

APPLICATION

Transportation Engineering Design Standards (TEDS) Exception Request

City File No.: TED-

Project: American Furniture Warehouse

Site Address: North end of Maldonado Street

Applicant: American Furniture Warehouse Company

Representative: Tom Logue

Date: February 22, 2010

Parent Project:

Project Name: AMERICAN SUBDIVISION

City File No.: To be assigned

1. Referenced section in TEDS and a brief description of the request(s)

Request #1 - 6.1.2.1 Reduce minimum centerline radius to 300 feet

Request #2 - 6.1.2.1 Reduce minimum approach tangent to 192 feet

2. Site Description

REQUEST #1 and #2

- A. Description: See Attached
- **B.** Exception Considerations
 - 1. How will the exception affect safety? See Attached
 - 2. Have other alternatives been considered that would meet the standard?
 - 3. See Attached
 - 4. Has the proposed design been used in other areas? See Attached
 - 5. Will the exception require CDOT or FHWA coordination? No
 - 6. Is this a one-time exception or a request to change the TEDS manual? One Time exception

TRANSPORTATION ENGINEERING DESIGN STANDARDS (TEDS) DESIGN EXCEPTION REQUEST AMERICAN SUBDIVISION FEBRUARY, 2010

INTRODUCTION – This request is prepared in response to Chapter 14 of the current TEDS manual and future land use applications for the American Subdivision. Additional information about the American Subdivision can be found in file number PRE-2009-229 in the City of Grand Junction's Public Works and Planning Department.

LOCATION – American Subdivision consists of 25.2 acres commonly located southeast of Base Rock Street (25 1/2 Road) and the Interstate 70 Business Loop in the City of Grand Junction as show on the accompanying EXHIBIT A.

SURROUNDING LAND USE – The surrounding land uses in the vicinity of the subject property are considered to be "high" intensity. The dominate land uses in the area of the requested Design Exception include; the Interstate 70 Business Loop, Gold's Gym and the Abby Carpet facilities. A large vacant parcel adjoins the west side of the existing Maldonado Street right-of-way. A 2008 air photo depicting Maldonado Street in relationship to the surrounding area can be found on EXHIBIT B.

DEVELOPMENT PROPOSAL – The ultimate short term objective is to redevelop most of the land in the proposed future subdivision as a 150,000 square foot showroom/warehousing facility that would be operated by the American Furniture Warehouse Company. A conceptual Site Development Plan for the new facility is depicted on the accompanying EXHIBIT C. The planned American Subdivision generally includes reconfiguring six existing subdivided lots and the dedication of a new roadway between the Interstate 70 business Loop and Base Rock Street, together with realigning the northern existing Maldonado Street right-of-way. In order to achieve this goal, several land use applications must occur:

Street and Easement Vacation Review and Acceptance TEDS Exception Request Final Plat Review and Acceptance Major Site Plan Review and Acceptance

Detailed engineering documents not only for the private "on-site" improvements, but planned public roadway and utility improvements will be provided for review and acceptance in the last two procedural phases.

REQUESTED DESIGN EXCEPTION – The area under consideration is part of existing street known as Maldonado Avenue that is proposed to be reconfigured at its intersection with a new roadway that will between the Interstate 70 Business Loop and Base Rock Street. EXHIBIT D illustrates the proposed geometry for the new roadways. EXHIBIT E illustrates AASHTO turning templates within the proposed street intersection that include a 50 foot combination unit vehicle. This exhibit also illustrates the minimum site distance that would be available. The proposed configuration can safely accommodate this vehicle while maintaining two lanes of traffic without encroaching on the adjoining curbwalk with adequate sight distances.

On July 17, 2004 the City adopted the *Grand Valley Circulation Plan* (GVCP). An updated plan is expected to be adopted sometime in April, 2010. The primary purpose of the GVCP serves to identify both major and minor routes for circulation and connectivity in the Grand Junction vicinity. A key component of the GVCP in the area surrounding the proposed subdivision indicates a new "major collector" connection across the property between the westbound and the separated eastbound lanes on the Interstate 70 Business Loop. EXHIBIT F is a reproduction of part the updated GVCP and indicates that Maldonado Street is classified as a "Minor Collector". A drawing illustrating the City of Grand Junction's typical minor collector street section is also shown on EXHIBIT F.

EXHIBIT G is a reproduction of two pages in chapter six of the July, 2003 *TEDS Manual*. The manual does not differentiate standard criteria between minor and major collector streets. The horizontal curve criterion for collector roadways in section 6.1.2.1 indicates a minimum centerline radius for a collector of: 470 feet and a minimum approach tangent at intersections of: 200 feet. This exception request is for consideration of a 300 foot centerline radius curve and a 172 foot approach tangent distance at the north end of the proposed Maldonado Street alignment. The exhibit indicates a 35 mph design speed for collector streets. Site distance requirements in section 4.2.7 are also included in this exhibit.

CASE STUDIES – Three Case Studies were conducted on various existing subdivisions platted between 1974 and 2005. EXHIBIT H includes; a graphic view of the subject street, obtained from the recorded final plat maps, and a 2008 air photo of the surrounding area. The Case Studies were selected based on the following:

- Classified as Collector streets on the GVCP.
- Located in a predominately non-residential neighborhood.
- A wide variety of geographic settings within the community.
- Have similar anticipated traffic volumes.
- Have a similar level of improvements.
- Have been continually used over a long period of time.

A visual onsite examination of each Case Study revel that the configuration of each street functions well and that there are no apparent safety problems.

ALTERNATIVE – EXHIBIT I illustrate a design alternative that has been prepared in accordance with the required minimum 470 foot centerline radius and 200 foot approach tangent. In addition to the cost deferential between the Proposed and Alternative conditions, approximately X,XXX square feet of land would be lost by the applicant.

A comparison between the proposed condition and the presented alternative is presented on the following table:

	COMPA	RISON TAB	LE			
CATEGORY	PROPOSED			ALTERNATIVE		
	Positive	Negative	Neutral	Positive	Negative	Neutral
Vehicle Accessibility			✓			✓
Applicants Desire	✓				✓	
Affect on Existing Utilities	 ✓ 				1	
Loss of Applicants Land Area	✓				✓	
Cost Effectiveness	✓				✓	

COST ANALYSIS – The purpose of this analysis is to provide a comparison between the proposed street configuration and the presented alternative. Each estimate and a summary are presented on the follows:

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UNIT					
ITEM	DESCRIPTION	UNIT	QUAN.	PRICE	TOTAL
1	Mobilization	LS			\$1,000.00
2	Clear Right-of-Way/Demolition	LS			\$6,500.00
3	Excavation	CY	1,950	\$6.00	\$11,700.00
4	Sub-Grade Preparation	SY	1,960	\$2.00	\$3,920.00
5	Class 3 Sub-base	TON	1,1 4 5	\$20.00	\$22,900.00
6	Class 6 ABC	TON	1,230	\$20.00	\$24,600.00
7	Hot Mixed Asphalt	TON	425	\$150.00	\$63,750.00
8	7'-0" Curbwalk	LF	576	\$35.00	\$20,160.00
9	Concrete Flatwork	SF	1,370	\$5.00	\$6,850.00
10	Traffic Control Services	DAY	10	\$1,140.00	\$11,400.00
11	Traffic Control Signs	EA	2	\$500 .00	\$1,000.00
12	Adjust Valves & Manholes	EA	3	\$500.00	\$1,500.00
	Sub-Total				\$175,280.00
	DOMESTIC WATER				
	RECORDINAN			UNIT	TOTAL
ITEM	DESCRIPTION	UNIT	QUAN.	PRICE	
1	Mobilization	LS	054	\$20.00	\$1,000.00
2	8" PVC Water Main	LF	254	\$30.00	\$7,620.00
3	6" PVC Water Main	LF	113	\$28.00	\$3,164.00
4	Join Existing Water Main	EA	1	\$472.00	\$472.00
5	Fire Hydrant Assembly	EA	1	\$3,760.00	\$3,760.00
6	Traffic Control Services	DAY	10	\$600.00	\$6,000.00
	Sub-Total				\$21,016.00
1	Design Services				\$23,500.00
2	Construction Staking				\$4,000.00
3	Compliance Testing				\$4,000.00
	Sub-Total				\$31,500.00
4	15 percent Contingency				\$34,170.00
	PROJECT TOTAL				\$261,966.00

PROPOSED STREET IMPROVEMENTS

ALTERNATIVE STREET IMPROVEMENTS

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ITEM	DESCRIPTION	UNIT	QUAN.	UNIT PRICE	TOTAL
1	Mobilization	LS			\$1,000.00
2	Clear Right-of-Way/Demolition	LS			\$6,500.00
3	Excavation	CY	2,620	\$6.00	\$15,720.00
4	Sub-Grade Preparation	SY	2,625	\$2.00	\$5,250.00
5	Class 3 Sub-base	TON	1,535	\$20.00	\$30,700.00
6	Class 6 ABC	TON	1,645	\$20.00	\$32,900.00
7	Hot Mixed Asphalt	TON	575	\$150.00	\$86,250.00
8	7'-0" Curbwalk	LF	767	\$35.00	\$26,845.00
9	Concrete Flatwork	SF	1,370	\$5.00	\$6,850.00
10	Traffic Control Services	DAY	21	\$1,140.00	\$23,940.00
11	Traffic Control Signs	EA	2	\$500.00	\$1,000.00
12	Adjust Valves & Manholes	EA	3	\$500.00	\$1,500.00
	Sub-Total				\$238,455.00
	DOMESTIC WATER				
ITEM	DESCRIPTION	UNIT	QUAN.	UNIT PRICE	TOTAL
1	Mobilization	LS	QUAN.	PRICE	TOTAL \$1,000.00
2	8" PVC Water Main	LS	354	\$30.00	\$1,000.00
2	6" PVC Water Main	LF	354 118	\$30.00 \$28.00	\$10,820.00
4	Join Existing Water Main	EA	1	\$20.00 \$472.00	\$3,304.00 \$472.00
5	Fire Hydrant Assembly	EA			
				53 / DU UU	
6			1 14	\$3,760.00 \$600.00	\$3,760.00 \$8,400.00
6	Traffic Control Services	DAY	14	\$3,760.00 \$600.00	\$8,400.00
6					
	Traffic Control Services Sub-Total				\$8,400.00 \$26,556.00
6 1 2	Traffic Control Services Sub-Total Design Services				\$8,400.00 \$26,556.00 \$31,800.00
1	Traffic Control Services Sub-Total Design Services Construction Staking				\$8,400.00 \$26,556.00 \$31,800.00 \$5,300.00
1 2	Traffic Control Services Sub-Total Design Services				\$8,400.00 \$26,556.00 \$31,800.00
1 2	Traffic Control Services Sub-Total Design Services Construction Staking Compliance Testing				\$8,400.00 \$26,556.00 \$31,800.00 \$5,300.00 \$5,300.00 \$42,400.00
1 2 3	Traffic Control Services Sub-Total Design Services Construction Staking Compliance Testing Sub-Total				\$8,400.00 \$26,556.00 \$31,800.00 \$5,300.00 \$5,300.00

SUMMARY	
Alternative Street Improvements	\$353,511.00
Alternative R.O.W Acquisition Cost	\$5,300.00
Total Alternative Street Improvements	\$358,811.00
Proposed Street Improvements	\$261,966.00
TOTAL DIFFERENCE	\$96,845.00

SUMMARY – This request is one of several that must be obtained prior beginning development of the American Furniture Warehouse facility. Given the number of site development applications that will be processed after this request, the applicant understands that they have a continuing duty to inform the Community Development Department of any substantial modifications to any aspect of the site development features proposed within this document that may affect acceptance of this request.

Following are justifications for acceptance of the requested Design Exemption:

- 1. TEDS doses not differentiate between minor and major collector street designations.
- 2. Access by emergency service vehicles is not compromised.
- 3. Access by oversized vehicles is not compromised.
- 4. The Proposed Conditions meets the minimum site distance requirements.
- 5. The request will result in a \$96,845.00 construction cost savings.
- 6. The request will require obtaining additional land for right-of-way from others.
- 7. The proposed configuration has been successfully used in other areas of the community.

APPENDIX

EXHIBIT A – Location Map EXHIBIT B – Surrounding Land Use Map EXHIBIT C – Site Development Concept Plan Map EXHIBIT D – Proposed Condition EXHIBIT E (2 sheets) – AASHTO Turn Template and Sight Distance EXHIBIT F – Street Classification Map and Section EXHIBIT G –TEDS (2 sheets) Section 6.1.2.1, Horizontal Alignment EXHIBIT H – Case Studies

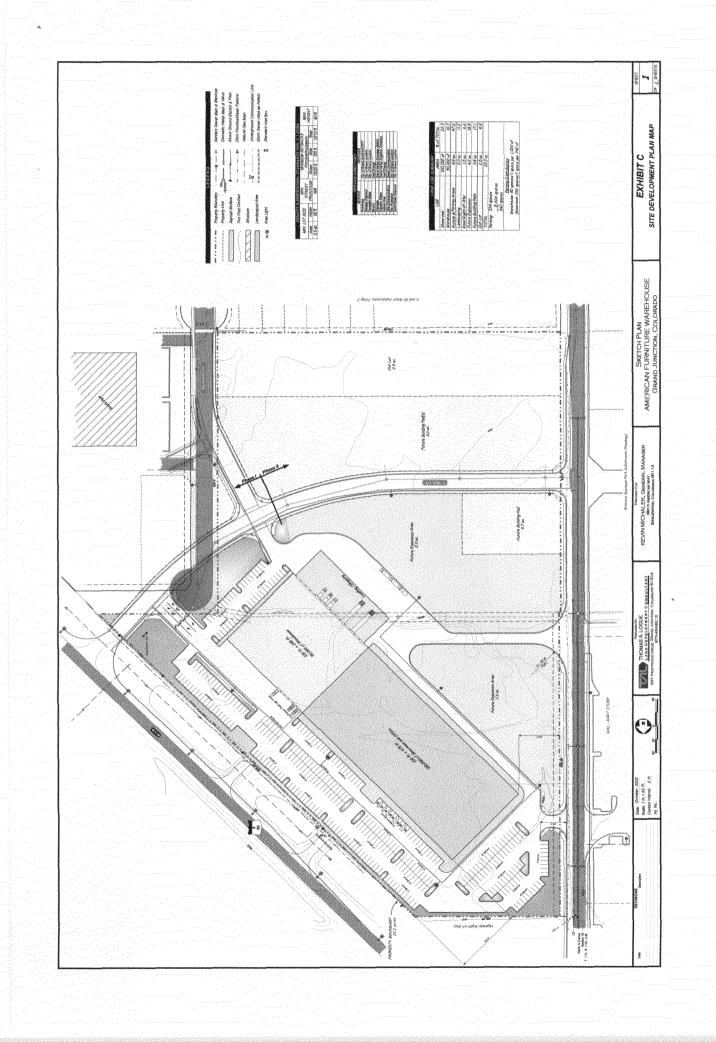
EXHIBIT I - Alternative Condition

LOCATION MAP PATTERSON Rd. NORTH AV <u>SITE</u> (50 Gunnson Rwer

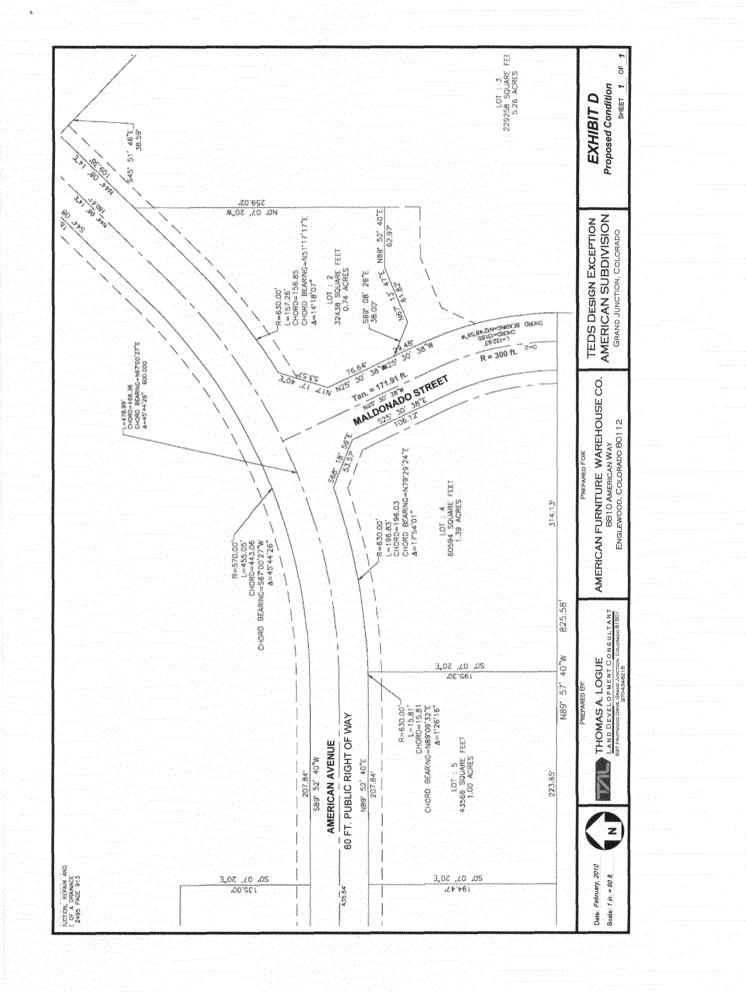
EXHIBIT B



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Plot Date: 2/23/2010



2/23/2010

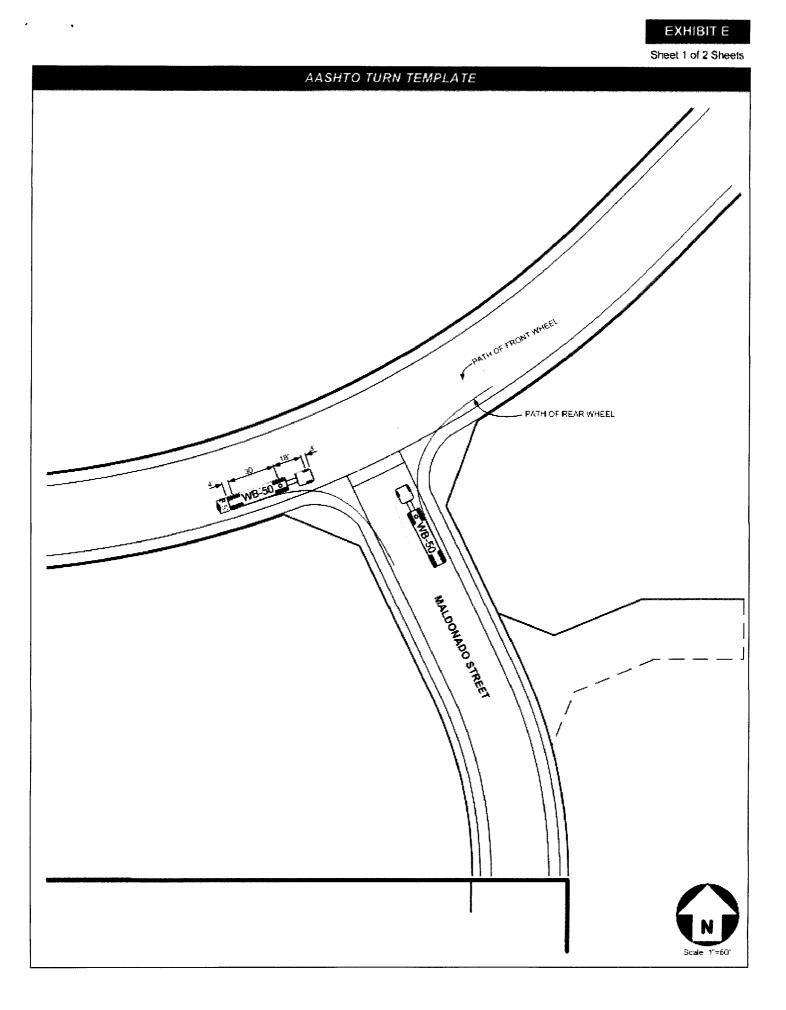
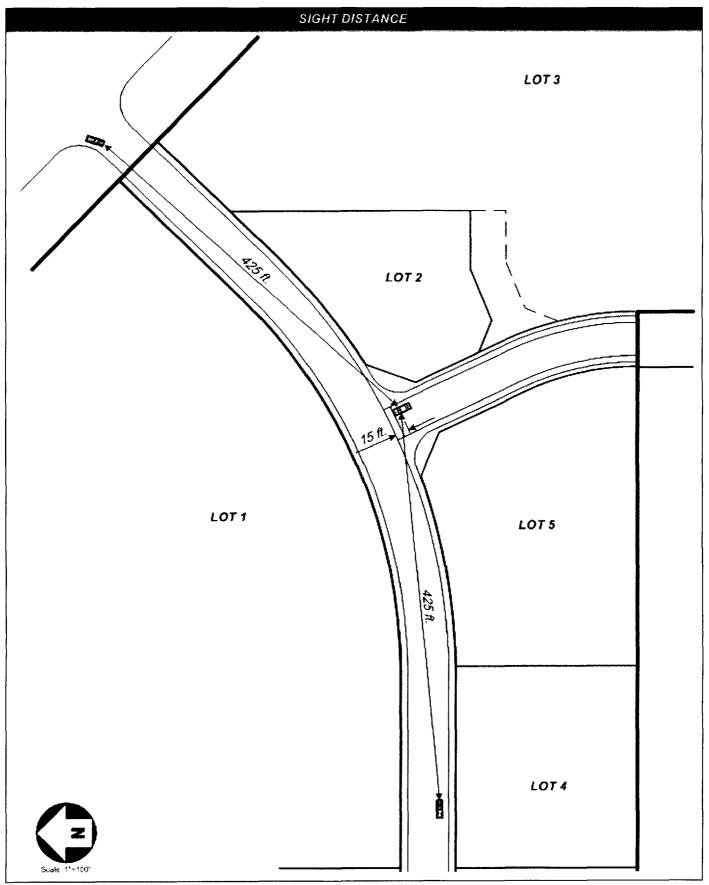


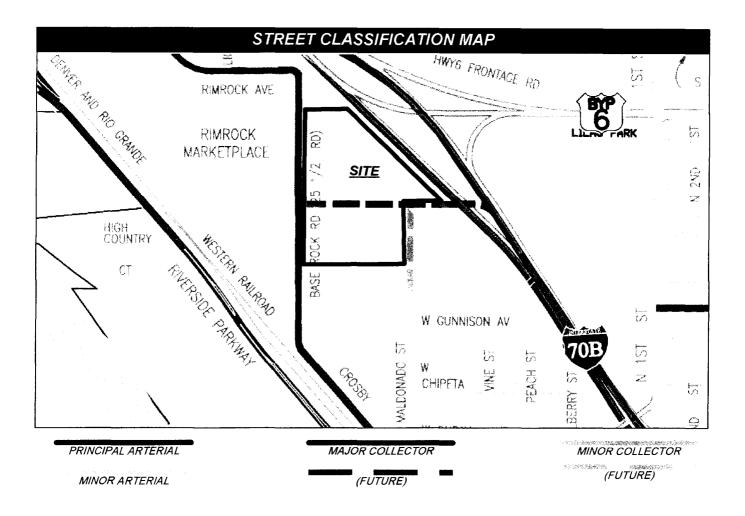
EXHIBIT E

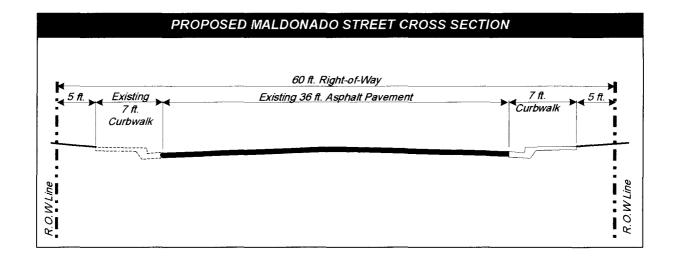
Sheet 2 of 2 Sheets



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- Principal Arterial (No On Street Parking)
- Minor Arterial (No On Street Parking)
- Collector (No On Street Parking)
- <u>D ¹/₂ Road Section (No On Street Parking)</u>
- D Road Section (No On Street Parking)
- <u>G Road Section</u>

6.1.2 Alignments

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6.1.2.1 Horizontal Alignment

Streets shall extend to the boundary lines of the land to be subdivided. Proposed streets with widths different from existing streets to which they are being connected must be transitioned using <u>pavement transition taper standards</u>.

All designs shall be based on the <u>Horizontal Curve Design</u> <u>Criteria</u>.

Design Criteria	Major ¹		
	Collector	Arterial	
Min. Design Speed (mph)	35	40	
Min. Center ² Line Radius (ft)	470	see ⁴	
Min. Horizontal Sight Distance (ft)	250	325	
Min. Reverse Curve Tangent (ft)	200	200	
Min. Approach ³ Tangent at Intersections	200	300	

Horizontal Curve Design Criteria

¹ These criteria are to be used without super-elevation.

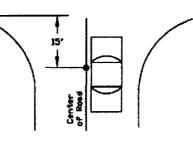
² Radii shown are based on the street having a crown section with a pavement crossslope of 2% on each side of the crown. For minimum radii required for other cross slopes or where super-elevation is provided and approved, see Exhibit 3-40 in "A Policy on Geometric Design of Highways and Streets," AASHTO, 2001 Edition.

- ³ Where a curved road approaches an intersection, these tangent sections must be provided on the approach to the intersection to provide for adequate sight distance for traffic control devices at the intersection.
- ⁴ The maximum super-elevation rate allowed is e 6%. Where super-elevation is used, runoff lengths shall conform to Exhibit 3-41 in "A Policy on Geometric Design of Highways and Streets," AASHTO, 2001 Edition.

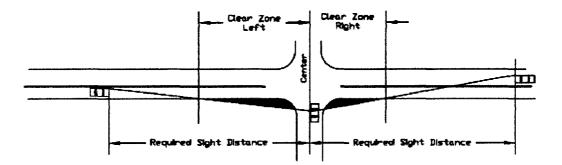
Sight Distance Design Standards (ref. "Institute of Transportation Engineers Handbook," 5th Ed., 1999)

- Dark areas represent mandatory Sight Distance clear zones, which vary by posted regulatory speed limit.
- Clear zones apply to all driveways and intersections. They are defined by a line between a driver's view point 15' away from the edge of travel lane of the crossing roadway.

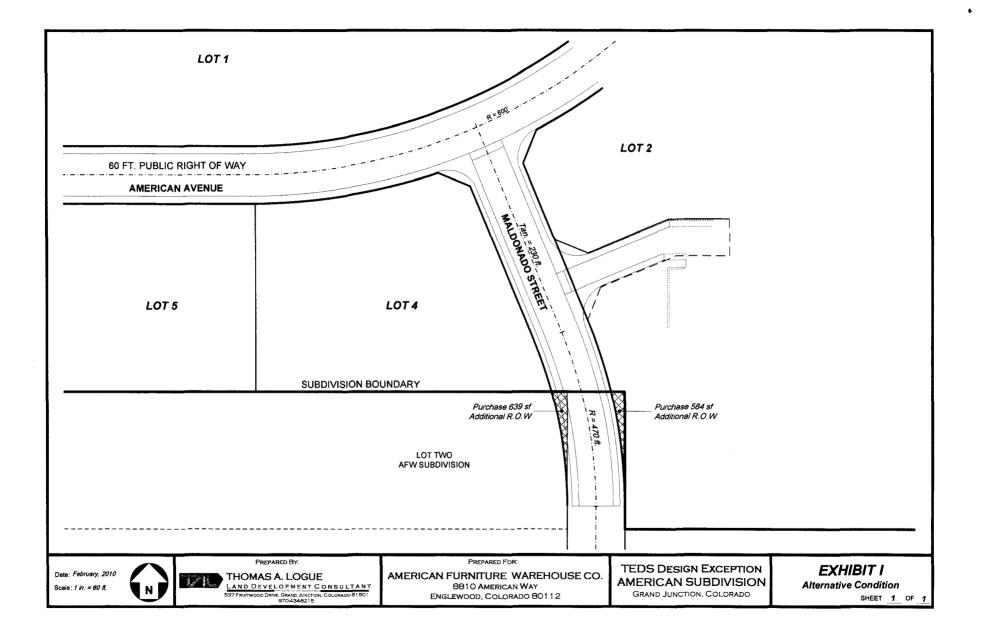
Measure from Driver's View Point (15' from the edge of travel lane)

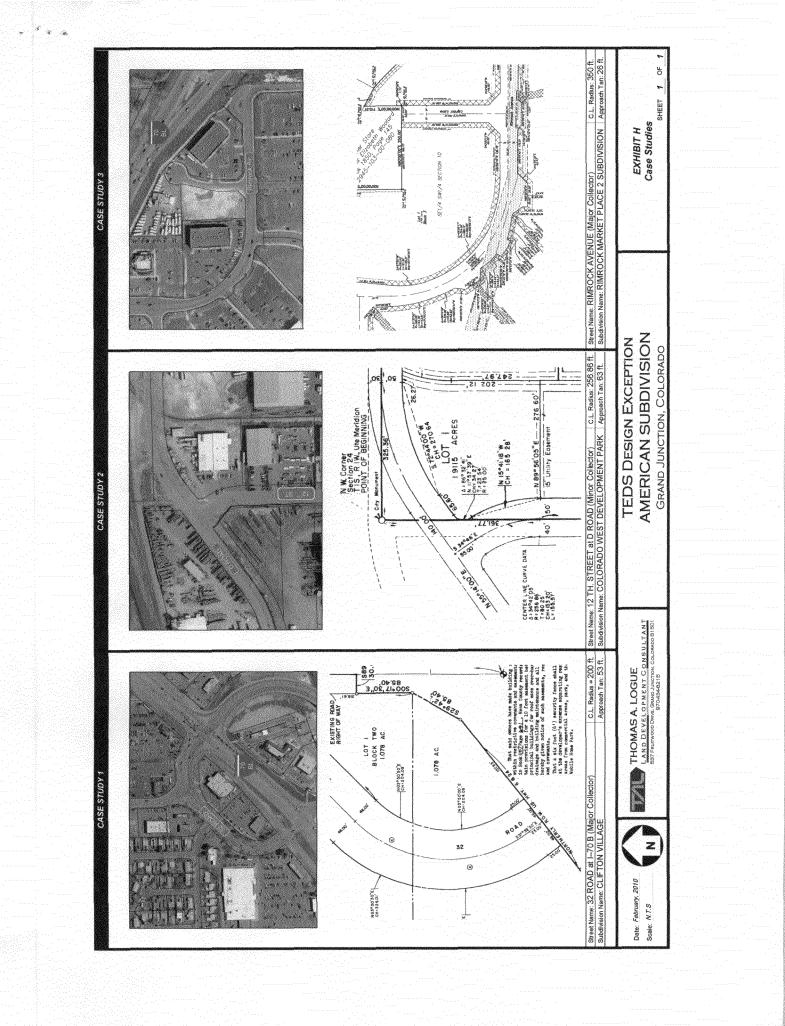


Clear Zone Overview (shaded area is to be clear of sight obstructions from 2.5' to B' H. above the road). Length varies by posted speed limit.



Cross Street Posted Speed Linit	Required Sight Distance	Clear Zone Length Left	Clear Zone Length Right
20 MPH	200 FT	108 FT	74 FT
25 MPH	275 FT	148 FT	101 FT
30 MPH	350 FT	188 FT	129 FT
35 MPH	425 FT	229 FT	157 FT
40 MPH	500 FT	269 FT	184 FT
45 MPH	575 FT	310 FT	212 FT
50 MPH	650 FT	350 FT	239 FT
55 MPH	725 FT	390 FT	267 FT







PUBLIC WORKS & PLANNING

March 18, 2010

Tom Louge 537 Fruitwood Drive Grand Junction CO 81504

Re: TEDS Exception 2010-019 – American Furniture Warehouse

The TED's Exception Committee has approved your request as requested.

If you have any questions, please feel free to contact the Development Engineer in charge of your project or Tim Moore, Public Works and Planning Director at 970.244.1557.

Sincerely,

Sur muller,

Sue Mueller Sr. Administrative Assistant

Cc: Rick Dorris, Development Engineer Lori Bowers, Sr. Planner File

RECEIVED

MAR 1 9 2010 COMMUNITY DEVELOPMENT DEPT.



PUBLIC WORKS & PLANNING DEPARTMENT PLANNING DIVISION

Transportation Engineering Design Standards (TEDS) Exception Approval / Denial Form

Project Number: <u>TED- 2010-019</u> Site Location: North end of Muldanado Applicant: American Furniture Warehouse Representative: Tom Louge Development Engr.: Rick Dorris Parent Project: Name: American Furniture Warehouse File No.: SS-2009-252 Planner: Lori Bowers

TEDS Exception Request #1: TEDS section 6.1.2.1, reduce centerline radius to 300' from 470'.

- X Approved as requested.
- ____ Approved with the following modification(s):
- ___ Denied.
- ____ The following additional information is required before a decision can be made:

TEDS Exception Request #2: TEDS section 6.1.2.1, reduce approach tangent from 200' to 172'

- X Approved as requested.
- ____ Approved with the following modification(s):
- __ Denied.

____ The following additional information is required before a decision can be made:

TEDS Review Comm	ittee:	
Public Works:	lim Ma	Date: <u>3-/0-10</u>
Planning Division:	disa ECix	Date: 3-10-2010
Fire Department:	Charles mathies	Date: 3-10-2810