block 1. See sketch.

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.

PUBLIC SERVICE COMPANY **5/9/96**
John Salazar **244-2781**
GAS & ELECTRIC: No objections

CITY FIRE DEPARTMENT **5/13/96**
Hank Masterson **244-1414**

The Fire Department has no objections to this Final Plan as proposed.

T C I CABLEVISION **5/13/96**
Glen Vancil **245-8777**

See attached comments.

CITY PROPERTY AGENT **5/15/96**
Steve Pace **256-4003**

1. Correct the basis of bearings statement on Sheet 1 and Sheet 2.
2. The platted bearings should read in the same direction as in the description.
3. The ingress-egress easements are not labeled on the plat.
4. Sign, landscaping and multi-purpose easement is addressed in the dedication but none are shown on the plat.
5. The access easement needs to be addressed separately, describe who benefits from this easement.
6. In the description the distance of 33.000' to P.O.B. is missing.
7. There appears to be some recorded easements as shown in the Title Commitment that are not shown or noted.
8. What type of monument is being set for centerline of streets.

CORP OF ENGINEERS **5/10/96**
Randy Snyder **243-1199**

See attached letter.

CITY DEVELOPMENT ENGINEER **5/16/96**
Jody Kliska **244-1591**

See attached comments.

CITY UTILITY ENGINEER **5/15/96**
Trent Prall **244-1590**

WATER: City of Grand Junction

1. Please clarify which work is being performed under this phase. Many items remain from Filing Number 1.
2. Please eliminate curb stop from standard drawings. It is not required as a stop is incorporated in the City standard setter.
3. Lot 13, Blk 2 has two water taps shown, please reconfigure.
4. Please add the following notes:
   A. All work shall be in accordance with City of Grand Junction Specifications.
   B. Water meter pits and setters will be provided by City inspector for installation by the contractor.
   C. All taps along the existing 8" water line will be tapped by the City of Grand Junction. Contractor will then be responsible to extend the service line from the corp stop.

N.V. -MD

CITY PARKS & RECREATION **5/17/96**
Shawn Cooper **244-3869**
Parks & Open Space fees - 55 units @ $225 = $12,375.

CITY COMMUNITY DEVELOPMENT **5/15/96**
Michael Drollinger **244-1439**
See attached comments.

LATE COMMENTS

MESA COUNTY SCHOOL DISTRICT #51 **5/20/96**
Lou Grasso **242-8500**
SCHOOL - CURRENT ENROLLMENT / CAPACITY - IMPACT
Lincoln Park Elementary - 239 / 300 - 14
East Middle School - 415 / 465 - 7
Grand Junction High School - 1674 / 1630 - 9

TO DATE, COMMENTS NOT RECEIVED FROM:
City Attorney
Grand Valley Irrigation
Grand Junction Drainage District
Ute Water
Fruitvale Sanitation District
Colorado Geological Survey
U.S. Postal Service

CITY PARKS & RECREATION **5/17/96**
Shawn Cooper **244-3869**
Parks & Open Space fees - 55 units @ $225 = $12,375.

CITY COMMUNITY DEVELOPMENT **5/15/96**
Michael Drollinger **244-1439**
See attached comments.

TO DATE, COMMENTS NOT RECEIVED FROM:
City Attorney
Mesa County School District #51
Grand Valley Irrigation
Grand Junction Drainage District
Ute Water
Fruitvale Sanitation District
Colorado Geological Survey
U.S. Postal Service

STAFF COMMENTS

FILE : #FP-96-115
DATE: May 15, 1996
STAFF: Michael T. Drollinger
PROJECT: Niagara Village Filing #2
REQUEST: Major Subdivision Plan/Plat- Final
LOCATION: Niagara Circle Drive
ZONING: PR-6

COMMENTS:

1. Site Plan drawing with building envelopes not provided with the plan set; please submit for review.

2. Landscaping of private open space must be made part of Development Improvements Agreement (DIA).

3. On plat cover sheet, correct "City of Grand Junction Approval" block reference to "Filing No. One" to "Filing No. Two."

4. On plat, the common area should be labeled as "Tract A", not "Outlot A."

5. Pedestrian path from North Niagara Circle to west should be a minimum of eight feet wide. Provide a detail and correct the width on all other applicable drawings. The building envelope on Block Four, Lot 15 which permits a double-wide unit appears to conflict with the pedestrian path.

6. The spelling of "Niagara" must be corrected on the profile views of the street plan sheets.

7. Sanitary Sewer Plan and Profile: (a) approval block shall be corrected to read "Filing No. 2"; (b) the Common Area shall be labeled "Tract A", not "Outlot A"; also correct on Grading Plan.

8. Storm Sewer Plan and Profile: (a) "28 Road" is labeled twice; please correct; (b) correct note on profile to read " . . . . after the water line *is* exposed then the storm sewer . . . . ."

9. Utility Composite Plan: (a) approval block shall be corrected to read "Filing No. 2"; (b) the Common Area shall be labeled "Tract A", not "Outlot A";

10. Regarding the Landscape Plan for the lots, who will this be done by and when will this be accomplished?

11. Landscape Plan (for common area): (a) correct spelling for "Billage" to "Village" in title block.

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

GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP
ATTORNEYS AT LAW
NORWEST BANK BUILDING, SUITE 400
2808 NORTH AVENUE
P.O. BOX 398
GRAND JUNCTION, COLORADO 81502

JAMES GOLDEN
KEITH G. MUMBY
K.K. SUMMERS
J. RICHARD LIVINGSTON
WILLIAM M. KANE

AREA CODE 970
TELEPHONE 242-7322
FAX 242-0698

May 22, 1996

Mr. Michael T. Drollinger
Community Developer
City Hall
Grand Junction, CO 81501

Re: Niagara Village

Dear Michael:

Enclosed please find a copy of the Easement Deed and Agreement executed by the Department of Military Affairs. The original has been sent to the Recorder's Office.

Sincerely,

GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP

J. Richard Livingston

JRL:jlc

Enclosure

cc: Sidney J. Spivak, Esq., w/enc.

K:\LIV\NIANEV\DROLLING.2LT

EASEMENT DEED AND AGREEMENT

This EASEMENT DEED AND AGREEMENT ("Agreement") is made effective as of the 16th day of May 1996, by and between STATE OF COLORADO, DEPARTMENT OF MILITARY AFFAIRS, 6868 S. Revere Parkway, Englewood, CO 80112, hereinafter referred to as "Grantor," and NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC., c/o P.O. Box 398, Grand Junction, CO 81502, hereinafter referred to as "Grantee."

The parties agree as follows:

SECTION ONE
CONVEYANCE OF EASEMENT

Grantor, for and in consideration of the sum of $500.00 and other good and valuable consideration the receipt and sufficiency of same being hereby acknowledged, hereby grants and conveys to Grantee without warranty an easement as more particularly described on Exhibit "A" attached hereto subject to all current and subsequent real property taxes and assessments, restrictions and reservations of record. The easement is and shall be perpetual and nonexclusive.

SECTION TWO
DESCRIPTION OF EASEMENT

An easement over and across the property of Grantor described on Exhibit "A" attached hereto for the use and benefit of Grantee, their employees, agents and contractors, or any of their successors in title. The easement is for the sole and exclusive purpose of installation, maintenance and operation of an underground sewer and storm drain line serving Niagara Village Subdivision.

SECTION THREE
CONDITIONS

(a) Grantee agrees and understands that Grantor has no responsibility for the repair and maintenance of any use made by Grantee in the easement;

(b) Grantee shall promptly repair any damage it shall do to Grantor's real property and shall keep the easement in good repair free of unsightly trash, rubbish or debris;

(c) Grantee shall indemnify and hold Grantor harmless from and against any and all loss and damage of any kind or nature including reasonable attorneys' fees and costs and including but not limited to that caused by the exercise of the rights granted herein or by any wrongful or negligent act or omission of Grantee or of their agents in the course of their employment;

(d) Grantee shall improve the low spot in the southwest corner of Grantor's property and install a grated manhole into the storm sewer to be installed by Grantee;

(e) Grantor reserves the right to use the easement for purposes that will not interfere with Grantee's full enjoyment of the rights granted by this instrument; provided that Grantor shall not erect or construct any building or other structure, or construct any other obstruction on the easement.

(f) Grantee shall be responsible for procuring comprehensive general liability insurance for the easement at its sole cost and expense. Grantee shall have Grantor endorsed as an additional insured and shall annually provide Grantor with a certificate of such insurance.

SECTION FOUR
EASEMENT TO RUN WITH LAND

This grant of easement shall run with the land and shall be binding on and shall inure to the benefit of the parties to this Agreement, their respective heirs, successors, or assigns. Upon the dissolution of Grantee at law this easement shall revert to Grantor.

SECTION FIVE
NOTICES

Any notice provided for or concerning this agreement shall be in writing and be deemed sufficiently given when sent by certified or registered mail if sent to the respective address of each party as set forth at the beginning of this agreement.

SECTION SIX
GOVERNING LAW

It is agreed that this agreement shall be governed by, construed, and enforced in accordance with the laws of the State of Colorado.

SECTION SEVEN
ENTIRE AGREEMENT

This Agreement shall constitute the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this Agreement shall not be binding upon either party except to the extent incorporated in this Agreement.

SECTION EIGHT
MODIFICATION OF AGREEMENT

Any modification of this Agreement or additional obligation assumed by either party in connection with this Agreement shall be

binding only if evidenced in writing signed by each party or an authorized representative of each party.

IN WITNESS WHEREOF, each party to the Agreement has caused it to be executed as of the date and year first above written.

"GRANTOR" STATE OF COLORADO

By: _____
Roy Romer, Governor

By: _____
Name: _____
Title: The Adjutant General

"GRANTEE" NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC.

By: _____
Title: President

STATE OF COLORADO)
) ss.
COUNTY OF ARAPAHOE)

The foregoing instrument was acknowledged before me this 18th day of April 1996, by the State of Colorado, by Governor Roy Romer as _____.

WITNESS my hand and official seal.
My commission expires:
April 14, 199

_____
Notary Public Maria S. Zepeda-Sanchez

COUNTRY OF CANADA)
) ss.
PROVIDENCE OF MANITOBA)

The foregoing instrument was acknowledged before me this 29th day of MARCH 1996 by Sidney J. Spivak as President of Niagara Village Homeowners Association, Inc.

WITNESS my hand and official seal.
My commission expires:

_____
Notary Public

A NOTARY PUBLIC
In and for the Province of Manitoba

EASEMENT DESCRIPTION

COMMENCING at the Southwest Corner of the Northwest Quarter of the Northwest Quarter (NW1/4 NW1/4) of Section 18, Township 1 South, Range 1 East of the Ute Meridian , from whence the Northwest Corner of said Section 18 bears North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 1318.47 feet;thence North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 204.29 feet; thence North 89 degrees 58 minutes 24 seconds East (N 89°58'24" E), a distance of 50.00 feet to the POINT OF BEGINNING; thence North 89 degrees 58 minutes 24 seconds East (N 89°58'24" E), a distance of 279.90 feet; thence North 00 degrees 08 minutes 30 seconds West (N 00°08'30" W), a distance of 20.00 feet; thence South 89 degrees 58 minutes 24 seconds West (S 89°58'24" W), a distance of 279.90 feet; thence South 00 degrees 08 minutes 30 seconds East (S 00°08'30" E), a distance of 20.00 feet to the POINT OF BEGINNING.
Said easement for utility and drainage purposes containing 0.129 acres, as described.

EXHIBIT "A"

AMENDED STORMWATER MANAGEMENT PLAN

FOR

NIAGARA VILLAGE SUBDIVISION

May 22, 1996

Prepared For:

Waterloo Nevada LTD
P.O. Box 98, STN L
Winnipeg, Manitoba, Canada R3C OZ4

Prepared By:

LANDesign
259 Grand Avenue, Grand Junction, Colorado 81501
(303) 245-4099

Prepared by: _____
Monty D. Stroup

Reviewed and Approved by: _____
Philip M. Hart P.E.
State of Colorado, #19346

A. Site and Project Description

1. Site Location:

Niagara Village Subdivision contains approximately 14.5 acres and is located within the City of Grand Junction. The property is located in the NW 1/4 of the NW 1/4 of Section 18, Township One South, Range One East, of the Ute Meridian.

Streets in the vicinity include 28 1/4 Road which defines the east boundary of the site, North Avenue 600 feet to the north, and 28 Road 280' to the west. Access to the site is attained from 28 1/4 Road.

Development in the vicinity is mixed use in nature. To the north lies K-Mart, Furr's Cafeteria and Appliance Repair. To the south and east are vacant lands. To the west is The Colorado National Guard Armory, The Brass Rail Lounge, a Convenience Store and a Shop Building.

2. Description of Property:

The project site contains approximately 14.5 acres. The project will be developed in 2 phases. Phase I is complete and contains approximately 5.1 acres. Phase I was approved with 100 percent retention of developed flows therefore a stormwater management permit was not obtained. Phase II contains approximately 9.4 acres and is vacant of structures and is in a fallow state. Recent agricultural production has not occurred on the property.

Approximately 100 percent of the onsite historic sub-basin drains from the northeast to the southwest in a sheetflow fashion towards an existing ditch along the south property line of the site. The flow within this ditch is conveyed west to Indian Wash.

The site is affected by offsite runoff from a small sub-basin northeast of site. Runoff from areas north of the site including K-Mart and Furr's is intercepted by parking lot grading elements and is directed west away from the site towards 28 Road. Topography of the property is flat in nature and slopes from the northeast to the southwest at approximately 0.75 percent.

3. Description of Proposed Construction Activity:

Activity shall include the construction of roadway, water, sanitary sewer, storm sewer, irrigation, dry utility infrastructures followed by the construction of 83 single family manufactured residential structures and associated landscaping.

4. Proposed Sequence of Major Construction Activities:

Phase I Clearing and grubbing of proposed roadway alignments and disposal of construction debris.

Phase II Construction of roadways to proposed subgrade elevations including cut and fill activities as required. Excess embankment material to be stockpiled in designated areas.

Phase III Utility infrastructures to be installed including storm sewers and culverts, swales and permanent erosion control features.

Phase IV Curb, gutter and sidewalks installed.

Phase V Clearing, Grubbing and overlot grading of single or multiple lots as sales and market conditions allow.

Phase VI Construction of building structures as sales and market conditions allow.

Phase VII Final landscaping of individual lots as required by the project Covenants, Conditions and Restrictions.

5. Estimate of Areas Subject to Clearing, Grubbing and Excavation:

Niagara Village contains a total of 14.5 acres. Construction Phases I consisted of approximately 5.1 acres. Phase II will consist of the residual area of 9.4 acres.

6. Preconstruction and Postconstruction Runoff Coefficients:

As defined in the Master Drainage Report For Niagara Village (References 8) the historic runoff coefficients for the 2 year and 100 year storm events respectively are 0.20 and 0.26.

With the construction of proposed roadways coefficients are expected to increase to 0.45 and 0.53 respectively.

7. Soil Erosion Potential:

Based on the "Soil Survey, Mesa County Area" (Reference 4, Exhibit 3.0) onsite soils are defined as (Bc), Billings silty clay loam, 0 to 2 percent slopes, hydrological soil group "C".

8. Existing Vegetation:

There are no wetlands on the site. The site is nearly void of ground cover with the exception of isolated pockets of natural grasses.

9. Storage of Fuel Oils, Chemicals, Fertilizers or Other Potential Pollution Sources:

The storage of fuel oils, chemicals, fertilizers or other potential pollutants is prohibited without prior written notice to the owner by the contractor, subcontractor or other persons doing work on the site. In the event in becomes necessary to store such items, storage areas shall be designated. Storage areas shall be located above and away from drainages, waterways and other apparent conveyance elements. Appropriate measures shall be taken to protect such areas from spills or vandalism including but not limited to spill control berms and fencing.

10. Anticipated Non-Stormwater Components of Discharge:

There are no anticipated non-stormwater components of discharge.

11. Name and Location of Receiving Waters:

Onsite and offsite lands drain generally from the northeast to the southwest towards the southwest corner of the site where it is conveyed westerly via an existing ditch towards Indian Wash (Exhibit 2.0). Runoff from areas east of the site is intercepted and convey south via an existing drainageway known as the Goodwill Drain.

Indian Wash is maintained by The City of Grand Junction. The Goodwill Drain is operated and maintained by The Grand Junction Drainage District.

The subject site is within Zone X as determined by the FIRM Flood Insurance Rate Map and is not within the 100 and 500 year flood plain of Indian Wash (Exhibit 1.0).

B. Management During Construction

1. Anticipated Problems and Corrective (BMPs) Best Management Practices:

Structural Erosion Control Areas within the proposed roadways shall be protected from erosion by the installation of prefabricated silt fences as shown on the Drainage and Grading Plan.

Non-Structural Erosion Control Disturbed areas not designated for immediate construction or permanent landscaping shall be temporarily re-vegetated. In the event

construction activity ceases for a period of 60 calendar days disturbed areas including cut and fill slopes shall be revegitated with a annual and perennial seed mixture.

Dust Abatement The contractor shall be required to provide a consistent and reliable source of construction water. Watering to prevent dust shall be ongoing for the duration of the project. In the event high winds and heavy traffic loads create a situation where watering by itself is not sufficient the contractor is to apply an approved dust palliative other than or in addition to water.

Soil Tracking Where construction traffic enters or exits unimproved areas onto asphalted public roadways a crushed rock construction staging pad shall be installed to minimize soil tracking.

Waste Disposal Construction debris shall be stockpiled in a central location. Debris shall be removed from the site and disposed of at appropriate locations secured by the contractor.

Sedimentation Control The contractor shall be responsible for inspecting the entire site on a weekly basis to ensure compliance and identify existing or potential sedimentation problems.

Final Stabilization and Long Term Management

The project's Covenants Conditions and Restrictions obligate each lot owner to fully landscape front yard within 60 days and the rear yard within 1 year from the issuance of a Certificate of Occupancy. Other areas including open-space are to be landscaped by the developer and maintained by the Homeowners Association.

Permanent structural BMP's include pipe outlet protection, rip-rap over filter fabric and grassed swales as shown on the Drainage and Grading Plan.

Inspection and Maintenance

The Contractor shall be ultimately responsible for compliance and maintenance during construction. The owners representative and the contractor shall make weekly inspections of the site to assure compliance and implementation of the proposed BMPs.

V. References

1. Mesa County Storm Drainage Criteria Manual, Final Draft, Mesa County, Colorado, March 1992.

2. Flood Hazard Information, Colorado River and Tributaries, Grand Junction, Colorado, prepared for the City of Grand Junction and Mesa County, by The Department Of The Army, Sacramento District, Corps Of Engineers, Sacramento, California, November, 1976.

3. Flood Insurance Rate Map, Mesa County, Colorado, (Unincorporated Areas), Community Panel Number 080115 0480 C, Federal Emergency Management Agency, Map Revised July 15th, 1992.

4. Soil Survey, Grand Junction Area, Colorado, Series 1940, No. 19, U.S. Department of Agriculture, issued November, 1955.

5. Urban Storm Drainage Criteria Manual, Urban Drainage and Flood Control District, prepared by Wright-McLaughlin Engineers, March 1969, Revised May, 1984.

6. Interim Outline of Grading and Drainage Criteria, City of Grand Junction, July 1992.

7. Douglas County Storm Drainage Design and Technical Criteria, Addendum A, Erosion Control Criteria, prepared by HydroDynamics Incorporated, Parker, Colorado, October, 1992.

8. Master Drainage Report for: Niagara Village Subdivision, prepared by LANDesign, LLC, August 1995.

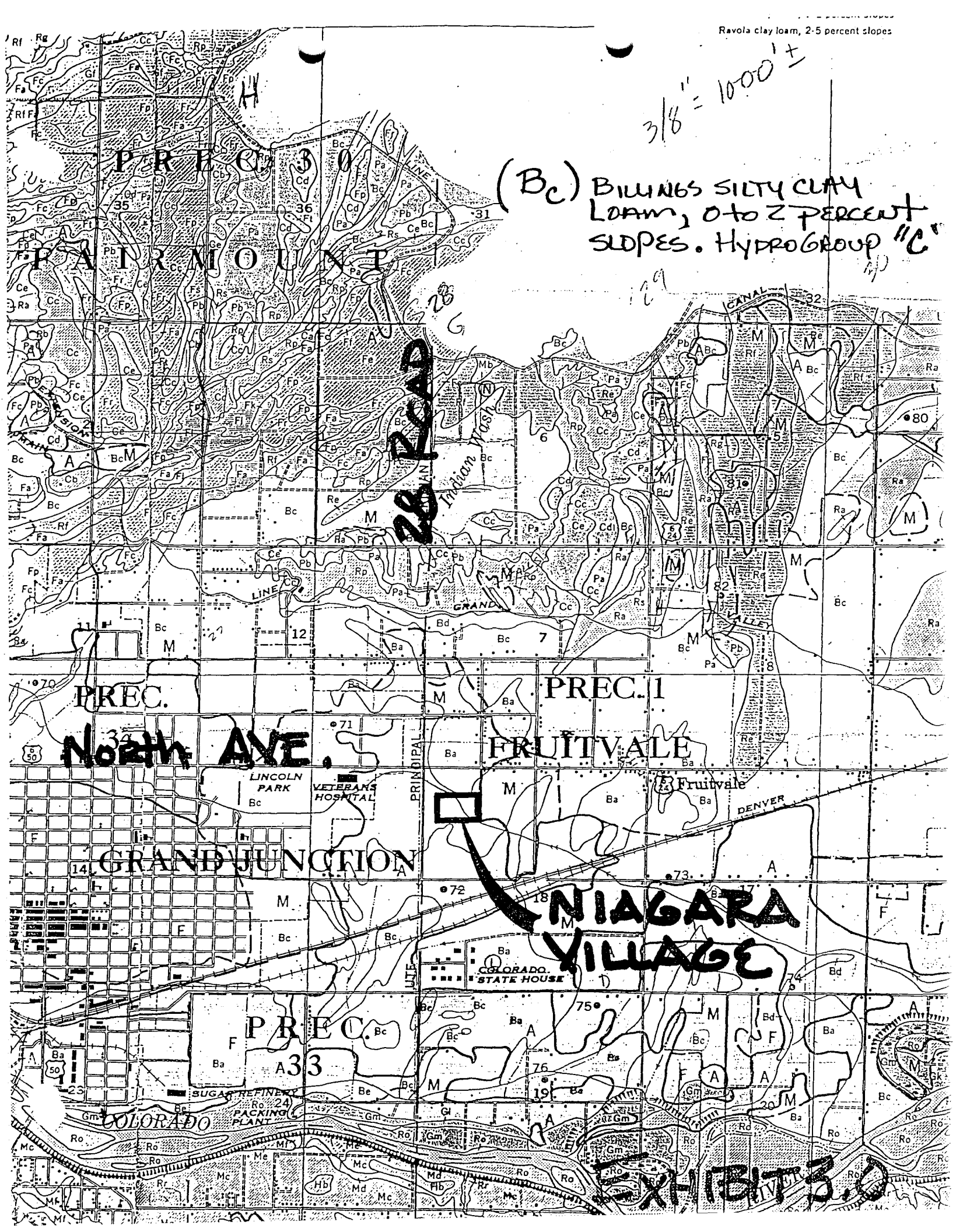
9. Colorado Department of Transportation, Erosion Control and Stormwater Quality Guide, Draft version, November 27, 1992.

APPENDIX


Claypit
Unity Ch
Claypit
PRIEST ROAD
UTE
PATTERSON AVE
F ROAD
Municipal Water Tower
GRAND VALLEY CANAL
Tope Sch
ORCHARD AVE
Orchard Ave Sch
Melrose Park
MESA AVE
ELM AVE
NORTH AVE
Mesa College
Radio Tower (KEXO)
Trailer Park
Nisley Sch
Drive-in Theater
Memorial Gardens of the Valley (Cemetery)
Veterans Hospital
Lincoln Park
Golf Course
Washington Park
Jr High Sch
GUNNISON AVE
GRAND JUNCTION
GRAND AVE
WHITE AVE
Lowell Sch
Grand Speedway
RIO GRANDE WESTERN AND DENVER
MESA COUNTY
DITCH
Emerson Sch
Park
UTE AVE
State Home and Training Sch
D ROAD
Filtration Plant
COLORADO RIVER
Jr High Sch
Columbus Sch
C ROAD
Gravel Pit
Orchard Mesa
Trailer Park
PROJECT LOCATION
38° 35' 13" LATITUDE
108° 55' 46" LONGITUDE
LOCATION MAP
EXHIBIT 1.0

HISTORIC BASIN MAP

EXHIBIT 2.0


Ravola clay loam, 2-5 percent slopes
3/16" = 1000' ±
(Bc) BILLINGS SILTY CLAY LOAM, 0 to 2 PERCENT SLOPES. HYDROGROUP "C"
PREC. 30
PARMOUNT
PREC.
North AVE.
PREC. 1
FRUITVALE
GRAND JUNCTION
NIAGARA VILLAGE
PREC. A33
Indian Wash
LINCOLN PARK
VETERANS HOSPITAL
PRINCIPAL
UTE
COLORADO STATE HOUSE
SUGAR REFINERY
PACKING PLANT
COLORADO
DENVER
Fruitvale
EXHIBIT 3.0

PLANNING COMMISSION STAFF REPORT

FILE: #FPP-96-115

DATE: June 5, 1996

STAFF: Michael T. Drollinger

REQUEST: Final Plan & Plat - Niagara Village Filing #2

LOCATION: W side of 28 1/4 Road; S of North Avenue

APPLICANT: Waterloo Nevada Ltd.
P.O. Box 98, Station L
Winnipeg, Manitoba, Canada R3H024

EXECUTIVE SUMMARY:

The petitioner is requesting final plan and plat approval for 55 single family lots on approximately 9.3 acres zoned PR-5.8 (Planned Residential with a density not to exceed 5.8 units per acre). The development proposal is in conformance with the Preliminary Plan approval. Staff recommends approval with conditions.

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Residential - Single Family (Manufactured Housing)

SURROUNDING LAND USE:

NORTH:	Commercial (Kmart; Furr's Cafeteria)
SOUTH:	Vacant (Commercial Zoning)
EAST:	Single Family Residential (Filing #1)
WEST:	Commercial; Public (National Guard Armory, The Brass Rail, Convenience store, etc.)

EXISTING ZONING: PR-5.8

SURROUNDING ZONING: (see also attached map)

NORTH:	C-1
SOUTH:	C-1
EAST:	PR-5.8 (Filing #1)

WEST: PZ

RELATIONSHIP TO COMPREHENSIVE PLAN:

The draft City of Grand Junction Growth Plan identifies the subject parcel in the "Residential Medium High (8-11.9 DU/acre)" land use category. The developer's proposed density is lower than recommended in the growth plan.

STAFF ANALYSIS:

Petitioner's request is for final plan and plat approval for 55 single family lots on approximately 9.3 acres. The final plan is consistent with the preliminary plan approval.

The developer will dedicate and construct with this filing approximately 0.445 acres of private open space which will be owned and maintained by the Niagara Village Homeowners Association. Proposed setback requirements and driveway configurations for the project are illustrated on the attached "Site Plan" map and are acceptable to staff. Also attached for reference are the proposed plat, street plan, and grading and drainage plan. An aerial map are also attached for reference and orientation.

Conditions of Approval

Should Planning Commission choose to approve the subject application, staff recommends that at a minimum the following conditions be part of the approval:

1. The maintenance agreement for Indian Wash must be amended to accept the stormwater discharge for this project prior to approval of final plans.

2. Approval of the sanitary sewer plans by the Fruitvale Sanitation District is required prior to City approval of the final plans.

3. The developer will be required to pay the drainage fee which was part of the original stormwater management plan for the project. Credit toward the fee will only be given if the petitioner can show to the satisfaction of the City Development Engineer that the petitioner's stormwater system is accommodating off-site stormwater. The petitioner will be responsible for providing the Development Engineer with the drainage fee calculations.

4. A street light design is required to be submitted and approved by the City Development Engineer prior to approval of final plans.

5. The petitioner is required to guarantee the driveway improvements as part of the Development Improvements Agreement.

STAFF RECOMMENDATION:

Staff recommends approval of the final plan and plat subject to the conditions #1-#5 in this staff report.

RECOMMENDED PLANNING COMMISSION MOTION:

Mr. Chairman, on item RZP-96-115, a request for final plan and plat approval, I move that approve this application subject to conditions #1 - #5 in the staff report dated June 5, 1996.

h:\cityfil\1996\96-115.srp

4. **Anticipated construction schedule:**

Commencement date: JUNE 11, 1996 Completion date: SEPTEMBER 1, 1996

5. **Area of the construction site:** Total area 14.50 Ac.

Area to undergo excavation or grading: 9.40

6. **The name of the receiving stream(s). (If discharge is to a ditch or storm sewer, also include the name of the ultimate receiving water):** INDIAN WASH TO COLORADO RIVER

7. **Other environmental permits held for this construction activity (include permit number):**

NONE

8. **Stormwater Management Plan Certification:**

I certify under penalty of law that a complete Stormwater Management Plan, as described in Appendix A of this application, has been prepared for my facility. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the Stormwater Management Plan is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for falsely certifying the completion of said SWMP, including the possibility of fine and imprisonment for knowing violations.

X

Signature of Applicant Date Signed

Name (printed) Title

9. **Signature of applicant:**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

X

Signature of Applicant Date Signed

Name (printed) Title

GENERAL PERMIT APPLICATION

STORMWATER DISCHARGES ASSOCIATED WITH:

CONSTRUCTION ACTIVITY

(Permit No. COR-030000)

FOR AGENCY USE ONLY									
Certification Number									
C	O	R	-	0	3				
Date Received						Fee Category			
Year		Month		Day					

Please print or type. All items must be completed accurately and in their entirety or the application will be deemed incomplete and processing of the permit will not begin until all information is received. Please refer to the instructions for information about the required items. An original signature of the applicant is **required.**

1. **Name and address of the permit applicant:**

Name SIDNEY J. SPIVAK, Q.C. DBA WATERLOO NEVADA LTD

Mailing Address P.O. BOX 98, STN. L

City, State and Zip Code WINNIPEG, MANITOBA, CANADA, R3H 0Z4

Phone Number (204) 772-8665 Taxpayer (or Employer) ID _____

Who is applying? Owner ☒ Developer ☐ Contractor ☐

Entity Type: Private ☒ Federal ☐ State ☐ County ☐ City ☐ Other: _____

Local Contact MONTY D. STROUP, LANDESIGN LLC

Title PROJECT MANAGER Phone Number 970-245-4099

2. **Location of the construction site:**

Street Address 6655 L.F. SOUTH OF NORTH AVENUE AT 28 1/4 ROAD

City, State and Zip Code GRAND JUNCTION, COLORADO 81501

County MESA Name of plan of development NIAGARA VILLAGE SUBDIVISION

Township, Range, section, 1/4 section T.1S., R.1E., 18, NW 1/4

Latitude and Longitude 38°35'13" / 107°55'46"

3. **Briefly describe the nature of the construction activity:**

INSTALLATION OF WATER, SEWER, STORM SEWER, ROADWAYS AND GRADING ASSOCIATED WITH SINGLE FAMILY RESIDENTIAL CONSTRUCTION.

LANDesign
ENGINEERING • SURVEYING • PLANNING

May 23, 1996

City of Grand Junction
Community Development Department
250 North 5th. Street
Grand Junction, Colorado 81501

Attn.: Mr. Michael Drollinger.

Re: **Niagara Village Filing No. Two, Response To Review Comments, File #FPP-96-115.**

Dear Mr. Drollinger;

In response to the review comments for this project we present the following:

City Police Department

The comment indicating approval is acknowledged.

US West

The easements have been added to the Plat.

Public Service Company

The comment indicating approval is acknowledged.

City Fire Department

The comment indicating approval is acknowledged.

TCI Cable

The attachment is acknowledged.

City Property Agent

1. The statement of basis of bearings has been corrected.

259 GRAND AVE. • GRAND JUNCTION, CO 81501 • (970) 245-4099 • FAX (970) 245-3076

2. Bearings are corrected as requested.

3. Ingress-egress easements are labeled on the plat as requested.

4. The reference to sign and landscape easement has been removed.

5. The access easement was previously recorded as part Filing No. One. It's definition and benefactor are a matter of public record.

6. The description is corrected as requested.

7. All easements of record are shown on the plat per the Title Commitment.

8. Monuments shall be per C.R.S. 3851105.

Corp Of Engineers

The comment indicating approval is acknowledged.

City Development Engineer

CONDITION OF APPROVAL — when?

1. The Soil Conservation service shall be contacted in writing with a request to amend the maintenance agreement between the City, Mesa County and SCS.

CONDITION OF APPROVAL TO PAY THE FEE AND PREPARE INFORMATION.

2. Cost for installation of proposed storm sewer to Indian Wash is approximately $28,774.00. The developer's obligation to mitigate downstream drainage impacts due to development is considered fulfilled. The developer requests the cost for construction be applied towards the drainage fee. A copy of the drainage fee calculation is attached.

OK 3. A pavement design is attached.

OK 4. A revised Stormwater Management plan with a permit application is attached.

OK 5. The access easement was previously dedicated with Filing No. One.

OK 6. The ingress-egress easements are shown one the plat.

7. The street marker signs have been added to the plans. Street light design shall be by Public Service company. The design is forth coming. condition - street light design

OK 8. The note regarding pit-run has been added to the plans.

OK 9. A pathway detail has been added to the plans.

check Filing #1 10. required in DIA

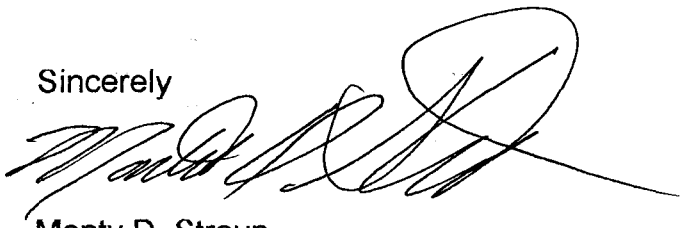
11. OK

City Parks and Recreation

1. The statement is acknowledged.

Please contact our office if you have any questions or concerns regarding this response.

Sincerely



Monty D. Stroup
Project Manager

05/23/9

NIAGARA VILLAGE FILING 2

– OUTFALL TO INDIAN WASH
Q100 = 24 CFS
ALLOWABLE HEADWATER DEPTH
IS 1.0' BELOW RIM OF MH ST-1
RIM = 4606.75
INV. OUT = 4598.06

8.69 FT

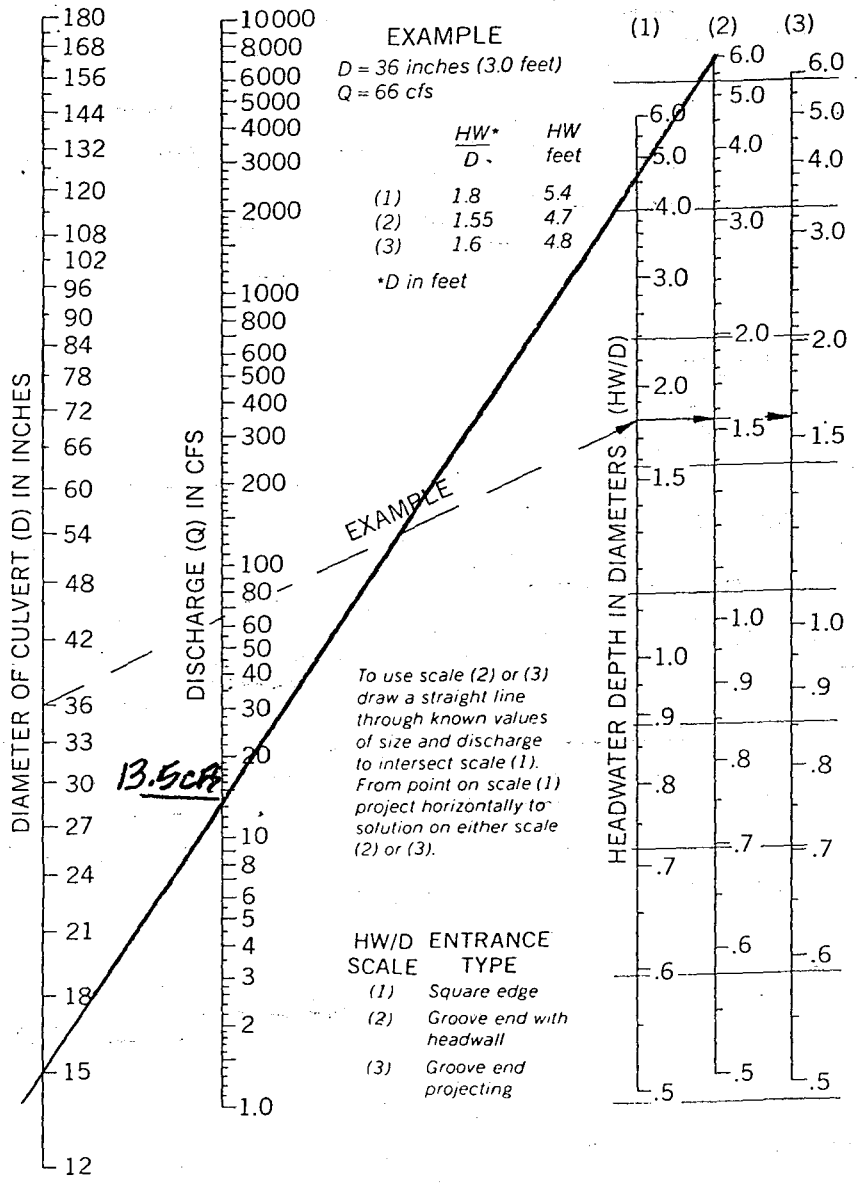
PIPE = 15" Ø
= 1.25'

HW/D = 8.69 / 1.25
= 7.44

1-15" CAPACITY = 13.5 CFS
USE 2 @ 27 CFS

FIGURE 33

HEADWATER DEPTH FOR CIRCULAR CONCRETE PIPE CULVERTS WITH INLET CONTROL



BUREAU OF PUBLIC ROADS JAN. 1963

HEADWATER SCALES 2&3
REVISED MAY 1964

05/23/

NIAGARA VILLAGE FILING 2

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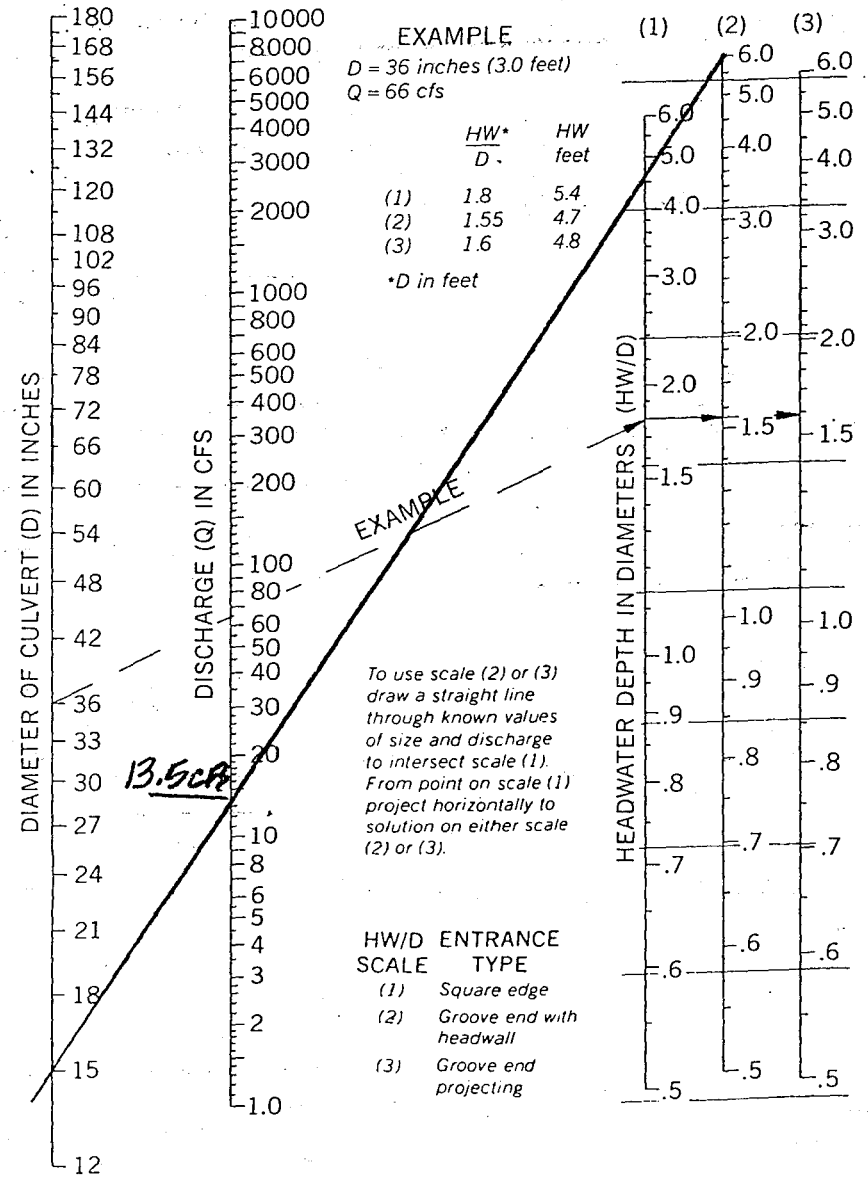


BUREAU OF PUBLIC ROADS JAN. 1963

HEADWATER SCALES 2&3
REVISED MAY 1964

City of Grand Junction

Community Development Department
Planning • Zoning • Code Enforcement
250 North 5th Street
Grand Junction, CO 81501-2668

Phone: (970) 244-1430
FAX: (970) 244-1599

Alan Parkerson
Parkerson Construction Inc.
710 South 15 Street
Grand Junction, CO.

Alan:

We have received mylars for fling one but not for filing two of Niagara Village Subdivision. I have included copies of the drawing standards checklist for as-built drawings. Some of the information included in the checklist may not be applicable to your subdivision (storm sewer as-builts) and will not be required. Along with one complete set of mylar as-built drawings, we will also need two blue line copies of the as-built drawings, one copy of the AutoCAD drawing on disk or C.D., and a test package form the soils firm that performed compaction testing on the interior roadways and trenches. If you have any questions feel free to contact me at (970)244-1451.

Respectfully,

Kent W. Marsh

John, This letter was e-mailed on 7-1-99.
-Tricia

July 1, 1999

John Shaver
Assistant City Attorney
City of Grand Junction
250 North Fifth Street
Grand Junction, CO 81503

Subject: Niagara Village Filing No. 1 and No. 2.

Dear Mr. Shaver:

After being contacted by Alan Parkerson, the developer for Niagara Village Filing No. 2, I proceeded to put together a Release of Improvements Agreement and Guarantee. Reviewing both Filing No. 1 and Filing No. 2, it was noticed there were some deficiencies present:

1. The open space landscaping has never been installed for Filing No. 1. Kent Marsh, E.I.T. estimates the landscaping at a value of $15,000.00. (Approximately 7,500 square feet @ $2/ square foot)
2. The open space area for Filing No. 2 has been landscaped, but is currently the responsibility of the Homeowner's Association and not being maintained.
3. The AutoCAD disks were never handed in for Filing No. 2's as-built drawings, according to Kent Marsh, E.I.T.

Noting these deficiencies present, I will wait for your response before I go any further with the release forms. Please call me if you have any questions at Ext. 4038.

Sincerely,

Patricia Parish
Associate Planner
City of Grand Junction
(970) 256-4038

To: KathyP
From: Patricia Parish
Subject: Fwd: Niagara Village
Date: 7/13/99 Time: 2:11PM

Originated by: JOHNS @ CITYHALL on 7/13/99 2:07PM
Forwarded by: PATP @ CITYHALL on 7/13/99 2:11PM (UNCHANGED)

********** ORIGINAL MESSAGE FOLLOWS **********

Tricia,

The Niagara Village Homeowners Association Inc. recently received payment from Waterloo Nevada Limited in the amount of $1000.00 as full and complete satisfaction and release of claims for failure to complete the common area in filing 1.

The agreement is dated March 31, 1999 and is signed by Jack C. Moore, president of Niagara Village HOA.

Tell me more about other problems with the improvements/if other improvements were not completed and I can help with strategy on what to do next. A letter to Mr. Moore confirming payment has been made may not be a bad idea.

Please write or call at your convenience if I can be of additional assistance.

jps

PATRICIA
PATRISH

SETTLEMENT AGREEMENT AND RELEASE OF CLAIMS

This SETTLEMENT AGREEMENT AND RELEASE OF CLAIMS ("Agreement") is entered into effective March 31, 1999, by and between WATERLOO NEVADA LTD. and NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC.

RECITALS

A. Waterloo Nevada Ltd. was the owner/developer of Niagara Village Subdivision, Filing 1, located in Grand Junction, Mesa County, Colorado.

B. Niagara Village Homeowners Association, Inc. is a Colorado non-profit corporation comprised of the owners of each lot in the subdivision.

C. The parties hereto agree that a legitimate dispute exists regarding completion of the subdivision common area.

D. The parties hereto desire to compromise and settle any and all disputes related in any way to the completion of the subdivision common area and the responsibilities of Waterloo Nevada Ltd. as the developer.

AGREEMENT

WHEREFORE, in consideration of the mutual promises made herein, and intending to be legally bound hereby, the parties agree as follows:

1. Definitions

1.1 The Releasing Party:

1.1.1 Niagara Village Homeowners Association, Inc.

1.1.2 Their heirs, assigns, agents, successors and/or offspring, as well as those taking by or through them.

1.2 The Released Party:

1.2.1 Waterloo Nevada Ltd.

1.2.2 Their insurers, officers, directors, employees, agents, attorneys, heirs, predecessors, successors, shareholders, administrators and assigns, if any.

1.3 The "Project" shall mean the development and construction of Niagara Village Subdivision, Filing 1.

1.4 "Claims" shall mean any and all claims, demands, actions, causes of action, liability, and suits at law or equity, arising out of, related to, in connection with, resulting from the design and construction of the Project. The term "Claims" shall include any Claims which may arise in the future, and which may not currently be anticipated or known.

1.5 "Damages" shall mean any and all damages of any kind whatsoever, including, but not limited to, compensatory damages, punitive and/or exemplary damages; special damages; general damages; past, present and future repair costs, loss of value, interest; litigation expenses; and attorney fees resulting from the design and construction of the Project and the selection or recommendation of components or materials used on the Project. The term "Damages" shall include any damages which may arise in the future, and which may not currently be anticipated or known.

2. Consideration

2.1 In consideration for the agreements and covenants contained in this Agreement, the Released Party agrees to pay a total of One Thousand Dollars ($1,000.00).

2.2 The above-described payment shall be made payable to Niagara Village Homeowners Association, Inc.

3. Releases of all Claims. Releasing Party hereby releases the Released Party and does hereby acquit and forever discharge the Released Party from any and all past, present and future Claims and Damages.

4. Additional Conditions.

4.1 All parties hereby agree that the payment described above is made in good faith and constitutes a reasonable sum for the settlement of any and all Claims and Damages. The condition stated above is contractual and not a mere recital.

4.2 This Agreement constitutes the entire agreement of the parties. All prior or contemporaneous written or oral communications are merged herein.

4.3 All parties agree that this Agreement and any dispute concerning its interpretation, scope or effect shall be determined in accordance with Colorado law.

4.4 This Agreement may be executed in any number of duplicate counterparts.

4.5 The persons executing this Agreement expressly warrant that they are authorized to do so.

4.6 All parties hereby declare and represent that no other person, firm or corporation that is not a party to this settlement has received any assignment, subrogation or other right of substitution to their or its Claims and/or Damages.

4.7 All parties state that they have read this Agreement and that they have had advice of legal counsel concerning the same, and so understand the same. All parties state that they have been advised of their right to consult additional professionals of their choice regarding any and all known and unknown, foreseen and unforeseen Damages, losses, injuries, costs, expenses, liabilities, Claims and the consequences thereof, of whatever kind and nature, they may have or will incur, whether suspected or unsuspected. The parties further expressly understand and agree that the signing of this agreement shall be forever binding, and no recision, modification or release of the undersigned from the terms and acceptance of this Agreement will be made for any mistakes. The Releasing Party expressly agrees to assume the risk of future damage to the Project and that a portion of the consideration paid is expressly for that agreement.

4.8 If any provision of this Agreement or the application hereof is held invalid or unenforceable, its validity or unenforceability shall not affect any other provision or application of this Agreement to the extend that such other provision or application can be given affect without the invalid or unenforceable provision or application and to this end of the provision of this Agreement are declared to be severable.

4.9 The parties agree to use reasonable efforts to keep the terms of this Agreement confidential.

WHEREFORE, the undersigned execute this Agreement as of the effective date.

WATERLOO NEVADA LTD.

By: _____
Printed Name: _____
Title: _____
Address: 202-1808 Wellington Avenue
Box 98, Stn L
Winnipeg, Manitoba
CANADA R3H 0Z4

NIAGARA VILLAGE HOMEOWNERS ASSOCIATION, INC.

By: Jack C. Moore
Printed Name: Jack C. Moore
Title: President
Address: Niagara Village HOA
2820 N. Niagara Circle
Grand Junction, CO 81501

GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP
ATTORNEYS AT LAW
NORWEST BANK BUILDING, SUITE 400
2808 NORTH AVENUE
P.O. BOX 398
GRAND JUNCTION, COLORADO 81502

JAMES GOLDEN
KEITH G. MUMBY
K.K. SUMMERS
J. RICHARD LIVINGSTON
WILLIAM M. KANE

AREA CODE 970
TELEPHONE 242-7322
FAX 242-0698

August 19, 1996

Mr. Michael T. Drollinger
Community Developer
City Hall
Grand Junction, CO 81501

Re: Niagara Village

Dear Michael:

Enclosed please find a copy of the filed Articles of Incorporation for Niagara Village Homeowners's Association, Inc.

Sincerely,

GOLDEN, MUMBY, SUMMERS, LIVINGSTON & KANE, LLP

J. Richard Livingston

JRL:jlc

Enclosure

K:\LIV\NIANEV\DROLLING.3LT

ATTENTION JODY

NIAGARA VILLAGE FILING NO. 1
28 1/4 ROAD FROM NIAGARA CIRCLE SOUTH
STREET IMPROVEMENTS 02-Nov-95

ITEM	DESCRIPTION	UNIT	QUAN	UNIT PRICE	TOTAL
1	Remove Clear & Grub	LS	1	$670.00	$670.00
2	Import Pit Run for Street Section To Sub-grade 0-2 Ft Deep Varies w/ Loc.	TONS	1,353	$3.70	$5,006.10
3	Import Fill Material (dirt)	TONS	282	$2.95	$831.90
4	Sub-Grade Preperation	SY	2,316	$0.72	$1,667.52
5	Class 6 ABC Under Curbs & Walkway	TONS	134	$10.60	$1,420.40
6	5" Grading C HBP	TONS	501	$26.45	$13,251.45
7	24-Inch Curb & Gutter	LF	535	$7.62	$4,076.70
8	5-Foot Detached Sidewalk	SF	2,675	$2.05	$5,483.75
9	Gravel Shoulder	LS	1	$700.00	$700.00
10	8" Fillets	SF	420	$3.78	$1,587.60
11	8" Cross Pans	SF	216	$3.47	$749.52
12	Handicap Ramp	SF	489	$2.90	$1,418.10
13	Post Delineators (9 Each)	LS	1	$133.00	$133.00
14	Realign Waste Ditch	LS	1	$1,075.00	$1,075.00
15	Adjust Water Valves	EA	1	$130.00	$130.00
16	Road Barricade	EA	1	$1,350.00	$1,350.00
17	Compliance Testing	LS	1	$670.00	$670.00

TOTAL STREET IMPROVEMENTS $40,221.04

Jody,
I concur with the above items and the cost involved. Robert M. Matter
United Companies
8-29-96

NIAGARA FILE

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

September 4, 1996

Richard Livingston
Golden, Mumby, Summers, Livingston & Kane, LLP
P.O. Box 398
Grand Junction CO 81502

RE: Niagara Village Filing #2 (Our File #FPP-96-115)

Dear Mr. Livingston:

Enclosed, as requested, please find a Development Improvements Agreement form for your use in preparation of the financial guarantee for the above-referenced project. John Shaver, Assistant City Attorney, and I have discussed your bond guarantee proposal. The City will accept your method of guarantee and we are awaiting your proposed bond form language for review.

I trust you will find the above and the enclosed helpful. Please do not hesitate to contact me should you have any questions or require additional information or materials.

Sincerely yours,

Michael T. Drollinger
Senior Planner

cc: John Shaver, Assistant City Attorney

Encl.

h:\cityfil\1996\96-115.ltl

FILE FPP-1996-115

SAMPLE LOCATION Niagra Subdivision

TEST BY LRS

SOIL TYPE Silty clay with sand

TYPE TEST C 698 A

MAX. DRY DENSITY 116.2 pcf

OPTIMUM MOISTURE 15.0 %

FRACTION USED

MOLD SIZE cu. ft.

SIEVE SIZE	% PASSING		
1 1/2"	100	#200	76
1"	97		
3/4"	97		
5/8"	96		
1/2"	96		
3/8"	95		
#4	94		
#8	93		
#10	93		
#16	92		
#30	91		
#40	91		
#50	89		
#100	84		

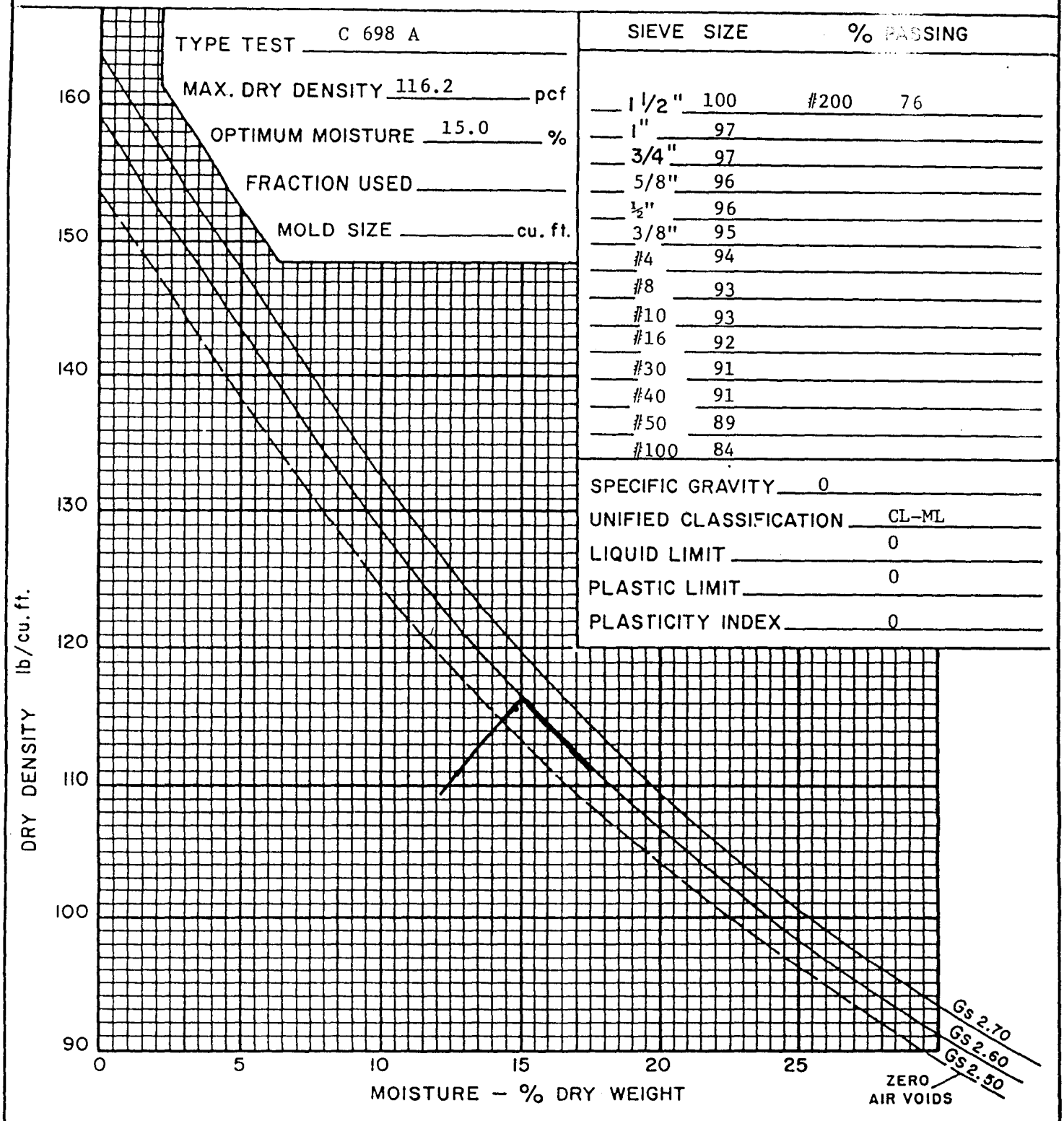
SPECIFIC GRAVITY 0

UNIFIED CLASSIFICATION CL-ML

LIQUID LIMIT 0

PLASTIC LIMIT 0

PLASTICITY INDEX 0



Lincoln DeVore, Inc.
Geotechnical Consultants

Parkerson Construction

Niagra Subdivision

DATE 11-23-96

JOB NO. 85836-1386

DRAWN EMM

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION:

REPORT No. 5

DATE of TEST: 12-12-96

TEST BY: MS

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X ___ County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
127	0+10 Niagra Cir., S, L side @ FG	100	95	7.5	+-2	136.7 @ 6.6	ABC
128	1+10 Niagra Cir., S, R side @ FG	97	95	6.8	+-2	136.7 @ 6.6	ABC
129	2+10 Niagra Cir., S, L side @ FG	100	95	8.6	+-2	136.7 @ 6.6	ABC
130	3+10 Niagra Cir., S, R side @ FG	100	95	8.5	+-2	136.7 @ 6.6	ABC
131	Middle of S cul de sac @ FG	98	95	7.4	+-2	136.7 @ 6.6	ABC
132	15' from S cul de sac, Niagra Cir, W road, R side@FG	100	95	7.0	+-2	136.7 @ 6.6	ABC
133	115' from S cul de sac, Niagra Cir, L side @ FG	100	95	7.2	+-2	136.7 @ 6.6	ABC
134	215' from S cul de sac, Niagra Cir, R side @ FG	98	95	6.1	+-2	136.7 @ 6.6	ABC
135	315' from S cul de sac, Niagra Cir, L side @ FG	100	95	7.2	+-2	136.7 @ 6.6	ABC
136	5' from N cul de sac on Niagra Cir., N, R side @ FG	95	95	6.4	+-2	136.7 @ 6.6	ABC
137	105' from N cul de sac on Niagra Cir., N, L side @FSG	96	95	6.0	+-2	136.7 @ 6.6	ABC
138	205' from N cul de sac on Niagra Cir., N, R side @FSG	95	95	6.1	+-2	136.7 @ 6.6	ABC
139	305' from N cul de sac on Niagra Cir., N, L side @FSG	99	95	5.7	+-2	136.7 @ 6.6	ABC
140	405' from N cul de sac on Niagra Cir., N, R side @FSG	100	95	6.8	+-2	136.7 @ 6.6	ABC
3A	RETEST, WS, Lot 9 & 10, S side @ mid trench	95	95	14.1	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY:

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION
LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION:

REPORT No. 5
DATE of TEST: 12-12-96
TEST BY: MS
LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
141	SS, Lot 8 & 9, S side @ FSG	100	95	13.0	+-2	116.2 @ 15.0	C
142	WS, Lot 8, Blk 2 @ FSG	100	95	13.4	+-2	116.2 @ 15.0	C
4A	SS, Lot 7, Blk 2 RETEST @ FSG	100	95	13.5	+-2	116.2 @ 15.0	C
143	WS, Lot 7, Blk 2 @ FSG	100	95	14.2	+-2	116.2 @ 15.0	C
5A	RETEST, WS, Lot 6, Blk 2 @ FSG	100	95	13.6	+-2	116.2 @ 15.0	C
12A	RETEST, WS, Lot 4, Blk 2 @ FSG	100	95	13.0	+-2	116.2 @ 15.0	C
14A	RETEST, WS, Lot 3, Blk 2 @ FSG	100	95	14.5	+-2	116.2 @ 15.0	C
144	SS, Lot 5 & 6, Blk 2 @ FSG	100	95	13.8	+-2	116.2 @ 15.0	C
145	SS, Lot 10, Blk 2 @ FSG	100	95	13.4	+-2	116.2 @ 15.0	C
1A	RETEST, FH @ corner of Lot 11, Blk 1 @ midtrench	95	95	14.6	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: [signature]

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION
LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ ABC

REPORT No. 4

DATE of TEST: 12-3-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
110A	Sidewalk N side of N Niagra 10' W of existing pavement	97	95	6.8	+-2	136.7 @ 6.6	BC
111A	Sidewalk S side of N Niagra 60' W of existing pavement	97	95	8.2	+-2	136.7 @ 6.6	BC
118	Sidewalk N side of N Niagra 160'W of existing pavement	98	95	8.4	+-2	136.7 @ 6.6	BC
119	Sidewalk S side of N Niagra 160'S of existing pavement	98	95	8.6	+-2	136.7 @ 6.6	BC
113A	Sidewalk N side of N Niagra 260'W of existing pavement	100	95	8.3	+-2	136.7 @ 6.6	BC
112A	Sidewalk S side of N Niagra 260'W of existing pavement	100	95	8.6	+-2	136.7 @ 6.6	BC
120	Sidewalk W side of W Niagra @ corner of N Niagra	95	95	6.2	+-2	136.7 @ 6.6	BC
121	Sidewalk E side of W Niagra 150'S of N Niagra	97	95	8.5	+-2	136.7 @ 6.6	BC
122	Sidewalk W side of W Niagra 150'S of N Niagra	96	95	8.3	+-2	136.7 @ 6.6	BC
123	Sidewalk W side of W Niagra @ corner of S Niagra	100	95	8.0	+-2	136.7 @ 6.6	BC
124	Sidewalk W Niagra @ corner of S Niagra	100	95	8.2	+-2	136.7 @ 6.6	BC
114A	Sidewalk N side of S Niagra 260'W of existing pavement	100	95	8.3	+-2	136.7 @ 6.6	BC
115A	Sidewalk S side of S Niagra 260'W of existing pavement	99	95	7.5	+-2	136.7 @ 6.6	BC
125	Sidewalk N side of S Niagra 160'W of existing pavement	100	95	8.0	+-2	136.7 @ 6.6	BC
126	Sidewalk S side of S Niagra 160'W of existing pavement	100	95	7.9	+-2	136.7 @ 6.6	BC

Page 1 of 2

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.
1-Westwater Eng.

KEY: • Foils Compaction SPEC. C = Cohesive
•• Foils Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY:

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION:

REPORT No. 4
DATE of TEST: 12-3-96
TEST BY: RSW
LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
116A	Sidewalk S Niagra N side 60' W of existing pavement	100	95	7.5	+-2	136.7 @ 6.6	BC
117A	Sidewalk S Niagra S side 60' W of existing pavement	100	95	6.8	+-2	136.7 @ 6.6	BC

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.
1-Westwater Eng.

KEY: * Fails Compaction SPEC. ** Fails Moisture SPEC. S = Standard Proctor M = Modified Proctor C = Cohesive NC = NonCohesive ABC = Aggregate Base PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY:

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ BCG

REPORT No. 3

DATE of TEST: 12-2-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
110	Sidewalk N Lane of N Niagra 60'W of existing pavement	95	95	4.8**	+-2	131.2 @ 9.3	BC
111	Sidewalk S Lane of N Niagra 60'W of existing pavement	96	95	5.5**	+-2	131.2 @ 9.3	BC
112	Sidewalk S Lane of N Niagra 250'W of existing pavement	96	95	5.1**	+-2	131.2 @ 9.3	BC
113	Sidewalk N Lane of N Niagra 250'W of existing pavement	94*	95	4.8**	+-2	131.2 @ 9.3	BC
114	Sidewalk S Lane of S Niagra 250'W of existing pavement	95	95	5.1**	+-2	131.2 @ 9.3	BC
115	Sidewalk S Lane of S Niagra 250'W of existing pavement	95	95	6.2**	+-2	131.2 @ 9.3	BC
116	Sidewalk N Lane of S Niagra 60'W of existing pavement	97	95	5.3**	+-2	131.2 @ 9.3	BC
117	Sidewalk S Lane of S Niagra 60'W of existing pavement	94*	95	5.4**	+-2	131.2 @ 9.3	BC

RECEIVED DEC 6 , 1996

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: [signature]

Distribution
2-Client
1-LD/CS
1-Subdiv. Env.

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 1

DATE of TEST: 11-22-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
1	FH corner of Lot 11 @ mid trench	99	95	+-2	11.5**	116.2 @ 15.0	C
2	WS, Lots 10 & 11 @ N side @ mid trench	100	95	+-2	14.0	116.2 @ 15.0	C
3	WS, Lots 7 & 10 @ S side @ mid trench	97	95	+-2	12.5**	116.2 @ 15.0	C
4	SS, Lot 7 @ S side @ mid trench	100	95	+-2	12.6**	116.2 @ 15.0	C
5	WS, Lot 6 @ S side @ mid trench	90*	95	+-2	12.0**	116.2 @ 15.0	C
6	SS, Lot 5 & 6 @ S side @ mid trench	100	95	+-2	14.3	116.2 @ 15.0	C
7	WS, Lot 5 @ S side @ mid trench	99	95	+-2	13.4	116.2 @ 15.0	C
8	WS, Lot 6 @ N side @ mid trench	100	95	+-2	15.4	116.2 @ 15.0	C
9	SS, Lot 5 & 6 @ N side @ mid trench	93*	95	+-2	13.3	116.2 @ 15.0	C
10	WS, Lot 5 @ N side @ mid trench	98	95	+-2	15.5	116.2 @ 15.0	C
11	Water main, corner of Lot 5 N side @ mid trench	99	95	+-2	15.1	116.2 @ 15.0	C
12	WS, Lot 4 @ S side @ mid trench	92*	95	+-2	13.2	116.2 @ 15.0	C
13	SS, Lots 3 & 4 @ S side @ mid trench	100	95	+-2	13.8	116.2 @ 15.0	C
14	WS, Lot 3 @ S side @ mid trench	94*	95	+-2	14.9	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: 

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

Client Parkerson Construction

Job No. 85836-1386

Test By RSW

Project Niagra Subdivision

Location of Test Lot 30 & 31, sidewalk

Concrete Supplier United

Truck No. 57

Ticket No. 3932

Date of Test 12-5-96

Mix, Proportions

28-day Required Strength psi

Cement Type

Slump (ASTM C 143) ½ inches

Air Content (ASTM C 231) 5.6 %

Temperature (ASTM C 1064) 62 ° F.

Test @ yds.

Water Added 0 gallons

6" x 12" Cylinder No.	Avg. Cyl. Diameter (in.)	Cross-Sectional Area (in.²)	Unit Weight (pcf)	Total Load (lbs.)	Unit Stress (psi)	Break Type	Break Date	Age (days)
1	6.10	28.37	147	143,000	5040	CM	12-12	7
2	6.09	29.13	147			CM	1-2	28
3	6.09	29.13	147			CM	1-2	28
4	6.09	29.13	147					Reserved

Remarks:

Specimen or cap defects:

Distribution:
2-Client
1-LD/CS
1-Subdiv Env
1-United
1-Westwater Eng.

* Does not meet required strength (if applicable)

Break Types:
CM - Conical Mortar Break
CA - Conical Aggregate Break
V - Shear Break

Date Issued: _____

Lincoln DeVore requires a minimum of 1 working day's notice to schedule personnel for any field tests and observations. Compressive strength test performed according to ASTM C-39. Final report will include data for all cylinders, and will be sent after the 28-day break. This laboratory cannot be responsible for any interpretation of the test results by other than laboratory personnel.

LINCOLN DeVORE, INC.

By: _____

CONCRETE TEST REPORT

Client Parkerson Construction

Job No. 85836-1386

Test By RSW

Project Niagra Subdivision

Location of Test Lot 30 & 31, sidewalk

Concrete Supplier United

Truck No. 57

Ticket No. 3932

Date of Test 12-5-96

Mix, Proportions

28-day Required Strength psi

Cement Type

Slump (ASTM C 143) ½ inches

Air Content (ASTM C 231) 5.6 %

Temperature (ASTM C 1064) 62 ° F.

Test @ yds.

Water Added 0 gallons

6" x 12" Cylinder No.	Avg. Cyl. Diameter (in.)	Cross-Sectional Area (in.²)	Unit Weight (pcf)	Total Load (lbs.)	Unit Stress (psi)	Break Type	Break Date	Age (days)
1	6.10	28.37	147	143,000	5040	CM	12-12	7
2	6.09	29.13	147	162,000	5560	CM	1-2	28
3	6.09	29.13	147	159,000	5460	CM	1-2	28
4	6.09	29.13	147					Reserved

Remarks:

Specimen or cap defects:

Distribution:
2-Client
1-LD/CS
1-Subdiv Env
1-United
1-Westwater Eng.

* Does not meet required strength (if applicable)

Break Types:
CM - Conical Mortar Break
CA - Conical Aggregate Break
V - Shear Break

Date Issued: 1-2-96

Lincoln DeVore requires a minimum of 1 working day's notice to schedule personnel for any field tests and observations. Compressive strength test performed according to ASTM C-39. Final report will include data for all cylinders, and will be sent after the 28-day break. This laboratory cannot be responsible for any interpretation of the test results by other than laboratory personnel.

LINCOLN DeVORE, INC.

By:

CONCRETE TEST REPORT

LINCOLN DeVORE ENGINEERS GEOLOGISTS

COLORADO: COLORADO SPRINGS
GRAND JUNCTION, PUEBLO

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 2

DATE of TEST: 11-25-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X ___ County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
15	WS, Lot 1, Blk 1	100	95	14.4	+-2	116.2 @ 15.0	C
16	MH, B3	98	95	16.6	+-2	116.2 @ 15.0	C
17	WS, Lot 2, Blk 1	100	95	16.4	+-2	116.2 @ 15.0	C
18	WS, Lot 3, Blk 1	100	95	15.2	+-2	116.2 @ 15.0	C
19	WS, Lot 1, Blk 2	100	95	13.9	+-2	116.2 @ 15.0	C
20	WS, Lot 4, Blk 1	98	95	14.4	+-2	116.2 @ 15.0	C
21	WS, Lot 2, Blk 2	100	95	13.8	+-2	116.2 @ 15.0	C
22	WS, Lot 3, Blk 2	100	95	15.7 **	+-2	104.9 @ 17.5	C
23	WS, Lot 4, Blk 2	98	95	13.2	+-2	116.2 @ 15.0	C
24	Water main, corner of Lots 4 & 5, Blk 2	100	95	13.2	+-2	116.2 @ 15.0	C
25	WS, Lot 5, Blk 1	100	95	13.7	+-2	116.2 @ 15.0	C
26	WS, Lot 6, Blk 1	100	95	13.0	+-2	116.2 @ 15.0	C
27	SS, Lots 5 & 6, Blk 1	99	95	13.0	+-2	116.2 @ 15.0	C
28	SS, Lot 4, Blk 2	100	95	13.7	+-2	116.2 @ 15.0	C
29	SS, Lots 2 & 3, Blk 2	100	95	14.1	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: 

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 2
DATE of TEST: 11-25-96
TEST BY: RSW
LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
30	SS, Lot 1, Blk 2	100	95	13.3	+-2	116.2 @ 15.0	C
31	SS, Lot 4, Blk 1	100	95	13.7	+-2	116.2 @ 15.0	C
32	SS, Lots 2 & 3, Blk 1	100	95	15.2	+-2	116.2 @ 15.0	C
33	SS, Lot 1, Blk 1	100	95	14.6	+-2	116.2 @ 15.0	C
34	Sewer main 150' W of MH B3	98	95	15.2	+-2	116.2 @ 15.0	C
35	WS, Lot 12, Blk 1	100	95	14.6	+-2	116.2 @ 15.0	C
36	SS, Lots 12 & 13, Blk 1	100	95	14.4	+-2	116.2 @ 15.0	C
37	WS, Lot 13, Blk 1	100	95	14.5	+-2	116.2 @ 15.0	C
38	SS, Lot 14, Blk 1	100	95	15.2	+-2	116.2 @ 15.0	C
39	WS, Lot 14, Blk 1	99	95	14.9	+-2	116.2 @ 15.0	C
40	WS, Lot 15, Blk 1	100	95	13.3	+-2	116.2 @ 15.0	C
41	SS, Lot 15, Blk 1	98	95	15.0	+-2	116.2 @ 15.0	C
42	WS, Lot 16, Blk 1	99	95	14.5	+-2	116.2 @ 15.0	C
43	SS, Lot 16, Blk 1	99	95	14.4	+-2	116.2 @ 15.0	C
44	MH B1	98	95	15.7	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
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GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: [signature]

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 2

DATE of TEST: 11-25-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X ___ County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
45	Utility crossing @ corner of Lot 16 & 17, Blk 1	99	95	14.3	+-2	116.2 @ 15.0	C
46	WS, Lot 17, Blk 1	96	95	14.7	+-2	116.2 @ 15.0	C
47	SS, Lot 17, Blk	97	95	18.1	+-2	104.9 @ 17.5	C
48	WS, Lot 18, Blk 1	100	95	14.4**	+-2	104.9 @ 17.5	C
49	SS, Lot 18, Blk 1	97	95	16.6	+-2	116.2 @ 15.0	C
50	WS, Lot 19, Blk 1	100	95	13.8	+-2	116.2 @ 15.0	C
51	SS, Lots 19 & 20, Blk 1	100	95	15.0	+-2	116.2 @ 15.0	C
52	WS, Lot 20, Blk 1	97	95	13.5	+-2	116.2 @ 15.0	C
53	SS, Lot 21, Blk 1	97	95	13.6	+-2	116.2 @ 15.0	C
54	WS, Lot 21, Blk 1	100	95	14.1	+-2	116.2 @ 15.0	C
55	WS, Lot 11, Blk 2	100	95	13.4	+-2	116.2 @ 15.0	C
56	SS, Lot 11, Blk 2	100	95	14.9	+-2	116.2 @ 15.0	C
57	WS, Lot 12, Blk 2	95	95	13.3	+-2	116.2 @ 15.0	C
58	SS, Lots 12 & 13, Blk 2	95	95	14.0	+-2	116.2 @ 15.0	C
59	WS, Lot 13, Blk 2	100	95	13.0	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: 

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 2

DATE of TEST: 11-25-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X ___ County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
60	WS, Lot 14, Blk 2	100	95	13.5	+-2	116.2 @ 15.0	C
61	SS, Lot 14, Blk 2	97	95	15.5	+-2	116.2 @ 15.0	C
62	WS, Lot 22, Blk 1	100	95	14.1	+-2	116.2 @ 15.0	C
63	SS, Lot 22, Blk 1	100	95	13.9	+-2	116.2 @ 15.0	C
64	Sewer main 100' N of MH A3	100	95	13.8	+-2	116.2 @ 15.0	C
65	Water main, sta 0+40	97	95	13.7	+-2	116.2 @ 15.0	C
66	FH corner of Lot 14, Blk 2	98	95	14.8	+-2	116.2 @ 15.0	C
67	SS, Lot 23, Blk 1	95	95	14.7	+-2	116.2 @ 15.0	C
68	WS, Lot 23, Blk 1	100	95	16.4	+-2	104.9 @ 17.5	C
69	WS, Lot 24, Blk 1	100	95	15.3	+-2	104.9 @ 17.5	C
70	WS, Lot 25, Blk 1	95	95	17.5	+-2	104.9 @ 17.5	C
71	SS, Lot 26, Blk 1	95	95	16.2	+-2	104.9 @ 17.5	C
72	WS, Lot 26, Blk 1	100	95	13.1	+-2	116.2 @ 15.0	C
73	WS, Lot 27, Blk 1	100	95	13.3	+-2	116.2 @ 15.0	C
74	SS, Lots 27 & 28, Blk 1	100	95	13.6	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: 

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION
LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 2

DATE of TEST: 11-25-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
75	WS, Lot 28, Blk 1	100	95	13.6	+-2	116.2 @ 15.0	C
76	SS, Lot 29, Blk 1	100	95	13.0	+-2	116.2 @ 15.0	C
77	WS, Lot 29, Blk 1	100	95	13.7	+-2	116.2 @ 15.0	C
78	SS, Lot 15, Blk 2	100	95	13.3	+-2	116.2 @ 15.0	C
79	WS, Lot 15 & 16, Blk 2	100	95	15.5	+-2	104.9 @ 17.5	C
80	SS, Lot 16, Blk 2	95	95	14.8	+-2	116.2 @ 15.0	C
81	SS, Lot 30, Blk 1	100	95	13.2	+-2	116.2 @ 15.0	C
82	WS, Lot 30, Blk 1	100	95	13.5	+-2	116.2 @ 15.0	C
83	WS, Lot 31, Blk 1	98	95	14.6	+-2	116.2 @ 15.0	C
84	SS, Lots 30 & 31, Blk 1	100	95	13.8	+-2	116.2 @ 15.0	C
85	SS, Lot 17, Blk 2	100	95	14.0	+-2	116.2 @ 15.0	C
86	WS, Lot 17, Blk 2	100	95	13.0	+-2	116.2 @ 15.0	C
87	WS, Lot 32, Blk 1	100	95	13.0	+-2	116.2 @ 15.0	C
88	SS, Lot 32, Blk 1	100	95	13.7	+-2	116.2 @ 15.0	C
89	WS, Lot 33, Blk 1	100	95	13.0	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: 

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION
LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 2

DATE of TEST: 11-25-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X ___ County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
90	SS, Lot 33, Blk 1	100	95	13.6	+-2	116.2 @ 15.0	C
91	Utility crossing, Lot 33, Blk 1	100	95	13.6	+-2	116.2 @ 15.0	C
92	SS, Lot 18, Blk 2	100	95	14.2	+-2	116.2 @ 15.0	C
93	WS, Lot 18, Blk 2	100	95	14.0	+-2	116.2 @ 15.0	C
94	WS, Lot 19, Blk 2	100	95	13.4	+-2	116.2 @ 15.0	C
95	SS, Lot 19, Blk 2	100	95	14.5	+-2	116.2 @ 15.0	C
96	WS, Lot 34, Blk 1	100	95	13.0	+-2	116.2 @ 15.0	C
97	SS, Lot 34, Blk 1	100	95	13.2	+-2	116.2 @ 15.0	C
98	South Street 100' W of existing pavement S Lane	100	95	14.6	+-2	116.2 @ 15.0	C
99	South Street 200' W of existing pavement N Lane	100	95	13.2	+-2	116.2 @ 15.0	C
100	South Street 300' W of existing pavement S Lane	100	95	13.4	+-2	116.2 @ 15.0	C
101	South Street 400' W of existing pavement N Lane	100	95	13.2	+-2	116.2 @ 15.0	C
102	West Street 100' N of S Street W Lane	95	95	16.0	+-2	104.9 @ 17.5	C
103	West Street 200' N of S Street E Lane	95	95	19.2	+-2	104.9 @ 17.5	C
104	Water main sta 2+00	95	95	14.6	+-2	116.2 @ 15.0	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. ** Fails Moisture SPEC. S = Standard Proctor M = Modified Proctor C = Cohesive NC = NonCohesive ABC = Aggregate Base PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: [signature]

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS & UTILITIES
250 NORTH 5TH STREET
GRAND JUNCTION, CO 81501
(970) 244-4003

TO THE MESA COUNTY CLERK & RECORDER:

THIS IS TO CERTIFY that the herein named Subdivision Plat,

NIAGARA VILLAGE FILING No. 2,

Situated in the NW 1/4 of Section 8,

Township 1 SOUTH, Range 1 EAST,

of the UTE Meridian in the City of Grand Junction, County of Mesa, State of Colorado, has been reviewed under my direction and, to the best of my knowledge, satisfies the requirements pursuant to C.R.S. 38-51-106 and the Zoning and Development Code of the City of Grand Junction for the recording of subdivision plats in the office of the Mesa County Clerk and Recorder.

This certification makes no warranties to any person for any purpose. It is prepared to establish for the County Clerk and Recorder that City review has been obtained. This certification does not warrant: 1) title or legal ownership to the land hereby platted nor the title or legal ownership of adjoiners; 2) errors and/or omissions, including, but not limited to, the omission(s) of rights-of-ways and/or easements, whether or not of record; 3) liens and encumbrances, whether or not of record; 4) the qualifications, licensing status and/or any statement(s) or representation(s) made by the surveyor who prepared the above-named subdivision plat.

Dated this 9 day of September, 1996.

City of Grand Junction,
Department of Public Works & Utilities

By: James L. Shanks
James L. Shanks, P.E., P.L.S.
Director of Public Works & Utilities

Recorded in Mesa County

Date: _____

Plat Book: 15 Page: 170 & 171

Drawer: CC79

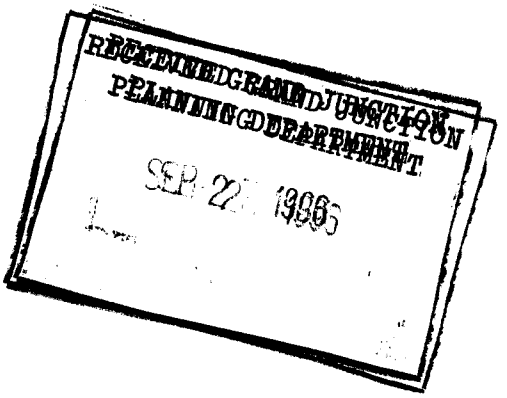
1772574 0352PM 09/27/96
MONIKA TODD CLK&REC MESA COUNTY CO

g:\special\platcert.doc Fee $20.00 1.00 SC

ATKINS AND ASSOCIATES, INC.
397 Ridges Blvd.
Grand Junction, CO 81503
(970) 243-4249

Letter Of Transmittal

Date: 09/26/96



To: City of Grand Junction
Community Development
250 N 5th.
Grand Junction, Co 81501

Attn: Mr. Drollinger

Re: Grand View Subdivision, Filing No. 2

Transmitted: By Delivery

Final Plat Originals, sheets 1 & 2 of 2. For signature and recordation. A disk and mylars will be submitted on prior to recording.

By: _____
Monty D. Stroup - Project Manager

file: lot3

WestWater Engineering
Consulting Engineers

2516 FORESIGHT CIRCLE, #1 GRAND JUNCTION, COLORADO 81505 (970) 241-7076 FAX (970) 241-7097

August 21, 1997

Art Crawford, Manager
Fruitvale Water & Sanitation District
2887 North Avenue
Grand Junction, Colorado 81501

RE: Niagara Village Filing #2, Sewer Extension #96-007
Notice of Initial Acceptance

Dear Art,

This is to inform you that the sewerline extension for Niagara Village Filing #2 has been completed by Parkerson Construction for the owner Alan Parkerson in accordance with the Fruitvale Sanitation District's standards and specifications as of August 20, 1997. All sewerlines constructed as a part of the extension have been tested and accepted as required by the Extension Agreement. Mr. Parkerson will warrant and guarantee for a period of one year from the above date that the sewerline remains free from all defects and shall make any repairs that may be necessary of such defects.

We are enclosing a copy of the Extension Agreement documenting the dates for final completion of construction as well as the date of initial acceptance. The extended time period between the end of construction and initial acceptance is a result of having completed the sewerline construction during December 1996, a delay in final street construction due to winter weather conditions, and in receiving a reproducible as-built drawing. The delay is also related to completing over-lot grading, that included raising manholes on the District's original collection system along the north property line and in negotiating reasonable access to the District's permanent easement along the north property line.

Existing manholes of the original collection system are now slightly above grade where the lots have been filled to prevent inflow into the manholes and for the District to access the sewerline. Because the City Planning Department required developers of Filing #1 and Filing #2 to install a privacy fence around the perimeter of the subdivision, access to the District's original system, including three existing manholes, located in a 10-foot permanent easement (recorded in Book 986, Page 733) is limited to a removable fence panel at the northwest fence corner for manhole #383 and a removable panel at the existing manhole near the east boundary between Niagara Village Filing #2 and the west boundary of Filing #1. An existing manhole centered between these two locations is accessible through either of the aforementioned fence panels, and along the north property line of lots in between.

NV2ACCPT.WPD

According to Mike Drollinger of the City of Grand Junction, it is his understanding that the City allows individual property owners to install fences across the permanent easement, provided the appropriate fence permit is obtained through the City. However, he was unclear how the permanent easement is addressed in the permit, or whether property owners are notified of the easement, including the District's right to remove any obstacle along the easement for maintenance purposes. Regardless, the District has access to the original system although it is somewhat limited and inconvenient in the event an emergency situation develops.

Respectfully,

C. Kellie Knowles

C. Kellie Knowles, P.E.

cc: Alan Parkerson, Parkerson Construction
David Chase, Banner Associates
Trent Prall, City of Grand Junction Utility Engineer
Mike Drollinger, City of Grand Junction Planner

FP-1996-115

Niagara Village Homeowners Association
2820 N. Niagara Circle
Grand Junction, CO 81501

Mr. Michael Drollinger
Development Services Supervisor
City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

May 5, 1999

Dear Mr. Drollinger

This letter is to report to you on the status of construction of the Commons Area in Filing II of Niagara Village. Parkerson Construction, Inc. has completed installation of an automatic sprinkler system, grass sod and trees in the Commons Area.
The area has been inspected by members of the HOA Board of Directors and the construction found to be complete. Three trees were found to be dead and are being replaced by Parkerson Construction, Inc..
The Commons area construction for Filing II is accepted by the Homeowners Association as completed and we ask that you accept it also.
If you have any questions or comments about this report, please contact me at (970) 256-8827.

Sincerely,

Jack C. Moore

Jack C. Moore, President
Niagara Village HOA Board of Directors

Bill Paull

Bill Paull, Vice President
Niagara Village HOA Board of Directors

Leslie Nagy

Leslie Nagy, Secretary-Treasurer
Niagara Village HOA Board of Directors

2943-18
T.1S. R.1E.

Adjoining
T.1S. R.1E.
2943073

Adjoining
T.1S. R.1E.
2943074

WOODLAND SUB.

NORTH AVE. (U.S. 6 & 24 BY-PASS)

NIAGARA VILLAGE
FIL. NO. ONE

DARWIN SUBDIVISION

DORRIS SUBDIVISION

SEE SPECIAL PLAT
2943181

PROJECT LOCATION

REPLAT OF
D & W.
SUBDIVISION

GOODWILL INDUST

MESA COUNTY DITCH

U.S. HIGHWAY 6 & 24

GRAND JUNCTION CITY LIMITS

28 1/4 ROAD

29 ROAD

D 1/2 ROAD

TELLER AVE.

BELFORD AVE.

HILL AVE.

GUNNISON AVE.

CHIPETA AVENUE

GLEN ROAD

WILLOW ROAD

KELLOGG LANE

PARSON STREET

A.D. PER BOOK 873, PAGE 470

A.D. PER BOOK 864, PAGE 338

Adjoining
T.1S. R.1W.
2945131

Adjoining
T.1S. R.1E.
294317

SOUTHERN PACIFIC TRANSPORTATION COMPANY
HUMP YARD

CENTER LINE OF MAIN TRACK

STATE OF COLORADO
DEPARTMENT OF INSTITUTIONS
GRAND JUNCTION REGIONAL CENTER

STATE OF COLORADO
MESA COLLEGE

W2NW4SE4 | W2E2NW4SE4 | E2E2NW4SE4 | W2NE4SE4 | E2NE4SE4

70 Rods

80 Rods

Adjoining
T.1S. R.1W.
2945134

Adjoining
T.1S. R.1E.
294319

T.1S. R.1E.
294318

CLIENT: Parkerson Construction

PROJECT: Niagra Subdivision

LOCATION: All tests @ FSG

REPORT No. 2

DATE of TEST: 11-25-96

TEST BY: RSW

LD JOB No.: 85836-1386

TEST TYPE: Nuclear Backscatter ___ Nuclear Direct Trans. X

SPECIFICATIONS: Project: ___ City: X County: ___ State: ___

Test No.	Location of Test	COMPACTION %	COMPAC. SPEC. %	MOISTURE CONT %	MOISTURE SPEC. %	PROCTOR VALUE	SOIL TYPE
105	W Street 300' N of S Street W Lane	100	95	13.8	+-2	116.2 @ 15.0	C
106	N Street 400' W of existing pavement S Lane	100	95	15.0	+-2	116.2 @ 15.0	C
107	N Street 300' W of existing pavement N Lane	99	95	14.3	+-2	116.2 @ 15.0	C
108	N Street 200' W of existing pavement S Lane	100	95	13.1	+-2	116.2 @ 15.0	C
109	N Street 100' W of existing pavement N Lane	100	95	16.1	+-2	104.9 @ 17.5	C

Distribution:
2-Client
1-LD/CS
1-Subdiv. Env.

KEY: * Fails Compaction SPEC. C = Cohesive
** Fails Moisture SPEC. NC = NonCohesive
S = Standard Proctor ABC = Aggregate Base
M = Modified Proctor PR = Pit Run

GRAND JUNCTION LINCOLN-DeVORE, Inc.

BY: 

FILL DENSITY TEST DAILY REPORT

NOTE: Results indicate in-place Soil densities at the locations and depths identified above. Grand Junction Lincoln-DeVore has relied on the contractor to provide uniform mix placement and compactive effort throughout the fill area.

GRAND JUNCTION LINCOLN-DeVORE, Inc.
GEOTECHNICAL ENGINEERS-GEOLOGISTS