

SUBMITTAL CHECKLIST

PLANNED DEVELOPMENT

Location: 755 26 Road

Project Name: Boothcliff Gardens Expansion

ITEMS	DISTRIBUTION																	TOTAL REQ'D.								
DESCRIPTION	SSID REFERENCE	<input type="checkbox"/> City Community Development	<input type="checkbox"/> City Dev. Eng.	<input type="checkbox"/> City Utility Eng.	<input checked="" type="checkbox"/> City Property Agent	<input type="checkbox"/> City Parks/Recreation	<input type="checkbox"/> City Fire Department	<input checked="" type="checkbox"/> City Attorney	<input checked="" type="checkbox"/> City G.J.P.C. (8 sets)	<input type="checkbox"/> City Downtown Dev. Auth.	<input type="checkbox"/> County Planning	<input type="checkbox"/> County Bldg. Dept.	<input type="checkbox"/> Irrigation District	<input type="checkbox"/> Drainage District	<input type="checkbox"/> Water District	<input type="checkbox"/> Sewer District	<input type="checkbox"/> U.S. West		<input type="checkbox"/> Public Service	<input type="checkbox"/> GVRP	<input type="checkbox"/> CDOT	<input type="checkbox"/> Corps of Engineers	<input type="checkbox"/> Walker Field	<input type="checkbox"/> Persigo	<input type="checkbox"/> TCI Cable	
● Application Fee	VII-1	1																								
● Submittal Checklist *	VII-3	1																								
● Review Agency Cover Sheet*	VII-3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
● Application Form*	VII-1	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
● 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
● Evidence of Title	VII-2	1		1			1																			
○ Appraisal of Raw Land	VII-1	1		1	1																					
● Names and Addresses*	VII-2	1																								
● Legal Description*	VII-2	1		1																						
○ Deeds	VII-1	1		1			1																			
○ Easements	VII-2	1	1	1	1		1									1	1	1						1		
○ Avigation Easement	VII-1	1		1			1															1				
○ ROW	VII-3	1	1	1	1		1									1	1	1						1		
○ Improvements Agreement/Guarantee*	VII-2	1	1	1			1																			
○ CDOT	VII-3	1	1																							
○ Industrial Pretreatment Sign-off	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	1	1	1	1	1
● Elevation Drawing	IX-13	1	1																							
● Site Plan	IX-29	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
○ 11"x17" Reduction of Site Plan	IX-29				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
○ Grading and Drainage Plan	IX-16	1	2										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		
○ Roadway Plan and Profile	IX-28	1	2										1													
○ Road Cross-Sections	IX-27	1	2																							
○ Detail Sheet	IX-12	1	2																							
○ Landscape Plan	IX-20	2	1	1					8																	
○ Geotechnical Report	X-8	1									1															
○ Final Drainage Report	X-5,6	1	2										1													
○ Stormwater Management Plan	X-14	1	2										1								1					
○ Phase I and II Environmental Report	X-10,11	1	1																							
○ Traffic Impact Study	X-15	1	2																		1					

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

PRE-APPLICATION CONFERENCE

Date: 9/3/96
Conference Attendance: Mike Pelletier, Paul Beigh
Proposal: Bookcliff Gardens expansion
Location: 755 26 Road

Tax Parcel Number: 2701-344-00-120, 118, 119

Review Fee: \$ 350

(Fee is due at the time of submittal. Make check payable to the City of Grand Junction.)

Additional ROW required? ~

Adjacent road improvements required? —

Area identified as a need in the Master Plan of Parks and Recreation? —

Parks and Open Space fees required? _____ Estimated Amount: _____

Recording fees required? _____ Estimated Amount: _____

Half street improvement fees/TCP required? ? Estimated Amount: _____

Revocable Permit required? _____

State Highway Access Permit required? _____

On-site detention/retention or Drainage fee required? _____

Applicable Plans, Policies and Guidelines _____

Located in identified floodplain? FIRM panel # _____

Located in other geohazard area? _____

Located in established Airport Zone? Clear Zone, Critical Zone, Area of Influence? _____

Avigation Easement required? _____

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

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

Related Files: _____

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

PRE-APPLICATION CONFERENCE

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

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

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

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

[Signature]
Signature(s) of Petitioner(s)

[Signature]
The Larson Group, Architects
Signature(s) of Representative(s)

2701-341-00-016
THOMAS E MILLER
L A
PO BOX 177
EVANSTON, WY 82931-0177

2701-341-00-018
MARION B LAMM
2587 G 1/2 RD
GRAND JUNCTION, CO 81505-9544

2701-341-00-087
GLADYS EARNEST
TRUSTEE
2855 APPLEWOOD ST
GRAND JUNCTION, CO 81506

2701-341-00-119
EDWARD H SETTLE
BETTY C C/O W R & A SETTLE
755 26 RD
GRAND JUNCTION, CO 81506-1432

2701-341-00-141
GNT DEVELOPMENT CORP - A
COLORADO CORP
PO BOX 308
GRAND JUNCTION, CO 81502-0308

2701-341-00-142
MARION B LAMM
2587 G 1/2 RD
GRAND JUNCTION, CO 81505-9544

2701-344-00-020
MARION B LAMM
2587 G 1/2 RD
GRAND JUNCTION, CO 81505-9544

2701-344-00-118
BETTY C SETTLE
774 27 RD # 2
GRAND JUNCTION, CO 81506-1884

2701-344-08-001
DALE E JONES
K ERIC ALPHA
821 27 RD
GRAND JUNCTION, CO 81506-8620

2701-344-08-002
DALE E JONES
K ERIC ALPHA
821 27 RD
GRAND JUNCTION, CO 81506-8620

2701-344-08-003
DALE E JONES
K ERIC ALPHA
821 27 RD
GRAND JUNCTION, CO 81506-8620

2701-344-08-007
DALE E JONES
K ERIC ALPHA
821 27 RD
GRAND JUNCTION, CO 81506-8620

2701-344-08-008
DALE E JONES
K ERIC ALPHA
821 27 RD
GRAND JUNCTION, CO 81506-8620

2701-344-08-009
DALE E JONES
K ERIC ALPHA
821 27 RD
GRAND JUNCTION, CO 81506-8620

2701-344-08-010
DALE E JONES
K ERIC ALPHA
821 27 RD
GRAND JUNCTION, CO 81506-8620

2701-352-00-013
STEPHEN R MEACHAM
DAVID P FISHER
PO BOX 2026
GRAND JUNCTION, CO 81502-2026

2701-353-00-061
MARIAN REUS JACOBSON
PO BOX 2162
GRAND JUNCTION, CO 81502-2162

Bookcliff Gardens
755 26 Road
Grand Junction, CO 81506

Paul Beigh
The Larson Group Architects
2452 Patterson Rd., Suite 300
Grand Junction, CO 81505

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

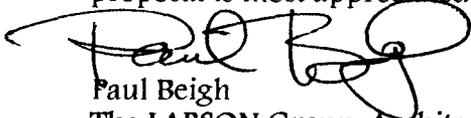
General Project Report

RE: Bookcliff Gardens

The proposed project is an addition / remodel to the existing facilities at Bookcliff Gardens located at 755 26 Road, Grand Junction, CO. The intent of this proposed construction is to remove the present (approx. 2200 square foot) retail area located between the northerly one story garden center building and the new proposed greenhouse / retail building on the south, and build a new two story (using the same footprint). This new structure will replace the existing retail / sales area and single restroom with a new retail sales area with two handicapped restrooms and two stairways to the proposed second floor. The upper level (of approx. 2200 sq. ft.) will have offices, light bulk storage, two handicapped restrooms and a lunchroom. A mechanical room is also provided for both this building and the venting of the proposed adjacent Greenhouse structure. The ridgeline of this office / retail building is approximately 4' higher than the ridge of the existing garden center building.

The second part of this proposal is to remove the current trellis system that is the public entry leading to the afore mentioned retail / sales building. It is to be replaced with a new greenhouse building that mirrors the existing garden center building in height and width.

This project will have minimum visual impact along any public streets and properties, especially I - 70. It is understood that various agencies will have certain criteria to be met prior to construction of these new replacement buildings. The intent of Bookcliff Gardens is to create a new "user friendly" environment while adding to the functionality of the facility for employees and staff. Your favorable consideration of this proposal is most appreciated.



Paul Beigh
The LARSON Group, Architects
2452 Patterson Road Suite 300
Grand Junction, CO 81505
970 - 242 - 8976

REVIEW COMMENTS

Page 1 of 2

FILE #PDR-96-203

TITLE HEADING: Bookcliff Gardens

LOCATION: 755 26 Road

PETITIONER: Bookcliff Gardens

PETITIONER'S ADDRESS/TELEPHONE: 755 26 Road
Grand Junction, CO 81506
242-7766

PETITIONER'S REPRESENTATIVE: Paul Beigh

STAFF REPRESENTATIVE: Mike Pelletier

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., SEPTEMBER 23, 1996.

CITY COMMUNITY DEVELOPMENT

9/12/96

Mike Pelletier

244-1451

1. Since the newly acquired area to west must be included in the approved plan before it can be utilized by the business, you should consider including it as part of this approval process. This will save money and time in the future. Depending on the use in this area, certain types of screening may be required along G ½ Road.
2. The gravel parking lot will not have to be paved, since the addition does not require additional parking spaces beyond what is already provided.
3. Be sure to get a sign permit when needed.
4. Add a scale and north arrow to the site plan drawing.
5. Make sure your "5"s don't look like "6"s on the drawing.

CITY DEVELOPMENT ENGINEER

9/18/96

Jody Kliska

244-1591

1. Transportation Capacity payment is ~~\$3710.00~~. *Jody changed to \$880.00*
2. No change to drainage, no fee.

CITY UTILITY ENGINEER

Trent Prall

244-1590

1. As sewer is within 400' of this property, a connection to sewer will be mandatory if the proposed improvements will necessitate the septic system be modified in order to accommodate the improvement.
2. Please contact Jodi Romero of the City Customer Service Division at 244-1520 for information regarding sewer plant investment fees for this site.
3. Fireline may be required as this property is only served by 2" line. Please see Fire Department requirements for more details.

CITY FIRE DEPARTMENT

9/17/96

Hank Masterson

244-1414

Section 903.2 of the Uniform fire Code requires that "an approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction." Section 38-194 of the City Code requires fire hydrants along public right-of-way and spaced so that there is no more than 250' from a property frontage to a hydrant. The minimum fire flow must be at least 500 gallons per minute and also must meet the flow requirements specified by the 1980 Fire Suppression Rating Schedule.

For this proposal, a fire hydrant must be placed near the main entrance to the property along 26 Road. Required fire flow depends on the type of construction for the new buildings, but will be at least 1,500 gallons per minute. The estimated available fire flow for a fire line extension along G ½ Road to this site would be less than 900 gallons per minute. If the new buildings included a complete fire sprinkler system, the required fire flow would be reduced by up to 75%.

One possible option for this proposal would be to place a fire hydrant along G ½ Road at the exit to the site and install a complete fire sprinkler system for the new buildings.

Contact the Fire Department for more information on these requirements.

MESA COUNTY BUILDING DEPARTMENT

9/16/96

Bob Lee

244-1656

1. All construction must comply to requirements of 1994 U.B.C.
2. Need 2 sets of sealed plans and allow 10-14 days for plan review.
3. Fire-walls may need to be added between retail/office uses and other uses.

September 23, 1996

Mike Pelletier
Community Development Department
City of Grand Junction
250 North 5th Street
Grand Junction, CO 81501

Re: PDR-96-203, review comments

Dear Mr. Pelletier,

The following are the owners responses to the comments made by each department regarding the proposed project at Bookcliff Gardens:

Community Development- 1) since the adjacent small triangular piece of property is not yet purchased we sill not be including this parcel in this approval process. When it does get purchased this property will already have been rezoned PB. Also it will be used for tree storage so will not require any screening; 2-5) no response.

City Development Engineer- 1) in talking to Jody Kliska, we will be negotiating the actual Transportation Capacity payment fees since the footage figures she used were incorrect; 2) no response.

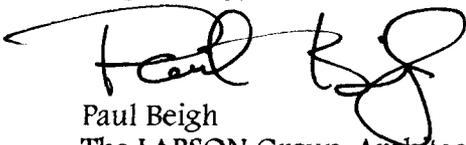
City Utility Engineer- 1) sewer connection is a given; 2) we have obtained the sewer plant investment fee from Jodi Romero; 3) see fire dept. comments.

City Fire Department- we will be discussing various alternatives for fire protection, but there will be an 8" water main brought to within 100' of the southwest corner of this property by the development of the Wilson Ranch Townhome development. This will answer to the water supply issue.

Mesa County Building Department- 1-3) no response

If you have any questions regarding any of our responses please do not hesitate to call at your earliest convenience.

Respectfully,



Paul Beigh
The LARSON Group, Architects
2452 Patterson Road, Suite 300
Grand Junction, CO 81505
970-242-8976

PLANNING COMMISSION STAFF REPORT

FILE: PDR-96-203

DATE: October 1, 1996

STAFF: Mike Pelletier

REQUEST: Addition and remodel of the retail portion of Bookcliff Garden Nursery

LOCATION: 755 26 Road.

APPLICANT: Paul Beigh (representative)

EXECUTIVE SUMMARY:

Bookcliff Gardens desires to remodel and expand their retail portion of the site. The visual impact of the proposal is minimal, with no change in building footprint and a small increase in height.

EXISTING LAND USE: Nursery

PROPOSED LAND USE: Same

SURROUNDING LAND USE:

NORTH: I-70, Residential
SOUTH: Vacant (Platted Residential)
EAST: Residential
WEST: Residential

EXISTING ZONING: Planned Business

SURROUNDING ZONING:

NORTH: RSF-R
SOUTH: PD1 (County)
EAST: R1B (County)
WEST: PR4.4 (Wilson Townhomes)

RELATIONSHIP TO COMPREHENSIVE PLAN:

The City/County Growth Plan recommends commercial for this property. However, the Growth Plan does not distinguish between commercial and neighborhood

business. Therefore, it does not necessarily recommend commercial over neighborhood business.

STAFF ANALYSIS:

The proposed project is an addition and remodel to the existing facilities at Bookcliff Gardens. The intent of this proposed construction is to remove the present (approx. 2200 sq.ft.) retail area located between the northerly one story garden center building and the new proposed greenhouse/retail building on the south, and build a new two story (using the same footprint). This new structure will replace the existing retail/sales area and single restroom with a new retail sales area with two handicapped restrooms and two stairways to the proposed second floor. The upper level (of approx. 2200 sq.ft.) will have offices, light bulk storage, two handicapped restrooms and a lunchroom. A mechanical room is also provided for both this building and the venting of the proposed adjacent Greenhouse structure. The ridgeline of this office/retail building is approximately 4 feet higher than the ridge of the existing garden center building.

The second part of this proposal is to remove the current trellis system that is the public entry leading to the aforementioned retail/sales building. It is to be replaced with a new greenhouse building that mirrors the existing garden center building in height and width.

The visual impact of this proposal on adjacent property owners and roadways is minimal due to the scale of the project and distance of neighboring homes. In addition, the existing parking lot has enough capacity to absorb the addition/remodel and still meet the parking requirement. The proposal will improve the site and have no significant effect on the compatibility with surrounding properties.

STAFF RECOMMENDATION:

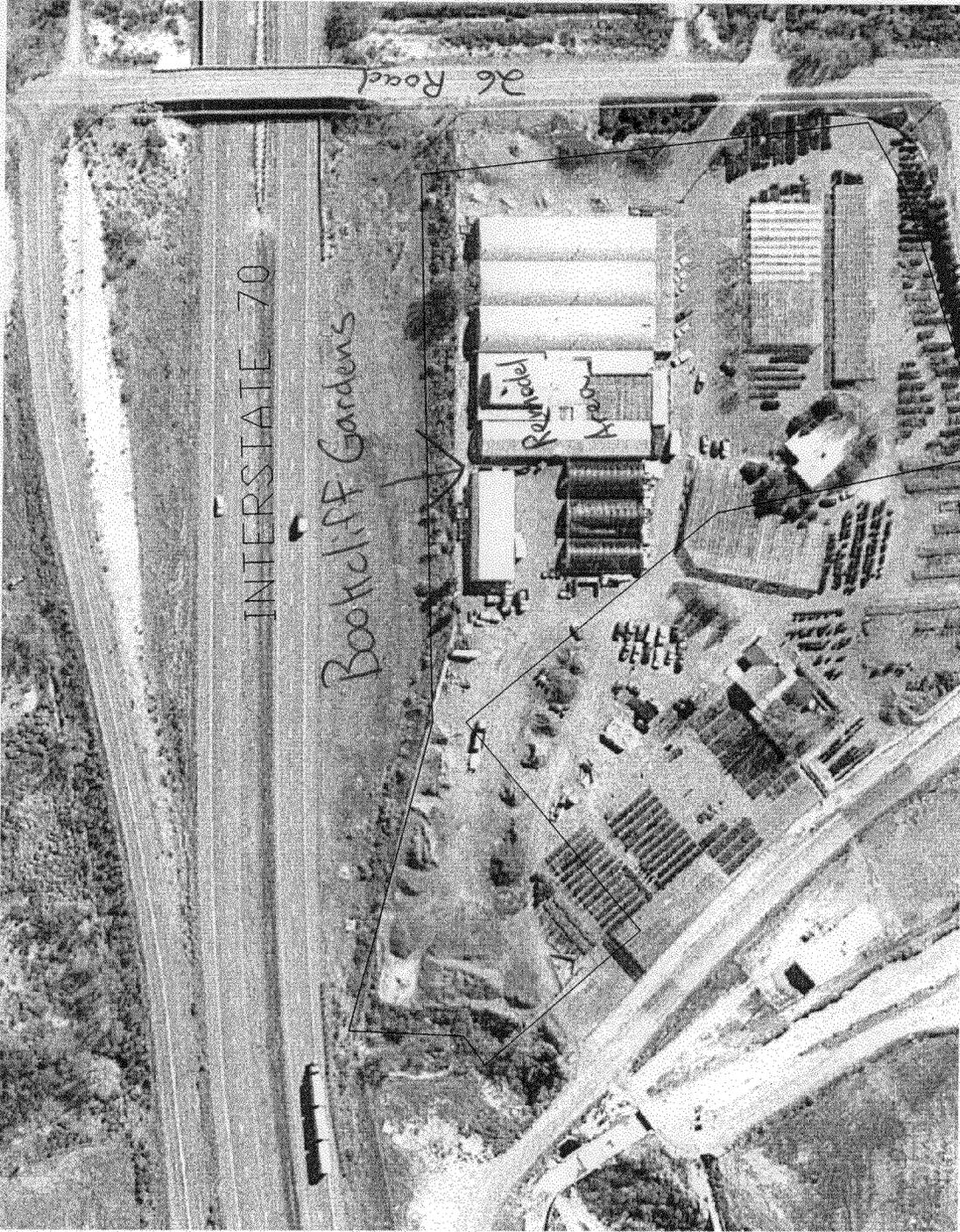
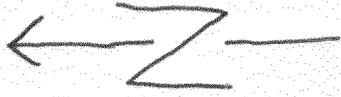
Approval

RECOMMENDED PLANNING COMMISSION MOTION:

Mr. Chairman, on item #PDR-96-203, I move that we approve this item.

with condition that the petitioner meets the fire depts. requirements and secures them with a development improvement agreement.





September 23, 1996

Mike Pelletier
Community Development Department
City of Grand Junction
250 North 5th Street
Grand Junction, CO 81501

Re: PDR-96-203, review comments

Dear Mr. Pelletier,

The following are the owners responses to the comments made by each department regarding the proposed project at Bookcliff Gardens:

Community Development- 1) since the adjacent small triangular piece of property is not yet purchased we will not be including this parcel in this approval process. When it does get purchased this property will already have been rezoned PB. Also it will be used for tree storage so will not require any screening; 2-5) no response.

City Development Engineer- 1) in talking to Jody Kliska, we will be negotiating the actual Transportation Capacity payment fees since the footage figures she used were incorrect; 2) no response.

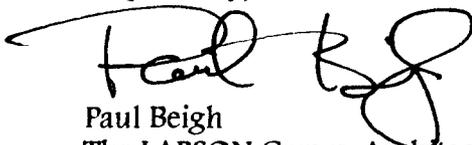
City Utility Engineer- 1) sewer connection is a given; 2) we have obtained the sewer plant investment fee from Jodi Romero; 3) see fire dept. comments.

City Fire Department- we will be discussing various alternatives for fire protection, but there will be an 8" water main brought to within 100' of the southwest corner of this property by the development of the Wilson Ranch Townhome development. This will answer to the water supply issue.

Mesa County Building Department- 1-3) no response

If you have any questions regarding any of our responses please do not hesitate to call at your earliest convenience.

Respectfully,



Paul Beigh
The LARSON Group, Architects
2452 Patterson Road, Suite 300
Grand Junction, CO 81505
970-242-8976

REVIEW COMMENTS

Page 1 of 2

FILE #PDR-96-203

TITLE HEADING: Bookcliff Gardens

LOCATION: 755 26 Road

PETITIONER: Bookcliff Gardens

PETITIONER'S ADDRESS/TELEPHONE: 755 26 Road
Grand Junction, CO 81506
242-7766

PETITIONER'S REPRESENTATIVE: Paul Beigh

STAFF REPRESENTATIVE: Mike Pelletier

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., SEPTEMBER 23, 1996.

CITY COMMUNITY DEVELOPMENT

9/12/96

Mike Pelletier

244-1451

1. Since the newly acquired area to west must be included in the approved plan before it can be utilized by the business, you should consider including it as part of this approval process. This will save money and time in the future. Depending on the use in this area, certain types of screening may be required along G ½ Road.
2. The gravel parking lot will not have to be paved, since the addition does not require additional parking spaces beyond what is already provided.
3. Be sure to get a sign permit when needed.
4. Add a scale and north arrow to the site plan drawing.
5. Make sure your "5"s don't look like "6"s on the drawing.

CITY DEVELOPMENT ENGINEER

9/18/96

Jody Kliska

244-1591

1. Transportation Capacity payment is \$3710.00.
2. No change to drainage, no fee.

CITY UTILITY ENGINEER

Trent Prall

244-1590

1. As sewer is within 400' of this property, a connection to sewer will be mandatory if the proposed improvements will necessitate the septic system be modified in order to accommodate the improvement.
2. Please contact Jodi Romero of the City Customer Service Division at 244-1520 for information regarding sewer plant investment fees for this site.
3. Fireline may be required as this property is only served by 2" line. Please see Fire Department requirements for more details.

CITY FIRE DEPARTMENT

9/17/96

Hank Masterson

244-1414

Section 903.2 of the Uniform fire Code requires that "an approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction." Section 38-194 of the City Code requires fire hydrants along public right-of-way and spaced so that there is no more than 250' from a property frontage to a hydrant. The minimum fire flow must be at least 500 gallons per minute and also must meet the flow requirements specified by the 1980 Fire Suppression Rating Schedule.

For this proposal, a fire hydrant must be placed near the main entrance to the property along 26 Road. Required fire flow depends on the type of construction for the new buildings, but will be at least 1,500 gallons per minute. The estimated available fire flow for a fire line extension along G ½ Road to this site would be less than 900 gallons per minute. If the new buildings included a complete fire sprinkler system, the required fire flow would be reduced by up to 75%.

One possible option for this proposal would be to place a fire hydrant along G ½ Road at the exit to the site and install a complete fire sprinkler system for the new buildings.

Contact the Fire Department for more information on these requirements.

MESA COUNTY BUILDING DEPARTMENT

9/16/96

Bob Lee

244-1656

1. All construction must comply to requirements of 1994 U.B.C.
2. Need 2 sets of sealed plans and allow 10-14 days for plan review.
3. Fire-walls may need to be added between retail/office uses and other uses.

October 3, 1996

Paul Beigh
Homes of Distinction
252 1/2 Gloucester Circle West
Grand Junction, CO 81503

Mr. Beigh:

During our meeting of October 1, 1996, the Fire Department proposed the following solution to meet the fire flow requirements for the new buildings at Bookcliff Gardens:

1. Extend the proposed eight-inch fire line scheduled to be installed up to your west property line as part of the Wilson Ranch Townhomes project. This line must be extended 550' to the nursery soils and mixing area on your property.
2. Install fire hydrants at your G 1/2 Road exit and at your nursery/soils mixing area.

These requirements will meet City fire flow standards, provided the new eight-inch fire line can supply the required flows.

Based on flow calculations completed for the Wilson Townhomes line extension, we estimate the available flows at your site will be about 900 gallons per minute (gpm). In earlier review comments I had calculated the required fire flow to be 1,500 gpm-which is the minimum allowed for commercial property in the Uniform Fire Code. The ISO fire flow calculation method, which is used by the City of Grand Junction, allows for flows less than 1,500 gpm for smaller structures. The normal procedure for determining required fire flows is to calculate the total square footage of all structures defined as one building. In the case of Bookcliff Gardens, this would include the two proposed buildings, the existing garden center, and the four attached greenhouses. In addition, all buildings within 100' are included as fire exposure hazards. Using this method, the resulting fire flow would be quite large; about 3,500 gpm.

For the Bookcliff Gardens project, since all existing structures were built before any fire flow requirements were in effect, the Fire Department will only consider the proposed new structures in determining fire flow. Existing attached buildings and exposures will not be considered. Using this method, the resulting fire flow requirement will be about 900 gpm. Since the available water supply will also be about 900 gpm, the proposed eight-inch line extension and two fire hydrants will provide adequate fire protection for the new office and greenhouse. The calculations for available fire flow (AFF) and required fire flow (RFF) are shown in the separate attachment.

The hearing for the Wilson Ranch Townhomes project is scheduled before the Grand Junction City Council on October 16, 1996. The cost to you of providing fire protection to your property is dependent on approval of this project because it includes extending an eight-inch fire line from the corner of Wilson Drive and Corral Drive along G 1/2 Road to your west property line, which is a distance of 2,055 feet.

I will amend the Fire Department conditions of approval for this project through the Grand Junction Community Development Department to reflect this additional approved method for you to provide fire protection to your project.

Please contact me at the Fire Department should you have any questions.

Sincerely,

Hank Masterson,
Code Enforcement

**Calculating Available Fire Flow (AFF) and Required Fire Flow (RFF) for the
Bookcliff Gardens Project-File #PDR-96-203**

**Calculating Available Fire Flow (AFF) and Required Fire Flow (RFF) for the
Bookcliff Gardens Project-File #PDR-96-203**

AFF

1. To determine AFF a flow test of the nearest fire hydrants is necessary. The nearest hydrant is about 2,600 feet west at Wilson Drive and Corral Drive. A flow test in March of 1996 gave a flow of 1069 gpm at 20 psi residual. Static pressure was 102 psi; residual pressure was 40 psi. The flow pressure reading was 919 gpm at 30 psi. Elevation at this location is 4634 feet.

2. To determine available flows at the end of a 2,600 foot waterline extension of eight-inch size, the elevation change is needed and the friction loss through the line must be calculated.

a. The elevation at the nursery soils/mixing area of Bookcliff Gardens is about 4659 feet. Pressure loss due to elevation is .433 psi /foot. The increase in elevation from the Wilson Ranch test point is 25 feet. So, 25 feet*.433/foot is 10.8 psi.

b. The friction loss through the eight-inch line is calculated using the Hazen Williams Equation: $p=4.52*Q^{1.85}*L/C^{1.85}*D^{4.87}$, where p=friction loss in psi; Q=flow in gpm (this is the flow pressure reading); L=length of pipe; C=coefficient of pipe roughness; and D=inside diameter of pipe in inches. For Bookcliff Gardens, Q=919gpm; L=2,600 feet; C=140; D=7.981

So, $p=4.52*919\text{gpm}^{1.85}*2600^3/140^{1.85}*7.981^{4.87}$ and p=15.5psi.

c. Total psi loss is 15.5+10.8=26.3 psi. Since the static pressure measured at Wilson Ranch was 102 psi, the static pressure at Bookcliff Gardens will reflect the elevation increase: 102psi-10.8psi=91.2psi. The residual pressure at Wilson Ranch was 40psi at 919gpm flow, the residual pressure at Bookcliff Gardens will be 40psi - 26.3psi=13.7 psi. at 919 gpm. The available flow at Bookcliff Gardens at 20psi residual pressure is given by the formula: $Q@20\text{psi}=Q@13.7\text{psi} * [(Ps-20\text{psi})/(Ps-Pr)^{0.54}]$, where Q@20psi=flow in gpm @ 20 psi residual pressure; Q@13.7psi=flow in gpm @ 13.7 psi residual pressure; Ps=static pressure; Pr=residual pressure.

So $AFF=Q@20\text{psi}=919\text{gpm}*[(91.2-20)/(91.2-13.7)^{0.54}]$ and Q@20psi=878 gpm.

RFF

To determine RFF using the ISO formula, the Construction factor (C) is multiplied by the Occupancy factor (O).

$C=18F(A)^{0.5}$, where F=a coefficient for class of construction and A=square footage of the building. F=0.6 for a modified fire resistive building. A=9,700 square feet. So, $C=18(0.6)(9,700)^{0.5}=1064\text{gpm}$

O=0.85 for a limited combustible occupancy.

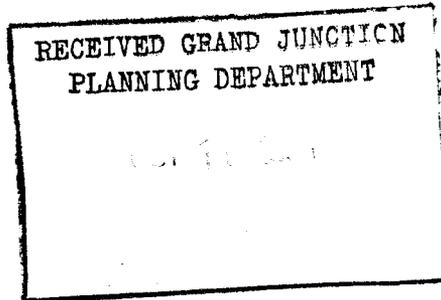
So, $RFF=C*O=1064\text{gpm}*.85=904\text{gpm}$.



Grand Junction Fire Department
330 South 6th Street
Grand Junction, Colorado 81501-7784

October 17, 1996

Paul Beigh
Homes of Distinction
252 1/2 Gloucester Circle West
Grand Junction, CO 81503



Mr. Beigh:

Regarding the Bookcliff Gardens project: In my letter to you dated October 3, 1996, I wrote that an 8" fire line extension from the west property line of Bookcliff Gardens along with installation of two fire hydrants would be an acceptable method of providing fire protection for this project. This fire line extension would be contingent upon another line extension of 2,055 feet to be completed as part of the Wilson Ranch Townhomes project.

The Wilson Ranch project was rejected by the Grand Junction City Council on October 16. Therefore the line extension will not occur and Bookcliff Gardens will have to extend a fire line from the existing line at Wilson Drive and Corral Drive, or from G Road along 26 Road to their property in order to provide required fire protection to their project.

Please contact me at the Fire Department should you have any questions about this.

Sincerely,

Hank Masterson

Hank Masterson,
Code Enforcement

pc: Mike Pelletier, Grand Junction Community Development Department

TYPE LEGAL DESCRIPTION(S) BELOW, USING ADDITIONAL SHEETS AS NECESSARY. USE SINGLE SPACING WITH A ONE INCH MARGIN ON EACH SIDE.

The land referred to is situated in the County of Mesa, State of Colorado, and is described as follows:

A Tract of land located in a part of the NE1/4 SE1/4 and a part of the SE1/4 NE1/4 of Section 34, Township 1 North, Range 1 West of the U.M. being more particularly described as follows: Commencing at the E 1/4 corner of said Section 34 and considering the East line of the SE1/4 of said Section 34 to bear North 00°16'30" East with all bearing contained herein being relative therto, thence North 25°07'28" West 255.83 feet to a Colorado State Highway right of way Monument on the South right of way of Interstate Highway No. 70, thence South 5°22'00" East along the said right of way of Interstate Highway No. 70 a distance of 409.20 feet to a point on the North right of way of G 1/2 Road, a county road of Mesa County; thence along the said North right of way of G 1/2 Road the following 3 courses and distances:

South 63°49'52" West 67.07 feet,

South 74°01'57" West 257.85 feet,

North 86°06'02" West 122.96 feet to the TRUE POINT OF BEGINNING of said Tract "A";

thence continuing along the said North right of way of G 1/2 Road the following 3 courses and distances:

North 51°46'49" West 111.57 feet,

North 38°24'46" West 235.17 feet,

North 46°51'15" West 95.77 feet,

thence North 51°35'14" East 247.67 feet, thence South 38°24'46" East 298.26 feet, thence South 17°34'54" West 250.68 feet to the TRUE POINT OF BEGINNING, LESS AND EXCEPT that part conveyed to BETTY C. SETTLE in instrument recorded October 2, 1980 in Book 1278 at Page 299, Mesa County, Colorado.

TYPE LEGAL DESCRIPTION(S) BELOW, USING ADDITIONAL SHEETS AS NECESSARY. USE
SINGLE SPACING WITH A ONE INCH MARGIN ON EACH SIDE.

THAT PT OF SE4NE4 + OF NE4SE4 SEC 34 IN 1W N OF RD + S OF I - 70 + DN EX THAT PT DESC IN B-
1070 P - 922 + THAT PT DESC IN B - 1123 P - 82 CO CLKS OFF
755 26 ROAD, GRAND JUNCTION 81506 - 1432 PARCEL NO. - 2701 - 341 - 00 - 120

