

- Vision
- Teamwork
- Commitment
- Communication

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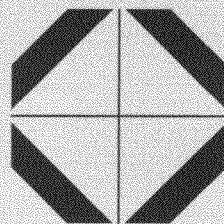
## **JACOBSEN SUBDIVISION**

**JN: 3596**

**TRANSPORTATION  
ENGINEERING DESIGN  
STANDARDS**

**DESIGN EXCEPTION**

**Prepared for**  
Village Homes of Colorado, LLC



**Carroll & Lange** INC

Professional Engineers & Land Surveyors  
165 South Union Blvd., Suite 156  
Lakewood, Colorado 80228  
(303) 980-0200 Fax: (303) 980-0917

TRANSPORTATION ENGINEERING DESIGN STANDARDS  
DESIGN EXCEPTION  
FOR  
JACOBSEN SUBDIVISION

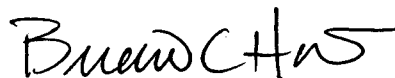
JN: 3596

June 9, 2006

Prepared for

Village Homes of Colorado, LLC  
100 Inverness Terrace East, Suite 200  
Englewood, CO 80112  
Fax: 303-795-9575  
303-795-1976

Prepared by:



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Brian C. Hart, PE  
Sr. Project Engineer



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165 South Union Boulevard, Suite 156  
Lakewood, CO 80228  
Fax: 303-980-0917  
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TRANSPORTATION ENGINEERING DESIGN STANDARDS  
DESIGN EXCEPTION  
FOR  
JACOBSEN SUBDIVISION

I. INTRODUCTION

This report outlines requested design exceptions from the City of Grand Junction's Transportation Engineering Design Standards (TEDS Manual) for the Jacobsen Preliminary Plan. There are a total of three design exceptions requested: Cul-de-sac length, Hammerhead turn-a-round in lieu of a traditional cul-de-sac, and Shared driveway length.

II. PROJECT LOCATION AND DESCRIPTION

- A. Location: The subject property is known as the Jacobsen Property and is located in the north-central area of Grand Junction east of the intersection of 26 Road and G ½ Road and south of Interstate I-70. More specifically, the property is the north 30 acres of the Northwest Quarter of the Southwest Quarter of Section 35, Township 1 North, Range 1 West of the Ute Meridian, and the entire Southwest Quarter of the Northwest Quarter of Section 35, Township 1 North, Range 1 West of the Ute Meridian, lying south of Interstate 70. Please see Exhibit 1 in the Appendix for a location map.
- B. Description of Project: The project is proposed as a 90 unit single-family detached residential subdivision on 37.61 acres. Primary access to the site will be from 26 Road at G ½ Road. Future access to the southern property will be available using the street network installed with this project. Please see Exhibit 2 for a preliminary site plan of the project.

III. DESIGN EXCEPTION NO. 1 – Cul-de-Sac Length

The first design exception request is for a cul-de-sac length longer than limit of 750 feet as outlined in Section 5.1.3 of the TEDS Manual. Exhibit 3 shows the layout of the site with the cul-de-sac length labeled. The 1,290-foot distance is measured from the next full street, which is a 44-foot Urban Residential Street within the subdivision.

First, it is important to point out that the 1,290-foot cul-de-sac length will be temporary. The last 230 feet of the cul-de-sac, as shown on Exhibit 2, is aligned along the adjacent property. This will allow for a future street connection to the property south of the site and will shorten the cul-de-sac length to less than 230-feet. The street was aligned along the property line to create an efficient site layout, but also to provide flexibility for the future street connection to the south.

TRANSPORTATION ENGINEERING DESIGN STANDARDS  
DESIGN EXCEPTION  
FOR  
JACOBSEN SUBDIVISION

Page 2

In addition, the topography further to the east along the southern boundary of the property drops approximately 25 feet into a historic drainage channel. Please see Exhibit 4. This would significantly limit the possibility of a future street connection.

Second, because of the topography limitations to the south of the Jacobsen Property and the challenging topography and wetlands area within the site, there are no additional access locations between the end of the cul-de-sac and the next intersection within the proposed site plan. The only other way to provide access is to extend the cul-de-sac to 26 Road. Initial conversations with City staff have indicated that a second access to 26 Road will more than likely not be allowed, even though it would meet the intersection spacing for collector streets outlined in Section 6.2.8.2. The applicant understands that staff would rather limit the access locations to a major collector like 26 Road and temporarily allow a cul-de-sac longer than 750 feet. Not allowing this second access would also provide flexibility for the property to the south to access 26 Road without significant intersection spacing limits, and would reduce all future accesses between the Grand Valley Canal and Interstate 70 from three to two.

IV. DESIGN EXCEPTION NO. 2 – Hammerhead vs. Cul-de-Sac

At the end of the cul-de-sac outlined in Design Exception 1, the current site plan has a hammerhead turn-a-round rather than a traditional cul-de-sac. It is not clear from the TEDS Manual if a traditional cul-de-sac is required for a dead end street or if a hammerhead turn-a-round can be utilized as an alternative. At the Pre-Application meeting with city staff, Eric Hahn suggested that a TEDS Exception for the hammerhead should be submitted to make sure the concept is acceptable prior to moving forward with a Preliminary Plan application. Exhibit 5 shows both the proposed hammerhead turn-a-round and a traditional cul-de-sac.

First, the hammerhead has been designed to conform to the requirements of Fire Department Access section of the TEDS Manual. More specifically, the hammerhead shown represents the Alternative Turnaround. In addition, the hammerhead is wider than required along the residential street portion of the turn-a-round. Therefore, the hammerhead turn-a-round does not create any problems in regards to emergency access.

Second, a traditional cul-de-sac will conflict with the wetlands as shown on Exhibit 5. The applicant will be required by permit with the Army Corp of Engineers to provide a 25-foot buffer around the delineated wetlands shown on the exhibit. The grade difference between the wetlands and the probable street



TRANSPORTATION ENGINEERING DESIGN STANDARDS  
DESIGN EXCEPTION  
FOR  
JACOBSEN SUBDIVISION

Page 3

grade dictate the use of a turnaround rather than a traditional cul-de-sac. Using a traditional cul-de-sac would force the street to end further to the east, which would eliminate the end lot on the north side of the street.

V. DESIGN EXCEPTION NO. 3 – Shared Driveway Length

The current site plan for the project shows a shared driveway along the western boundary of the site, just south of the main entrance serving lots 61–63, and possibly lot 60. The shared driveway as proposed will meet all twelve guidelines as outlined in Section 13.2.1 of the TEDS Manual for shared driveways, except guideline number 3. Guideline number 3 states that shared driveway can be a maximum of 150 feet long. The shared driveway shown is approximately 205 feet as measured from the street right-of-way. Please see Exhibit 6 for more detail.

The shared driveway has been arranged as proposed to provide efficient access to the adjacent lots without using a standard residential street, which would probably eliminate up to three lots. This is an important aspect of this request because the site is required to have a minimum density of four units per acre by code, and the site is close to that density as shown.

To provide turn-a-round access for emergency vehicles, we are proposing an Alternative Turnaround as shown in Chapter 14 of the TEDS Manual. Therefore, access for emergency vehicles is acceptable.

In addition, the shared driveway standards outlined in the TEDS Manual require a minimum width of 16 feet. The shared driveway proposed is 20 feet wide, which provides additional width for local turning movements. More importantly, the 20-foot width provides the minimum width for emergency access. Therefore, the 20-foot driveway will provide a wider access for adjacent residents while providing adequate width for emergency access.

VI. CONCLUSION

The developer of the Jacobsen Property respectfully requests the City of Grand Junction TEDS Design Exception Committee approve the proposed design exceptions outlined in this report. The developer believes that the proposed exceptions provide a reasonable approach to challenging design issues.

This report does not propose that the exceptions should be permanently applied to the TEDS Manual.

# 738 26 Road



SCALE 1 : 11,814

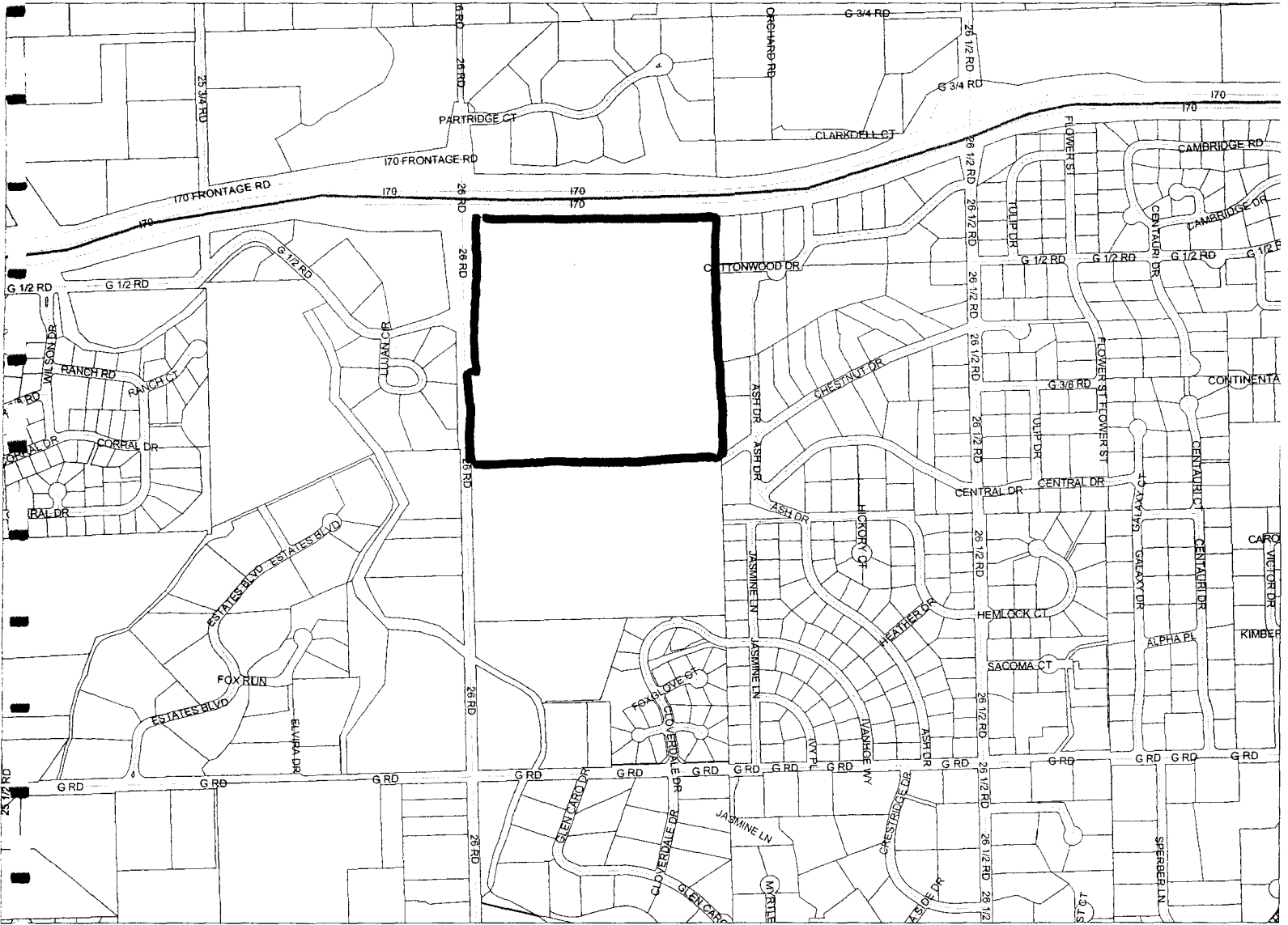


**APPENDIX A**

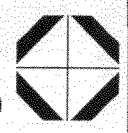
**Design Exception Exhibits**



# Location Map - Exhibit 1



JACOBSEN SUBDIVISION  
 DESIGN EXCEPTION  
 EXHIBIT 2



Professional Engineers & Land Surveyors  
 165 South Union Blvd., Suite 156  
 Lakewood, Colorado 80228  
 PHONE: (303) 980-0200  
 FAX: (303) 980-0917  
 WWW.CARROLL-LANGE.COM

No.	Revisions	Date	By	Chk

Designed By: \_\_\_\_\_  
 Checked By: \_\_\_\_\_  
 SEE MASTER REVISION/TRACKING TABULATION

FOR AND ON BEHALF OF  
 CARROLL & LANGE, INC.

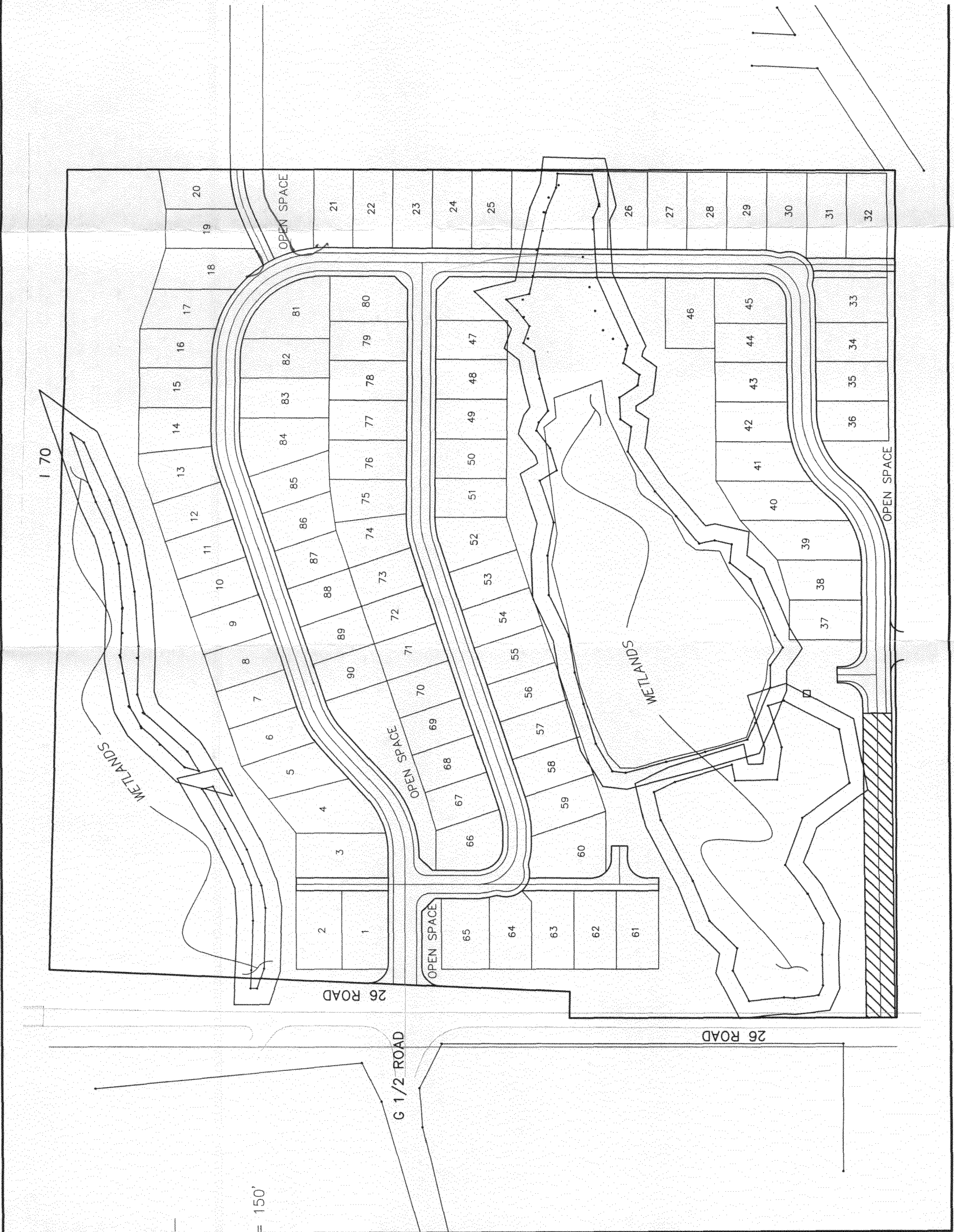
FOR AND ON BEHALF OF  
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Record Documents

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WATER  
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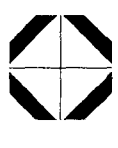
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SCALE: 1" = 150'



Project: Title: JACOBSEN SUBDIVISION  
 Scale: Date: JUNE 2006  
 Job No. 3596  
 File No. EX-03  
 Sheet 1 of 1



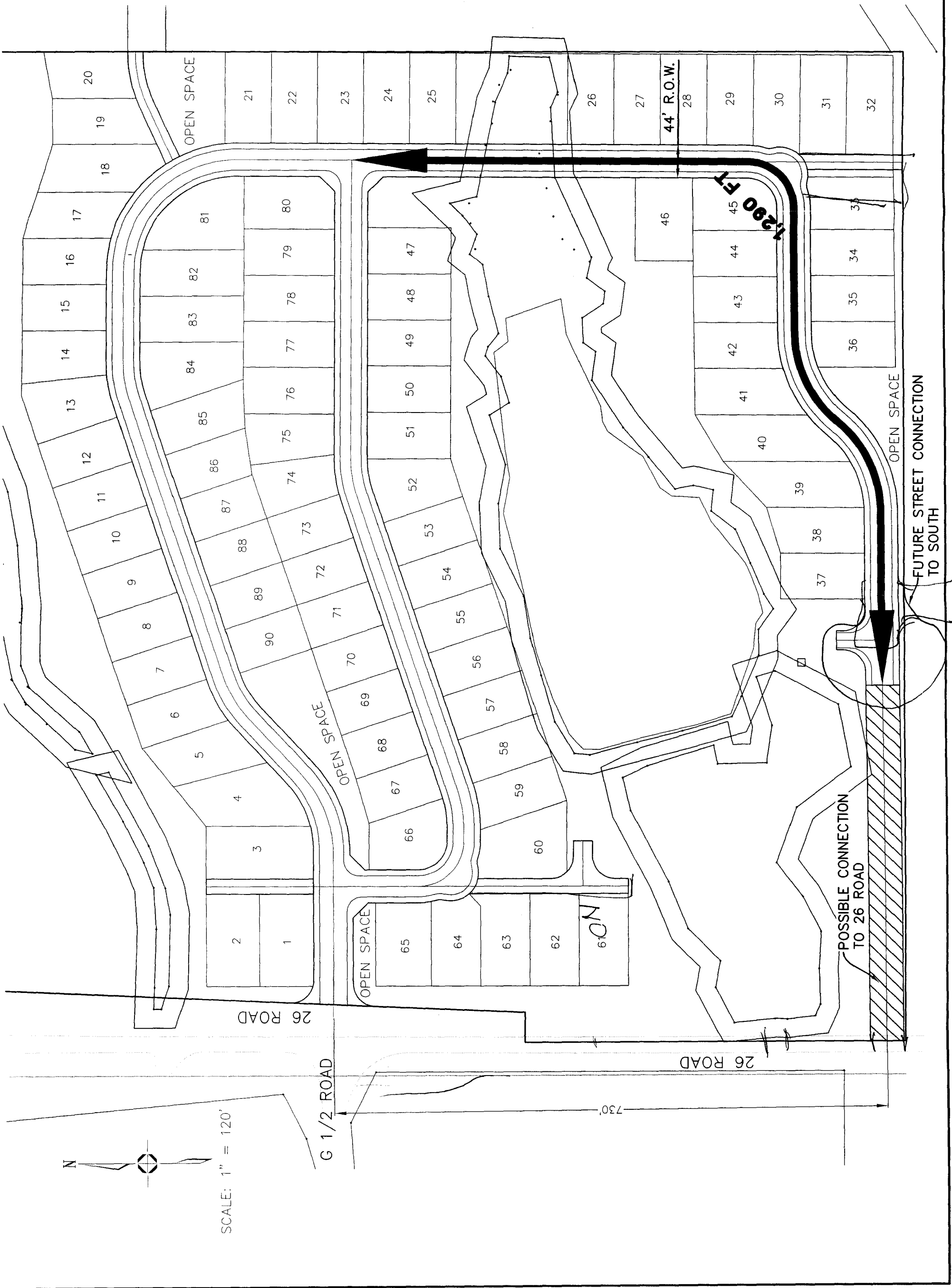
**Carroll & Lange**  
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Designed By: \_\_\_\_\_  
 Checked By: \_\_\_\_\_  
 SEE MASTER REVISION/TRACKING TABULATION

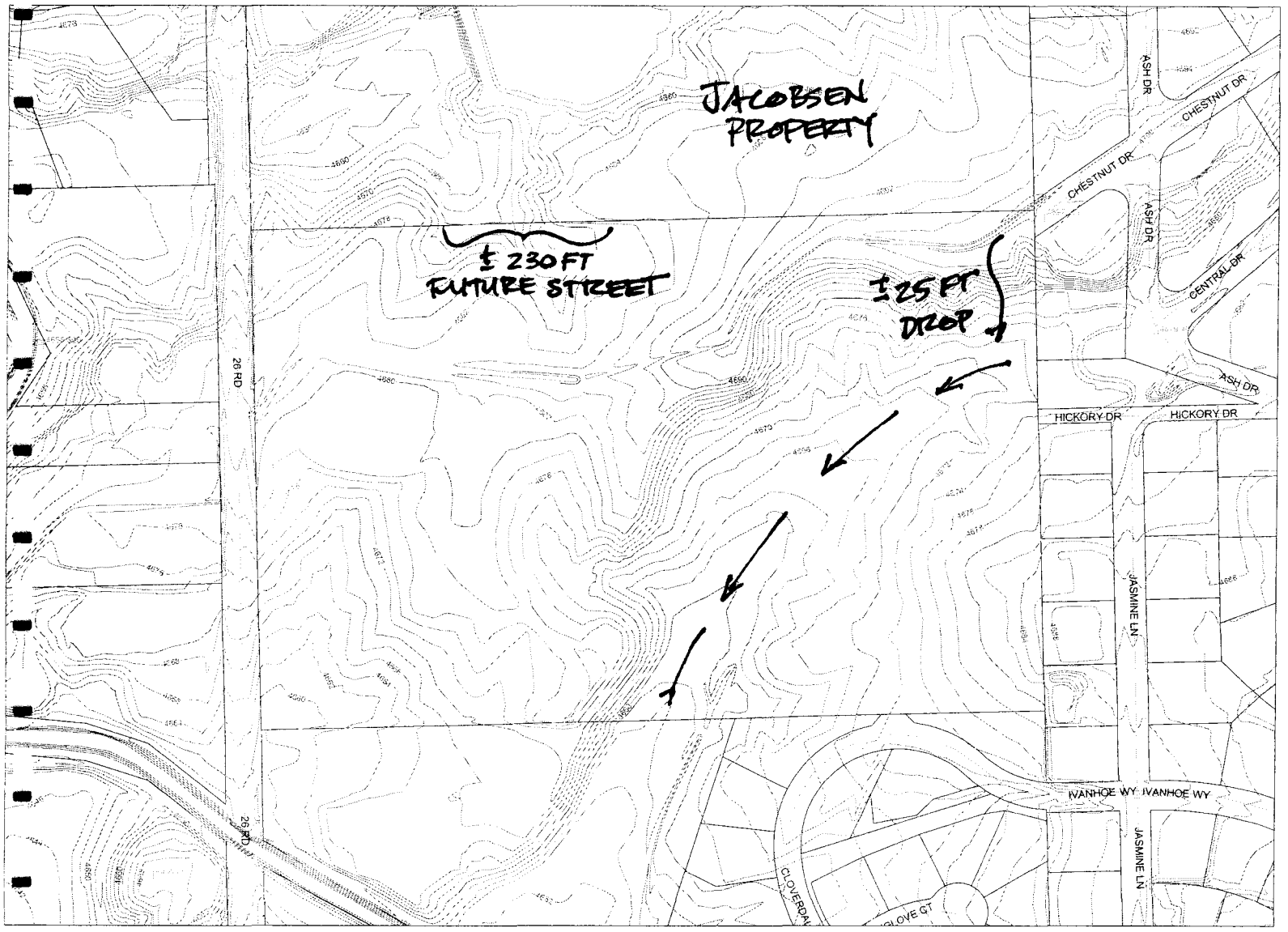
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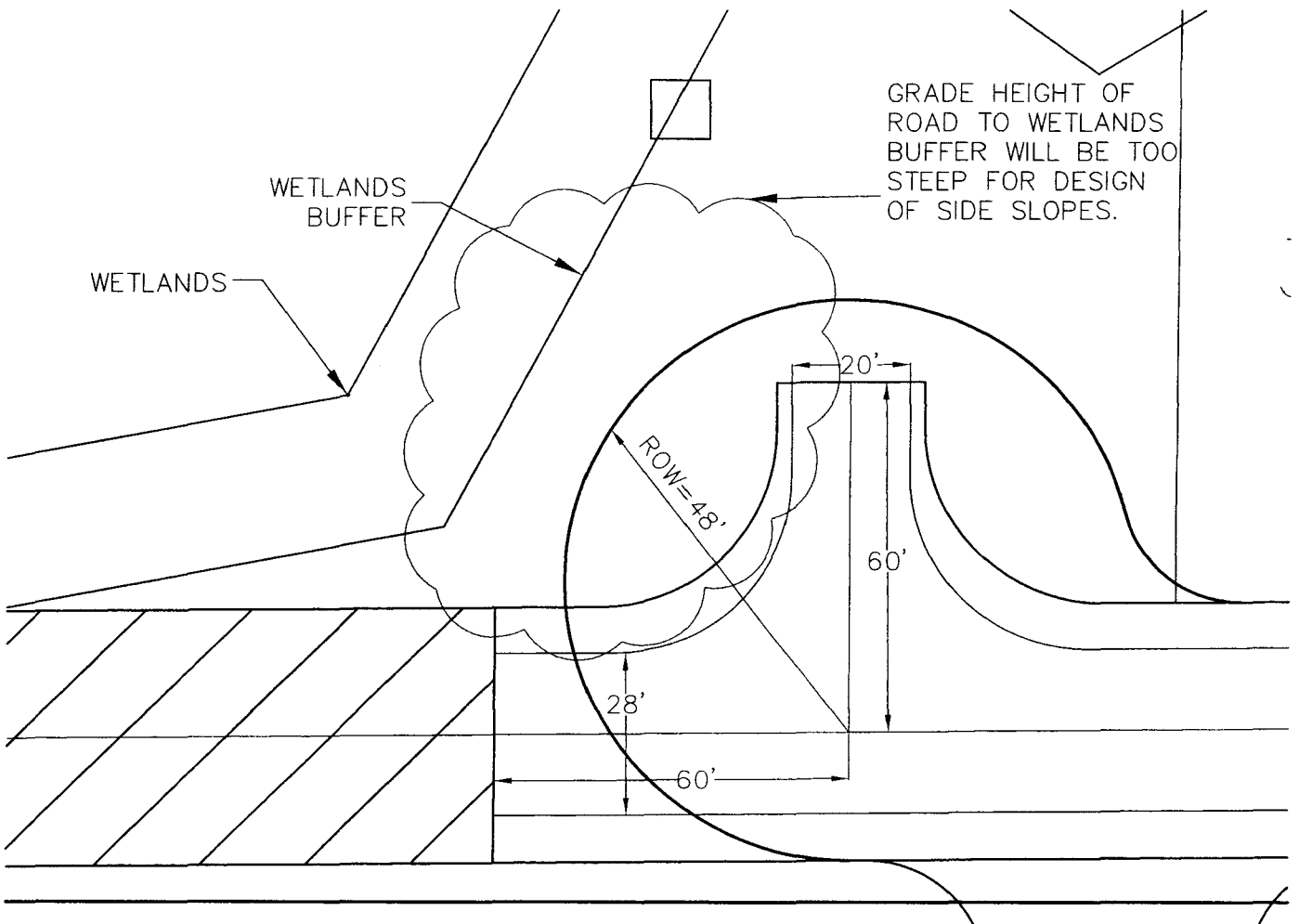
# Cul-de-sac Length - Exhibit 4



# ILLUSTRATION FOR HAMMERHEAD VS. CUL-DE-SAC



SCALE: 1" = 30'



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CITY OF GRAND JUNCTION, CO

JACOBSEN SUBDIVISION  
DESIGN EXCEPTION  
EXHIBIT 5

By: RGN	Scale: 1"=30'	
Drawn By: BH	Date: 06-09-06	Job No. 3596





June 21, 2006

Brian Hart  
Carroll & Lange, Inc.  
165 South Union Boulevard, Suite 156  
Lakewood, CO 80228

Re: Design Exception 24-06 – 738 26 Road (Jacobsen Subdivision)

Dear Mr. Hart:

Please find attached the committee's decision for the above referenced request. This design exception has been approved as explained below. You may use this decision to proceed through the development review process for this exception.

**#1 Cul-de-sac length**

The TEDS Committee approved the exception request for a cul-de-sac length of approximately 1290' with the understanding that the applicant will construct two public roadway stubs (per city standards) to the parcel to the south; one at the location shown near the proposed hammerhead and one near the south east corner of the site adjacent to lots 31, 32 & 33. The Committee also stressed the importance of a public roadway connection to the east at Cottonwood Drive.

**#2. Hammerhead vs. Cul-de-sac**

The TEDS Committee approved this request as proposed.

**#3. Shared Driveway Length**

The TEDS Committee approved this request as proposed.

If you have any questions concerning this decision, please feel free to contact the Development Engineer in charge of your project or Tim Moore, Public Works Manager at (970) 244-1557.

Sincerely,

*Sandi Nimon*

Sandi Nimon,  
Sr. Administrative Assistant

Xc: Eric Hahn, Development Engineer (244-1443)

*File*

## DESIGN EXCEPTION 24-06

To: Mark Relph, Director of Public Works & Utilities  
Sheryl Trent, Assistant to the City Manager  
Jim Bright, Acting Fire Chief

From: Tim Moore, Public Works Manager

Copy to: Eric Hahn

Date: June 14, 2006

RE: 738 26 Road (Jacobsen Sub.) #1. Cul-de-sac length  
#2. Hammerhead vs. cul-de-sac  
#3. Shared driveway length

### DESCRIPTION OF THE SITUATION

The applicant desires to create 90 residential lots on 37 acres at 738 26 Road. Proposed primary access to the subdivision will be from 26 Road, with additional access from surrounding street networks.

#### Exception #1 – Cul-de-sac length

The applicant's proposed street layout attempts to maximize the use of the existing site, while respecting the topography, wetlands, and the desire to limit accesses onto Collector Streets. The layout requires a cul-de-sac that will be 1290 ft, until such time as the adjacent property to the south develops and creates an intersection near the end of the cul-de-sac.

### EXCEPTION CONSIDERATIONS

**1. Will the exception compromise safety?**

Staff does not believe safety will be compromised if the parcel interconnectivity requirements are met for adjacent properties to the east and south.

**2. Have other alternatives been considered that would meet the standard?**

Yes. It is possible to simply extend the cul-de-sac and create another access on 26 Road. This would probably meet most or all TEDS requirements, but due to the topography, sight distance may be difficult to attain without reconstructing 26 Road.

**3. Has the proposed design been used in other areas?**

The proposed subdivision will ultimately have fewer than 100 lots which meets maximum allowed in TEDS for dead end street length and the TEDS Committee has granted similar requests. Some municipalities on the Front Range have no limit on dead-end lengths.

**4. Will the exception require CDOT or FHWA coordination?**

No.

**5. Is this a one-time exception or a manual revision?**

This would be a one-time exception.

**Staff Recommendation of Exception #1:**

Staff recommends approval of this exception request

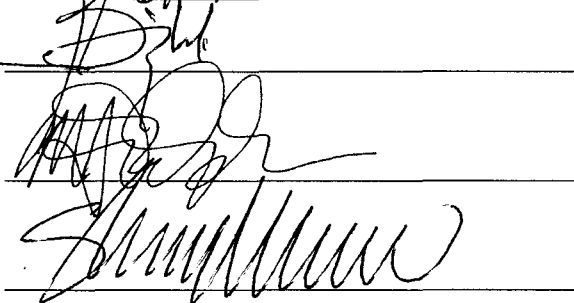
Recommended by: \_\_\_\_\_

Approved as Requested:

Approved as Modified:

Denied

Dated: 6/19/06

  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Exception #2 – Hammerhead vs. Cul-de-sac**

The applicant proposes to construct a hammerhead turnaround on the dead end street, rather than the typical cul-de-sac bulb. The existing wetlands constrict the available area, and the applicant does not wish to lose a lot.

**EXCEPTION CONSIDERATIONS**

**2. Will the exception compromise safety?**

Staff does not believe this specific area will present safety issues. When development occurs on the lot to the south and the southern connection is complete, this turn around will no longer be needed.

**2. Have other alternatives been considered that would meet the standard?**

Yes. It is possible to construct a typical cul-de-sac bulb. The resulting geometry may (or may not) require the loss of one lot.

**6. Has the proposed design been used in other areas?**

Hammerheads are used in many areas around the valley, but all are temporary or installed for very low-volume uses, such as shared driveways.

**7. Will the exception require CDOT or FHWA coordination?**

No.

**8. Is this a one-time exception or a manual revision?**

This would be a one-time exception.

**Staff Recommendation of Exception #2:**

Staff recommends approval of the requested exception.

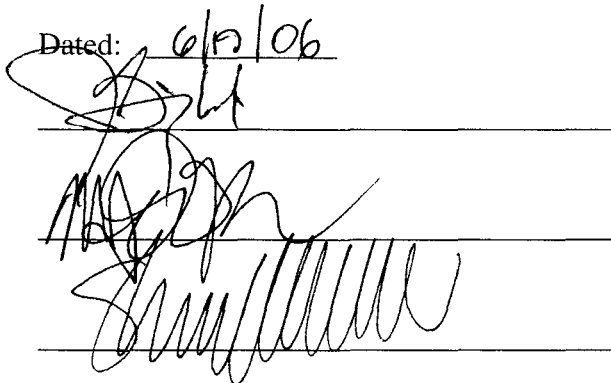
Recommended by: \_\_\_\_\_

Approved as Requested:

Approved as Modified:

Denied

Dated: 6/19/06





**Exception #3 – Shared driveway length**

The applicant proposes to construct a shared driveway that is greater in length than the maximum allowed distance of 150 feet.

**EXCEPTION CONSIDERATIONS**

**3. Will the exception compromise safety?**

Emergency services access may be compromised.

**2. Have other alternatives been considered that would meet the standard?**

Yes. A typical public cul-de-sac could be constructed. Also, it may be possible to modify the existing lot layout slightly to accommodate a 150' shared driveway without a hammerhead that would serve the proposed four lots.

**9. Has the proposed design been used in other areas?**

Staff is unaware of any shared driveways in the valley that are greater than 150'

**10. Will the exception require CDOT or FHWA coordination?**

No.

**11. Is this a one-time exception or a manual revision?**

This would be a one-time exception.

**Staff Recommendation of Exception #1:**

Staff recommends denial of the requested exception, unless it can be shown that small modifications to the lot layout can accommodate a 150' shared driveway.

Recommended by: \_\_\_\_\_

Approved as Requested: \_\_\_\_\_

Approved as Modified: \_\_\_\_\_

Denied  \_\_\_\_\_

Dated: 10/19/09  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

DE# 24-06 738 26 Road Cul-de-sac length