



**City of Grand Junction**  
**Public Works Department**  
250 North 5<sup>th</sup> Street  
Grand Junction, CO 81501-2668  
Phone: (970) 244-1555  
FAX: (970) 256-4022

April 11, 2003

Mr. John Kornfeld  
Rhino Engineering, Inc.  
1334 Ute Avenue  
Grand Junction, CO 81501

RE: TEDS Exception No. 10-03, to Exceed Maximum Grades Through Local Street Intersections

Dear John;

Please find attached the committee's decision on the above request. You may use this decision to proceed through the development review process.

If you have any question concerning this decision, please feel free to contact the Development Engineer in charge of your project or me at (970) 256-4047.

Sincerely,

A handwritten signature in black ink that reads "Michael G. McDill".

Michael G. McDill, P.E.  
City Engineer

C: Laura Lamberty, Development Engineer (256-4155)  
Pat Cecil, Development Services Supervisor



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### **DESIGN EXCEPTION #DE10-03**

To: Mark Relph, Director of Public Works & Utilities

Thru: Tim Moore, Public Works Manager

Copy to: Laura Lamberty, Development E.I.T.  
Pat Cecil, Development services Supervisor

From: Mike McDill, City Engineer

Date: January 21, 2003

RE: Request to Exceed Maximum Grades Through Local Street Intersection

#### **DESCRIPTION OF THE SITUATION**

Applicant is planning a 53-lot subdivision at the above location. The topography of the property (approximately thirty feet of fall from south to north) creates some challenges for providing moderate street grades. This problem is especially noticeable at intersections.

Section 5.2.4, *Intersection Grades*, states, "...the maximum allowable grade in the intersection is 4% and extends a minimum of 50 feet in each direction from the outside edge of the traveled way of the intersecting street." It also states, "Grades above 4% will only be allowed on local and collector streets in areas with steep topography or other unusual circumstances that prevent a flatter grade, and must be documented as a design exception."

The applicant requests exception from Section 5.2.4., *Intersection Grades*.

## **EXCEPTION CONSIDERATIONS**

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

The proposed grades are only slightly more than 4%. The difference will probably not be perceived by drivers. Although these are north facing slopes, the difference should not cause any appreciable amount of extra icing. Both of the approaches are very short (only the cul-de-sac from the south and a short block to the north) so speeds should always be quite slow. I do not foresee any safety compromise.

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

The applicant considered other grading arrangements that met the design criteria, but generated more extreme cuts below the Orchard Mesa Irrigation Ditch. These cuts below the ditch have a higher probability of causing uncontrollable groundwater problems.

The grades through this intersection could be reduced to a value closer to 4% by increasing the slope away from B1/2 Road. However, it is a better engineering solution to keep the grades at this busier intersection, which will probably have a stop condition, flatter.

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

There are other areas of the City, particularly in the Redlands and around 28 ¼ Road that have steeper slopes through local street intersections.

**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.


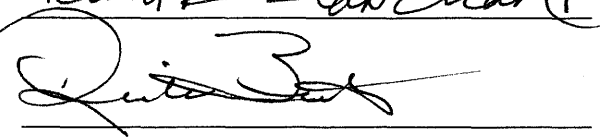
**Staff Recommendation**

I recommend approval of the requested Design Exceptions to Section 5.2.4 to allow steeper than 4% grades, not to exceed 5.52%, through the intersection of Kip Lane and Sheene Road.

Recommended by: 

Approved as Requested:

Denied:

  
Kathleen Slavichard  


# MEMORANDUM



*Date:* March 21, 2003

*To:* Bob Blanchard, Community Development  
Rick Beaty, Fire Department

*From:* Sandi Nimon, Sr. Administrative Assistant *Sandi*

*Subj:* DE10-03- Request to Exceed Maximum Grades  
Through Local Street Intersection.

*Please E-mail your comments to Mark Relph and  
copy me no later than Tuesday, March 25, 2003. I  
would appreciate it!*

*Sn*

**COPY**

*Re-sent 4-9-03  
by Mike McNeil  
Please return comments  
by April 14.  
Charles*

***TEDS EXCEPTION***  
***For***  
***KIP LANE and KIP COURT at SHEENE ROAD***  
***LOCAL STREET INTERSECTION GRADES***  
***of***  
***CIMARRON MESA SUBDIVISION FILING ONE***  
***255 LINDEN AVENUE***

***Introduction***

Cimarron Mesa Subdivision lies along Linden Avenue, near the southern limits of Orchard Mesa. The natural ground slopes, at the area in question, 4 to 10 percent. Therefore, the natural slopes for this parcel are greater than the average slopes common to areas within the City of Grand Junction.

This site has historically been more difficult site for development due to the existing sewer manhole that it being tied to. About 5 feet of fill is required near the northwest corner of Filing One to gain sufficient cover over the sanitary sewer.

***Proposed Exception***

The longitudinal slope of Kip Lane as it approaches Sheene Road is 5.52%. Across the intersection to Kip Court, the longitudinal slope decreases to 4.15%. See attached drawing.

According to TEDS Chapter 5, 5.2.4, at unsignalized intersections, the maximum allowable grade in the intersections is 4% and extends a minimum of 50 feet in each direction from the outside edge of the traveled way of the intersecting street...*Grades above 4% will only be allowed on local and collector streets in areas with steep topography or other unusual circumstances that prevent a flatter grade, and must be documented as a design exception.*

***Alternatives Considered***

An alternative to reduce the street grades increases the amount of cut near the Orchard Mesa Canal for Sheene Road. The first submittal included a design that entailed about 5 feet of cut on the "downhill side" of the canal. This submittal now maximizes a cut of 2 feet along Sheene Road. The first submittal was not favored by Community Development.

Another alternative would be to increase the street grade closer to B½ Road. Although this street design may decrease the slope on Kip Lane, it would not change the greater than 4% on Kip Court. This would increase the algebraic difference between the street grades of Kip Lane and

Kip Court across the intersection. In addition, this alternative would create a steeper downhill intersection (northerly aspect) into B½ Road and approach 4 percent.

***Proposed Design***

Based upon the current site plan and the lack of a better alternative for overall street grades, the current site plan is the proposed design. The proposed design includes slopes slightly in excess of 4 percent.

***Impact of Design***

The proposed design allows for safer traffic movements at the Kip Lane/Sheene Road intersection than to create a greater algebraic difference across the intersection. This, in turn, would create a less dangerous intersection than meeting TEDS requirements and creating larger cuts near the canal.

REVISION	DATE	DESCRIPTION	BY	CK

GRADING AND DRAINAGE PLAN  
 CIMARRON MESA SUBDIVISION  
 255 LINDEN AVENUE  
 GRAND JUNCTION, COLORADO

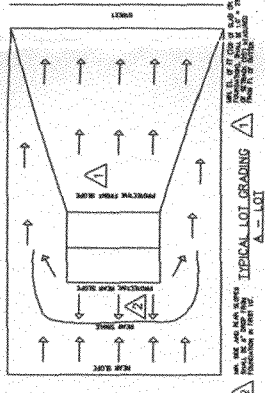
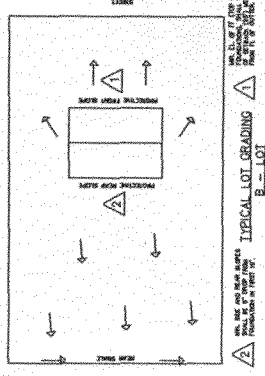
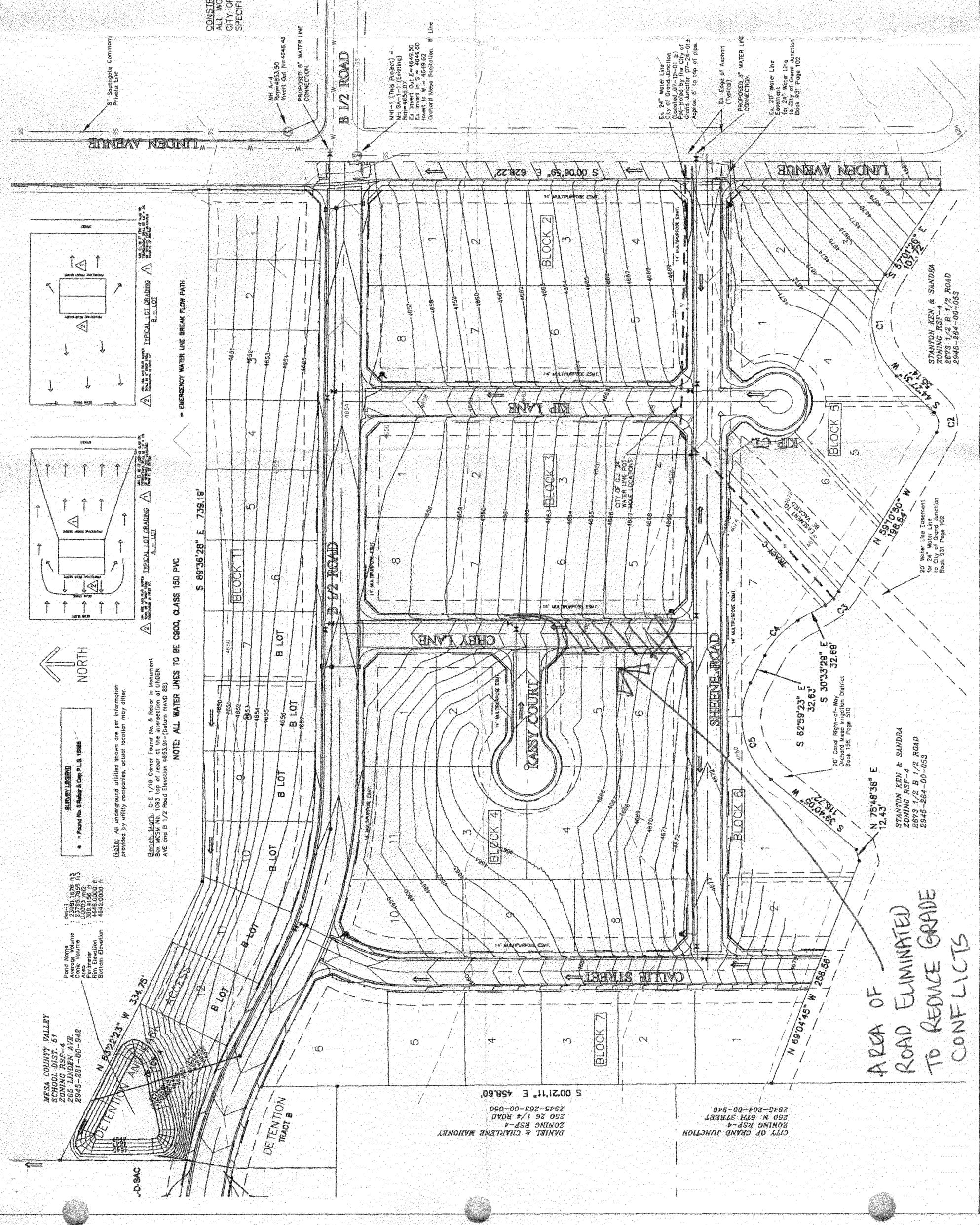
RHINO ENGINEERING, INC.  
 1334 UTE AVENUE  
 GRAND JUNCTION, CO 81501  
 970.241.6027 fax 970.256.7992

DATE	10-2-02
SCALE	1" = 50'
PROJECT NO	CIM-001
SHEET NO	5

CONSTRUCTION NOTES:  
 ALL WORK TO BE DONE IN ACCORDANCE WITH THE  
 CITY OF GRAND JUNCTION'S STANDARDS AND  
 SPECIFICATIONS.

- ABBREVIATIONS:
- EOA EDGE OF ASPHALT
  - PC POINT OF CURVATURE
  - PT POINT OF TANGENCY
  - BOW BACK OF WALK
  - EX EXISTING
  - EL ELEVATION
  - ROW RIGHT-OF-WAY
  - LS LANDSCAPED
  - PR PROPOSED
  - MH MANHOLE
  - FES FLARED END SECTION WITH ACRES
  - FF FINISHED FLOOR
  - HC HANDICAP RAMP
  - FL FLOW LINE
- LEGEND

OVERVIEW/  
 ROAD PLAN



EMERGENCY WATER LINE BREAK FLOW PATH

NOTE: ALL WATER LINES TO BE CROD, CLASS 150 PVC

NOTE: All underground utilities shown are per information provided by utility companies, actual location may differ.

Bench Marks: C-E 1/16 Corner Found No. 5 Rebar in Monument  
 Box WCSM No. 1053 top of rebar at the intersection of LINDEN  
 AVE and B 1/2 Road Elevation 4653.91 (Datum NAVD 88)

- SURVEY LEGEND**
- Found No. 5 Rebar & Cap P.L.B. 16566

Pond Name	Area	Volume	Top Elevation	Bottom Elevation
DETENTION AND TRACT A	18776.03	23795.7659	113	4642.0000
DETENTION AND TRACT B	10063.702	1448.0000	113	4642.0000

MPSA COUNTY VALLEY  
 SCHOOL DIST. 51  
 ZONING RSP-4  
 265 LINDEN AVE  
 2945-281-00-942

DANIEL & CHARLENE MAHONEY  
 ZONING RSP-4  
 250 26 1/4 ROAD  
 2945-263-00-050

CITY OF GRAND JUNCTION  
 ZONING RSP-4  
 250 N. 5TH STREET  
 2945-264-00-946

AREA OF  
 ROAD ELIMINATED  
 TO REDUCE GRADE  
 CONFLICTS

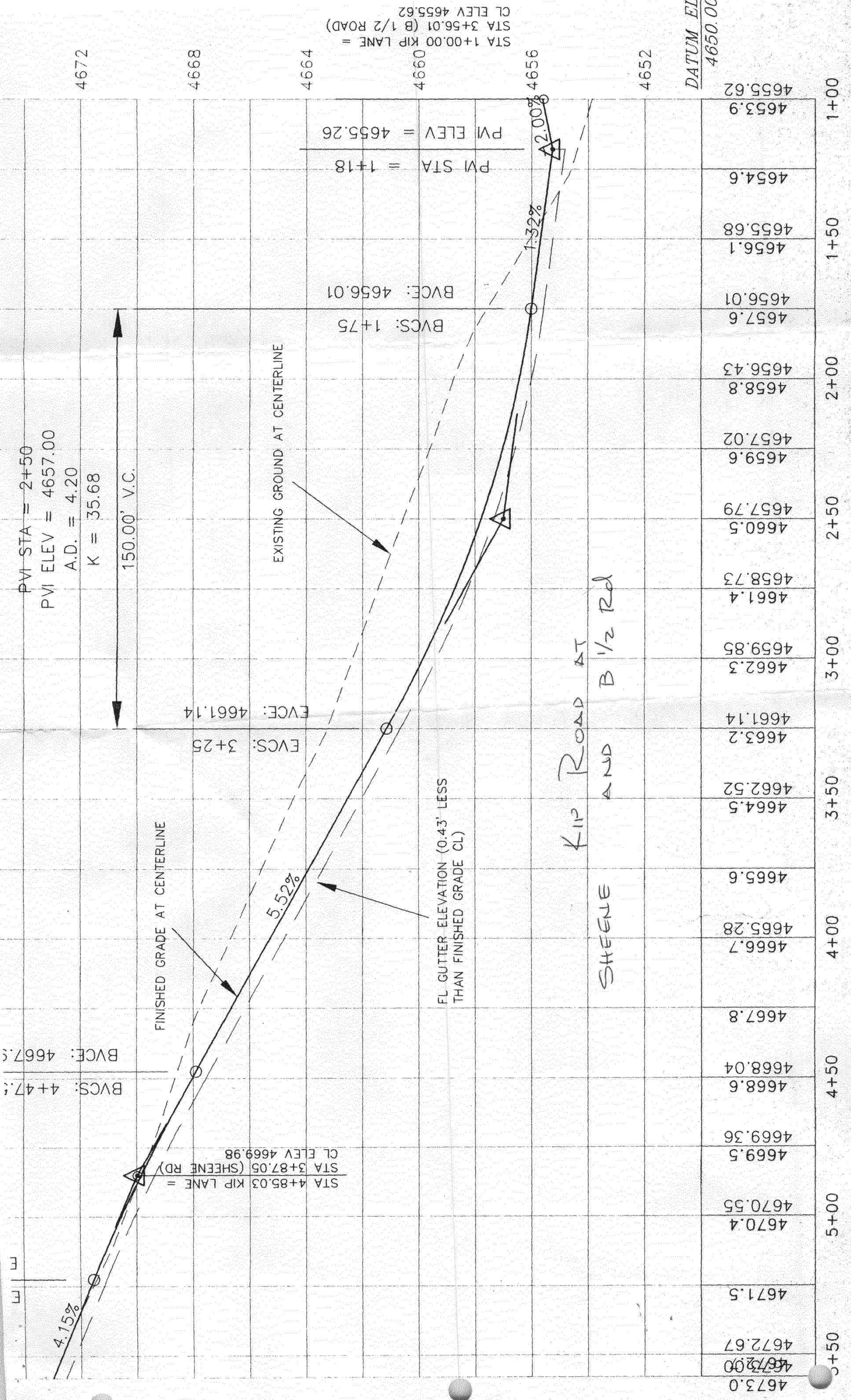
STANTON, KEN & SANDRA  
 ZONING RSP-4  
 2678 1/2 B. 1/2 ROAD  
 2945-264-00-053

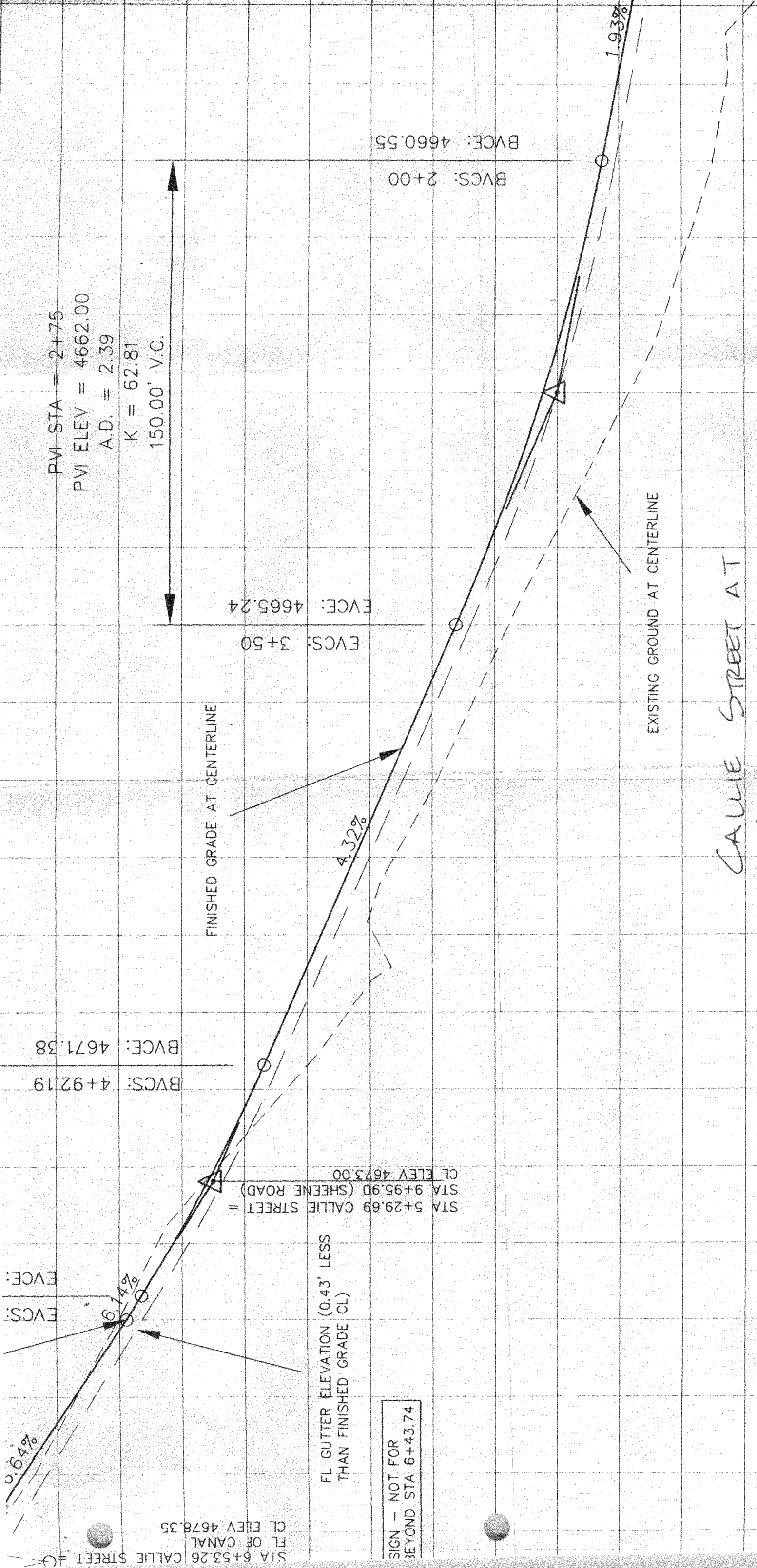
20' Canal Right-of-Way  
 Orchard Mesa Irrigation District  
 Book 158, Page 510

20' Water Line Easement  
 to City of Grand Junction  
 Book 931 Page 102

STANTON, KEN & SANDRA  
 ZONING RSP-4  
 2678 1/2 B. 1/2 ROAD  
 2945-264-00-053







PVI STA = 2+75  
 PVI ELEV = 4662.00  
 A.D. = 2.39  
 K = 62.81  
 150.00' V.C.

BVCS: 4+92.19  
 BVCE: 4671.58

EVCS: 3+50  
 EVCE: 4665.24

BVCS: 2+00  
 BVCE: 4660.55

EVCS:  
 EVCE:

STA 5+29.69 CALLIE STREET =  
 STA 9+95.90 (SHEENE ROAD)  
 CL ELEV 4673.00

STA 6+53.26 CALLIE STREET =  
 FL OF CANAL  
 CL ELEV 4678.35

FL GUTTER ELEVATION (0.43' LESS  
 THAN FINISHED GRADE CL)

SIGN - NOT FOR  
 BEYOND STA 6+43.74

FINISHED GRADE AT CENTERLINE

EXISTING GROUND AT CENTERLINE

CALLIE STREET AT  
 SHEENE ROAD

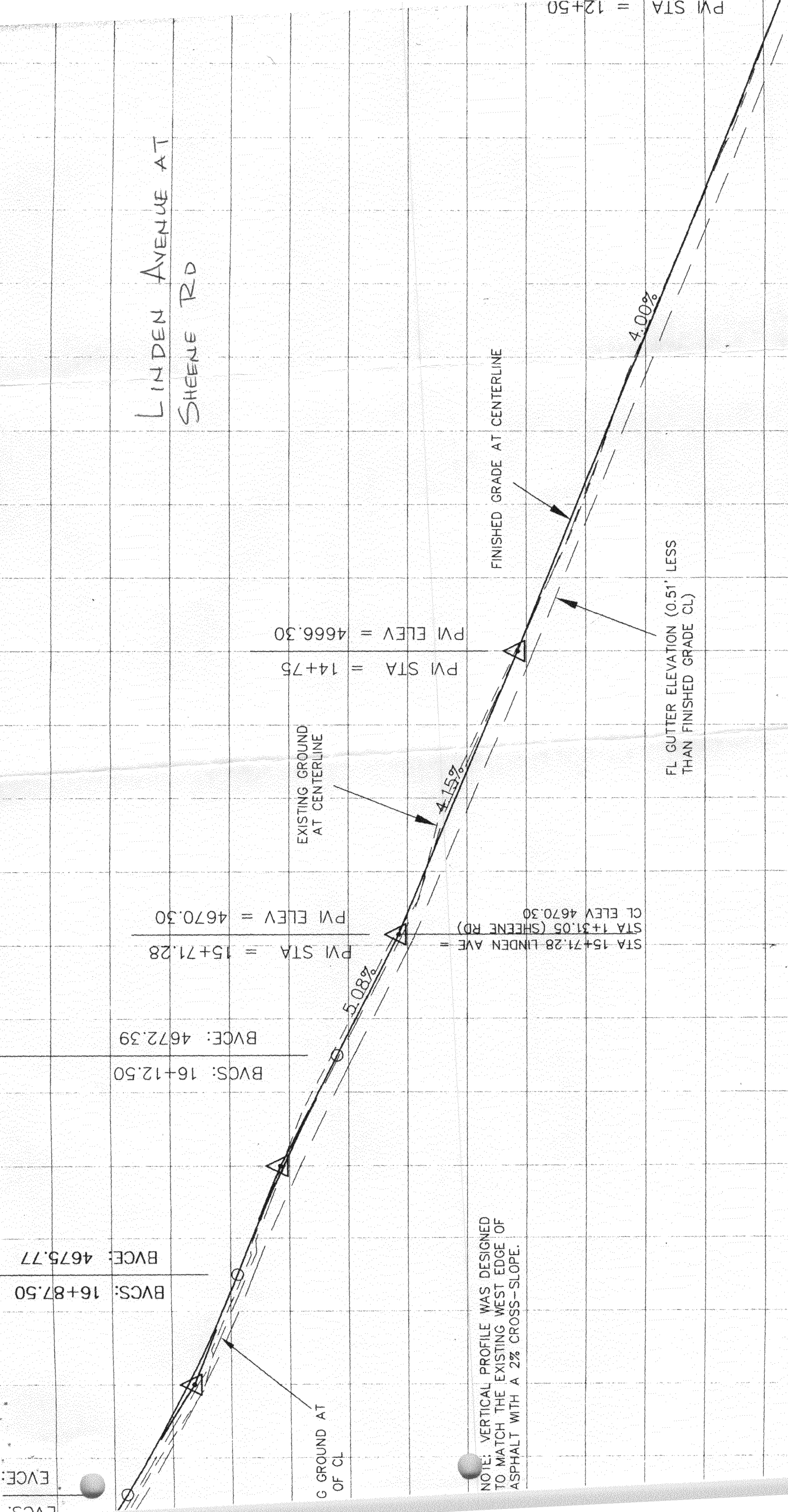
0.64%

6.74%

4.32%

1.93%

LINDEN AVENUE AT  
SHEENE RD



NOTE: VERTICAL PROFILE WAS DESIGNED TO MATCH THE EXISTING WEST EDGE OF ASPHALT WITH A 2% CROSS-SLOPE.

PVI STA = 12+50



CONTOUR INTERVAL = 2 FEET.

BOUNDARY AND TOPOGRAPHY SURVEY BY  
MONUMENT SURVEY COMPANY, 2001.

Linden Avenue  
at B 1/2 Rd

SCALE:  
HORIZ: 1" = 30'  
VERT: 1" = 3'



GRAPHIC SCALE



( IN FEET )  
1 inch = 30 ft.

CENTERLINE

PVI STA = 12+50  
PVI ELEV = 4657.30

STA 11+88.56 LINDEN AVE =  
STA 11+00.00 (B 1/2 RD)  
CL ELEV 4653.91

4.00%

5.52%

4662.4	4661.3	4660.3	4659.2	4659.30	4658.2	4657.3	4657.30	4656.3	4654.8	4654.54	4653.9
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+00      13+50      12+50      12+00

LINDEN CIMAI	GRAN
RHINO ENGINEERING, INC. 1334 UTE AVENUE GRAND JUNCTION, CO 81501 970.241.6027 fax 970.256.7992	
DATE	11/25/02
SCALE	1" = 30'
PROJECT NO	21034.03
SHEET NO	16

APPROVED FOR CONSTRUCTION	DATE
CITY OF GRAND JUNCTION	DATE
FINAL ACCEPTANCE	DATE
CITY OF GRAND JUNCTION	DATE