NEIGHBORHOOD TRAFFIC CALMING POLICY

Submitted by:

Dr. Milton Rahman, P.E.

Harris County Commissioners Court

County Judge

Lina Hidalgo

Precinct 1 Commissioner
Rodney Ellis

Precinct 3 Commissioner
Tom Ramsey, P.E.

Precinct 2 Commissioner
Adrian Garcia

Precinct 4 Commissioner
Lesley Briones

April 23, 2024

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1.0 POLICY

1.1 PURPOSE

The Harris County Engineering Department (HCED) has developed this policy to assist in the implementation of the Harris County Engineering Department Guidelines for Neighborhood Traffic Calming, as adopted by Commissioners Court on September 19, 2023.

1.2 BACKGROUND

In August 2020, Harris County Commissioners Court approved a resolution to officially launch Vision Zero as an integrated part of future Harris County transportation plans and projects. Through the implementation of Vision Zero, Harris County aims to eliminate all traffic related fatalities in the region by the year 2030.

Vision Zero starts with the belief that everyone has the right to move safely in their communities, and that improving safety is a shared responsibility between road users, system designers, and policymakers. This means that road users are expected to follow traffic laws, while system designers and policymakers are expected to improve the roadway environment, adopt supporting policies, and provide initiatives to lessen the severity of crashes.

The Harris County Engineering Department Neighborhood Traffic Calming Policy is one such supporting policy that proposes to lessen the severity of crashes by providing traffic calming measures designed to reduce vehicle speeds and/or volumes on residential streets in support of Vision Zero.

1.3 ELIGIBILITY & REQUIREMENTS

Traffic calming measures will be implemented as identified by a Professional Engineer licensed with the Texas Board of Professional Engineers and Land Surveyors as the most appropriate solution to solve an engineering problem. Otherwise, for a street to be considered for traffic calming, it shall meet the following criteria:

1. Classified as a collector or a residential road,
2. No more than one moving traffic lane in each direction,
3. A posted or prima facie speed limit of no greater than 30 miles per hour,
4. At least 50 percent front facing residences (driveways connecting to the street), and
5. A petition (Appendix A) signed by a minimum of 60 percent of front facing residential households in support of implementation on the subject street(s).

Locations near a park, school, or place of worship shall be considered on a case-by-case basis.

2.0 PROCESS

Figure 1 summarizes the process from a study request to the implementation.

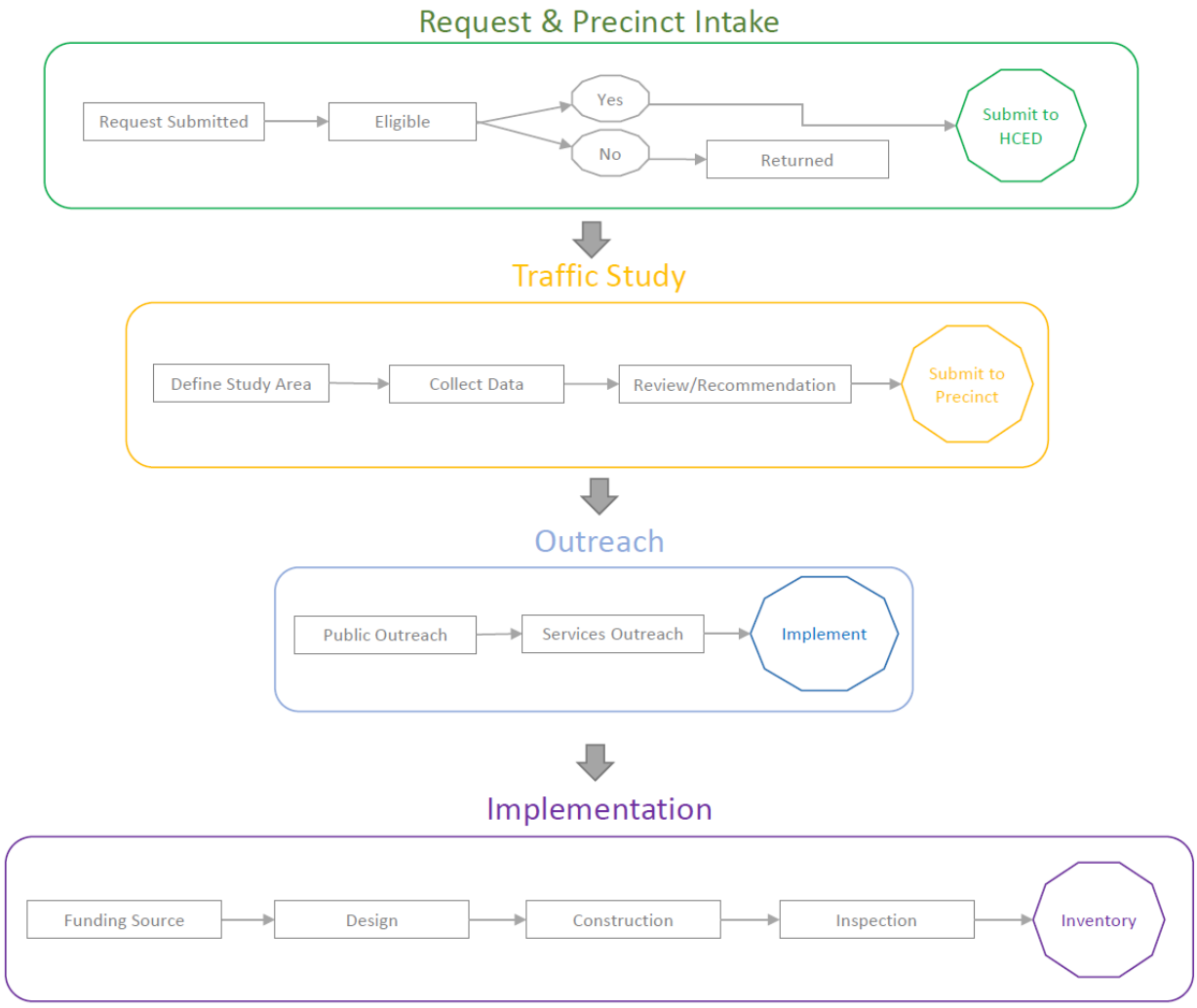


Figure 1: Traffic Calming Process.

2.1 REQUEST & PRECINCT INTAKE

Constituents may submit a written request and signed petition for traffic calming to their Precinct. The Precinct will verify the submittal and either return it to the constituent or request a Traffic Study from HCED.

2.2 TRAFFIC STUDY

Upon receipt of the request, HCED will initiate a Traffic Study. The study area and scope will be defined based on the information received, the site conditions, and communication with the petitioner. Traffic data, such as traffic volume counts, the 85th percentile speed, crash records, and any other information as required to perform the study, will be collected. A Professional Engineer licensed with the Texas Board of Professional Engineers and Land Surveyors will review the accumulated information and provide a recommendation based on the Guidelines for Neighborhood Traffic Calming in the form of a signed and sealed technical memorandum and accompanying exhibits. The final recommendation will be provided to the Precinct for concurrence and acceptance.

2.3 OUTREACH

Upon completion of the Traffic Study, public outreach should be conducted to explain the results to the applicant and/or affected community. Additionally, the applicable emergency services, independent school districts, home service providers, etcetera, should be contacted to coordinate their operations, such as emergency response routes, school bus routes, and waste collection.

2.4 IMPLEMENTATION

Once the Traffic Study is finalized and the funding source is approved, the recommended traffic calming measure(s) will be installed within the public right of way and will be inspected by HCED. An inventory of all installed measures will be maintained by HCED.

3.0 TRAFFIC CALMING MEASURES

Table 1 illustrates the traffic calming toolbox available to Harris County.

Table 1: Traffic Calming Toolbox.

Traffic Calming Measures	Traffic Concerns			Applicability				Minimum Level of Traffic Calming Study	Cost $: <$6k $$: $6k-$15k $$$: >$15k	
	Speeding	Cut Through Traffic	Safety	Intersection	Roadway Segment w/Open Ditch	Roadway Segment w/Curb & Gutter	Neighborhood or District		Installation	Maintenance
Speed Monitoring & Awareness Measures										
Neighborhood Education Campaigns	!	!	!	+	+	+	+	No study required	$	$
Temporary Enforcement	!	!	!	+	+	+	+	No study required	$	-
Reduced Speed Limit Signs	!	!	!	–	+	+	+	TRANSP § 545.355	$	$
Speed Feedback Signs	+	!	!	–	+	+	+	Permit	$$	$
High Visibility Crosswalks	–	–	!	+	+	+	+	Minor	$	$
Pedestrian Crossing Signs	!	–	!	+	+	+	+	Minor	$	$
Vertical Deflection Measures ("Drive Over")										
Speed Humps & Speed Cushions*	+	+	+	–	!	+	+	Minor	$	$
Speed Tables & Raised Crosswalks*	+	+	+	–	–	+	+	Regular	$$	$
Raised Intersection	!	!	!	+	–	–	+	Regular	$$$	$ - $$
Horizontal Deflection Measures ("Drive Around")										
Corner Extension / Bulb Out*	!	–	!	+	–	–	+	Regular	$$ - $$$	$ - $$
Choker / Pinchpoint*	!	!	–	–	!	+	+	Regular	$$ - $$$	$ - $$
Chicane*	+	!	!	–	+	+	+	Regular	$$	$ - $$
Median Island / Pedestrian Refuge*	!	–	+	+	+	+	+	Regular	$$ - $$$	$ - $$
Median Barrier & Forced Turn Island*	–	+	!	+	–	–	+	Regular	$ - $$$	$ - $$
On-Street Parking	!	–	–	–	–	+	+	Regular	$$	$ - $$
Delineation of Wide Cross Sections	!	–	+	+	+	+	+	Regular	$ - $$$	$ - $$$
Neighborhood Traffic Circle*	+	+	+	+	–	–	+	Regular	$$ - $$$	$ - $$
Small Modern & Mini Roundabout*	!	–	+	+	–	–	+	Regular	$$$	$ - $$

** Appropriate for temporary trial installation*

\+ *Preferred treatment* ! *Engineering judgment* – *Not recommended*

3.1 NEIGHBORHOOD EDUCATION CAMPAIGNS

Neighborhood education campaigns aim to address traffic issues through driver awareness. Harris County will prepare stickers, brochures, flyers, yard signs, and other applicable materials promoting Harris County's Vision Zero Action Plan to educate commuters on a case-by-case basis. This measure will often be deployed as a first response to a calming request, or in situations where physical traffic calming measures are not desirable.

3.2 TEMPORARY ENFORCEMENT

The Harris County Sheriff's Office may be deployed to enforce traffic laws and deter unsafe behaviors on a case-by-case basis. This measure will often be deployed as a first response to a calming request, or in situations where physical traffic calming measures are not desirable.

3.3 REDUCED SPEED LIMIT SIGNS

Constituents may solicit their Precinct to alter speed limit signage in accordance with the Texas Transportation Code (§ 545.355).

3.4 SPEED FEEDBACK SIGNS

A speed feedback sign is an electronic sign that displays the posted speed limit sign above the actual speed of passing vehicles. Signs shall be installed per HCED's Electronic Speed Feedback Sign Details and in accordance with the Texas Transportation Code (§ 430).

3.5 HIGH VISIBILITY CROSSWALK

A high visibility crosswalk indicates the optimal location for pedestrian crossing activity by helping to designate right-of-way for motorists to yield to pedestrians. Crosswalks shall be designed to HCED's Pavement Marking Details and warranted based on HCED's Pedestrian Crosswalk Guidance.

3.6 PEDESTRIAN CROSSING SIGNS

Signage may be installed to remind motorists that state law requires them to stop for pedestrians at unsignalized pedestrian crossings. Pedestrian crossing signage shall be provided in accordance with the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) in conjunction with other calming measures, such as high visibility crosswalks.

3.7 SPEED HUMPS AND SPEED CUSHIONS

Speed humps and cushions are raised traffic calming devices installed across a roadway to physically slow motorists. This measure is applicable to a curb and gutter cross-section with an average daily traffic of less than 4,000 vehicles. Open ditch cross-sections will only be considered after careful evaluation of the existing shoulder width and the roadside conditions in accordance with the latest version of the American Association of State Highways and Transportation Officials' (AASHTO) Roadside Design Guide. The spacing of speed humps and cushions will be dictated by an engineering study but shall not be more than 500 feet apart. The design will be in accordance with HCED's 12-Foot Parabolic Speed Hump or Speed Cushion standard (Appendix B), as applicable. Installed speed humps and cushions may be removed at any time based on an engineering study or by the request of the Precinct.

3.8 SPEED TABLES AND RAISED CROSSWALKS

Speed tables and raised crosswalks are raised, flat-topped traffic calming devices installed across a roadway to physically slow motorists. This measure is applicable to a curb and gutter cross-section. Open ditch cross-sections will not be considered. The location of speed tables and raised crosswalks will be established by an engineering study and designed in accordance with HCED's 22-Foot Speed Table or 22-Foot Raised Crosswalk standard (Appendix B), as applicable. Installed speed tables and raised crosswalks may be removed at any time based on an engineering study or by the request of the Precinct.

3.9 RAISED INTERSECTION

A raised intersection is a raised, flat-topped traffic calming device, with ramps on all approaches, installed across an entire intersection to physically slow motorists. The applicability of a raised intersection shall be determined by an engineering study but shall only be considered for locations with an average daily traffic of less than 10,000 vehicles. Engineering drawings will be produced on a case-by-case basis. A raised intersection design will be typically 3-4 inches in height, have slopes between 10:1 and 25:1, and tapers no greater than 6:1.

3.10 CORNER EXTENSION / BULB OUT

A corner extension, or bulb out, extends the sidewalk or curb line into the street at an intersection to physically narrow the roadway and decrease the intersection curb radii, thereby encouraging slower turning speeds. The applicability of corner extensions shall be determined by an engineering study. Engineering drawings will be produced on a case-by-case basis.

3.11 CHOKER / PINCHPOINT

A choker, or pinchpoint, is the narrowing of a roadway at a midblock location to visually and physically narrow the travel width to encourage slower vehicle speeds. The applicability of a choker shall be determined by an engineering study. Engineering drawings will be produced on a case-by-case basis.

3.12 CHICANE

A chicane is a series of alternating curves or lane shifts, using a return angle of up to 45 degrees, that force motorists to maneuver their vehicle instead of travelling in a straight path. The applicability of a chicane shall be determined by an engineering study but shall only be considered for locations with a minimum 40-foot cross section and an average daily traffic of less than 3,500 vehicles. Engineering drawings will be produced on a case-by-case basis,

3.13 MEDIAN ISLAND / PEDESTRIAN REFUGE

A median refuge island is a median located along the centerline of a road to narrow the travel lanes and provide refuge for crossing pedestrians. Raised median refuge islands shall be a minimum of 6 feet in length and 5 feet in width (Figure 2). The crosswalk shall be continental type dimensioned to HCED's Pavement Marking Details standard. Detectable warnings are to be provided for 2 feet at the street edge on each side of the island. Grades and cross slopes are to be less than 2%, although not flat to avoid ponding. A black concrete nose shall be applied from the opening to the intersection for a minimum of 10 feet and the curb painted with yellow reflective paint. All signage and pavement markings shall be per the TMUTCD.

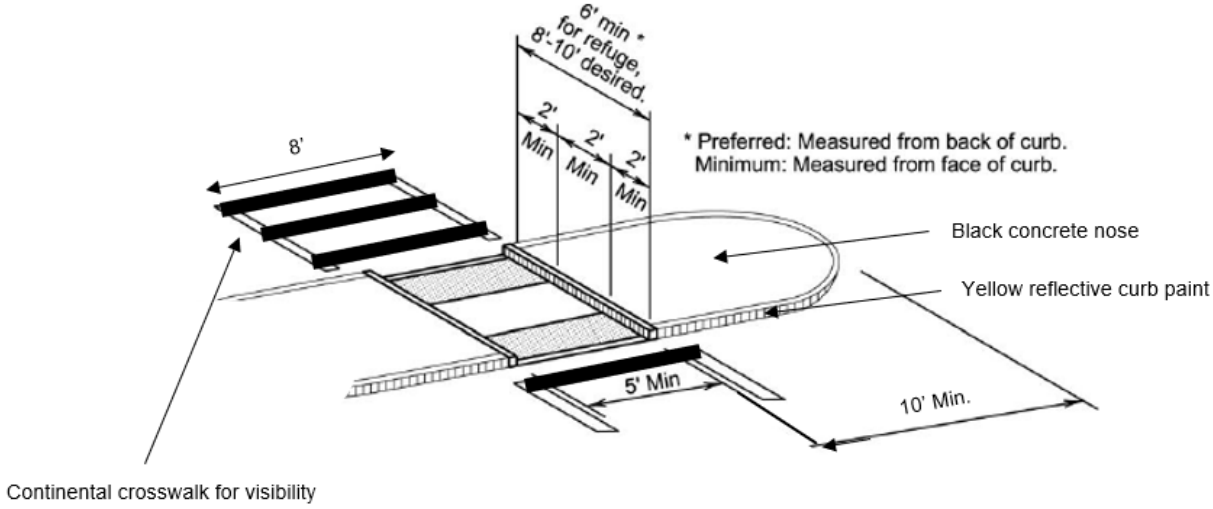


Figure 2: Pedestrian Refuge Island (Adapted from TxDOT, 2022, p. 7-48). [1]

[1] Texas Department of Transportation (2022) Roadway Design Manual.

3.14 MEDIAN BARRIER AND FORCED TURN ISLAND

Median barriers and forced turn islands are forms of physical restrictions at an intersection that restrict certain traffic movements, thus preventing cut-through traffic. The applicability of a median barrier or forced turn island shall be determined by an engineering study. Engineering drawings will be produced on a case-by-case basis.

3.15 ON-STREET PARKING

On street parking effectively narrows the travel lane by creating friction for traveling vehicles, thereby reducing the free-flow speed. The applicability of on-street parking shall be determined by an engineering study. Engineering drawings will be produced on a case-by-case basis.

3.16 ROAD DIET

A road diet uses pavement markings to alter the travel lane widths or reduce the number of travel lanes on a stretch of roadway. In all cases, lane widths of at least 11 feet shall be maintained. The applicability of a road diet shall be determined by an engineering study, which will include an analysis on the impact to the level of service of the stretch of roadway. Engineering drawings will be produced on a case-by-case basis.

3.17 NEIGHBORHOOD TRAFFIC CIRCLE

A traffic circle is placed within an unsignalized intersection, forcing motorists to reduce their speed to appropriately maneuver around the circle. Approximately 15 feet of clearance should be provided from the intersection corner to the widest point of the circle. The applicability of traffic circles shall be determined by an engineering study, with engineering drawings produced on a case-by-case basis.

3.18 SMALL MODERN AND MINI-ROUNDABOUTS

A small modern roundabout or mini-roundabout is placed within an unsignalized intersection to force motorists to reduce their speed to appropriately maneuver around the roundabout. The applicability of roundabouts shall be determined by an engineering study on a case-by-case basis. Engineering drawings will be produced referencing HCED's Typical Roundabout Design Standard Details and the Transportation Research Board's National Cooperative Highway Research Program (NCHRP) Report 672.

3.19 DESIGN SUMMARY

Table 2 summarizes the measures and associated design standards.

Table 2: Traffic Calming Design Standards

Traffic Calming Measure	Design Reference
Neighborhood Education Campaign	N/A
Temporary Enforcement	N/A
Reduced Speed Limit Signs	Texas Transportation Code § 545.355
Speed Feedback Sign	Electronic Speed Feedback Sign Details and Texas Transportation Code § 430.
High Visibility Crosswalk	Pedestrian Crosswalk Guidance and Pavement Marking Details
Pedestrian Crossing Signs	TMUTCD
Speed Humps and Speed Cushions	12-Foot Parabolic Speed Hump Standard, Speed Cushion Standard, and AASHTO's Roadside Design Guide
Speed Tables and Raised Crosswalks	22-Foot Speed Table Standard and 22-Foot Raised Crosswalk Standard
Raised Intersection	Site Specific Design
Corner Extension / Bulb Out	Site Specific Design
Choker / Pinchpoint	Site Specific Design
Chicane	Site Specific Design
Median Island / Pedestrian Refuge	Section 3.13
Median Barrier and Forced Turn Island	Site Specific Design
On-Street Parking	Site Specific Design
Road Diet	Site Specific Design
Neighborhood Traffic Circle	Site Specific Design
Small Modern and Mini-Roundabout	Typical Roundabout Design Standard Details and NCHRP Report 672

APPENDICES

APPENDIX A

Neighborhood Traffic Calming Petition

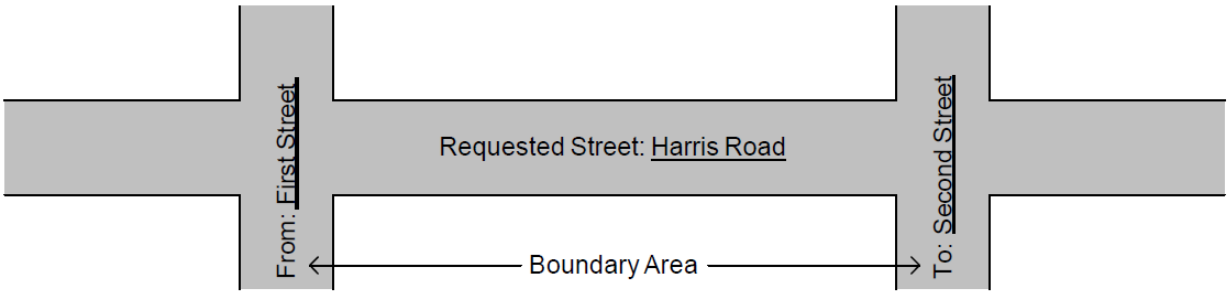
NEIGHBORHOOD TRAFFIC CALMING PETITION

Requested Street: _____

(One street per petition)

Limits Start From: _____ Limits End At: _____

(Cross Street) (Cross Street)



Traffic Concerns: _____

_____

_____

_____

_____

(Describe the traffic issue to be studied, including the time of day or days of the week the problem occurs)

	Not important	Somewhat unimportant	Neutral	Somewhat important	Very important
Vehicle speeding					
Cut through traffic					
Crashes					
Drivers failing to yield					
Difficult to bike					
Other (describe above)					

(Place a check mark to indicate and prioritize the issues you hope to address through traffic calming)

Form to be completed by Applicant

Traffic Calming Devices Requested:

(Place a check mark next to the devices requested)

- ☐ Neighborhood Education Campaigns
- ☐ Temporary Enforcement
- ☐ Speed Limit Evaluation
- ☐ Speed Feedback Signs
- ☐ High Visibility Crosswalks
- ☐ Pedestrian Crossing Signs
- ☐ Speed Humps / Speed Cushions
- ☐ Speed Tables / Raised Crosswalks
- ☐ Raised Intersection
- ☐ Corner Extension / Bulb Out
- ☐ Choker / Pinchpoint
- ☐ Chicane
- ☐ Median Island / Pedestrian Refuge
- ☐ Median Barrier / Forced Turn Island
- ☐ On-Street Parking
- ☐ Road Diet
- ☐ Neighborhood Traffic Circle
- ☐ Small Modern / Mini Roundabout

Please refer to the Traffic Calming Toolbox for descriptions of these devices. Note that selection of a particular device will not guarantee the installation of that device, with the final determination made through an engineering study.

APPLICANT INFORMATION

Full Name: _____
(Print)

Address: _____
(Street Address) (Unit)

_____
(City) (State) (ZIP Code)

Phone: _____ Email: _____

Signature: _____ Date: _____

Form to be completed by Applicant

NEIGHBORHOOD TRAFFIC CALMING PETITION

This form shall be signed by a minimum of 60% of residential households supporting traffic calming on the subject street.

Number of residential properties: _____ x 0.60: _____
(Round up to next whole number)

- Only streets that meet the eligibility criteria shall be considered.
- Only front facing residences (driveways connecting to the street) shall be considered eligible to sign the petition.
- Only one signature per household shall be accepted.
- The final placement of devices will be determined by the Engineer of Record.

Address	Print Name	Signature	Phone	Email

Petition Page ____ of ____
(Print additional pages as needed)

Address	Print Name	Signature	Phone	Email

Petition Page _____ of _____

(Print additional pages as needed)

AFFIDAVIT

THE STATE OF TEXAS

COUNTY OF H A R R I S

Before me, the undersigned Notary Public, on this day personally appeared _____, who being duly sworn on his oath deposed and said:

My name is _____, I am over 18 years of age and am competent to make this affidavit. I have reviewed all of the signatures provided in the petition and attest that, to the best of my knowledge, the information is correct and true.

I have reviewed all the plats for the Boundary Area and according to the plats, the total number of residences is ____. A total of ____ individuals have signed the petition attached hereto. Each person who signed the petition is over 18 years old and is either an owner or tenant of a residence. Further, only one person has signed the petition for each residence.

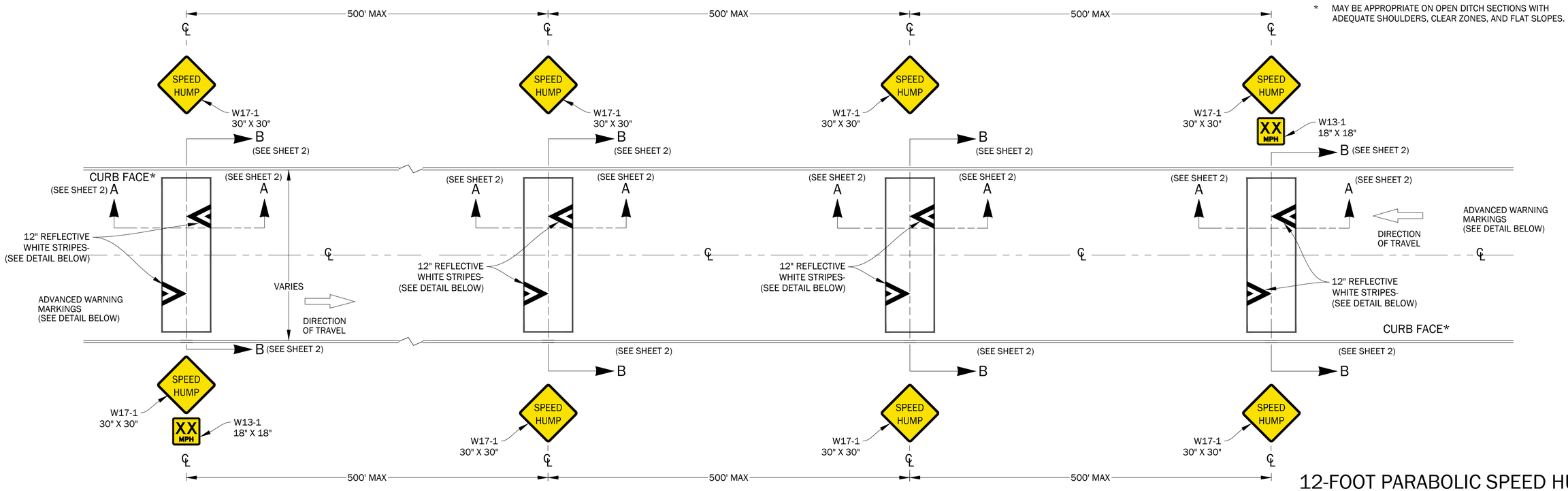
I have received and read a copy of the Harris County Neighborhood Traffic Calming Policy and I hereby acknowledge that I understand the Policy.

SUBSCRIBED AND SWORN TO BEFORE ME, on this the _____day of _____, 20____, to certify which witness my hand and official seal.

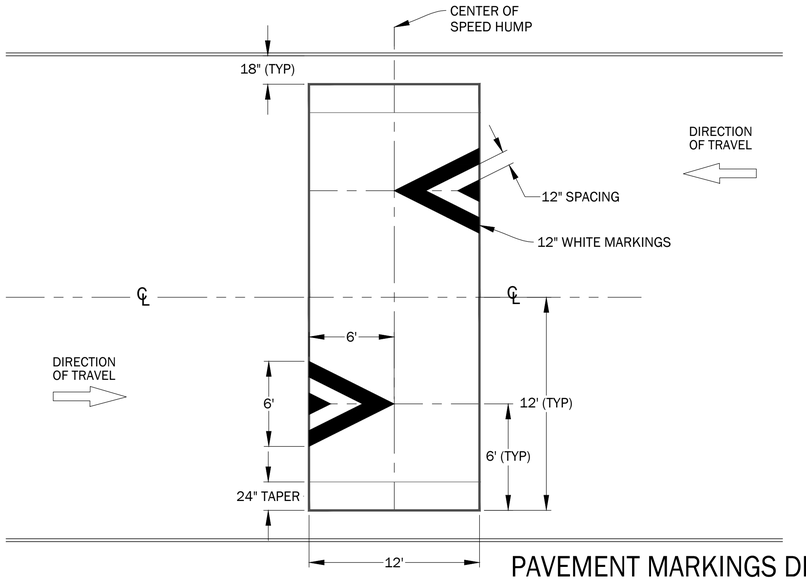
_____
NOTARY PUBLIC in and for the
STATE OF TEXAS

APPENDIX B

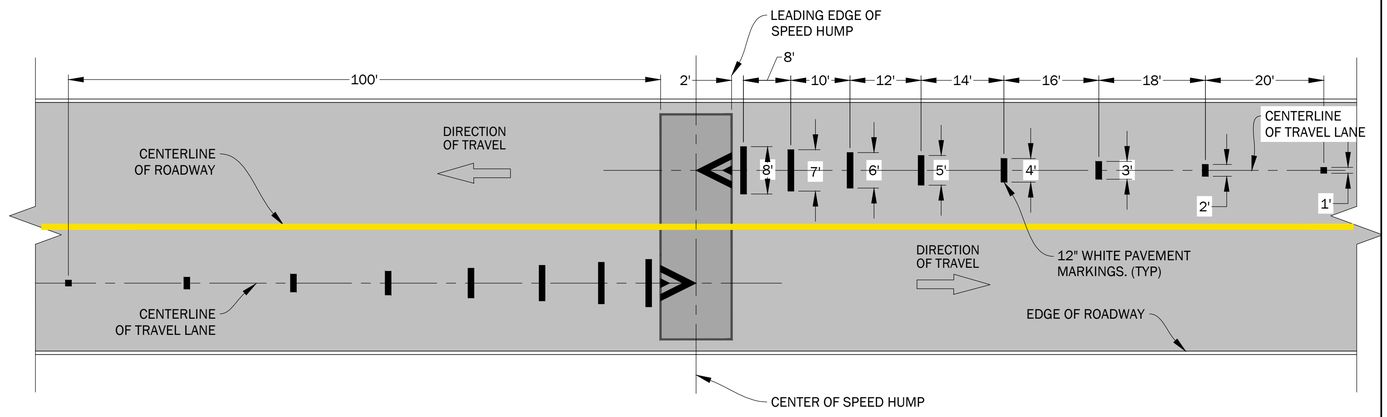
Neighborhood Traffic Calming Standard Drawings



12-FOOT PARABOLIC SPEED HUMP



PAVEMENT MARKINGS DETAIL



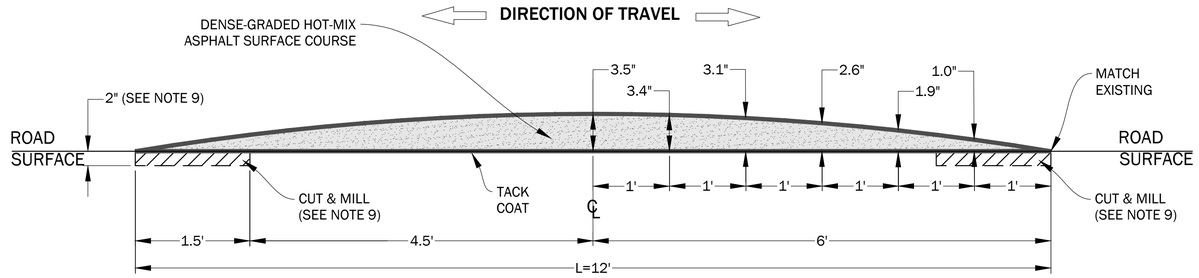
ADVANCED WARNING MARKINGS

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

HARRIS COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:		
SHEET DESCRIPTION: 12' PARABOLIC SPEED HUMP		TRAFFIC STANDARD: SH
DRAWN BY: SF	SHEET 1 OF 2	DATE: 04/23/24
CK'D BY: KH	SCALE: NTS	SHEET NO:

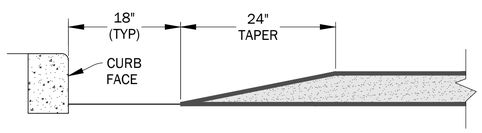
Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Guidelines\07 Policy\HCED Neighborhood Traffic Calming Standards\CAD\12-FOOT PARABOLIC SPEED HUMP.dwg



SECTION A-A
ASPHALTIC PARABOLIC CROWN PROFILE

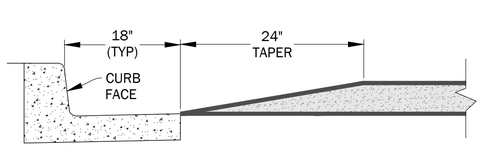
GENERAL NOTES

1. SPEED HUMPS SHALL ONLY BE CONSTRUCTED AT LOCATIONS DESIGNATED BY HCED THROUGH AN ENGINEERING STUDY.
2. 12-FOOT PARABOLIC ASPHALTIC SPEED HUMPS SHALL BE COMPRISED OF DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE PER SPECIFICATION ITEM 341.
3. 12-FOOT PARABOLIC CONCRETE SPEED HUMPS SHALL BE COMPRISED OF CONCRETE PAVEMENT PER SPECIFICATION ITEM 360.
4. THE 12-FOOT LONG VERTICAL CROSS-SECTION OF THE SPEED HUMP SHALL BE A PARABOLIC CURVE WITH A MAXIMUM HEIGHT OF 3.5 INCHES AT THE MID-POINT, AND 12-FEET IN LENGTH AS DETAILED IN SECTION A-A.
5. NO PART OF A SPEED HUMP SHALL BE LOCATED IN FRONT OF A DRIVEWAY APPROACH. SPEED HUMPS SHOULD BE A MINIMUM OF 6 FEET FROM THE EDGE OF DRIVEWAY, WHERE PRACTICAL.
6. SPEED HUMPS AND TRAFFIC SIGNS SHOULD BE PLACED AS CLOSE AS POSSIBLE TO PROPERTY LINES INSTEAD OF MID-LOT, WHEN PRACTICAL.
7. SPEED HUMPS SHOULD BE INSTALLED AT A RIGHT ANGLE TO THE CENTERLINE TANGENT OF THE ROADWAY.
8. TRAFFIC CONTROL CONSISTING OF TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE PROVIDED TO ADVISE ROADWAY USERS OF A SPEED HUMP'S PRESENCE AND TO GUIDE THEIR SUBSEQUENT ACTION. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD, LATEST EDITION WITH REVISIONS).
9. ASPHALT SURFACES SHALL BE CUT-MILLED AT TAPERED EDGES AROUND THE PERIMETER OF THE SPEED HUMP PER SPECIFICATION 106 FOR 2 INCHES, AS ILLUSTRATED IN SECTION A-A AND THE CUT & MILL DETAIL OF THIS SHEET.
10. PRIOR TO THE APPLICATION OF THE DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE, ENSURE THE MILLED AND EXPOSED PAVEMENT SURFACE IS THOROUGHLY CLEANED OF DEBRIS BEFORE APPLYING THE TACK COAT PER SPECIFICATION ITEM 312.
11. CONCRETE SURFACES SHALL BE SAW CUT AND REMOVED FOR AT LEAST 1.5' AROUND THE PERIMETER OF THE SPEED HUMP, AS ILLUSTRATED IN SECTION A-A AND THE SAW CUT DETAIL OF THIS SHEET. NEW CURBS ARE TO BE INSTALLED PER HCED'S CONCRETE PAVEMENT DETAILS.



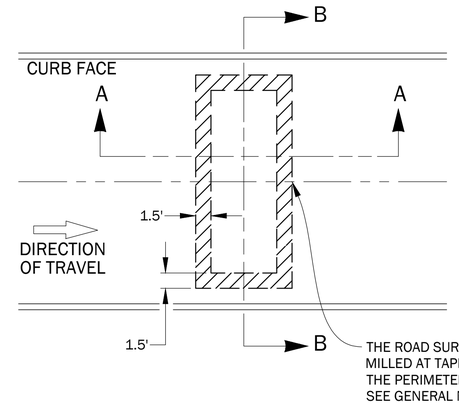
(STANDARD CURB)

SECTION B-B
EDGE DETAILS

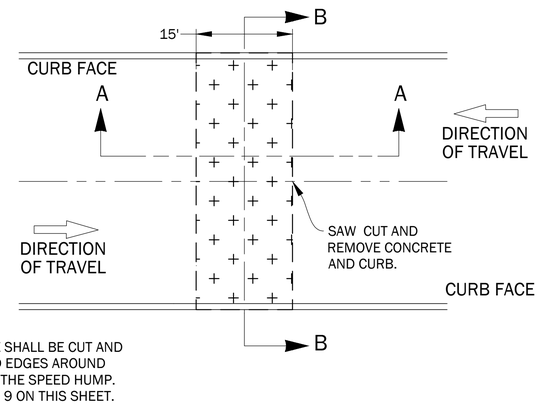


(CURB & GUTTER)

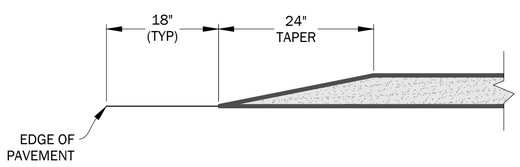
SECTION B-B
EDGE DETAILS



CUT & MILL DETAIL

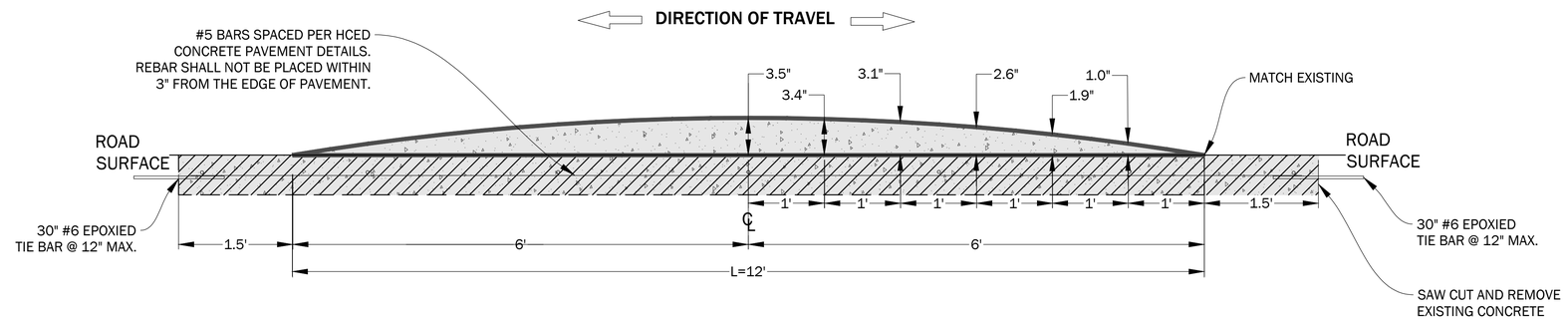


SAW CUT DETAIL



(NO CURB)

SECTION B-B
EDGE DETAILS



SECTION A-A
CONCRETE PARABOLIC CROWN PROFILE

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

HARRIS COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

SHEET DESCRIPTION: 12' PARABOLIC SPEED HUMP

TRAFFIC STANDARD: SH

DRAWN BY: SF

SHEET 2 OF 2

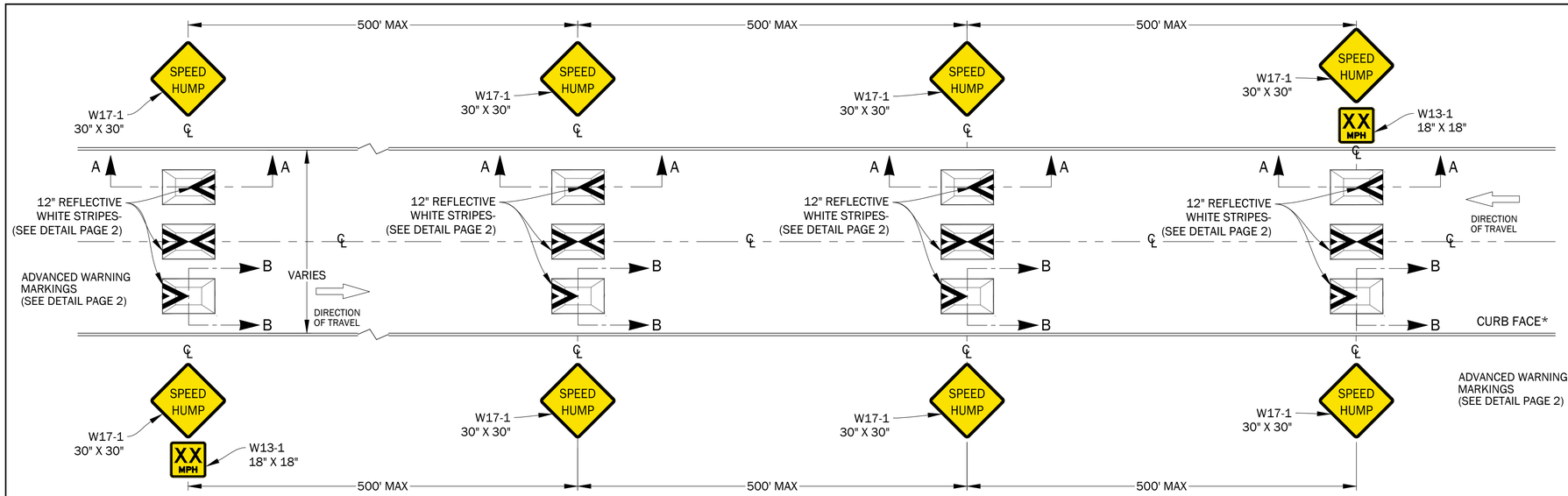
DATE: 04/23/24

CK'D BY: KH

SCALE: NTS

SHEET NO:

Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Guidelines\07 Policy\HCED Neighborhood Traffic Calming Standards\CAD\12-FOOT PARABOLIC SPEED HUMP.dwg

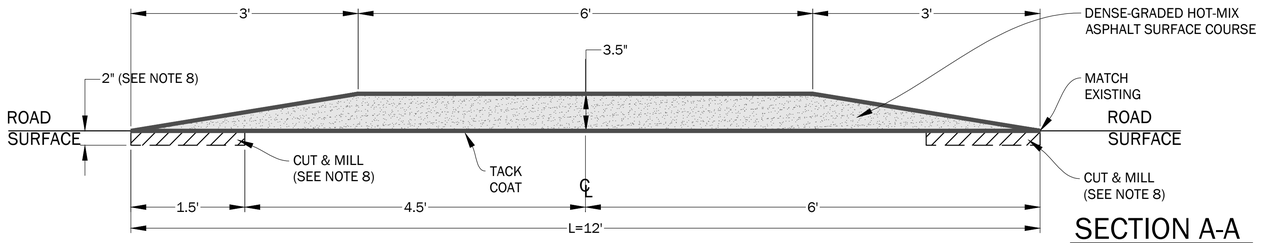


* MAY BE APPROPRIATE ON OPEN DITCH SECTIONS WITH ADEQUATE SHOULDERS, CLEAR ZONES, AND FLAT SLOPES.

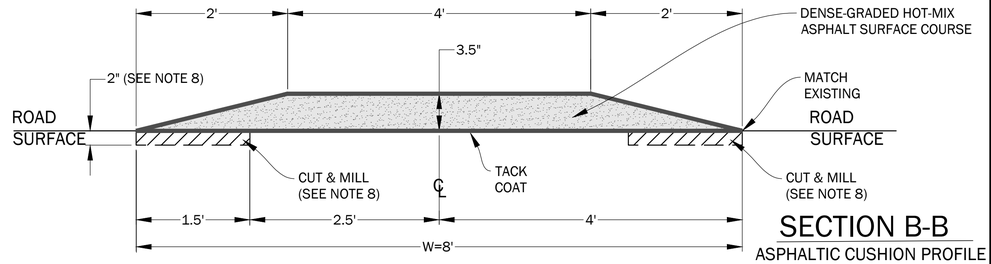
9' x 12' SPEED CUSHION

GENERAL NOTES

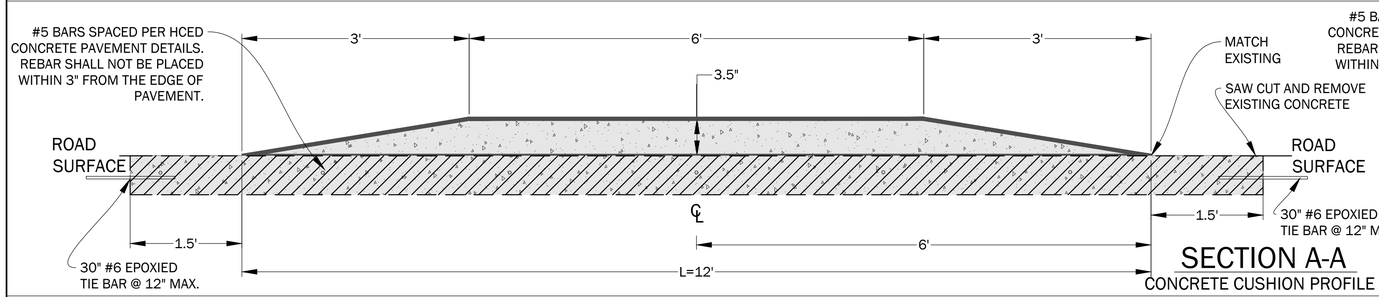
1. SPEED CUSHIONS SHALL ONLY BE CONSTRUCTED AT LOCATIONS DESIGNATED BY HCED THROUGH AN ENGINEERING STUDY.
2. ASPHALTIC SPEED CUSHIONS SHALL BE COMPRISED OF DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE PER SPECIFICATION ITEM 341.
3. CONCRETE SPEED CUSHIONS SHALL BE COMPRISED OF CONCRETE PAVEMENT PER SPECIFICATION ITEM 360.
4. NO PART OF A SPEED CUSHION SHALL BE LOCATED IN FRONT OF A DRIVEWAY APPROACH. SPEED CUSHIONS SHOULD BE A MINIMUM OF 6 FEET FROM THE EDGE OF DRIVEWAY, WHERE PRACTICAL.
5. SPEED CUSHIONS AND TRAFFIC SIGNS SHOULD BE PLACED AS CLOSE AS POSSIBLE TO PROPERTY LINES INSTEAD OF MID-LOT, WHEN PRACTICAL.
6. SPEED CUSHIONS SHOULD BE INSTALLED AT A RIGHT ANGLE TO THE CENTERLINE TANGENT OF THE ROADWAY.
7. TRAFFIC CONTROL CONSISTING OF TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE PROVIDED TO ADVISE ROADWAY USERS OF A SPEED CUSHION'S PRESENCE AND TO GUIDE THEIR SUBSEQUENT ACTION. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD, LATEST EDITION WITH REVISIONS).
8. ASPHALT SURFACES SHALL BE CUT-MILLED AT TAPERED EDGES AROUND THE PERIMETER OF THE SPEED CUSHION PER SPECIFICATION 106 FOR 2 INCHES, AS ILLUSTRATED IN SECTION A-A AND THE CUT & MILL DETAIL.
9. PRIOR TO THE APPLICATION OF THE DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE, ENSURE THE MILLED AND EXPOSED PAVEMENT SURFACE IS THOROUGHLY CLEANED OF DEBRIS BEFORE APPLYING THE TACK COAT PER SPECIFICATION ITEM 312.
10. CONCRETE SURFACES SHALL BE SAW CUT AND REMOVED FOR AT LEAST 1.5' AROUND THE PERIMETER OF THE SPEED CUSHION, AS ILLUSTRATED IN SECTION A-A AND THE SAW CUT DETAIL OF THIS SHEET. NEW CURBS ARE TO BE INSTALLED PER HCED'S CONCRETE PAVEMENT DETAILS.



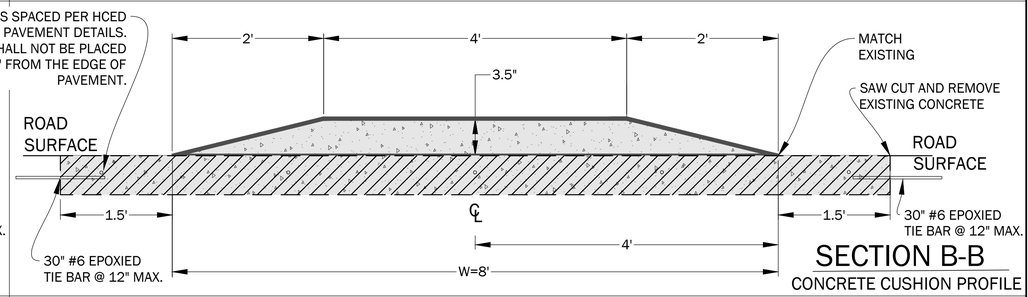
SECTION A-A
ASPHALTIC CUSHION PROFILE



SECTION B-B
ASPHALTIC CUSHION PROFILE



SECTION A-A
CONCRETE CUSHION PROFILE



SECTION B-B
CONCRETE CUSHION PROFILE

TYPICAL SPEED CUSHION ARRANGEMENT

PAVEMENT WIDTH (FT)	NO OF CUSHIONS	GAP (IN)	CUSHION (IN)	GAP (IN)	CUSHION (IN)	GAP (IN)	CUSHION (IN)	GAP (IN)
22	2	24	96	24	96	24	-	-
24	2	32	96	32	96	32	-	-
26	2	42	96	36	96	42	-	-
28	2	48	96	48	96	48	-	-
30	3	18	96	18	96	18	96	18
32	3	24	96	24	96	24	96	24
34	3	30	96	30	96	30	96	30
36	3	36	96	36	96	36	96	36
38	3	42	96	42	96	42	96	42
40	3	48	96	48	96	48	96	48

1. FOR RUBBER SPEED CUSHIONS, SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTION TO HCED FOR APPROVAL.
2. RUBBER SPEED CUSHIONS SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

RUBBER CUSHION

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

HARRIS COUNTY ENGINEERING DEPARTMENT

PROJECT TITLE:

SHEET DESCRIPTION: SPEED CUSHION

TRAFFIC STANDARD: SC

DRAWN BY: SF

SHEET 1 OF 2

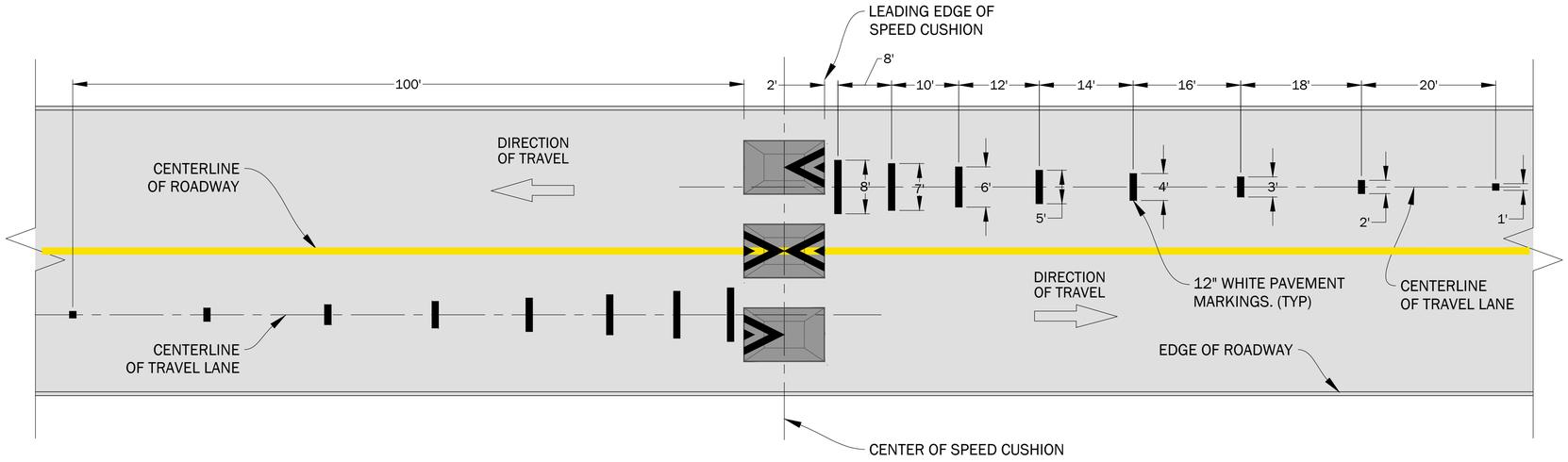
DATE: 04/23/24

CK'D BY: KH

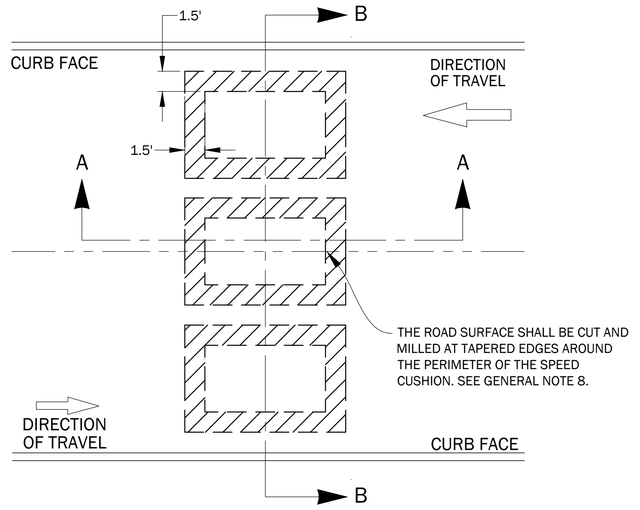
SCALE: NTS

SHEET NO:

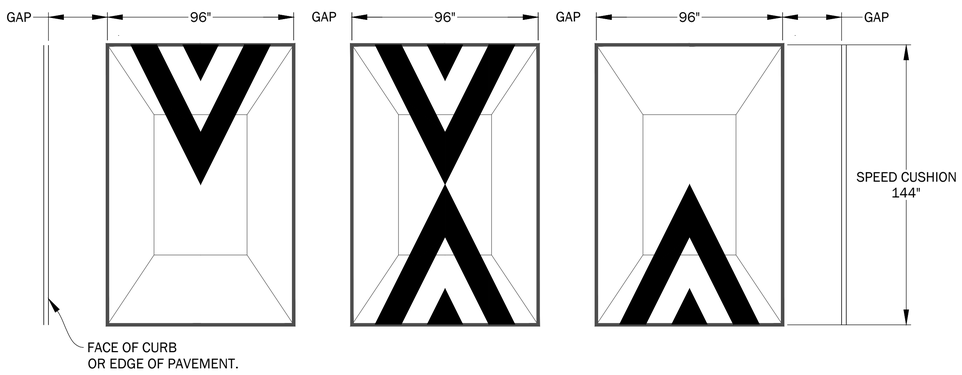
Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Guidelines\07 Policy\HCED Neighborhood Traffic Calming Standards\CAD\SPEED CUSHION.dwg



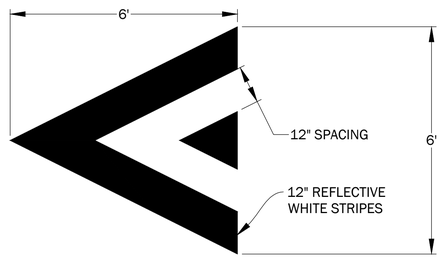
ADVANCED WARNING MARKINGS



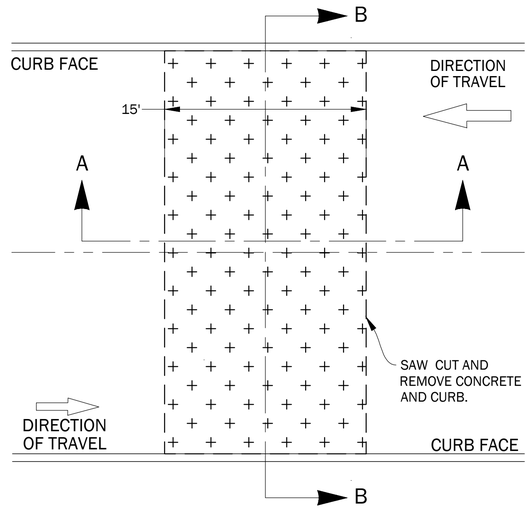
CUT & MILL DETAIL



CUSHION SPACING DETAIL



PAVEMENT MARKING DETAIL



SAW CUT DETAIL

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

HARRIS COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

SHEET DESCRIPTION: SPEED CUSHION

TRAFFIC STANDARD: SC

DRAWN BY: SF

SHEET 2 OF 2

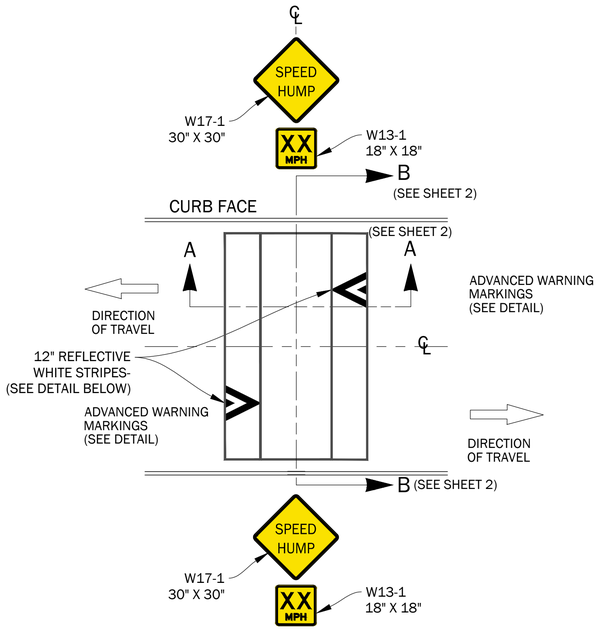
DATE: 04/23/24

CK'D BY: KH

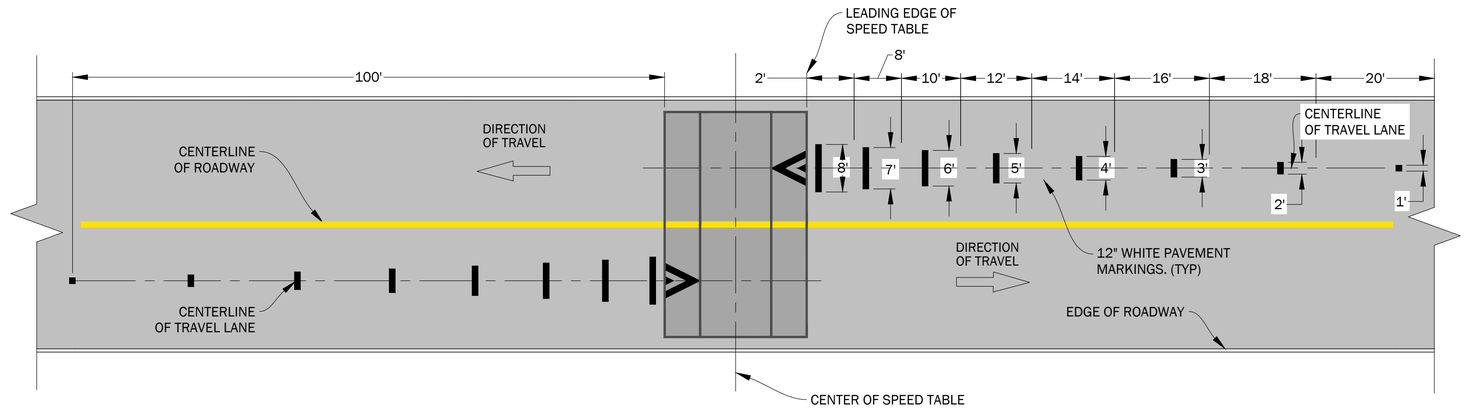
SCALE: NTS

SHEET NO:

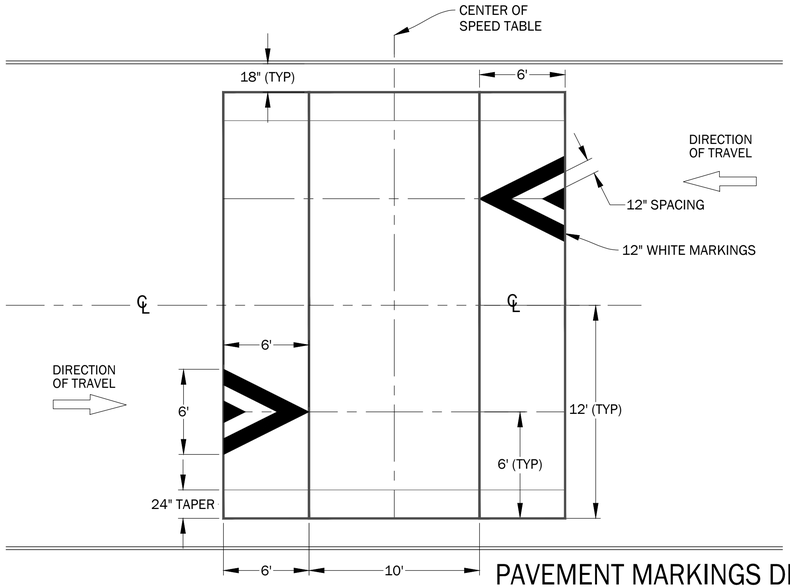
Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Standards\CAD\SPEED CUSHION.dwg
Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Guidelines\07 Policy\HCED



22-FOOT SPEED TABLE



ADVANCED WARNING MARKINGS



PAVEMENT MARKINGS DETAIL

GENERAL NOTES

1. SPEED TABLES SHALL ONLY BE CONSTRUCTED AT LOCATIONS DESIGNATED BY HCED THROUGH AN ENGINEERING STUDY.
2. 22-FOOT ASPHALTIC SPEED TABLES SHALL BE COMPRISED OF DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE PER SPECIFICATION ITEM 341.
3. 22-FOOT CONCRETE SPEED TABLES SHALL BE COMPRISED OF CONCRETE PAVEMENT PER SPECIFICATION ITEM 360.
4. THE 22-FOOT LONG VERTICAL CROSS-SECTION OF THE SPEED TABLE SHALL BE AS DETAILED IN SECTION A-A.
5. NO PART OF A SPEED TABLE SHALL BE LOCATED IN FRONT OF A DRIVEWAY APPROACH. SPEED TABLES SHOULD BE A MINIMUM OF 6 FEET FROM THE EDGE OF DRIVEWAY, WHERE PRACTICAL.
6. SPEED TABLES AND TRAFFIC SIGNS SHOULD BE PLACED AS CLOSE AS POSSIBLE TO PROPERTY LINES INSTEAD OF MID-LOT, WHEN PRACTICAL.
7. SPEED TABLES SHOULD BE INSTALLED AT A RIGHT ANGLE TO THE CENTERLINE TANGENT OF THE ROADWAY.
8. TRAFFIC CONTROL CONSISTING OF TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE PROVIDED TO ADVISE ROADWAY USERS OF A SPEED TABLE'S PRESENCE AND TO GUIDE THEIR SUBSEQUENT ACTION. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD, LATEST EDITION WITH REVISIONS).
9. ASPHALT SURFACES SHALL BE CUT-MILLED AT TAPERED EDGES AROUND THE PERIMETER OF THE SPEED TABLE PER SPECIFICATION 106 FOR 2 INCHES, AS ILLUSTRATED IN SECTION A-A AND THE CUT & MILL DETAIL OF THIS SHEET.
10. PRIOR TO THE APPLICATION OF THE DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE, ENSURE THE MILLED AND EXPOSED PAVEMENT SURFACE IS THOROUGHLY CLEANED OF DEBRIS BEFORE APPLYING THE TACK COAT PER SPECIFICATION ITEM 312.
11. CONCRETE SURFACES SHALL BE SAW CUT AND REMOVED FOR AT LEAST 1.5' AROUND THE PERIMETER OF THE SPEED TABLE, AS ILLUSTRATED IN SECTION A-A AND THE SAW CUT DETAIL OF THIS SHEET. NEW CURBS ARE TO BE INSTALLED PER HCED'S CONCRETE PAVEMENT DETAILS.

NO.	REVISIONS	DATE	NAME
1			
2			
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HARRIS COUNTY ENGINEERING DEPARTMENT

PROJECT TITLE:

SHEET DESCRIPTION: 22' SPEED TABLE

TRAFFIC STANDARD: ST

DRAWN BY: SF

SHEET 1 OF 2

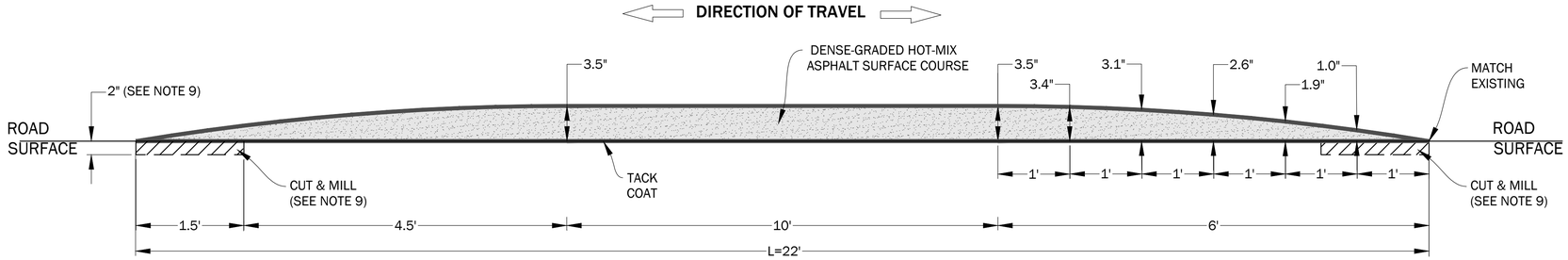
DATE: 04/23/24

CK'D BY: KH

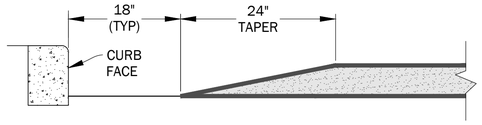
SCALE: NTS

SHEET NO:

Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Guidelines\07 Policy\HCED Neighborhood Traffic Calming Standards\CAD\22-FOOT SPEED TABLE.dwg

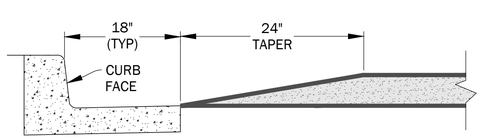


SECTION A-A
ASPHALTIC PROFILE



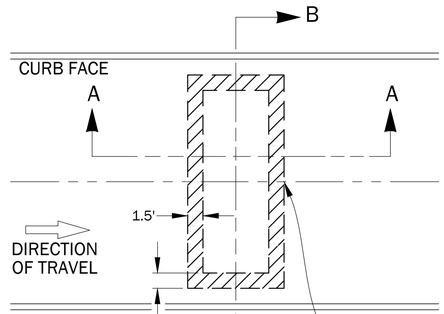
(STANDARD CURB)

SECTION B-B
EDGE DETAILS

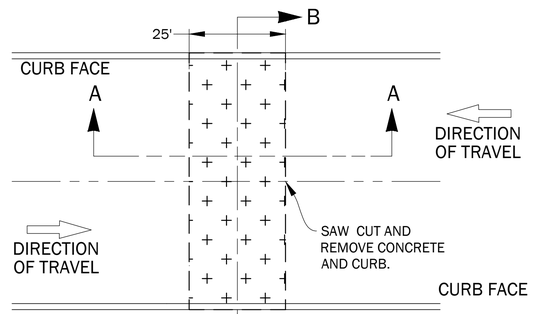


(CURB & GUTTER)

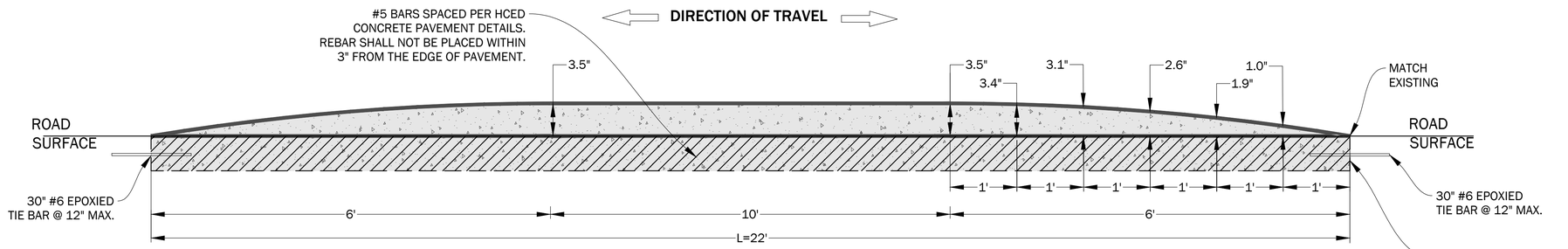
SECTION B-B
EDGE DETAILS



CUT & MILL DETAIL



SAW CUT DETAIL



SECTION A-A
CONCRETE PROFILE

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

HARRIS COUNTY ENGINEERING DEPARTMENT

PROJECT TITLE:

SHEET DESCRIPTION: 22' SPEED TABLE

TRAFFIC STANDARD: ST

DRAWN BY: SF

SHEET 2 OF 2

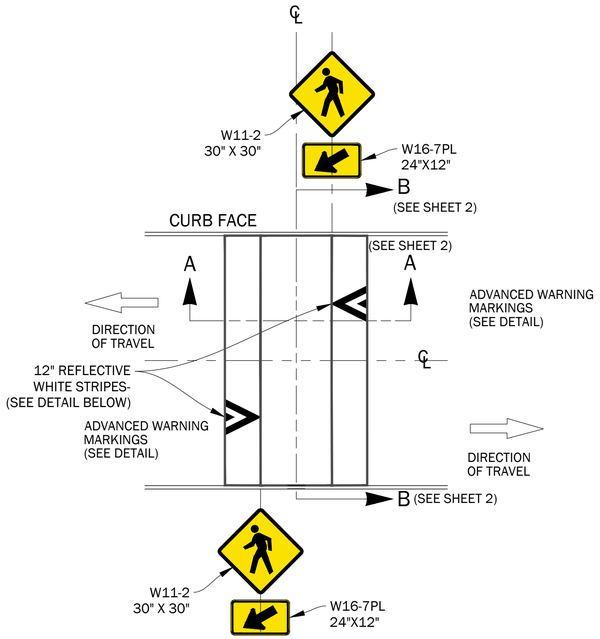
DATE: 04/23/24

CK'D BY: KH

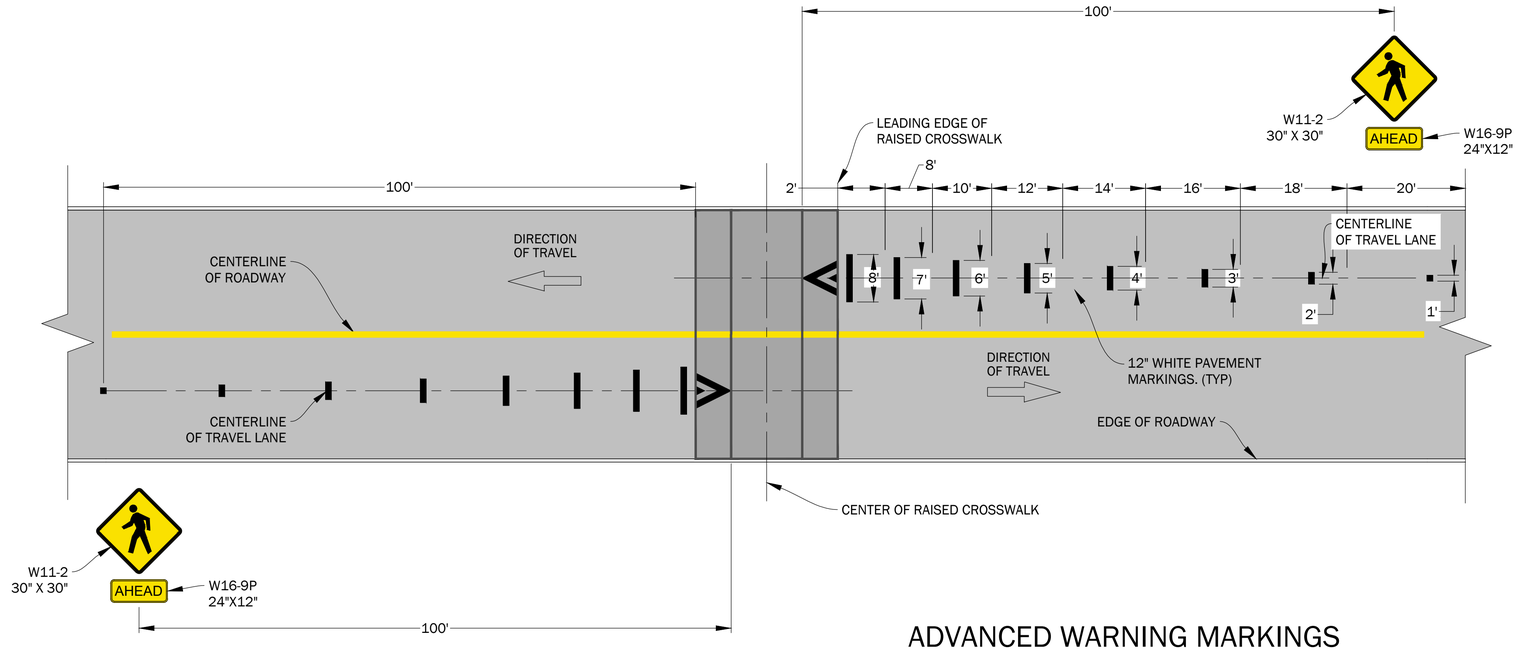
SCALE: NTS

SHEET NO:

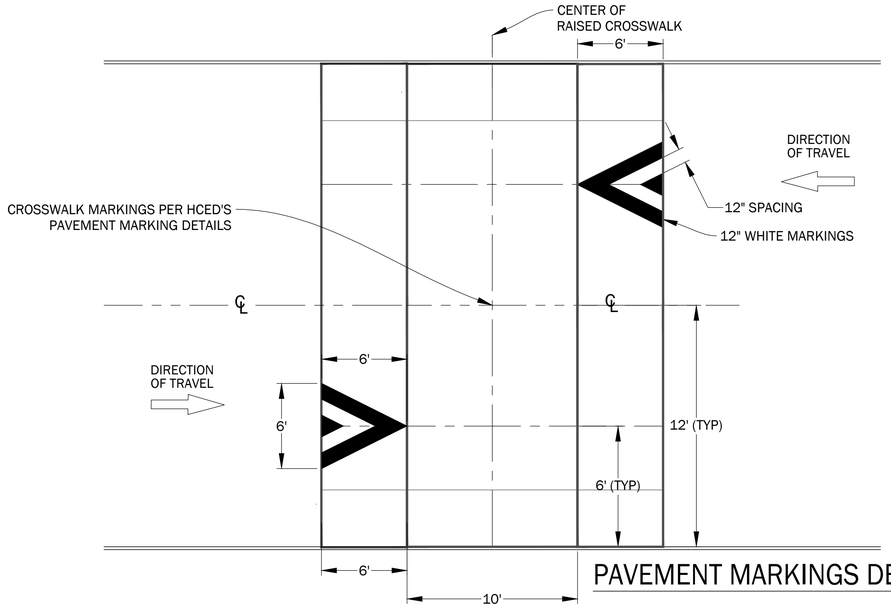
Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Standards\CAD\22-FOOT SPEED TABLE.dwg



22-FOOT RAISED CROSSWALK



ADVANCED WARNING MARKINGS



PAVEMENT MARKINGS DETAIL

GENERAL NOTES

1. RAISED CROSSWALKS SHALL ONLY BE CONSTRUCTED AT LOCATIONS DESIGNATED BY HCED THROUGH AN ENGINEERING STUDY.
2. 22-FOOT ASPHALTIC RAISED CROSSWALKS SHALL BE COMPRISED OF DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE PER SPECIFICATION ITEM 341.
3. 22-FOOT CONCRETE RAISED CROSSWALKS SHALL BE COMPRISED OF CONCRETE PAVEMENT PER SPECIFICATION ITEM 360.
4. THE 22-FOOT LONG VERTICAL CROSS-SECTION OF THE RAISED CROSSWALK SHALL BE AS DETAILED IN SECTION A-A.
5. NO PART OF A RAISED CROSSWALK SHALL BE LOCATED IN FRONT OF A DRIVEWAY APPROACH. SPEED TABLES SHOULD BE A MINIMUM OF 6 FEET FROM THE EDGE OF DRIVEWAY, WHERE PRACTICAL.
6. RAISED CROSSWALKS AND TRAFFIC SIGNS SHOULD BE PLACED AS CLOSE AS POSSIBLE TO PROPERTY LINES INSTEAD OF MID-LOT, WHEN PRACTICAL.
7. RAISED CROSSWALKS SHOULD BE INSTALLED AT A RIGHT ANGLE TO THE CENTERLINE TANGENT OF THE ROADWAY.
8. TRAFFIC CONTROL CONSISTING OF TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE PROVIDED TO ADVISE ROADWAY USERS OF A RAISED CROSSWALKS'S PRESENCE AND TO GUIDE THEIR SUBSEQUENT ACTION. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD, LATEST EDITION WITH REVISIONS).
9. ASPHALT SURFACES SHALL BE CUT-MILLED AT TAPERED EDGES AROUND THE PERIMETER OF THE RAISED CROSSWALK PER SPECIFICATION 106 FOR 2 INCHES, AS ILLUSTRATED IN SECTION A-A AND THE CUT & MILL DETAIL.
10. PRIOR TO THE APPLICATION OF THE DENSE-GRADED HOT-MIX ASPHALT SURFACE COURSE, ENSURE THE MILLED AND EXPOSED PAVEMENT SURFACE IS THOROUGHLY CLEANED OF DEBRIS BEFORE APPLYING THE TACK COAT PER SPECIFICATION ITEM 312.
11. CONCRETE SURFACES SHALL BE SAW CUT AND REMOVED FOR AT LEAST 1.5' AROUND THE PERIMETER OF THE SPEED TABLE, AS ILLUSTRATED IN SECTION A-A AND THE SAW CUT DETAIL. NEW CURBS ARE TO BE INSTALLED PER HCED'S CONCRETE PAVEMENT DETAILS.
12. RAISED CROSSWALKS SHALL BE PLACED AS TO NOT IMPEDE DRAINAGE.

NO.	REVISIONS	DATE	NAME
1			
2			
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HARRIS COUNTY
ENGINEERING DEPARTMENT

PROJECT TITLE:

SHEET DESCRIPTION: 22' RAISED CROSSWALK

TRAFFIC STANDARD: RC

DRAWN BY: SF

SHEET 1 OF 2

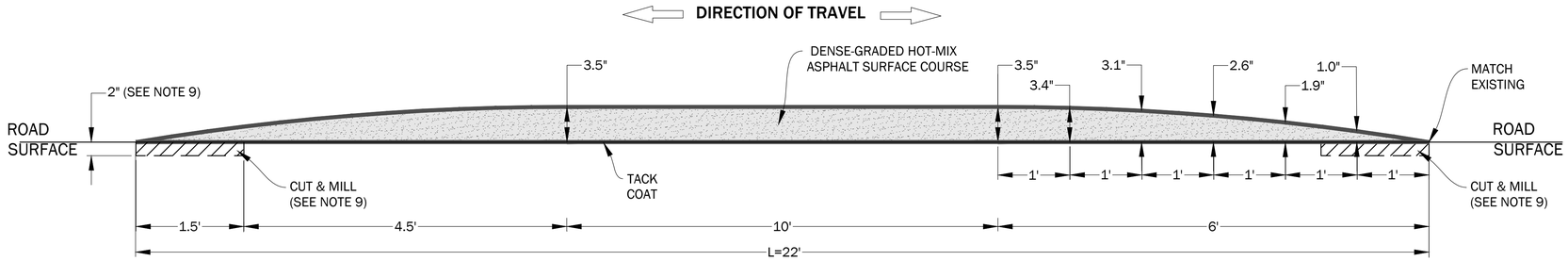
DATE: 04/23/24

CK'D BY: KH

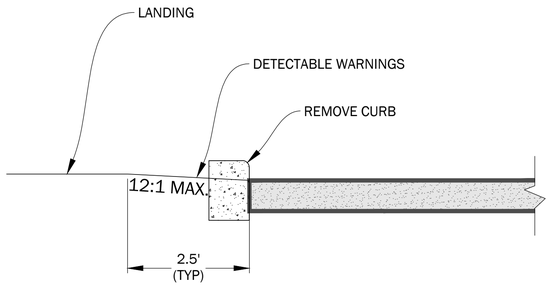
SCALE: NTS

SHEET NO:

Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Guidelines\07 Policy\HCED Neighborhood Traffic Calming Standards\CAD\22-FOOT RAISED CROSSWALK.dwg

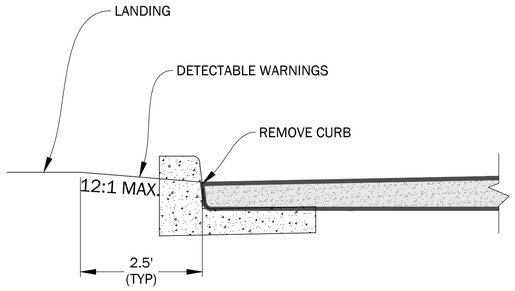


SECTION A-A
ASPHALTIC PROFILE



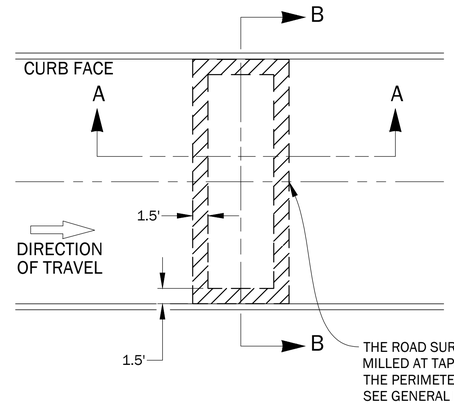
(STANDARD CURB)

SECTION B-B
EDGE DETAILS

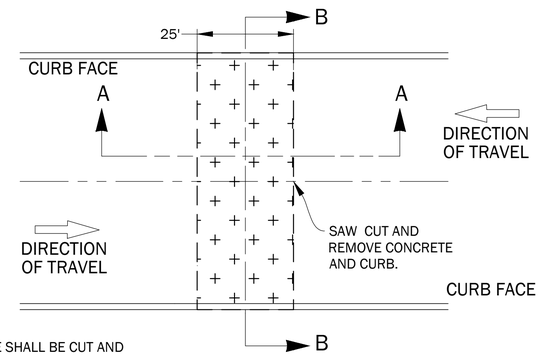


(CURB & GUTTER)

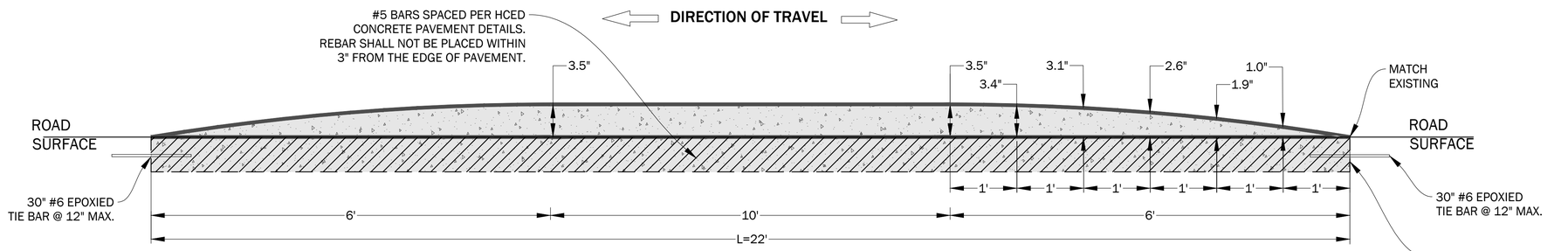
SECTION B-B
EDGE DETAILS



CUT & MILL DETAIL



SAW CUT DETAIL



SECTION A-A
CONCRETE PROFILE

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

HARRIS COUNTY ENGINEERING DEPARTMENT

PROJECT TITLE:

SHEET DESCRIPTION: 22' RAISED CROSSWALK

TRAFFIC STANDARD: RC

DRAWN BY: SF

SHEET 2 OF 2

DATE: 04/23/24

CK'D BY: KH

SCALE: NTS

SHEET NO:

Z:\6. Traffic Standards & Guidelines\6.1 Guidelines\6.1.3 Neighborhood Traffic Calming Guidelines\07 Policy\HCED Neighborhood Traffic Calming Standards\CAD\22-FOOT RAISED CROSSWALK.dwg