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X Х

X

Х

X X

X

х

Project Name: The Falls North - Filing #4 - Final Plan

Date 7/15/02 P A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the in some с r instances, not all entries designated to be scanned by the department are present in the file. There are also documents e a specific to certain files, not found on the standard list. For this reason, a checklist has been provided. s n Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick e n n guide for the contents of each file. e d t Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc. *Summary Sheet – Table of Contents X X X X **Review Sheet Summary** Application form **Review Sheets** Receipts for fees paid for anything *Submittal checklist *General project report Reduced copy of final plans or drawings Reduction of assessor's map Evidence of title, deeds X X *Mailing list to adjacent property owners Public notice cards Record of certified mail Х Legal description Appraisal of raw land Reduction of any maps - final copy *Final reports for drainage and soils (geotechnical reports) Other bound or nonbound reports Traffic studies Individual review comments from agencies *Consolidated review comments list Х X *Petitioner's response to comments *Staff Reports *Planning Commission staff report and exhibits *City Council staff report and exhibits *Summary sheet of final conditions *Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date) **DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:** Preliminary Grading, Drainage & Utility Plan X X Action Sheet Х X **Review Sheet Summary** Х Final P.D. Development Plan X X Preliminary Development Plan X Review Sheets Letter from Broetzman, CO Dept. of Health to Robert Rewinkle re: application The Falls - Phase 1 is in conformance with Water Quality Control Commission with conditions-11/15/82 X X Planning Commission Minutes - ** -7/27/82, 8/31/82 X Utility Composite

Site Plan

X Х This site is located on the east side of 28 1/4 Road at Grand Falls Drive, approximately 200 feet north of the Grand Valley Canal, and 1/4 mile south of Patterson Road. The property currently lies within the City of Grand Junction, and is zoned PR 8.

The existing site contains hills on the east and west boundaries with a definite distinct boggy area between them. There is currently approximately 20 feet of fall from the north to the south boundary, and from the hills to the drainage. The intent of this plan is to utilize that relief and maximize the views by stacking the units into the hills. This relief also isolates this portion of The Falls site, making it possible for the high densities proposed for this filing to be achieved without affecting the single family character of the rest of the subdivision.

The Preliminary Development Plan calls for 87 units to be located in two types of buildings. The first type is designated on the plan as stacked townhomes which shall be built into the ridgeline which parallels 28 1/4 Road. Three units shall be stacked above the garage with a single story unit below and two story above. The face presented to 28 1/4 Road will be that of a two story garden-level building. There are 27 of these types of units. There are 60 units in two buildings which are indicated on the plan as condos. These again shall use the natural relief of the site with two story garden-level units in front and a full three stories on the south, the direction with the maximum views. These units shall be single story, containing 900 square feet -. Entries shall be from an interior atrium corridor. An office and laundry area is located between the two condo buildings. There is covered parking for each unit located convenient to the unit; along with open stalls, there is a ratio of 2.16 parking spaces per unit.

All of these units shall be purchased with a condominium type ownership. The Homeowners Association shall be established for the maintenance of all commonly held areas, including buildings, parking areas and landscaped areas.

It is anticipated that this project will be developed in approximately two years. This is, of course, subject to market demand and could be accelerated were existing conditions to change.

This property lies within the Ute Water Conservancy District. Sanitary sewer treatment shall be by the City of Grand Junction via the Central Grand Valley Sanitation District. Irrigation water shall be provided in order to maintain the extensive landscaping as shown on the Preliminary Development Plan.

DEVELOPMENT SCHEDULE

TOTAL AREA	62.0 AC	
DEDICATED R.O.W.	1.2 AC	19.4%
PRIVATE DRIVES/PARKING AREA	1.3 AC	21.0%
AREA IN BUILDING FOOTPRINTS	1.0 AC	16.1%
AREA IN LANDSCAPED COMMON OPEN SPACE	2.7 AC	43.5%
TOTAL UNITS	87 = 14 DU/AC	!
TOTAL PARKING SPACES	188 = 2.16 Spa	ces/Unit

1 Covered Space/Unit

THE FALLS, FILING 4

The developer shall submit a Final Plan within one year of approval of Preliminary Plan by the Grand Junction City Council.

DEVELOPMENT SCHEDULE

Water for landscaping purposes shall be supplied to all lots via a pressurized piped system.

2943-072-01-021 Richard Kimball 108 E Park Avenue	2943-072-21-001, 002, 003, 004 Robert P. Gerlofs P.O. Box 2872	2943-072-00-033 Ellen Mathews 2838 Orchard
Grand Junction, CO 81501 #51-82	Grand Junction, CO 81502 #5/82	Grand Junction, CO 81501
2943-072-00-009 Warren F. Reams 301 N 7th	2943-072-00-035 Lawrence B. Dowd 2660 Paradise Way	2943-072-00-031 Glenn Edwards 2840 Orchard
Grand Junction, CO 81501 #5/82	Grand Junction, CO 81501 #5/82	Grand Junction, CO 81501 #SI-82
2943-072-17-032, 031, 030, 029, 028, 027, 025, 024 Robert Rewinkle	2784 Cross roads Blud! Grand Jet. CO 81501	
2835 Grand Falls Road #5/82 Grand Junction, CO 81501	#51-82	
2943-072-17-026 Ronald G. Cude 2837 Grand Falls Road Grand Junction, CO 81501 #5182		

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1441 Motor Grand Junction, Colo 81501 (303) 242-8968

June 8, 1982

Paragon Engineering 2784 Crossroads Blvd. Suite 104 Grand Junction, CO 81501

RE:

SUBSURFACE SOILS INVESTIGATION

THE FALLS SUBDIVISION

GRAND JUNCTION, COLORADO

Gentlemen:

Transmitted herein are the results of a Subsurface Soils Investigation and Foundation Recommendations for The Falls Subdivision, Filing 3 in Grand Junction, Colorado.

Respectfully submitted,

LINCOLN-DeVORE TESTING LABOR

By: Gary M

Gary M. Krzisnik, C.E. Grand Junction Office

Reviewed by: George D. Morris, P.E.

GMK/cr

LDTL JOB NO. 43589J

ABSTRACT:

The contents of this report are a Subsurface Soils Investigation and Foundation Recommendations for the proposed Filing 3 of The Falls Subdivision in Grand Junction, Colorado.

Topographically, the site is a

complex of small, low hills with slopes ranging from 3° to 15° , due, in part, to extensive filling in parts of the site. Surface drainage is very poor in some areas and good in others, but overall requires some improvement. Subsurface drainage is poor.

The soil within the upper 15 feet of the soil profile encountered during drilling was noted to consist of Mancos Shale, overlain in many areas by man-made fill of varying depth. This fill was found to contain some tires, asphalt, concrete and wood and was noted to be quite variable in terms of density. Because of the high potential for differential settlement, we would recommend that this fill either be penetrated by piers or piles, or be removed from below foundation line, being replaced with a suitable structural fill. If the fill is overexcavated, a shallow foundation system, designed on the basis of a maximum bearing capacity of 3000 psf would be appropriate. Where shallow type foundations bear on the native shale (i.e., where there is very little or no fill), they may be proportioned for a maximum allowable bearing pressure of 4500 psf. Where the

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shale is at or within 3 feet below footings, a minimum pressure of 1500 psf will be required to resist the potential soil expansion after construction is completed.

To limit differential movement in as much as possible, we would recommend that the foundations for the residential units across the subdivision be well balanced and heavily reinforced.

All floor slabs on grade must be constructed to act independently of other structural portions of the buildings. Alternatively, where extensive existing fill of poor quality is located below slabs, the slabs should be designed as structural floor slabs supported by other structural elements of the building rather than being supported by fill.

Surface and subsurface drainage must be carefully designed and controlled. A perimeter drain would be recommended around the building exterior.

A Type II Cement would be recommended in all concrete in contact with the soil on this site. More detailed recommendations can

be found within the body of this report. All recommendations will be subject to the limitations set forth herein.

obtained to provide a general and preliminary indication of the soils which will probably be found under presently unknown types of structures proposed for the site. Site specific information must be obtained beneath each proposed structure after

The information herein has been

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its exact location is determined, since the soil types and conditions differ across the overall site and the type of structure proposed is not known.

This report is intended to identify general soil conditions on the site, as requested. Nine (9) test borings spread over a 10+ acre site, can only be used as an over-view of the soil conditions and not for site specific design purposes.

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GENERAL:

The purpose of this investigation was to determine the general suitability of the site for construction of Filing 3 of The Falls Subdivision, in Grand Junction, Colorado. Characteristics of the individual soils found within the test borings were examined for use in designing foundations on this site.

Although Lincoln-DeVore has not seen a set of construction drawings for any of the residential units proposed, we believe that they will be basically frame structures of more or less conventional design. Foundation loads for structures of this nature are normally light to medium weight in magnitude. The topography of the site area is that of a system of small hills (Badlands type topography). Parts of the low areas between hills were filled with a poor quality mix of remolded shale and man-made debris. As a result, portions (shown on the Boring Location Diagram as areas of "bog") are very wet and very poorly drained. In general, surface drainage in the area flows to the southwest toward the Colorado river. Considerable improvement in surface drainage, in part restoring conditions existing prior to filling, will be required at this site to eliminate the extensive water ponding now occurring. Subsurface drainage is poor in the low permeability native and fill soils.

Below the man-made fill in some areas, and beginning at the surface elsewhere, we found weathered Mancos Shale. The Mancos Shale can broadly be described as a thin-bedded, drab, light to dark gray marine shale, with thinly

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interbedded fine grain sandstone and limestone layers. Some portions of the Mancos Shale are bentonitic, and therefore, are highly expansive. The majority of the shale, however, has only a moderate expansion potential. Formational shale was encountered in all of the test borings at depths ranging from zero (existing surface) to 13 feet. It is anticipated that this formational shale will directly affect the construction and the performance of the foundations on the site.

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BORINGS, LABORATORY TESTS AND RESULTS:

Nine (9) test borings were placed on the site, at locations indicated on the attached Test Boring Location Diagram. These test borings were placed in such a manner as to obtain a reasonably good profile of the proposed construction site subsurface soils. Some variations were noted in the soil profile, but in general, the profile was found to be fairly uniform, so that further test borings were not deemed necessary at this time. All test borings were advanced with a power-driven, continuous auger drill and samples were taken with the standard split-spoon sampler and by bulk methods.

The precise gradational and plasticity characteristics associated with the soils encountered during drilling can be found on the attached summary sheets. The representative number for each soil group is indicated in a small circle immediately below the sampling point on the Drilling Logs. The following discussion of the soil groups will be general in nature.

The soils profile encountered on this site can broadly be described as a two layer system. The upper 1 to 13 feet of the profile was found to be man-made fill, including tires, asphalt, concrete and wood, in many areas. Beginning at the existing surface or beneath this surface layer, the soils were found to consist of shale of the Mancos Shale Formation described previously.

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ered was actually perched above the formational shale materials and was traveling through the fractures in the weathered zone. This is substantiated by the fact that moisture was noted in the fractures of the weathered shale. In one case, the water appeared to be perched in the man-made fill. Due to the seepage encountered in this weathered shale zone, as well as the potential for seepage and for accumulations of "perched" or entrapped, water, subsurface peripheral drains around the structures are strongly recommended. Additionally, water may be encountered during construction, especially in deeper excavations and dewatering techniques may be necessary. It is felt that the quantities of water to be anticipated can be handled by sump pits and pump during construction.

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CONCLUSIONS AND RECOMMENDATIONS:

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.

The presence of variable-depth, variable-density, man-made fill, and its unacceptable compositions has been pointed out repeatedly in the foregoing section of this report. In general, this fill must be considered unsuitable for foundation support. At isolated locations, it is possible that clean, well-densified fill of shallow depth exists (such fill must be identified and examined on a site specific basis). However, in most areas where the existing fill depth is in excess of 3 feet, we encountered unacceptable debris in the fill. Therefore, we recommend that the fill be removed entirely and replaced with controlled structural fill.

It would be preferred to remove the fill from the entire site and place new fill. Alternatively, existing fill may be removed from specific building foundation locations and from within 4 feet below pavements and slabs. Structural fill used to replace existing fill should be laid

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down in maximum 10 inch loose depth lifts where heavy, selfpropelled compaction equipment is used (and 6 inch loose depth lifts where hand equipment is used). Where structural fill is placed below footings, it must extend laterally beyond the footing perimeter a distance equal to the fill's depth and be compacted to at least 92%, but not over 97%, of the material's maximum Proctor dry density (ASTM D-1557). Fill below floor slabs and pavements should be compacted to at least 88% but not over 93% of that value.

Where controlled fill is used to support foundations, it is recommended that a shallow foundation system consisting of continuous footings beneath all bearing walls and isolated spread footings beneath columns and other points of concentrated load, be used to transfer the weight of the proposed structure. Such a shallow foundation system may be designed on the basis of a maximum allowable bearing capacity of 3000 psf as an overall site average. Where the native shale is located within 3 feet of the footings or where expansive fill is used, a minimum pressure of 1500 psf will be required.

Where the existing fill depth is such that complete removal is impractical, we would recommend penetrating the fill with a foundation system of drilled piers. Such drilled piers should extend at least 10 feet into formational shale to penetrate the more weathered, fractured material. A maximum allowable tip bearing pressure of 12,000 psf can be used in their design, together with an average skin friction pressure of 2400 psf for the portion located within the shale.

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Possible expansion of the shale and some denser portions of the overlying clayey fill could exert uplift pressures equivalent to a skin friction pressure of as much as 500 psf. Also, a minimum tip pressure of 1500 psf is required. Such pressures must be resisted by the building and pier dead load and, if necessary, by shear rings installed in the shale near the tip.

Where little or no fill exists,

so that footings will bear on the weathered formational shale, it is recommended that a shallow foundation system consisting of continuous footings beneath all bearing walls and isolated spread footings beneath columns and other points of concentrated load, be used to transfer the weight of the proposed structure. Such a shallow foundation system may be designed on the basis of a maximum allowable bearing capacity of 4500 psf as an overall site average. Again, a minimum pressure of 1500 psf will be required.

Where a shallow foundation system is used, we would recommend that the contact stresses be balanced beneath the foundation components. Most buildings are invariably more heavily loaded on some walls and columns than on others. The amount of this variation may tend to be quite high. We would recommend that the size of the foundation component be varied in direct relationship to the actual load being carried, thus maintaining approximately the same pressure on the soil at all points. Using the criterion of either full dead load (for single-story, slab on grade structures) or dead plus one-half the estimated live load (for multiple level structures), we would recommend that the contact stresses beneath the load bearing walls be

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balanced to within \pm 300 psf at all points beneath the foundation wall. Isolated interior column pads should be designed for pressures of about 200 psf more than the average of the pressures beneath the load bearing walls.

To help ensure that the structure moves more or less as a single unit rather than in a differential manner, we would recommend that all stem walls be supported by a grade beam capable of spanning at least 15 feet. This grade beam would apply to both interior and exterior load bearing walls. Such a grade beam should be horizontally reinforced continuously around the structure with no gaps or breaks in reinforcing steel unless they are specially designed. Beams should be reinforced at both the top and the bottom with the major reinforcement being at the top where expansive soils are at or close to the footings or at the bottom when footings are on nonexpansive structural fills. All interior bearing walls should rest on a grade beam and foundation system of their own and should not be allowed to rest on a thickened slab section or "shovel" footing.

A reinforced concrete grade beam is recommended to carry the exterior wall loads in conjunction with the aforementioned deep foundation alternatives. This grade beam should be designed to extend from bearing point to bearing point and should not be allowed to rest upon the ground surface between these two points. In the case of very long spans (25-foot or greater), the grade beam could be designed to only span half the distance between the bearing points with some load transfer being

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allowed near mid-span. In all cases, the grade beam should be horizontally reinforced continuously around the structure with no gaps or breaks in the reinforcing steel unless they are specially designed. Beams should be reinforced at both the top and the bottom as required by the building loads and provisions of ACI 318, Building Code Requirements for Reinforced Concrete.

The bottoms of all piers should be thoroughly cleaned prior to the placement of concrete. The amount of reinforcing required in each pier will depend upon the magnitude and nature of loads involved. However, as a rule of thumb, reinforcement equal to approximately 6% of the gross crosssectional concrete areas should be utilized. Additional reinforcing should be used if structural consideration is so warranted. Reinforcement over the entire shaft length would be recommended. Where the stem walls are relatively

shallow, vertical reinforcing will probably not be necessary. However, where the walls retain soil in excess of about 5 feet in height, vertical reinforcing may be necessary to resist the active pressure of the soils along the wall exterior. To aid in designing such vertical reinforcing, the following equivalent fluid pressures can be utilized:

It should be noted that the above values should be modified to take into account any surcharge loads applied at the top of the walls as a result of stored

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goods, live loads on the floor, machinery, or any other externally applied forces. The above equivalent fluid pressures should also be modified for the effects of any free water table.

The bottom of all foundation components should rest a minimum of 1½ feet below finished grade or as required by the local building codes. Foundation components must not be placed on frozen soils.

Prior to constructing floor slabs on grade, any unsuitable materials including topsoil, organics and unacceptable miscellaneous fills should be removed from the underslab areas. The resulting surface should be scarified and recompacted prior to placing the new fill.

All floor slabs on grade must be constructed to act independently of the other structural portions of the building. These floor slabs should contain deep construction or contraction joints to facilitate even breakage and to help minimize any unsightly cracking which could result from differential movement. Floor slabs on grade should be placed in sections no greater than 25 feet on a side.

If the existing, poor quality fill is left in place below slabs and drilled pier foundations are used to penetrate such fill, we recommend using a structural floor system supported by the deep foundations. We would emphasize that some isolation from expansive soils is imperative for such a system. A minimum of 12 inches of drained non-expansive granular fill is recommended below such slabs.

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Where floor slabs are used, they may be placed directly on grade or over a compacted gravel blanket of 4 to 6 inches in thickness. Under no circumstances should this gravel pad be allowed to act as a water trap beneath the floor slab. A vapor barrier is recommended beneath any and all floor slabs on grade which will lie below the finished exterior ground surface. All fill placed beneath the interior floor slabs must be compacted to at least 88% of its maximum Proctor dry density, ASTM D-1557, but not over 93% of this value.

Any interior, non-load bearing partitions which will be constructed to rest on the floor slab should be constructed with a minimum space of 1½ inches at either the top or bottom of the wall. The bottom of the wall would be the preferred location for this space. This space will allow for any future potential expansion of the subgrade soils and will prevent damage to the wall and/or roof section above which could be caused by this movement.

Adequate drainage must be provided in the foundation area both during and after construction to prevent the ponding of water. The ground surface around the building should be graded so that surface water will be carried quickly away from the structure. The minimum gradient within 10 feet of the building will depend upon surface landscaping. Bare or paved areas should maintain a minimum gradient of 2%, while landscaped areas should maintain a minimum gradient of 5%. Roof drains must be carried across all backfilled areas and discharged well away

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from the structure. In addition, structural fill used below slabs, pavements and foundations must be provided with a free gravity outlet to daylight or to a sump pit.

To give the building extra lateral stability and to aid in the rapidity of runoff, all backfill around the building and in utility trenches in the vicinity of the structure should be compacted to at least 90% of its maximum Proctor dry density, ASTM D-698. The native materials encountered on this site may be used for backfilling purposes, if so desired. All backfill must be compacted to the required density by mechanical means. No water flooding techniques of any type should be used in the placement of fill on this site.

A subsurface peripheral drain, including an adequate gravel collector, sand filter and perforated drain pipe, should be constructed around the outside of the building at foundation level. Dry wells should not be used anywhere on this site. The discharge pipe should be given a free gravity outlet to the ground surface. If "daylight" is not available, a sealed sump and pump should be used.

Difficulties may be encountered during construction on this site and with performance of the foundation systems due to seasonal groundwater levels. Full and half basement foundations could be used, but should be well sealed and should be provided with a subsurface peripheral drain described in this report. The discharge of subsurface drains should be

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provided with a free gravity outfall to the surface if at all possible. If gravity outfall is not possible, then a lined sump and pump should be used, kept well away from the building.

Samples of the surficial native

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

> R = 5Expansion @ 300 psi = 6.62 Displacement @ 300 psi = 4.21

The displacement indicates that this soil is only marginally stable when wet unless it is confined. In addition, its possible expansion pressure against portions of pavements could result in damage due to differential heave. A sub-base of coarse, non-expansive fill, well-drained, should be considered against the risk of pavement deterioration associated with soils having these characteristics. We would recommend that all subgrade fill, sub-base and aggregate base course materials be compacted to at least 95% of the maximum modified Proctor (ASTM D-1557) dry density specific to each material used. When sufficient information becomes available that will permit reasonable assumptions of the traffic volume and mix that are likely at this site, we would be pleased to further assist with the development of this project by preparing detailed pavement design recommendations, if you so desire.

Some, but not major, difficulties are anticipated in the course of excavating into the surficial

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site soils that consist of man-made fills and native weathered shales. Because fills of such varying composition can cave from steep vertical cuts, it is possible that some safety provisions such as the sloping or bracing of the sides of excavations over 5 feet deep could be necessary. Any such safety provisions should conform to reasonable industry safety practices and applicable OSHA regulations.

The soils on this site were found to contain sulfates in detrimental quantities. Therefore, a Type II Cement would be recommended in all concrete in contact with the soil. Under no circumstances should calcium chloride ever be added to a Type II Cement. In the event that Type II Cement is difficult to obtain, a Type I Cement may be used, but only if it is protected from the soils by an impermeable membrane.

It must be recommended that the

open foundation excavation be inspected prior to the placing of forms to establish the appropriate design parameters for each individual building lot. Further exploration on a building to building basis may be warranted. At the time of inspection or further investigation, the maximum and minimum bearing values can be verified or modified as necessary and recommendations made as to the suitable foundation type for that particular site. Also, this inspection will ensure that no debris, soft spots, or areas of unusually low density are located within the foundation region. Any changes in the recommendations included in this report can easily be made at the time of such inspection.

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All fill placed below the foundations must be fully controlled and tested to ensure that adequate densification has occurred.

It is extremely important due to the nature of data obtained by the random sampling of such a heterogeneous material as soil that we be informed of any changes in the subsurface conditions observed during construction from those outlined in the body of this report. Construction personnel should be made familiar with the contents of this report and instructed to relate any differences immediately if encountered.

It is believed that all pertinent points concerning the subsurface soils on this site have been covered in this report. If questions arise or further information is required, please feel free to contact Lincoln-DeVore at any time.

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SOILS	DESC	RIPTIONS:	ROCK	DESCRIPTIONS:	SYMBO	LS & NOTES:
SYMBOL	<u>USCS</u>	<u>DESCRIPTION</u>	OUD OF SEL	DESCRIPTION DIMENTARY ROCKS	STMBOL	DESCRIPTION
22		- Topsoil	0.0	CONGLOMERATE	9	/12 Standard penetration drive
		-Man-made Fill		SANDSTONE	N ti	lumbers indicate 9 blows to drive he spoon 12" into ground.
0.000	GW	Well-graded Gravel		SILTSTONE	Ls	T 2-1/2" Shelby thin wall sample
0000	GP	Poorly-graded Gravel		SHALE		
	GM	Silty Gravel	x x x x x x	CLAYSTONE		Jo Natural Moisture Content
00	GC	Clayey Gravel		COAL	Free	J _X Weathered Material
	SW	Well-graded Sand	野	LIMESTONE	F	ree water table
	SP	Poorly-graded Sand		DOLOMITE	7	⁷⁰ Natural dry density
	SM	Silty Sand		MARLSTONE	T	B.—Disturbed Bulk Sample
	SC	Clayey Sand		GYPSUM		2) Soil type related to samples in report
	ML	Low-plasticity Silt		Other Sedimentary Rocks		
	CL	Low-plasticity Clay		GRANITIC ROCKS	<u>15' Wx</u> T Form.	op of formation
	OL	Low-plasticity Organic Silt and Clay	++++++++++++++++++++++++++++++++++++	DIORITIC ROCKS	•	Test Boring Location
	мн	High-plasticity Silt		GABBRO		Test Pit Location
المخعوا	СН	High-plasticity Clay		RHYOLITE		
<u>7</u> -z -7-	ОН	High-plasticity Organic Clay	# 14 # # 14 # # 14 #	ANDESITE		Lineation indicates approx. length & orientation of spread
	Pt	Peat		BASALT		(S = Seismic, R = Resistivity)
4 9 0 9 9 0 9 9 0	GW/GM	Well-graded Gravel, Silty		TUFF & ASH FLOWS	Standa by drivi	rd Penetration Drives are made ng a standard 1.4" split spoon
0000	GW/GC	Well-graded Gravel, Clayey	0.0	BRECCIA & Other Volcanics	i40 lb.w des. D-	veight 30". ASTM test 1586.
00000	GP/GM	Poorly-graded Gravel, Silty	- L L L - L L L - L L L	Other Igneous Rocks	Sample spoon (s may be bulk , standard split both disturbed) or 2-1/2" I.D.
0000 0000 0000 0000	GP/GC	Poorly-graded Gravel, Clayey		GNEISS	thin wa sample	ll ("undisturbed") Shelby tube s. See log for type.
	GM/GC	Silty Gravel, Clayey		SCHIST	The bor at the d	ing logs show subsurface conditions ates and locations shown , and it is
	GC/GM	Clayey Gravel, Silty		PHYLLITE	not war of subsi	ranted that they are representative urface conditions at other locations
	SW/SM	Well-graded Sand, Silty		SLATE		53.
	SW/SC	Well-graded Sand, Clayey	1	METAQUARTZITE		
	SP/SM	Poorly-graded Sand, Silty	000	MARBLE		
	SP/SC	Poorly-graded Sand, Clayey	WWW WWW	HORNFELS		
	SM/SC	Silty Sand, Clayey	عد ملير مله عد 1000	SERPENTINE		
	SC/SM	Clayey Sand, Silty	1224	Other Metamorphic Rocks		
	CL/ML	Silty Clay	LD LINCOLN DeVORE TESTING LABORATORY	COLORADO: Colorado Springs, Pueblo, Glenwood Springs, Montrose, Gunnison, Grand Junction WYO Rock Springs	EXPLANAT AND L	TION OF BOREHOLE LOGS

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and the second se	
SUMMAR	Y SHEET
Soil Sample <u>CL</u> SILTV CLAY, TRACE SAND (SA Location <u>The Fauls - Frence 3 - Grawn Tunction</u> Boring No Depth Sample No	4167) Test No. <u>43589 J</u> 5 CO Dute <u>6-1-82</u> Test by <u>PKE</u>
Natural Water Content (w)% Specific Gravity (Gs)	In Place Density (7 0)pcf
SIEVE ANALYSIS: Sieve No. % Passing 11/2" 1/2" 3/4" 1/2" 1/2" 100.00 1/2" 100.00 10 97.2 20 97.4 40 75.7 100 93.5 200 90.1	Plastic Limit P.L.
SOIL ANALYSIS	LINCOLN-DeVORE TESTING LABORATORY COLORADO SPRINGS, COLORADO

SUMMAR	Y SHEET
Soil Sample <u>CL, SILTY CLAY, TE TO SOME SAND</u> Location <u>THE FALLS - FIL. 3 - GEAND</u> JUNCTION CC Boring No. Donth	File) Test No. <u>43589 J</u> Dote <u>6-1-82</u>
Sample No2	Test by PKE
Natural Water Content (w)% Specific Gravity (Gs)	In Place Density (7 0)pcf
SIEVE ANALYSIS: Sieve No. % Passing 1 1/2" 3/4" 1/2"/og.o 499.4 1099.4 1099.3 2098.2 4095.1 100	Plastic Limit P.L. 14.3 % Liquid Limit L. L. 29.5 % Plasticity Index P.I. 15.0 % Shrinkage Limit % % Flow Index % % Shrinkage Ratio % % Volumetric Change % % Lineal Shrinkage %
100 <u>90.6</u> 200 <u>85-8</u> HYDROMETER ANALYSIS: Grain size (mm) %	MOISTURE DENSITY: ASTM METHOD Optimum Moisture Content - w9% Maximum Dry Density -7dpcf California Bearing Ratio (av)% Swell:Days% Swell ogainst_//30 psf Wo gain_6.4%
<u>0.02</u> <u>49.5</u> <u>0.005</u> <u>30.4</u>	BEARING: Housel Penetrometer (av)psf Unconfined Compression (qu)psf Plate Bearing:psf Inches Settlement Consolidation % under psf PERMEABILITY: K (at 20°C) Void Ratio Sulfates 2000 ± ppm.
SOIL ANALYSIS	LINCOLN-DeVORE TESTING LABORATORY COLORADO SPRINGS, COLORADO



2"x4" stud wall secured from above by metal straps or nailing 1/2" Drywall nailed to studs , only Drill 3/8" dia. hole in top base plate and use 60 penny nails at about 3'-0" c.c. to stabilize frame wall. Drive large nail into lower base plate. " space to allow for independent movement of the floor slab Wall base board nailed to base plate, only Ve"xI"nailing 0 2"x4" base plate secured with 3" strip to hold base : b ۵ board in place concrete nails or 0 ramset studs 0 x Concrete floor slab WALL FRAMING Non-bearing wall on concrete floor slab over expansive clay soil THE LINCOLN-DEVORE TESTING LABORATORY COLORADO: Colorado Springs, Pueblo, Glenwood WYOMING: Rock Spring DETAIL WYOMING: Rock Springs Springs, Montrose, Gunnison.

REVIEW SHEET SUM.MARY

FILE NO. 51-	-82 TITLE HEADIN	AG The Falls South DUE DATE 7/12/82
ACTIVITY - PE	TITIONER - LOCATION	N - PHASE - ACRES Petitioner: Valley Housing and Development
Robert Rewinl	kle. Location: Eas	st of 28.25 Road and approximately 1200 feet south of Patterson
Road. A req	uest for a revised [preliminary plan for 87 units on approximately 5.8 acres in
a planned re	sidential zone at 8	units per acre. Consideration of revised preliminary plan.
PETITIONER A	DDRESS 2835 Grand	Falls Drive
ENGINEER Par	agon	
DATE REC.	AGENCY	COMMENTS
7/9/82	Ute Water	Suggest that the water main in South Grand Falls Circle be increased to 8" for fire protection reasons. Policies and fees in effect at the time of application will apply.
7/8/82	City Utilities	The public improvements for the previous filings have not been completed.
7/12/82	Mountain Bell	10' utility easements requested on each side of street ROW. Conduit to P/L will be required for the 27 & 30 unit complexes. See plat.
7/12/82	City Planning Staff Comments	NOTE: The overall density for the Falls is 8 units/acre. Filing #4 indicates 14 units per acre. Adjustments in filing may be needed to ensure the overall 8/acre density.
	, , ,	 This plan is quite different from the original preliminar plan as enclosed. It should be considered a revised preliminary and thus will be reviewed as to the re- lationship of the original preliminary to the overall concept of the Falls. Landscaping at intersections need to be low profile as to not create a site distance problem. How will landscaping be maintained? Some of the parking stalls in question as to their validity. Any amenities provided for this or other filings of the Falls? (i.e. pool, rec-room etc.). The lift station, solid waste disposal and other utility concerns need to be resolved with City Utilities Dept. A drainage easement will be required on the west side re: the water tank drainage. Coordinate with City
7/13/82	City Engineer	Street layout is reasonable and will eliminate a cul de sac planned for Filing 2. No utility layouts or street grades were included in my packet. I want to see that information and thought it was required with preliminary plan submittal. In my opinion, this submittal is incomplete. I also did not receive a plat.
7/13/82	City Fire Late	
7/15/82	- P.S. Co, L	de

RESPONSE TO REVIEW COMMENTS FOR THE FALLS FILING #4

File No. 51-82 Phase: Preliminary Plan Location: East of 28.25 Road and approximately 1200 feet South of Patterson Road

Agency

Ute Water

Response

Water mains through the project will be eightinches including that line in South Grand Falls Circle.

The water, sewer, utilities have been completed in

The Townhome lots on South Grand Falls Court are

Utility easements will be provided as requested.

Utility composite and site grading plan showing street grades was submitted to the Planning Department. A separate copy has been delivered to the

Conduit will be provided for multi-family

those areas that are being developed.

not being developed at this time.

City Utilities

Mountain Bell

City Engineer

A plat was not submitted.

City Engineer by this office.

structures as requested.

A complete submittal, according to the Regulations, was provided to the Planning Department.

We apologize for the City Engineer not receiving all of the information, but it was not in our control.

All water lines, including South Grand Falls Circle will be increased to eight-inch.

No parking will be allowed on the streets. Adequate off-street parking is provided.

R DE	ECEIVED MESA COUNTY VELOPMENT DEPARTMENT
	JUL 22 1982

City Fire

City Planning Staff

The Planning Commission originally reviewed The Falls Preliminary Plan in 1977. In 1979, a revised Preliminary Plan was approved. This plan was the basis for Filing One as it is recorded with the areas of Filings Two through Four shown as "Future Development". The traffic circulation plan proposed at this time varies little from the one approved. Furthermore, when Filing Two was platted, three multi-family lots were designated north of Grand Falls Drive. One of these, Lot 10, Block 2, comprises approximately 40% of the Filing Three Final Plan.

The total Falls property contains 34 Acres. At a density of eight units per acre, 272 units result. Following is an acreage, unit and density tabulation of Filings One through Four as proposed.

Filing	Acres	Proposed Units	Developed	Density
One	15.48	55	55	3.55 units/acre
Two (Less Lot 10)	6.67	99		
Townhomes			19	
Lots 8 and 9			_23	6.29 units/acre
Three (Includes				
Lot 10)	5,55	51	51*	9.19 units/acre
Four	6.2	87	87*	14 units/acre
Total	33.9		235	6.9 units/acre

Assume full development.

The requests to date result in a density well below the eight unit per acre or 272 units allowed in this zoning.

Technical issues enumerated by the Planning Staff are addressed as follows:

1. This plan does differ from previous plans and should be considered as a revised preliminary plan. We feel it better fits the overall concept of The Falls.

2. Intersection landscaping will be low profile.

3. Landscaping will be sprinkle-irrigated through a central system.

4. The parking stalls which the Staff feels are invalid will be eliminated. Adequate parking is still available. City Planning Staff (Cont'd)

5. If amenities are provided, we recommend that they not include a pool.

Suggested amenities would include tennis court, hard-surface, multi-purpose game area and recreation rooms in each of the 30 unit buildings.

6. As stated in our letter to the Planning Department dated July 13, 1982, this project is within the Central Grand Valley Sanitation District. A sewer outfall line was built from 29 Road in to serve this parcel. It has always been proposed that this side of The Falls would be served by a lift station inas much as the Fruitvale Sanitation District has refused service to this parcel in the past.

7. The City of Grand Junction has traditionally dumped water from the Mantey Heights water tank onto this property. The construction of 28-1/4 Road channeled additional concentrated storm drainage onto this site.

To the best of our knowledge, the City has never had the right to dispose of this water across private property.

At such time as this project receives final approval, the developer will enter into an agreement to accept this runoff.

Historic runoff from the tank area was considered in final drainage report.

REVIE V SHEET SUMMARY

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FILE NO	#51-82 TITLE HEADIN	DUE DATE 0/ 10/82
ACTIVITY -	PETITIONER - LOCATION	I – PHASE – ACRÈS
FETTTIONER	ADDRESS	
ENGINEER	· · · · · · · · · · · · · · · · · · ·	
DATE REC.	AGENCY	COMMENTS
8/13/82	City Fire	Will accept looped water main system as shown if acceptable to Ute Water. Must provide adequate turn-around on private drive north side of 10 condo units. Would like Grand View Ct. and South Grand Falls Circle connected by thru street at southern end. Will accept hydrant placement as shown. All building construction to conform to 1979 Uniform Fire and Bldg. Codes.
3/16/82	Ute Water	No objection to Filing #3. The water system serving the condo units in the N.W. corner of the project is not totally acceptable to the district as proposed. The developer and engineer are aware of the necessary changes and have agreed to correction in construction. Filing #4 development will result in looping the water system back into Filing #1 resulting in adequate fire flows. Policies and fees in effect at the time of application will apply.
6/16/82	Public Service	Gas & Electric: Request developer contact P.S.Co. concern loads and points of service as project develops. We request that all open and common areas be designated as utility easements. Also, provide 10 ft. easement along all streets. Request ten ft. wide utility easement adjacent to north Lot Line of Lots 12 & 14, Block #2, Filing #3.
/16/82	City Engineer	Street improvements for Filings 1 and 2 have not been completed. On July 20, 1982, I received a long letter addressing my letters of December 28, April 15, March 19, and January 21, 1981. I have not yet digested this long overdue response. The July 20, 1982 letter alludes to an inspection and requested acceptance of Phase I of Filing 2. What about the other streets which have been in place and used for years? Sewer and street layouts appear reasonable. However, the entire sewer system
		including the lift station and force-main will have to be in place to serve the lots in Filing 3. Some easements will be required for those portions of sanitary sewer system which are outside of platted and/or dedicated rights of way. Of course we wish another lift station was not being added to the sewer system. We have too many now.
3/16/82	City Utilitiés	Vehicular access should beoprovided to all sanitary sewer maholes and to the lift station.

REVIE V SHEET SUMMARY

FILE NO.	#51-82	TITLE HEADING	The Falls South	Filing #4 Rev	ised DU	E DATE <u>8/16/82</u>	•
ACTIVITY	- PETITION	NER - LOCATION	- PHASE - ACRES	Petitioner:	Valley Hous	sing and Develo	op-
ment/Rob	ert Rewink	le. Location:	East of 28.25	Road and appro	kimately 1200) feet south of	:
Patterso	n Road. A	request for a	revised prelimi	nary plan for {	37 units on a	pproximately	
5.8 acre	s in a pla	nned residentia	1 zone at 8 uni	ts per acre.	Consideratio	n of revised	
prelimin	ary plan.						
PETITIONE	ER ADDRESS	2835 Grand Fa	lls Drive				

ENGINEER Paragon

. .

8/13/82

DATE REC.

Planning Staff Comments

AGENCY

COMMENTS

1. Need to resolve the issue of Fruitvale Sanitation accepting the Falls.

 The water lines system, as indicated by the Grand Junction Fire Department are unacceptable. Need to get OK from the Grand Junction Fire Department prior to approval.

- Is there a possibility to connect the cul-de-sac of #2 (on the west side) to S Grand Falls Circle? This would provide better circulation for service and fire vehicles.
- 4. The ammenities issue will require Grand Junction Planning Commission approval.
 - a. What about the open area in #2 (adj. to proposed tennis.cts.).
 - b. What about visitor or other parking for the ammenities? There is none provided except 6 on-street spaces, if that, exclusively for the rec. area.
 - c. What about parking for the courts in Filing #3? Also no access is shown to the courts (i.e. footpaths).
- 5. The private drive set-up for the condo's in #3 need
- to be ok'd by the Grand Junction Fire Department (in writing) prior to approval.
- 6. Resolve all previous issues.

Mailed 8/17/82

9/16/82 GJPC MINUTES OF 8/31/82

MOTION: (COMMISSIONER QUIMBY) "I MAKE A MOTION ON ITEM #51-82 THAT WE RECOMMEND TO CITY COUNCIL APPROVAL OF FILING #4 PRIOR TO ALL CONCERNS AND COMMENTS FROM REVIEWING AGENCIES BEING ADDRESSED AND AN ADDITIONAL CLARIFICATION ON THE AMENITIES TO BE PROVIDED IN THE COVENANTS."

COMMISSIONER DUNIVENT SECONDED THE MOTION.

CHAIRMAN TRANSMEIER ASKED IF THERE WAS ANY FURTHER DISCUSSION. SINCE THERE WAS NON, CHAIRMAN TRANSMEIER THEN CALLED FOR A VOTE, AND THE MOTION CARRIED UNANIMOUSLY, 5-0.

Acres <u>58</u>		Fi	le No. <u>#51-82</u>	
Units <u>87</u>	preliminary	/plan [°]	ne <u>PR8</u> x Parcel Number	-
Activity Falls	South- Filma 4	- Pholiminary	Plan	<u>57</u>
Phase		Dila Di	e f Talle	
Common Location	2. OF (BIG Kd, S.C	of tautorson ral	-0.0t taus	Ord Lan
Date Submitteri 171182	Date Mailed Out <u>1218</u>	Date Poste	7/10/82	IR 1920
Date Adjacent Property Owners Notif		ate Adjacent Property Owners Noti 1 N O P Q R 🔊 T. U V .W	tfied of MCC/CIC	FF GG 1244
agencies -	• • • • • • • • •		•••••	•
County Road County Health				
County Parks/Recreation				
City Utilities 2 425				
City Parks/Recreation City Police Dept.				
Offoodplain Administration OComprehensive Planning				
G.J. Dept. of Energy Fire				
Orainage (J Libber Water (Lite Clifton)				
Sewer G.V. Rural Power				
Public Service (2 sets) Soil Conservation				
Ostate Highway Dept. Ostate Geological				
OTransamerica Water & Power Resources				
Mack, Loma, Mesa, Collbran, <u>Fruita, Palisade, Grand Jct.</u> MOTHER:				
PLANNING COMMISSION 10 CIC/MCC 7				
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ц ц ц	Covenneuts re	: anneniduls pr	ourded. 5 staff	
a 9/15/82 C:C.	Approved, cap	sent agenda	(subject to	
GJPC 4/30/8	35 rec. 1 year exte	ions)	0	
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