

## Six changes to the 96<sup>th</sup> street speed hump study

**1. ADD 10 HOMES ON DEXTER TO THE AFFECTED PROPERTY SURVEY BECAUSE THEY'RE WITHIN THE 300 ft. NOISE RANGE AND QUALIFY FOR THE AFFECTED PROPERTIES (AP) SURVEY.** The 4 homes on Jacob, west of 96<sup>th</sup> St., (West Jacob) qualified for the AP survey because noise impacts homes within 300 ft. of 96<sup>th</sup> street. To be consistent, then the homes on Dexter need to be added to the survey. There are 7 homes on the west side of Dexter, north of Jacob and the 3 homes on the West side Dexter, north of Juanita.

See FIG 1 Color results of AP survey map in color

- Noise is the common factor here.
- The west Jacob homes has no access to 96<sup>th</sup> St. A 6 ft. block wall prevents them from driving that way. The Dexter homes have access to 96<sup>th</sup> St. and will travel over the speed humps.
- In this case, it's evident that noise impacts are greater than the impacts from travelling over the humps.
- To be consistent, you only have two choices. To remove the 3 homes from Jacob or add the 10 homes on Dexter.
- This is an easy change and the right thing to do.

## **2. REMOVE THE HOA FROM THE AFFECTED PROPERTY**

**SURVEY**: The HOA needs to be removed from the affected properties survey. According to the policy, they don't qualify for the survey. The HOA doesn't have developable land. The City of Mesa and the County requires the subdivision to comply with stormwater retention ordinance. This land fulfills that requirement because it's a drainage basin and cannot be converted to another use without violating the City's stormwater ordinance and the zoning ordinance for housing density. The retention basin will not travel over the speed cushions or be affected by the noise. It's not certain that the HOA conducted a legal vote either

See FIG 9 Color aerial location map 96<sup>th</sup> street.

- COUNCILMAN KEVIN THOMPSON AGREES WITH THIS REQUEST.
- This is an easy change and the right thing to do.

### **3. REMOVE THE SPEED CUSHION (SC1) NORTH OF JACOB**

**STREET:** A speed cushion is planned to be installed just north of Jacob Street. A speed hump at this location is unnecessary. Because just south of this location is the stop sign at Baseline and 96<sup>th</sup> street. The speed cushion and stop are close together. Field driving tests show that we're already slowing and preparing to brake for the stop sign when we're at this speed cushion location. THE SPEED CUSHION WILL CREATE MORE DISCOMFORT AND NOISE IN OUR NEIGHBORHOOD, ESPECIALLY WITH DAILY TRIP COUNTS ABOVE 2400 TRIPS PER DAY. My point is we need do some tailoring in this design so it blends in well with our community.

See FIG 1 Color results of AP survey map in color

- THIS IS A WIN-WIN FOR EVERYONE.
- The stop sign at Baseline (southbound affect) and the street narrowing at Jacob (northbound affect) are causing us to slow down anyway.
- As we learned earlier, noise is a big factor.
- We already get noise from Freeway US 60 and Baseline. We don't need more WAP-WAP noise in our neighborhood.
- IMMEDIATELY, THE SPEED CUSHIONS WILL CHANGE OUR DRIVING BEHAVIOR.
- THE SPACING IS THE SAME. The distance from Idaho to speed cushion 3 (sc3) is nearly the same as the distance from SC2 to baseline stop sign.
- A renter signed the AP survey and not the property owner as required by the speed hump policy.
- This is an easy change and the right thing to do.
- OUR COMMUNITY STRONGLY SUPPORTS THIS REQUEST.

**4. CHANGE THE SPEED CUSHION LENGTH TO 22 FEET:** Mesa has 3 speed hump details. The 14 ft. speed hump is 14 ft. long and 3 inches high and keeps speeds below 20 mph. The 22 ft. speed hump is 22 ft. long and 3 inches high is designed for streets with lots of traffic. The speed cushion is 12 feet long and 3 inches high.

See FIG 8 Speed hump Lengths City of Mesa Speed Hump Policy

- The 12 ft. long speed cushion is not appropriate for our neighborhood. This speed cushion is the most uncomfortable ride of the three, because it has the shortest length.
- THIS IS A WIN-WIN FOR EVERYONE.
- SINCE 96<sup>TH</sup> IS A COLLECTOR STREET and gets over 2400 cars on it every day, IT SHOULD GET THE 22 FT LENGTH. The longer speed hump length is designed for streets like 96<sup>th</sup> St. That's what its design for.
- INCREASING THE LENGTH TO 22 FEET WILL BE EFFECTIVE AT KEEPING SPEEDS AT THE POSTED SPEED LIMIT AND WE'LL LIKE IT BETTER.
- It's only 10 feet more but it makes a difference. The longer speed hump is made for our street. It's only a minor change.
- OUR COMMUNITY STRONGLY SUPPORTS THIS REQUEST.

**5. EXPAND THE AFFECTED PRPROPERTY SURVEY AREA TO INCLUDE “ONLY ACCESS” HOMES WHICH ARE VIRTUAL**

**CUL DE SACS**: The property owners at the northwest and northeast areas of our community were not allowed to be affected property owners. Those residents have only one way to enter and leave the community. There are no other viable access routes for these residents.

See FIG 3 Only Access homes Boundaries map for homes in our community.

- THE TAB HAS THE DISCRETION TO GRANT THIS REQUEST AND I BELIEVE IT’S IN THE SPIRIT OF THE POLICY. The policy has minimum criteria for choosing AP. But the minimum shouldn’t be used globally as the standard. Considerations should be made to make the affected area larger based on the circulation of each neighborhood. In this case, the neighborhood funnels users to 96<sup>th</sup> Street, so the “alternatives” aren’t direct routes and send drivers in front of a greater number of homes to reach Baseline Road.
- THEY DON’T HAVE ANOTHER VIABLE ROUTE TO EXIT THEIR COMMUNITY.
- OUR COMMUNITY DESERVES A VOTE.
- 97 homes got a vote and 350 Only Access homes didn’t.
- The affected property homes have a 4 to 1 advantage over the homes that are “only access types” and didn’t get a vote. That’s not fair and needs to be changed.
- Your policy allows for these homes to get a vote.
- This is an easy change and the right thing to do.
- THE ONLY ACCESS HOMES WANT A VOTE.

**6. SEPARATE THE AFFECTED PROPERTIES SURVEY RESULTS FROM THE USERS SURVEY RESULTS.**

See Fig 5 staff report for 96<sup>th</sup> St. speed hump study

- The sampling methods and quality of sampling control between the AP survey and the Users survey are very different and the results of the two surveys cannot be combined and reported as one. The user's survey has duplicate votes, unknown voters and unverified voters. The user's data is then combined with the AP survey data which has better controls.

A "Yes" vote is included for the HOA regarding all property owned and maintained by the HOA within the affected area

TOTAL PROPERTIES SURVEYED = 98  
 YES VOTES NEEDED FOR 70% = 69  
 TOTAL VOTES  
 YES = 77  
 NO = 21 (no or no response)  
 78.5% AGREEMENT



Property owner of 9564 S. 96th St called in after the comment phase was concluded and the report was already sent to the TAB. He gave us a YES vote, but this was not reflected in the report.





**mesa·az Transportation Advisory Board Report**

**Date:** October 21, 2014  
**To:** Transportation Advisory Board  
**From:** Dave Barrier, Traffic Studies Analyst  
**Subject:** Ninety-Sixth Street between Baseline Road and Idaho Avenue  
Speed Cushion Installation

### **Purpose and Recommendation**

This report presents the level of support for the proposed installation of speed cushions on 96<sup>th</sup> Street between Baseline Road and Idaho Avenue from immediately affected property owners and from other road users. See Figure 1 for the location map and Figure 2 for the proposed speed cushion locations. Under the current Speed Hump Policy (Policy), once a street meets all of the warranting criteria that make it eligible for the installation of speed cushions, the Transportation Advisory Board (TAB) must make a decision to approve or not approve the installation.

Staff recommends approval of the installation of speed cushions on 96<sup>th</sup> Street between Baseline Road and Idaho Avenue.

### **Background**

Ninety-Sixth Street is a 40-foot wide fully developed residential street between Baseline Road and Idaho Avenue with curb and gutter on both sides. It is a collector type street that serves as a connection between the arterial and local neighborhood streets. Under the current Policy, the 85<sup>th</sup> percentile speed must be at least eight mph over the posted speed limit, traffic volumes must be less than 5,000 vehicles per day, at least 70% of the affected property owners must support the installation, and the Fire Department and the TAB must approve of the installation.

### **Discussion**

Ninety-Sixth Street between Baseline Road and Idaho Avenue has met all the warranting criteria that make them eligible for speed cushions.

Ninety-Sixth Street between Baseline Road and Idaho Avenue has a posted speed limit of 25 mph, 85<sup>th</sup> percentile speed of 34.8 mph, and daily traffic volume of 2,500 vehicles. The Fire Department does not object to the installation of speed cushions

in this street section. The survey of the 98 affected property owners confirmed at least 70% approval. Affected properties include all that abut this segment of 96<sup>th</sup> Street, and a minimum of 300 feet on each side of the connecting streets.

Seventy-seven (77) or 79% of the 98 affected property owners approve of the speed cushions. Twelve (12) property owners were not in favor and nine (9) property owners could not be reached and therefore, twenty-one (21) are considered to not approve.

Comments from other road users were generated through the placement of information signs on 96<sup>th</sup> Street. The signs indicated that speed cushions may be coming, and directed the public to a webpage, or a telephone number, for more information. The signs were up for two weeks in August of 2014.

Fifty-seven (57) comments were received from people who live outside the affected area (i.e., the properties included in the neighborhood survey). Twenty-four (24) supported speed cushions, stating safety concerns for those who live off of 96<sup>th</sup> Street, especially the children, and one owner noted that their property has been hit three times by a speeding vehicle. Thirty-three (33) were opposed to the installation saying that the traffic volumes and speeds are low and that speed cushions damage the car's suspension.

Comments from another four (4) people were received; however, these people did not provide an address or provided an incorrect address. Two (2) people were in favor and two (2) were opposed to the speed cushions.

**Table 1: Speed Cushion Survey Results**

<b>RESPONSES</b>	<b>IN FAVOR</b>	<b>OPPOSED</b>
Within affected area	77 (79%)	21 (21%)
Outside affected area	24 (42%)	33 (58%)
Area not known	2 (50%)	2 (50%)
Total	103 (65%)	56 (35%)

When dealing with potential traffic calming measures on collector streets, staff's experience has been that support for traffic calming largely comes from those who live on the affected streets, while there is little or no support from others who do not live on or adjacent to the affected streets. This is not unexpected since traffic has a larger impact on the quality of life for the adjacent residents than for drivers who use a particular street but live elsewhere. Thus historically more weight has been given to the desires of the residents of a street in implementing traffic calming, while still leaving the street available to all drivers.

### **Alternatives**

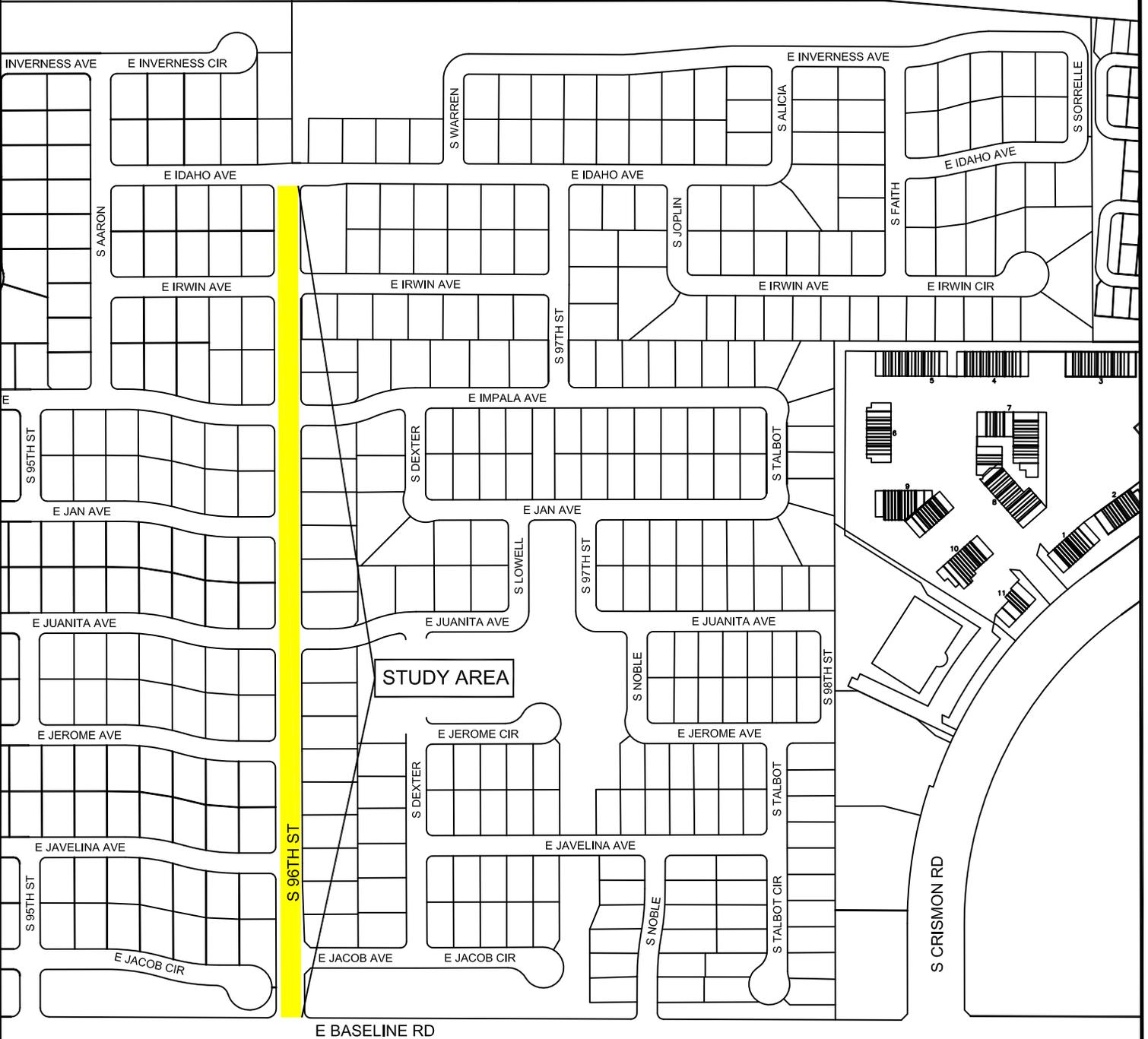
One alternative is not to approve the installation speed cushions; however, this would be one less tool to address traffic speeds on this street.

### **Fiscal Impact**

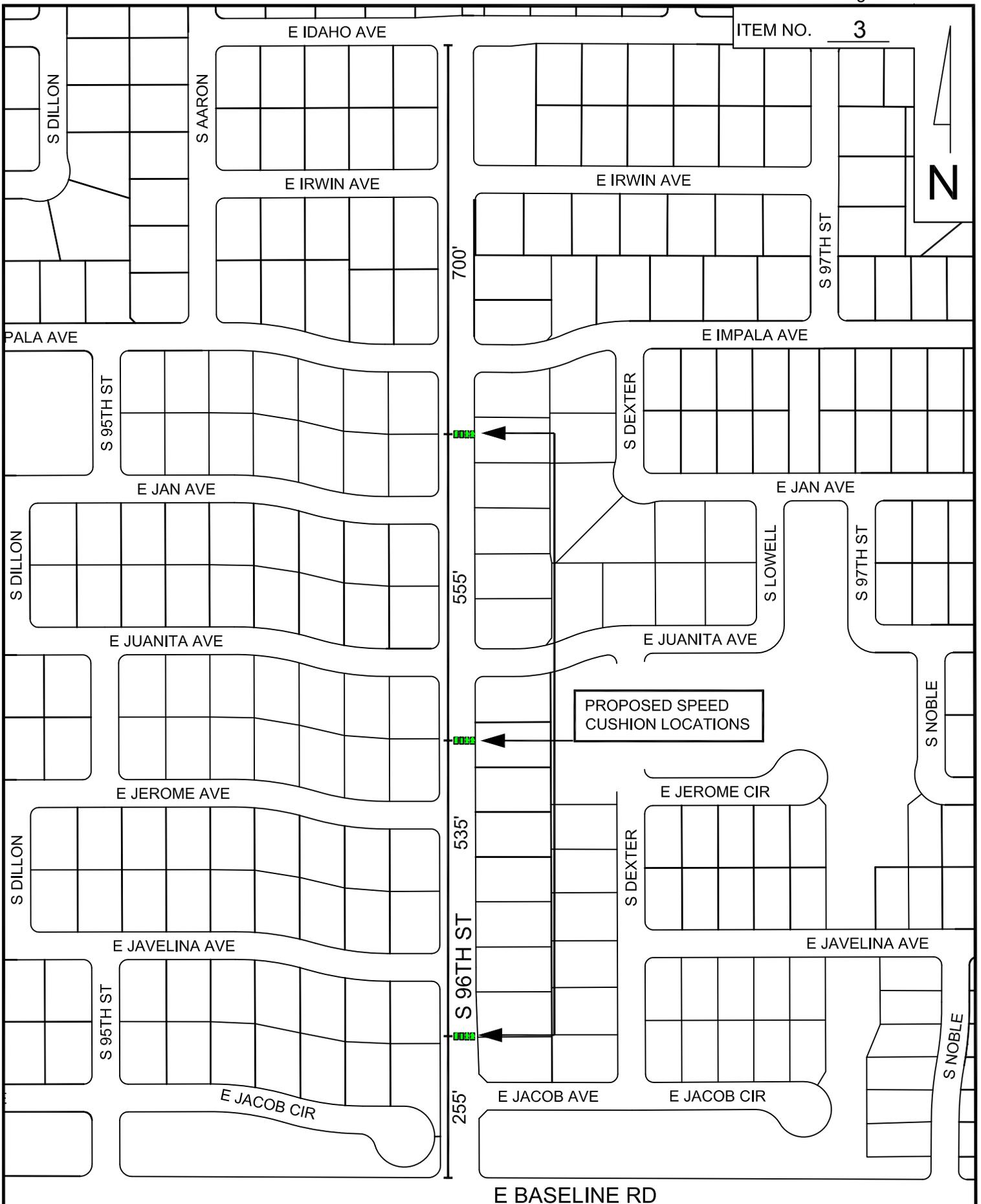
Three sets of speed cushions on 96<sup>th</sup> Street are estimated to cost \$15,000 (\$5,000 each set on a 40-foot wide road).



SUPERSTITION FREEWAY



ITEM NO. 3



Speed Hump Policy  
January 2013

### **CITY OF MESA - SPEED HUMP POLICY**

The speed hump policy identifies warranting criteria to be used when considering speed hump and speed cushion installations. This policy also outlines the mandatory neighborhood support needed for approving installation and cost responsibilities associated with these devices.

The neighborhood must have a liaison willing to serve as a contact person with whom the City can work throughout the request process. The neighborhood liaison must live in the affected area to be eligible to act as the neighborhood liaison. This person should contact Transportation at 644-2160 for a preliminary inspection.

In the preliminary inspection, a City representative from Transportation will check for traffic conditions on the street where the devices are desired. A location may not be studied more than once in a twelve-month period, unless significant changes in traffic conditions occur.

#### **A. Warranting Criteria**

Speed humps and speed cushions shall be considered for installation only when a location meets all of the warranting criteria. The warranting criteria are listed below:

1. The devices must be located on a paved, residential street (alleys are not eligible);
2. The street should have vertical curb abutting the proposed device locations. Devices may be placed on streets with roll curb or ribbon style sidewalk after a review to determine the best possible location. In this case, it may be necessary to take additional measures to prevent drivers from going around the devices;
3. The posted speed limit on the street shall be 30 m.p.h. or less;
4. The 85th percentile speed on the street shall be at least 8 m.p.h. over the posted speed limit;
5. Traffic volumes on the street must fall between 500 vehicles per day for full City cost participation, and 5,000 vehicles per day (the maximum traffic volume allowed). Devices may be installed where traffic volumes are less than 500 vehicles per day if the neighborhood shares in the cost as defined in item D. below;
6. The devices shall not be located within 200 feet of a stop sign or traffic signal on the subject street;
7. The street is not an arterial or major collector street;
8. Drainage on the street shall not be compromised due to the installation of the devices;
9. Streets designated as fire routes will be treated with speed cushions; other streets will be treated with speed humps. The configuration of the speed cushions will vary depending on the width of the street;
10. The Fire Department retains the right to veto the installation of speed humps or cushions.

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B. Neighborhood Support – Adequate neighborhood support must be shown for the project.

Neighborhood Acceptance Survey

Once the street has passed the warranting criteria and favorable conditions exist, the installation must then follow a neighborhood acceptance procedure (survey form). This is to assure that a majority of the property owners affected by the devices will support the installation. City of Mesa personnel will determine affected properties in the area.

The neighborhood liaison and City staff will conduct the review of possible device locations. The neighborhood liaison must then circulate a survey of acceptance to the affected property owners. The survey must confirm at least 70% approval from the affected property owners to install the devices.

Property owners who do not respond to the survey process or mark "no opinion" are considered opposed to the installation.

All property owners within 50 feet along each side of the device must approve of the installation.

If there is less than 70% approval from affected residents, or if it is not possible to place the devices on the street under consideration due to opposition from adjacent property owners, no device will be installed.

The completed survey must be returned to the City of Mesa Transportation Department.

Affected Property Owners

At a minimum, the affected properties will include all that abut the street on which the devices are being considered, and a minimum of 300 feet on each side of any cross streets. These cross streets can be public or private, and include driveway-type access streets.

Panhandle shaped properties, whose only access is from the subject street, will be included in the neighborhood survey, regardless of how far the main part of the property is located from the subject street.

If a street parallel to the subject street is encountered prior to the 300 foot distance, no additional property owners need be notified on that parallel street unless City staff recommends additional notifications.

Where a cross street is at the terminating end of the subject street, properties on both sides of the cross street within 300 feet of the subject street shall be included, unless the cross street is more than 48 feet in width. In that case, properties on the far-side of the cross street shall not be included.

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Properties or tracts that are not developable-sized lots, and are dedicated for road, access, drainage, or landscaping purposes shall not be included in the neighborhood survey, but owners of such lots shall have a say in whether they approve of the installation of the device within 50 feet of their property/tract.

Once neighborhood support is confirmed (via the neighborhood survey for speed hump installations and via the Transportation Advisory Board for speed cushion installations), City staff will identify exact locations for the devices based on input from the survey. Shortly prior to construction, City staff will confirm that property owners within 50 feet of each proposed device continue to support the installation at that location. In the event that support is withdrawn, staff and the neighborhood liaison will determine whether a suitable alternate location exists and whether to proceed with the remaining device installations.

Opinions of Other Road Users

If the street is a collector type street, the level of support from other road users must also be determined. This will be handled by City staff. Information signs will be posted on the subject street inviting the public to comment on the proposed installation of speed cushions. Comments will be accepted in a variety of formats (on-line survey, neighborhood meeting, telephone, email).

Results of the neighborhood survey and comments received from other roadway users will be presented to the Transportation Advisory Board.

C. Data Collection Costs

The neighborhood will be responsible for all data collection costs required to determine if the street under consideration meets the warranting criteria. Traffic volume and speed data will be collected by one of the City of Mesa's traffic counting contractors. Typically, sufficient data is collected using road tubes in one location for 48 consecutive hours. Two count locations are generally necessary for street segments over one-half mile in length or if the character of the street or adjacent land use varies considerably from one end of the street segment to the other. The cost of the speed counts is per the current Schedule of Fees and Charges.

**IMPORTANT NOTES: The neighborhood shall pay for the data collection prior to the traffic speed and volume counts being taken on the street under consideration. This payment is non-refundable once the traffic counts have been taken. This payment is strictly to determine if the street qualifies for speed humps or speed cushions and in no way guarantees that such device will eventually be installed on the street under consideration. If for any reason, speed humps or speed cushions are not installed on the street under consideration, the cost of data collection will not be reimbursed to the neighborhood.**

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D. Installation and Maintenance Costs

A typical installation on a quarter-mile long residential street consists of two devices. A minimum of two devices spaced about 500 feet apart is recommended for them to be effective.

The City of Mesa will install the devices and be responsible for their perpetual maintenance costs. Installation and maintenance include the costs of material, construction, signing, striping, maintenance and removal of the devices (if necessary).

If the neighborhood wishes to pursue the installation of the devices on a street with traffic volumes below 500 vehicles per day, but satisfying all of the other warranting criteria, the devices could be installed. In this case, the neighborhood would be responsible for a \$500 per device fee to be paid to the City. The neighborhood may collect monies in any manner they deem equitable but all monies submitted to the City must be submitted at the same time and be for the full amount of the required neighborhood contribution. These monies must be received in order for the street to be considered for ranking as described in paragraph E.

E. Prioritization of Installations

Rankings will be established for all streets that have passed the warranting criteria, have submitted the survey with at least 70% approval from the affected property owners, and submitted the neighborhood contribution, if applicable, by the first Monday in September or the first Monday in March. Qualified streets with traffic volumes of 500 vehicles per day or more will be ranked first based on their 85th percentile speeds, then on traffic volumes. Qualified streets with less than 500 vehicles per day will be ranked after qualified streets having 500 vehicles per day or more, regardless of the 85<sup>th</sup> percentile speeds.

Approximately half the annual program budget will be available for each review period. Prioritization will be divided into two categories: speed humps and speed cushions. Of the total budget, 1/3 will be available to treat streets with speed humps, and 2/3 will be available to treat streets with speed cushions.

Available funding will be applied to eligible streets in order of priority until all funds are committed. Candidate streets not receiving funding will be carried forward to the next review period at which time they will be prioritized with all eligible requests identified by that time. Candidate streets will not be carried forward for more than two years. After two years, the survey process must begin anew. If funds are left over from either of the two categories, the funds can be applied to the next eligible candidate in the other category.

F. Removal of Speed Humps or Speed Cushions

Once devices have been in place for at least one year, a survey requesting removal may be conducted and submitted to the Transportation Department. All affected properties, which were previously identified in the neighborhood survey process, shall be involved in the removal process as well. A simple majority of the affected property owners must approve of the removal. Property owners who do not respond to the survey process or mark "no opinion" are considered opposed to the removal of the devices. Once the survey has been verified, the City of Mesa will be responsible

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for removal of the device(s) and all costs associated with the removal. Devices removed from a location under this process cannot be reconsidered for re-installation for three years after the devices are removed.

G. Design/Construction Specifications

The City of Mesa has adopted two speed hump designs; a 14-foot long speed hump for 25 m.p.h. streets and a 22-foot long speed hump for 30 m.p.h. streets. Both speed hump designs are 3 inches at their highest point and vary in width, depending on the width of the road. See Details 1 and 2.

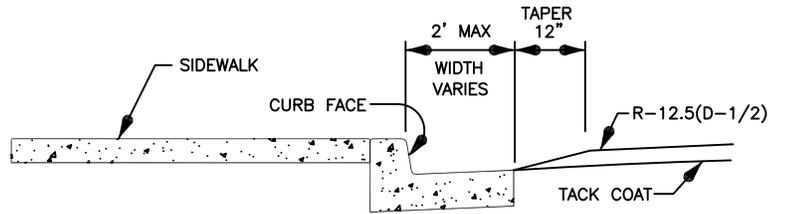
The City of Mesa has adopted a 12-foot long speed cushion design for use on fire routes. The cushions are 3 inches at their highest point, and are a minimum of 6 feet wide. See Detail 3.

H. Revision

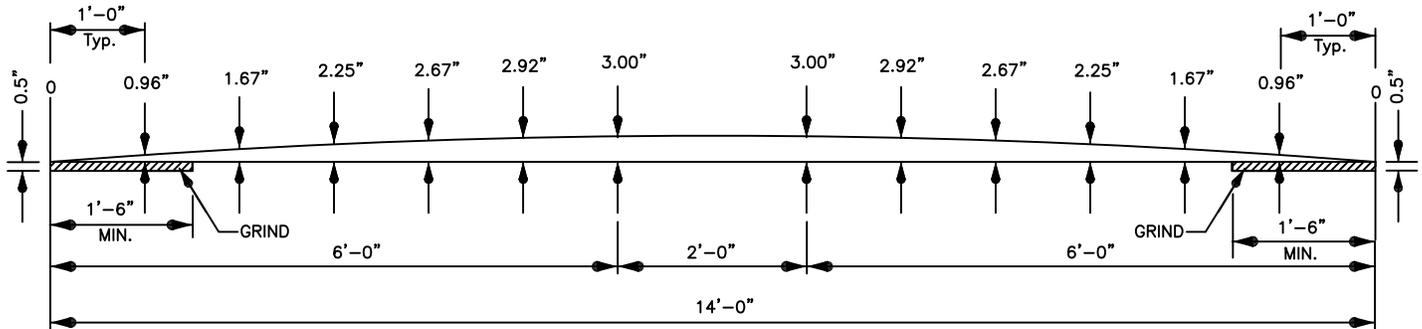
The City Manager or designee may make adjustments to the requirements for speed hump installation as necessary. All adjustments shall be in writing and on file in the Transportation Department office.

# SPEED HUMP SPECIFICATIONS

IMPORTANT: Speed Humps to be 3" in height to provide maximum effectiveness, while not being overly restrictive to emergency police and fire vehicles.



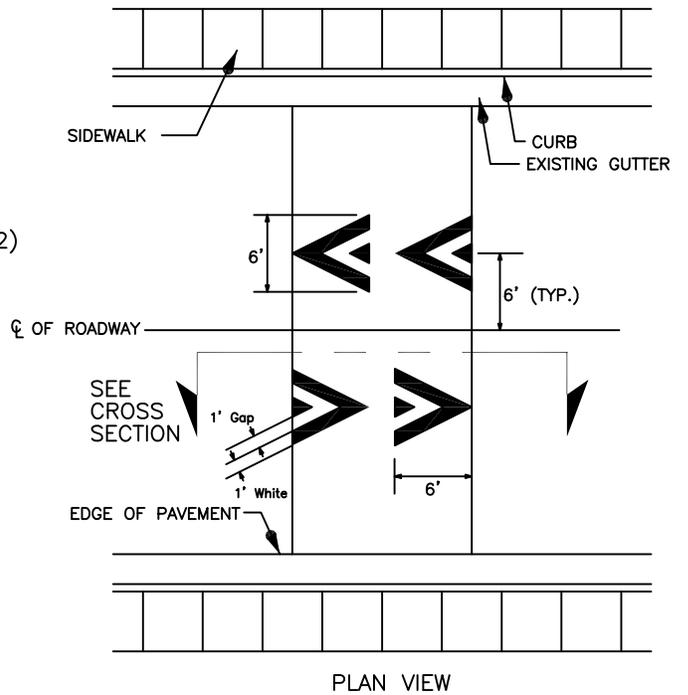
EDGE DETAIL



## CROSS SECTION

NOTES:

1. Speed humps shall not be placed over manholes, water valves, survey monuments, etc.
2. Speed humps shall not be installed in a location such that roadway drainage is compromised.
3. Speed humps to be constructed with type R-12.5(D-1/2) course (M.A.G. Spec. Section 710). A tack coat shall be applied prior to application of pavement material.
4. Striping to be installed by contractor per detail M-15.1. Contact City of Mesa sign shop one week prior to installation to coordinate placement of signs.

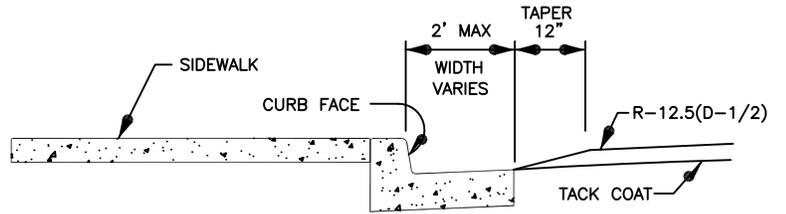


PLAN VIEW

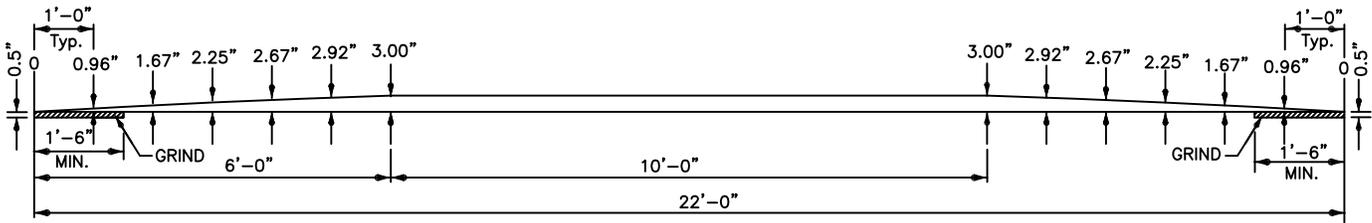
## DETAIL 1: 14' SPEED HUMP

# SPEED HUMP SPECIFICATIONS

**IMPORTANT:** Speed Humps to be 3" in height to provide maximum effectiveness, while not being overly restrictive to emergency police and fire vehicles.



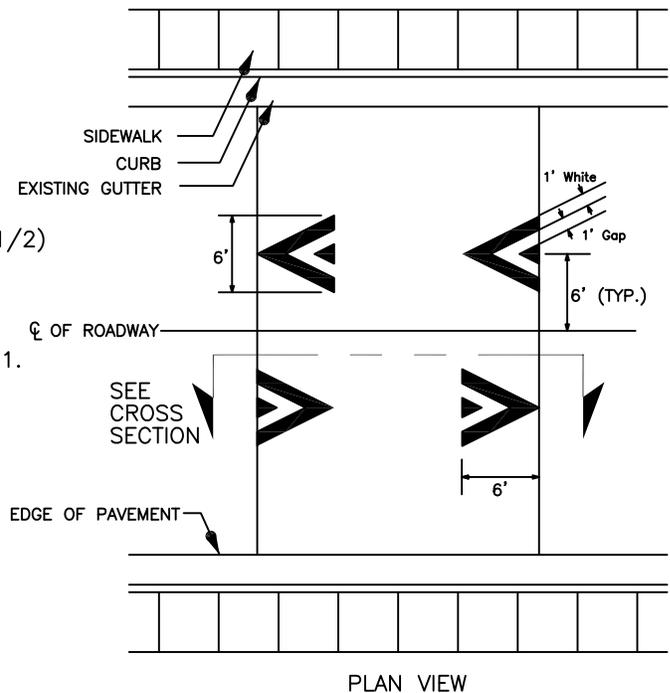
EDGE DETAIL



## CROSS SECTION

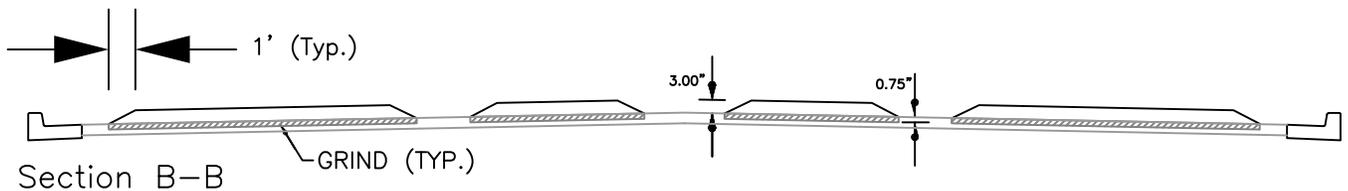
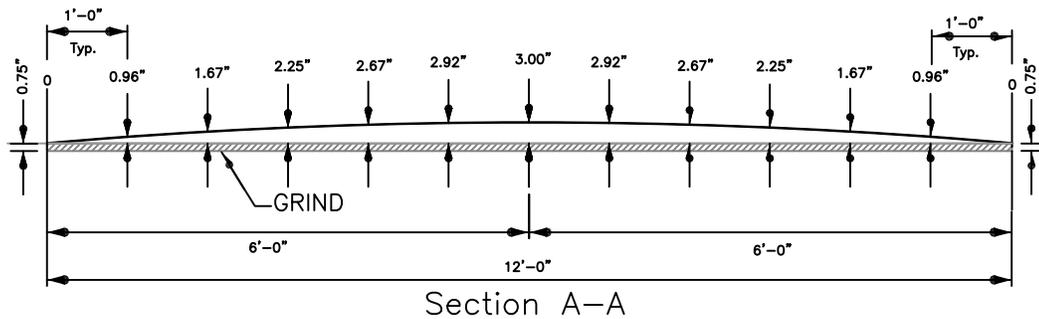
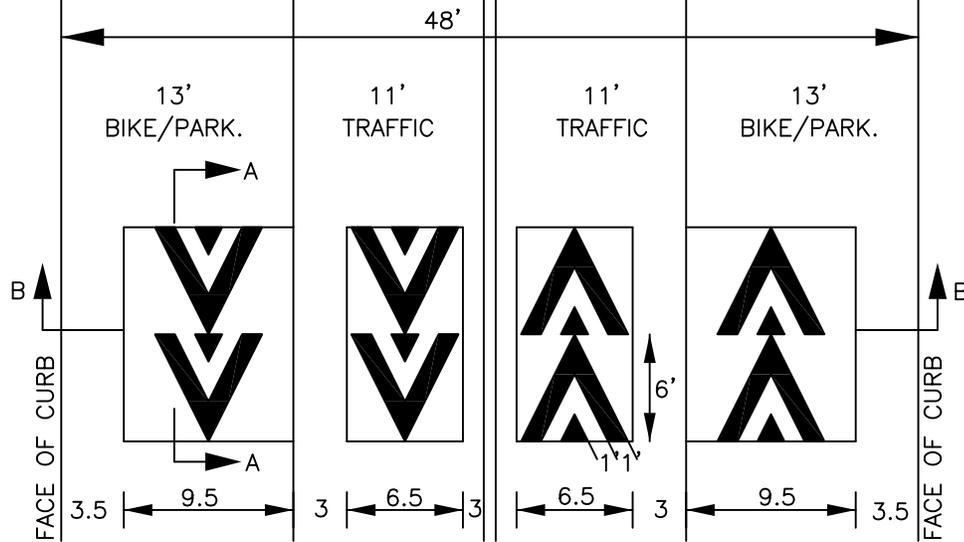
**NOTES:**

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2. Speed humps shall not be installed in a location such that roadway drainage is compromised.
3. Speed humps to be constructed with type R-12.5(D-1/2) course (M.A.G. Spec. Section 710). A tack coat shall be applied prior to application of pavement material.
4. Striping to be installed by contractor per detail M-15.1. Contact City of Mesa sign shop one week prior to installation to coordinate placement of signs.



PLAN VIEW

## DETAIL 2: 22' SPEED HUMP



**NOTES**

SPEED CUSHIONS SHALL NOT BE PLACED OVER MANHOLES, WATER VALVES, SURVEY MONUMENTS, ETC.

SPEED CUSHIONS SHALL NOT BE INSTALLED IN A LOCATION SUCH THAT DRAINAGE IS COMPROMISED.

SPEED CUSHIONS SHALL BE CONSTRUCTED WITH TYPE R-12.5 ASPHALT MIX PER EAST VALLEY ASPHALT (EVA) CRITERIA, 1996 EDITION AND BE APPROVED BY EVA COMMITTEE. A TACK COAT SHALL BE APPLIED PRIOR TO APPLICATION OF PAVEMENT MATERIAL.

THE ENTIRE BASE OF EACH CUSHION SHALL BE GROUND DOWN TO A DEPTH OF 3/4"

**DETAIL 3: SPEED CUSHION (48' STREET)**

