



CITY OF OAKLAND

# NEY AVENUE NEIGHBORHOOD TRAFFIC CALMING STUDY

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Prepared For:



City of  
Oakland

Department of  
Transportation

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## Chapter 1. Executive Summary

The purpose of this study is to identify resident-supported traffic calming measures that the City of Oakland can build to create a safer neighborhood on and near Ney Avenue. The following study details the existing conditions, opportunities and challenges, alternatives and options evaluated, preferred alternative, cost estimate, and all public input gathered during the course of the Ney Avenue Neighborhood Traffic Calming Study. This document is meant to provide a detailed summary of the project process, in addition to, the technical reports and documents that have been generated for the previous phases.

This study provides a brief project background and understanding with discussion on the completed site visit, outreach events, and stakeholder interviews. The concept plan development will be discussed in detail, with a focus on the relationship between the neighborhood's concerns and the impact of the proposed traffic calming tools. Additionally, the study covers design trade-offs, an overall cost estimate, and potential temporary or low-cost materials to be used for faster construction. For next steps and implementation, the study discusses potential phasing and funding to direct the City of Oakland towards creating a safer and more walkable Ney Avenue Neighborhood.



*Figure 1. Oakland Department of Transportation (OakDOT) staff met with Ney Avenue neighborhood residents in September 2020 to demonstrate traffic calming measures and gather community input.*

## Chapter 2. Introduction

In July 2020, the City of Oakland (City) began developing a set of traffic calming improvements in the Ney Avenue Neighborhood that would reduce speeds along the corridor and surrounding roads and reduce cut-through traffic. The Ney Avenue Neighborhood Traffic Calming Study is a collaboration with area residents, local elected officials and the Parker Elementary School community to develop a traffic calming plan to address these issues.

In order to obtain a comprehensive understanding of how the built environment can impact overall safety concerns in the neighborhood, the City has completed an extensive existing conditions analysis of Ney Avenue and its surrounding streets, participated in three community meetings, and held multiple stakeholder interviews. With this understanding, the City has completed an iterative process of concept design that was shared with community members at certain phases. With feedback on the final designs, the City will use this study to describe the project process, as well as, present the final design concepts and provide final recommendations. The Oakland Department of Transportation (OakDOT) staff will use this plan to collaborate with the community to develop a schedule to implement both near-term and long-term improvements.



*Figure 2. At the Walk-Shop, Ney Avenue neighborhood residents used street chalk to modify traffic calming treatment designs and share their opinions with OakDOT staff and fellow neighbors.*

## Chapter 3. Project Background and Understanding

### Study Area

The study focuses on Ney Avenue but includes residential streets bounded by MacArthur Boulevard, 73rd Avenue, 82nd Avenue, and Hillmont Avenue as seen in Figure 3. The roadways are narrow two-lane streets whose grades vary considerably. Parker Elementary School on Ney Avenue, between Parker Avenue and Ritchie Street, is the only school in the neighborhood. The remaining streets in the neighborhood are residential or commercial.

While primarily a residential neighborhood, community members report that neighborhood streets are used to avoid busier roads, such as 73rd Avenue and MacArthur Boulevard. Residents and police officers also report that motorists use the neighborhood streets to flee after committing crimes in the area.

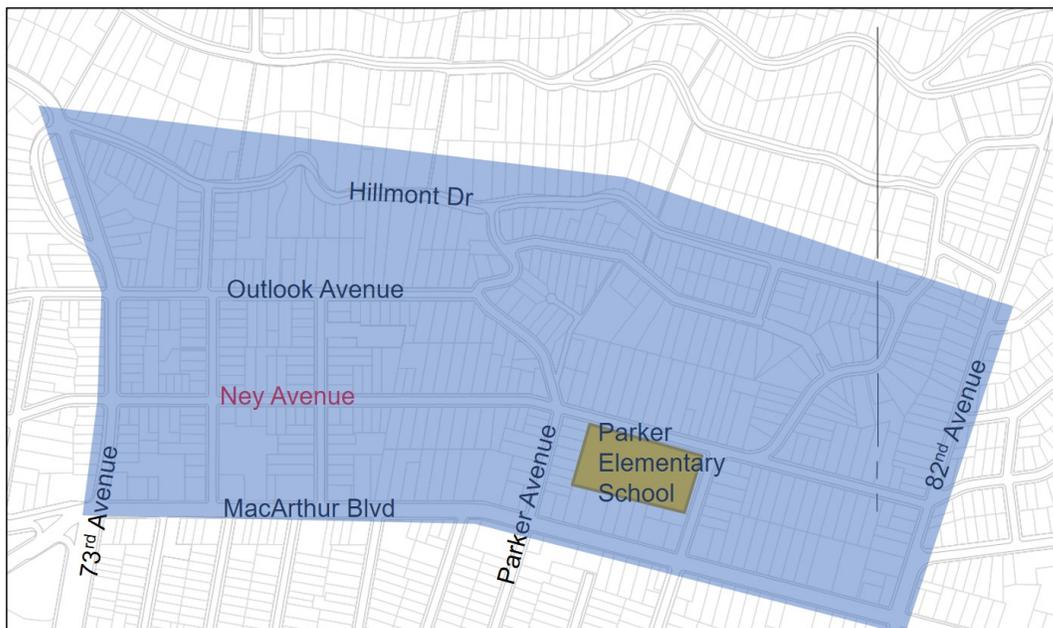


Figure 3. Project study area

### Ongoing and Past Efforts

Recent measures to calm traffic and improve walking conditions in the neighborhood have included ADA curb ramps, high-visibility crosswalks, and speed humps and speed hump signage. Some of these are pictured in Figure 2. Many of the recent improvements resulted from the Safe Routes to School Audit the City completed in 2010, a map of which is in Appendix G. A number of recent improvements along Ney Avenue are pictured in Figure 4.

In the early Spring of 2020, due to COVID-19 and the city's Shelter in Place policy, the City of Oakland launched their Slow Streets Program to promote physical activity while social distancing. Ney Avenue, between 73rd Avenue and 82nd Avenue is among the city's Slow Streets



Figure 4. Recent traffic calming improvements on Ney Avenue

## Data Collection

Seven-day 24-hour counts and speed surveys were taken at five locations throughout the study from Friday, July 10, 2020 to Thursday, July 16, 2020. Due to the COVID-19 pandemic, traffic volumes regionwide were down about 24% during this period<sup>1</sup>. Ney's designation as a Slow Street may also have impacted traffic volumes. Speed and volume data shared in this study should be considered in that context.

Count and speed data was collected at the following locations:

- Ney Avenue between 73<sup>rd</sup> Avenue and 75<sup>th</sup> Avenue
- Ney Avenue between 76<sup>th</sup> Avenue and Richie Street
- Outlook Avenue between 76<sup>th</sup> and 75<sup>th</sup> Avenue
- Ritchie Street between MacArthur Boulevard and Ney Avenue
- Hillmont Drive between Parker Avenue and 75<sup>th</sup> Avenue

The average daily traffic (ADT), average speed, 85<sup>th</sup> percentile speed, and any outlier speed data provide a quantitative basis for the recommended proposed traffic calming measures.

On July 16, 2020, the City completed field inspections to supplement the count and speed surveys throughout the study area. The following attributes were noted for each street:

- Parking utilization
- Speed hump measurements and condition
- Type of intersection control
- Utility locations
- Pavement markings and condition
- Curb ramp type and condition

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<sup>1</sup> Kellie Hwang, "Is traffic on Bay Area highways and bridges returning to 'normal'? Here's how close we are," *San Francisco Chronicle* (San Francisco, CA), Jul. 22, 2020.

## Key Findings

Key findings for each corridor from the existing conditions analysis were as follows:

### Ney Avenue

- Ney Avenue experiences **high cut through traffic** from drivers turning onto Ney from 73<sup>rd</sup> and heading southbound.
- **Drivers exceeded the posted speed limit** of 25 miles per hour just 3% of the time, however one car was clocked above 40 miles per hour over a seven-day period.
- Existing traffic calming **speed humps are deteriorating**, shown in Figure 5.
- Traffic calming opportunities could include but are not limited to **traffic circles, speed humps, curb extensions, and/or traffic diverters**.

### Ritchie Street

- With a signal at MacArthur Boulevard and a seven percent grade, **drivers exceeded the posted speed limit** of 25 miles per hour 27% of the time with the highest observed speed of 45-50 miles per hour in two instances over a seven-day period.
- Traffic calming opportunities could include but are not limited to **roadway narrowing and/or speed humps**.

### Outlook Avenue

- Drivers **exceeded the posted speed limit** of 25 miles per hour 6% of the time with the highest observed speed of 40-45 miles per hour in one instance over a seven-day period.
- A majority of cars along Outlook Avenue **were parked on curbs and sidewalks**, shown in Figure 5, increasing the space drivers have to operate, thus allowing higher speeds.
- Traffic calming opportunities could include but are not limited to **refreshing the existing speed humps**.

### Hillmont Avenue

- Traffic volumes were significantly less than the other streets.
- The average width of the street is narrower than other streets in the study area - approximately 20 feet wide, which acts as a traffic calming measure to reduce speeding.
- Drivers **exceeded the posted speed limit** of 25 miles per hour 3% of the time with the highest observed speed of 35-40 miles per hour in one instance over a seven-day period.



Figure 5. From left to right: Cars parked on sidewalk, Outlook Avenue; Deteriorating speed humps, Ney Avenue; Hillmont Avenue

A detailed existing conditions analysis can be found in Appendix A.

## Chapter 4. Outreach

OakDOT presented at one virtual National Crime Prevention Council (NCPC) meeting for Oakland’s Beat 30 and subsequently held a standalone meeting using the NCPC mailing list. In the early phase of the concept design, OakDOT also facilitated an in-person Walk-Shop in the community with neighborhood residents. The three meetings advertised participation through the neighborhood’s NCPC group, though many additional neighbors participated in the walk-shop. To augment the feedback from the community, City staff interviewed five stakeholders including Oakland Police Department staff, the Chief of the Department of Violence Prevention, the Parker Elementary School principal, and a city councilmember. Summaries of each event are provided below with event materials and notes provided in Appendix C.

### Neighborhood Meeting 1 (June 24, 2020)

- More than 30 people attended.
- OakDOT Staff presented a traffic calming toolkit and tentative project schedule.
- Attendees were asked where data should be collected and what types of traffic calming would fit with the character of the neighborhood.
- Residents asked to clarify the geographic boundaries of the study area.
- Participants expressed an interest in the impact of Ney's Slow Street designation on data collection.
- Attendees expressed some reservations about the effectiveness of traffic calming measures from national toolkits.

### Community Walk-Shop (September 26, 2020)

- More than 15 people attended.
- OakDOT staff simulated proposed traffic calming measures in the neighborhood with chalk and cones to demonstrate how they might function if implemented, as pictured in Figure 6.
- Attendees were given chalk to draw their preferred improvements, as shown in Figure 7.
- This event reaffirmed that the community wants aggressive and effective traffic calming measures.



Figure 6. Diagonal diverter made with chalk and cones



Figure 7. Attendee using chalk to draw out preferred alternative

### Neighborhood Meeting 3 (January 14, 2021)

- Twenty-eight (28) people attended.
- City staff presented on key findings from data collection and on the three levels of traffic calming implementation.
- Each level contained recommendations based off of the community engagement process and data collections and varied in cost and impact on existing traffic patterns.
- Attendees responded enthusiastically to the recommendations and gravitated towards the Level 2 and Level 3 measures but refrained from endorsing full closures of existing intersections.
- Attendees pressed OakDOT on a more defined schedule for implementation and were concerned about budget constraints and whether environmental and existing conditions were taken into consideration in design.

### Stakeholder Interviews

In order to better understand how personal safety concerns and criminal behavior in the neighborhood intersect with traffic safety issues, OakDOT convened a series of stakeholder interviews between December 2020 and March 2021. City staff interviewed the following stakeholders:

- Parker Elementary School (Principal Roquel Colbert and Timothy Wilson)
- Office of City Councilmember Loren Taylor (City Councilmember Loren Taylor, Pamela Ferran, Chief of Staff, and Rowena Brown, Community Liaison)
- MacArthur Boulevard Merchants Association (Greg Turner)
- Oakland Police Department
  - Traffic Section Safety Supervisor (Paul Cirolia)
  - Beat 30 School Resource Officer (Rio DelMoral)
- Department of Violence Prevention (Chief Guillermo Cespedes)

# Chapter 5. Concept Plan Development

## Key Takeaways

Based on feedback from the community members and stakeholders consulted in the outreach process, three key themes emerged as top concerns:

1. Ney Avenue receives a high volume of non-resident cut-through traffic
2. Reckless driving behaviors are commonly witnessed, including high speeds, reverse driving, donuts, non-compliance with traffic signs and regulations
3. Ney Avenue and Parker Avenue are used as escape routes by drivers committing shootings

## Concept Design Toolbox<sup>2</sup>

With the key themes in mind, the concept plan recommends traffic calming measures to reduce volume, cut-through traffic, and speeding along and around Ney Avenue. These recommendations may also help deter violent crimes that involve vehicles in the neighborhood. This toolbox, found in Table 1 and Table 2, provides an image and brief description of the recommended traffic calming improvements. It is intended to help City staff, parents, students, school staff, and other members of the public better understand the improvement recommendations.

Table 1. Speed Reduction Tools

Infrastructure Name	Infrastructure Description	Built Example
Speed Humps	Speed humps are raised areas of pavement typically placed in a series and cross the entire width of the roadway. They cannot be used on high volume or high-speed streets nor streets exceeding 7%,	 <i>Figure 8. Speed hump example</i>

<sup>2</sup> Institute of Transportation Engineers, 'Traffic Calming Measures,' <https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/>

Infrastructure Name	Infrastructure Description	Built Example
Chicanes	Chicanes are a series of alternating curves or lane shifts that force a motorist to steer back and forth instead of traveling a straight path.	 <p data-bbox="971 594 1382 625"><i>Figure 9. Chicane example</i></p>
Curb Extensions	Curb extensions extend the curb into the street. They can provide several important traffic calming and safety benefits including a shorter crossing distance, improved visibility at intersections, and provide additional space for people waiting to cross. A curb extension with smaller curb radii can also slow turning vehicles.	 <p data-bbox="959 982 1395 1014"><i>Figure 10. Curb Extension example</i></p>
Neighborhood Traffic Circles	Traffic circles are raised islands placed in unsignalized intersections around which traffic circulates. They require drivers to slow to a speed that allows them to comfortably maneuver around them. They also serve as an opportunity for landscaping or local art work.	 <p data-bbox="971 1377 1406 1409"><i>Figure 11. Neighborhood traffic circle example</i></p>
Pinch Points	Pinch points narrow the roadway through the use of curb extensions. A narrower roadway encourages lower speeds.	 <p data-bbox="915 1808 1466 1839"><i>Figure 12. Pinch point example (NACTO)</i></p>

Table 2. Traffic Volume Reduction Tools

Infrastructure Name	Infrastructure Description	Built Example
Forced Turn Island	A forced turn island is a raised island at an intersection that forces a right turn. The turn island diverts traffic and helps with preventing cut-through traffic.	 <p data-bbox="915 632 1370 659">Figure 13. Forced turn island example (NACTO)</p>
Diagonal Diverter	Diagonal diverters are barriers placed diagonally across four-legged intersections, blocking through movements. Diverters contribute to reduced cut-through traffic and also improve pedestrian and bicycle safety. They also serve as an opportunity for landscaping or local art work.	 <p data-bbox="980 1068 1386 1123">Figure 14. Diagonal diverter example with painted barriers</p>

## Concept Design

The preferred concept incorporates the key themes that were gathered from the outreach process and infrastructure improvements supported by community members. The recommendations are categorized by type of traffic calming – speed management and volume management. The following discussion will present the rationale behind each feature as well as its trade-offs. See Appendix D for the full plan.

### Speed Management

#### Ney Avenue at 76<sup>th</sup> Avenue Traffic Circle

As mentioned in the Design Toolbox, neighborhood traffic circles are an effective tool to reduce vehicular speeds. Throughout the outreach process, community members echoed their concerns about dangerous vehicle speeds throughout the neighborhood, but especially along Ney Avenue. Most intersections along Ney Avenue are great candidates for a traffic circle as they tend to be wide, allowing for fast turns and donut maneuvers. This intersection’s proximity to Parker Elementary School further enforced the need for an effective speed reduction improvement.

Installing a traffic circle at this intersection, shown in Figure 15, would remove unused space and only leave space necessary to safely turn and continue through the intersection. There would be minimal, if any, impact on existing parking spaces. Traffic circles often cost more than other traffic calming devices and may have an impact on existing storm and drainage infrastructure, therefore taking longer to construct. To reduce costs, the typical concrete floating islands per the City's standard, have been replaced by bollards and striping. There are cheaper and temporary alternatives that, in the interim, may be used to mitigate speeding concerns. Those options are further discussed later in this chapter.

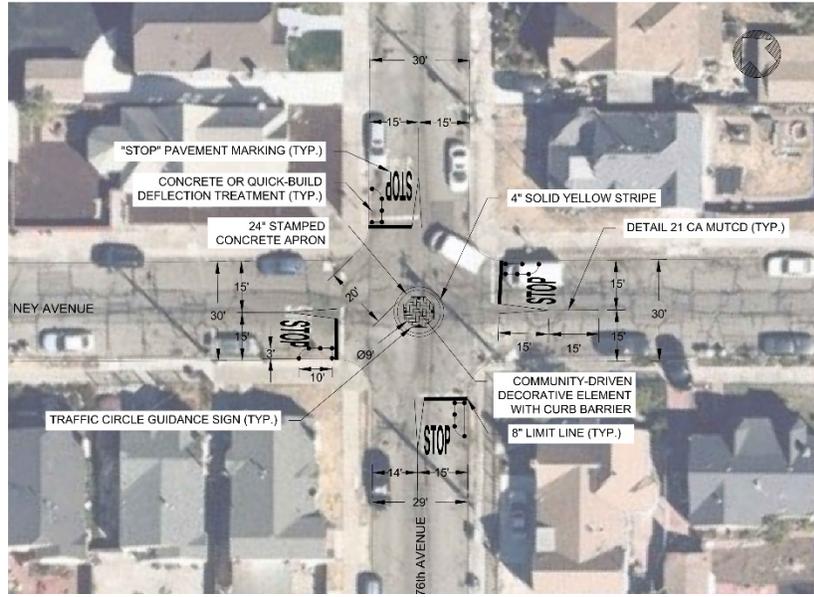


Figure 15. Ney Avenue at 76th Avenue traffic circle

### Ney Avenue at Parker Avenue Traffic Circle

Similar to Ney Avenue at 76<sup>th</sup> Avenue, Ney Avenue at Parker Avenue requires speed management. The northwest leg of Parker Avenue is skewed and has a steep grade. Many community members reported vehicles operating at dangerous speeds at both approaches of this intersection and primarily driving recklessly on the northwest leg of Parker Avenue.

The skewed nature of this intersection, in addition to the crosswalks on the northwest and east legs, make it difficult to install any of the standard traffic calming tools. The concept plan proposes a traffic circle at this intersection, though it does not comply with City of Oakland standards due to the aforementioned conflicts. To accommodate turning vehicles, excluding emergency vehicles or delivery trucks, the circle would have a three-foot radius, which is non-compliant with the standard design, outlined in Appendix F. Emergency vehicles and delivery trucks would likely not be able to turn so the City would have to permit these vehicles to turn before the traffic circle. This is a common practice for vehicles that rarely use the corridor, such as emergency vehicles, though is not typical for common oversized vehicles, such as delivery trucks.

The City recommends the layout of this traffic circle, shown in Figure 16, despite adjustments to the design standards. The nature of the intersection in addition to community concerns prioritize the installation of speed management infrastructure. The proposed concept has replaced the concrete floating islands per the City's detail with posts and pavement markings to reduce overall price. Cost and compliancy may be a concern at this intersection so it is recommended that temporary and low-cost structures be installed to determine the efficacy of the traffic circle.

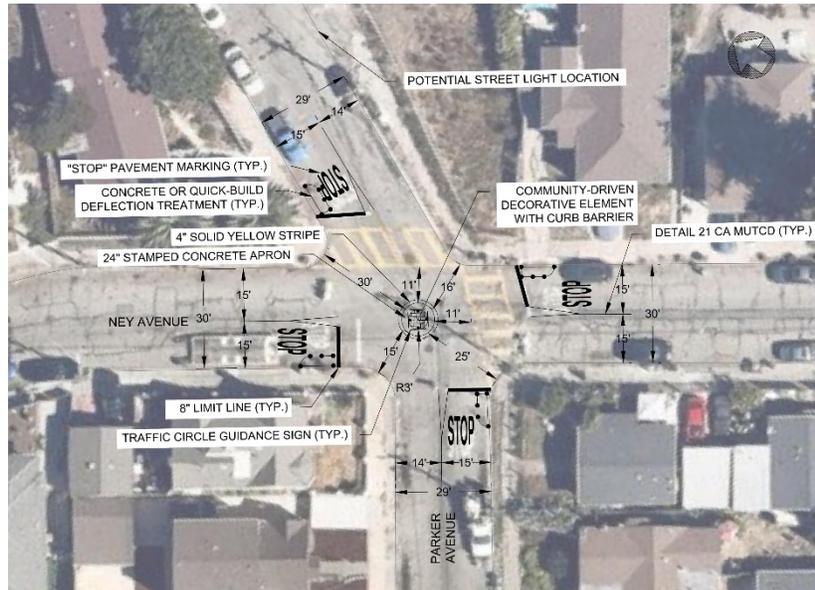


Figure 16. Ney Avenue at Parker Avenue traffic circle

### Speed Humps along Ney/Outlook/Hillmont Avenue

The City proposes repairing and installing speed humps along Ney Avenue, Outlook Avenue, and Hillmont Avenue. Community members expressed that these three corridors serve as cut-throughs, race courses for reckless drivers, and escape routes for people committing crimes in the neighborhood. Speed humps can be an effective speed management tool and will work best in conjunction with the proposed intersection improvements. See Appendix D for precise speed hump locations.

There are a number of existing speed humps along Ney Avenue and Outlook Avenue. As discussed in the City's Existing Condition Analysis, about 75% of speed humps along Ney Avenue and Outlook Avenue are deteriorating and need to be rebuilt. The location of speed humps impacts their efficacy. The City proposes decreasing the spacing between speed humps on Outlook Avenue. A majority of the speed humps along Ney Avenue are appropriately spaced 250-feet apart but are deteriorating. The City proposes to rebuild and replace these speed humps in addition to removing the existing mid-block crossing and speed hump at Parker Elementary School and replacing them with two new speed humps. There are no speed humps along Hillmont Avenue. There are some very narrow portions of Hillmont Avenue where speeding is not a concern, but many residents emphasized the importance of installing speed management infrastructure along this street, especially at the wider sections. With this in mind, the concept plan proposes speed humps approximately every 200 feet. This infrastructure should be installed in the same time frame as improvements on Ney Avenue to prevent spillover impacts.

Speed humps are a lower-cost option that can easily be installed. Many residents questioned the efficacy of installing new speed humps when the existing ones have not prevented speeding and reckless driving. To ensure speed management, the proposed speed humps must be installed at standard intervals and with the standard height and width according to Oakland City Standards, found in Appendix F.

Table 3. Speed hump details

Street Name	Speed Humps Existing	Rebuild in Place	New Speed Humps	Total Speed Humps Recommended	Net Gain
Ney Ave	10	9	2	11	+1
Outlook Ave	4	2	3	5	+1
Hillmont Ave	0	0	7	7	+7
<b>TOTAL</b>	<b>14</b>	<b>11</b>	<b>12</b>	<b>23</b>	<b>+9</b>

**Ney Avenue at Partridge Avenue Curb Extension**

The City proposes a curb extension at the intersection of Ney Avenue and Partridge Avenue to reduce turning speeds from Partridge Avenue onto Ney Avenue. Community members complained of people making dangerous and fast right turns onto Ney Avenue, taking advantage of both the downhill grade of Partridge Avenue and the large curb radius. Many people noted that drivers often do not stop at this intersection, despite the existing stop sign. This poses multiple threats, especially because of the intersection’s proximity to Parker Elementary School.

Installing a curb extension, similar to the one at Ney Avenue at Ritchie Street and shown in Figure 17, reduces turning speeds with the smaller curb radius, increases the pedestrian visibility, and shortens the crossing distance for pedestrians. Such a treatment would also provide a good opportunity for green infrastructure. Existing utilities and drainage need to be considered in design and construction and there will likely be a minor impact on parking at the corner.



Figure 17. Ney Avenue at Partridge Avenue curb extension

**Outlook Avenue Horizontal Deflection**

A chicane is a type of horizontal deflection that could be placed near the intersection of Outlook Avenue and 76th Avenue. These treatments require motorists to slow and drive attentively through left and right turns in the roadway. A chicane would be a significant change to the street, with parking impacts, and should move forward only with community support. Detaching the channelizing elements from the curb would avoid drainage impacts and save on cost.

Typically, chicanes are installed on wide roads with marked parking and lane lines. While Outlook does not have lane lines, the typically unused parking along the uphill side provides more width than necessary for this residential setting. Driveways along Outlook Avenue limit the potential locations of this chicane, which is why the section with driveways on only one side is proposed, as shown in Figure 18. The chicane could be installed if parking were removed and physical barriers were installed to force the steering movements. Many residents have voiced concern that cars speeding at either approach of the chicane may not have enough time to slow down and collide with the channelizers or, if not spaced correctly, use the chicane as an obstacle course. When installed in combination with speed humps, the traffic calming effect should be enhanced and these concerns mitigated<sup>3</sup>.

An upgrade to the existing speed hump at this approach would be a low-cost alternative. It would be upgraded in conjunction with the other speed humps along Outlook Avenue.

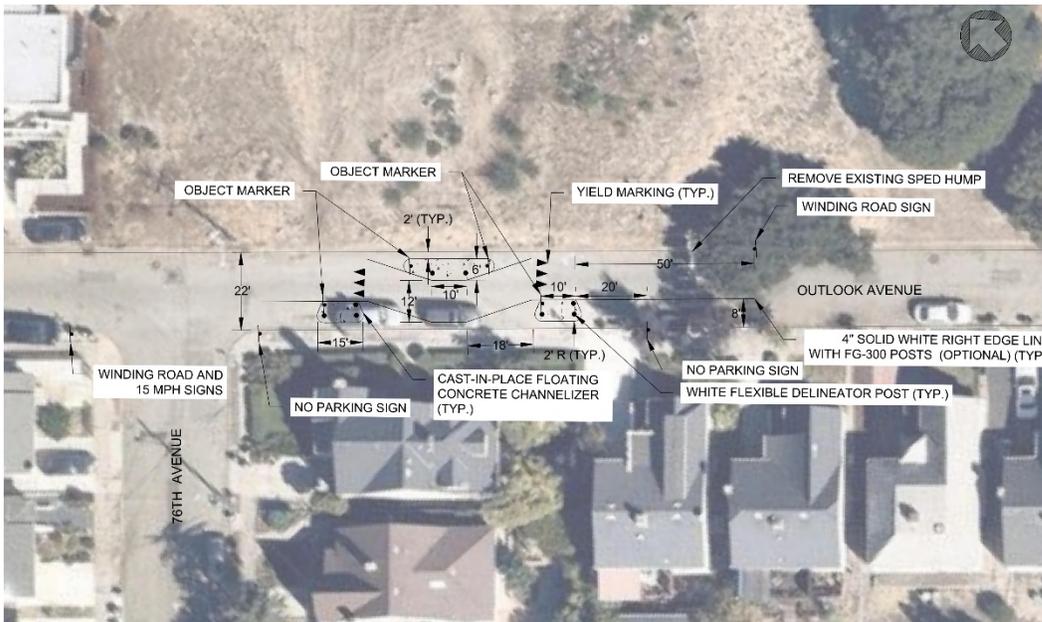


Figure 18. Outlook Avenue at 76th Avenue chicane

### Ritchie Street Pinch Point

To address high speeds on Ritchie Street, the concept plan proposes a mid-block pinch point. The pinch point would leave 16 feet for two vehicles traveling opposing directions to pass each other, requiring drivers to slow down. While a narrower pinch point would be more effective, the presence of a signal at MacArthur introduces an unacceptable risk of westbound drivers fixating on a green light and ignoring the pinch point. The pinch point is recommended to be located approximately 150 feet southwest of Ney Avenue. To taper the approaches to the pinch point, on-street parking would need to be removed for 30 feet (approximately 2 spaces) on each side of the street. In addition, the pinch point will require the removal of one on-street car parking space on each side of the street for a net loss of six spaces. Reducing curb space may have a negative impact on Parker Elementary student passenger loading/unloading. A speed hump may be an alternative; however, an analysis of the roadway grade is needed as Ritchie exceeds typical consideration for speed humps since it is too steep.

<sup>3</sup> Reid Ewing and Steven Brown, *The U.S. Traffic Calming Manual* (Chicago: American Planning Association, 2009), 55.

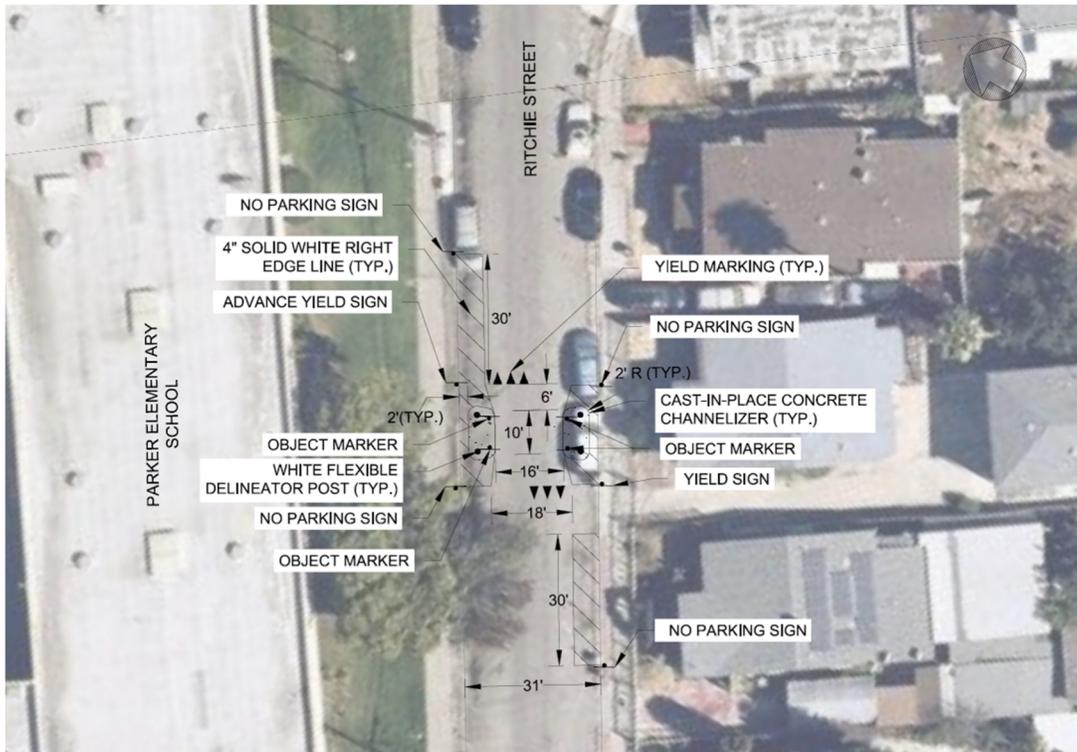


Figure 19. Ritchie Street Pinch Point

## Volume/Cut-Through Management

### Ney Avenue at 75<sup>th</sup> Avenue Diagonal Diverter

The concept plan proposes two volume management tools that work best when installed together. The first, and prioritized, is the diagonal diverter at Ney Avenue and 75<sup>th</sup> Avenue. Based off of the data collected for the Existing Conditions Analysis and community comments, many motorists turn left onto Ney Avenue from 73<sup>rd</sup> Avenue then right on 75<sup>th</sup> Avenue to access MacArthur Boulevard and avoid the left turn onto MacArthur Boulevard from 73<sup>rd</sup> Avenue. This movement increases volume on two residential streets and attracts motorists who are not familiar with the neighborhood and may assume they can continue driving as fast as they were on 73<sup>rd</sup> Avenue.

A diagonal diverter, drawn in Figure 20, at this intersection would force drivers who are using Ney Avenue as a cut through to turn left onto 75<sup>th</sup> Avenue and then onto Outlook Avenue to get back onto MacArthur. The intention is that once people have been forced to complete this loop once, they will not do it again, thus reducing cut through volumes. The concept plan shows two design options – concrete curb extensions or decorated planters anchored into the pavement. This design should have minimal impact on local traffic and neighborhood access. Those wishing to access eastern parts of the neighborhood from 73<sup>rd</sup> Avenue can make a left turn at Outlook Avenue or make a left turn off of MacArthur Boulevard.



Figure 20. Ney Avenue at 75th Avenue diagonal diverter concrete and planter options

### MacArthur Boulevard at 76<sup>th</sup> Avenue Right-In/Right-Out Forced Turn Island

In conjunction with the diagonal diverter at Ney Avenue and 75th Avenue, a right-in/right-out forced turn island at MacArthur Boulevard and 76<sup>th</sup> Avenue, shown in Figure 21, would likely decrease the desirability of using the neighborhood as a cut-through and would pose an obstruction to those trying to flee a crime scene.

The right-in/right-out island would require the removal of the eastbound left turn lane and installation of concrete medians. The concrete median in the left turn lane also would create a pedestrian refuge area mid-way through the crossing, which would improve safety and comfort for people walking.

Similar to the diagonal diverter, there may be minimal impact on local traffic and neighborhood access. Installation of the diverter and island may alter the local travel patterns, though, based off of community feedback, residents were willing to alter their travel patterns for effective volume management infrastructure. Community members were concerned about accessing the existing bus station on the eastern leg of the intersection. This is something that would be considered in future phases of design.



Figure 21. MacArthur Boulevard at 76th Avenue forced right-in/right-out island

## Design Concerns

Each of the recommendations requires a comprehensive analysis of the existing conditions, including existing drainage and utilities, striping, and the presence and condition of ADA compliant facilities at each intersection where an improvement is recommended.

The diverters and traffic circles are proposed at intersections, or intersection approaches, that have existing utilities and drainage facilities. The design of those improvements will need to accommodate the following:

- **Drainage and Utilities:** Improvements at the curb line can affect drainage patterns and designs should avoid ponding or other issues. Manholes may need to be adjusted for raised infrastructure and utility relocation can increase cost.
- **Accessibility:** All treatments that affect the pedestrian path and travel should include necessary ADA compliant infrastructure.

It is unlikely that there will be many design issues with the proposed speed humps along Ney Avenue and Outlook Avenue as many of the speed humps are simply being replaced. The new speed humps must not conflict with existing driveways, must be designed to accommodate existing drainage patterns, and follow OakDOT standards outlined in Appendix F.

## Cost Estimate

### Planning Level Cost Estimates

High-level concept cost estimates were calculated for each proposed traffic calming measure in addition to the total cost of all the measures combined. Costs include mobilization, demolition, construction, paving materials, landscaping, and striping.

Table 4. Cost estimate summary

Location	Construction Cost
Ney Avenue at 76 <sup>th</sup> Avenue Traffic Circle	\$88,871
Ney Avenue at Parker Avenue Traffic Circle	\$88,838
Speed Humps along Ney/Outlook/Hillmont Avenue	\$204,516
Ney Avenue at Partridge Avenue Curb Extension	\$21,917
Outlook Avenue Horizontal Deflection Alternative	\$25,942
Ritchie Street Pinch Point	\$14,299
Ney Avenue at 75th Avenue Diagonal Diverter with Concrete Curb Extensions	\$13,943
Ney Avenue at 75th Avenue Diagonal Diverter with Decorative Planters*	\$10,939
MacArthur Boulevard at 76th Avenue Right-In/Right-Out Forced Turn Island	\$17,456
<b>Total**</b>	<b>\$513,701</b>

\*Cost not included in total

\*\*Value includes additional street light cost, found in cost estimate

See Appendix E for detailed planning level cost estimates, including unit costs.

### Temporary or Low-Cost Materials

Some of these recommendations can be built with lower cost and temporary (quick build) materials. A quick build installation would cost significantly less, have a much shorter time line, and provide community members and OakDOT with insight into how effective some of these measures would be in the neighborhood. However, quick-build measures do not have the same lifetime of concrete improvements and may introduce ongoing maintenance needs. A number of potential quick build options that would be applicable within the study area are shown in Figure 22.



Figure 22. Quick build examples (City of Lakewood, OH; Denverite; Alta Planning + Design; Street Plans)

## Chapter 6. Next Steps and Implementations

### Phasing

It is recommended that the project improvements be divided into two phases – synchronized construction and independent construction. Some of the improvements will be more effective if they are built in conjunction with other improvements while others can be built independently and within a shorter timeline.

#### Constructed Under Existing Program

- Speed Humps

#### New Capital Projects

- Independent Construction
  - Ney Avenue at Partridge Avenue Curb Extension
  - Ritchie Street Pinch Point
  - Ney Avenue at 76<sup>th</sup> Avenue and Parker Avenue Traffic Circles
- Synchronized Construction
  - Outlook Avenue Horizontal Deflection
  - Ney Avenue at 75<sup>th</sup> Avenue Diagonal Diverter
  - MacArthur Avenue at 76<sup>th</sup> Avenue right-in/right-out forced turn island.

### Coordination

The City may wish to coordinate both phases of construction with existing and proposed projects and programs in the City’s upcoming 2021-2023 Capital Improvement Plan (CIP) and future three-year street paving plan.

### Funding

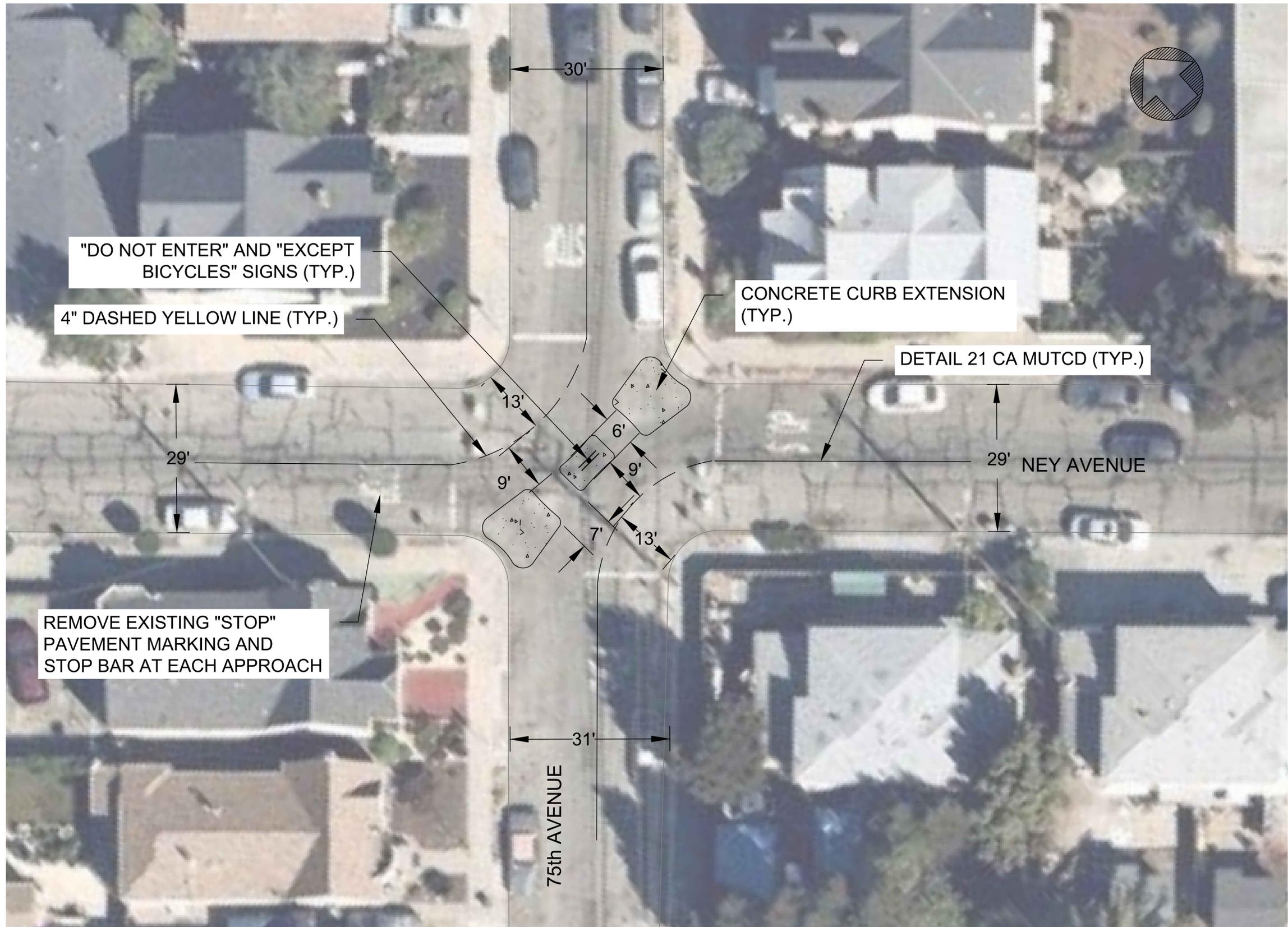
Identifying and securing funds for the improvements identified in this study is crucial to achieving the community’s goals. Table 2 identifies additional local, regional, and state funding sources to support the implementation and construction of the proposed traffic calming measures.

Table 5. Additional funding sources for the Ney Avenue Neighborhood Traffic Calming Plan

Project	Potential Fund Source	Details
Low-Cost alternatives to recommendations on Ney, Ritchie, Partridge	Safe Routes to School Mini-Grant Program (Alameda County Transportation Commission)	If this program is offered in 2022, signing, striping, and low-cost alternatives to the traffic calming measures on streets that bound Parker Elementary could be competitive for funding.
Low-Cost alternatives to all recommendations	Active Transportation Program Quick-Build (California Transportation Commission)	The California Transportation Commission held a call for quick-build projects as part of its Active Transportation Program call for projects in 2020. This could be a funding source for recommendations using low-cost materials.

## Appendix D

### Proposed Concepts



**NEY AVENUE TRAFFIC CALMING**  
 NEY AVENUE AT 75TH AVENUE DIAGONAL DIVERTER - CONCRETE CURB EXTENSION

N.T.S.



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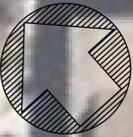
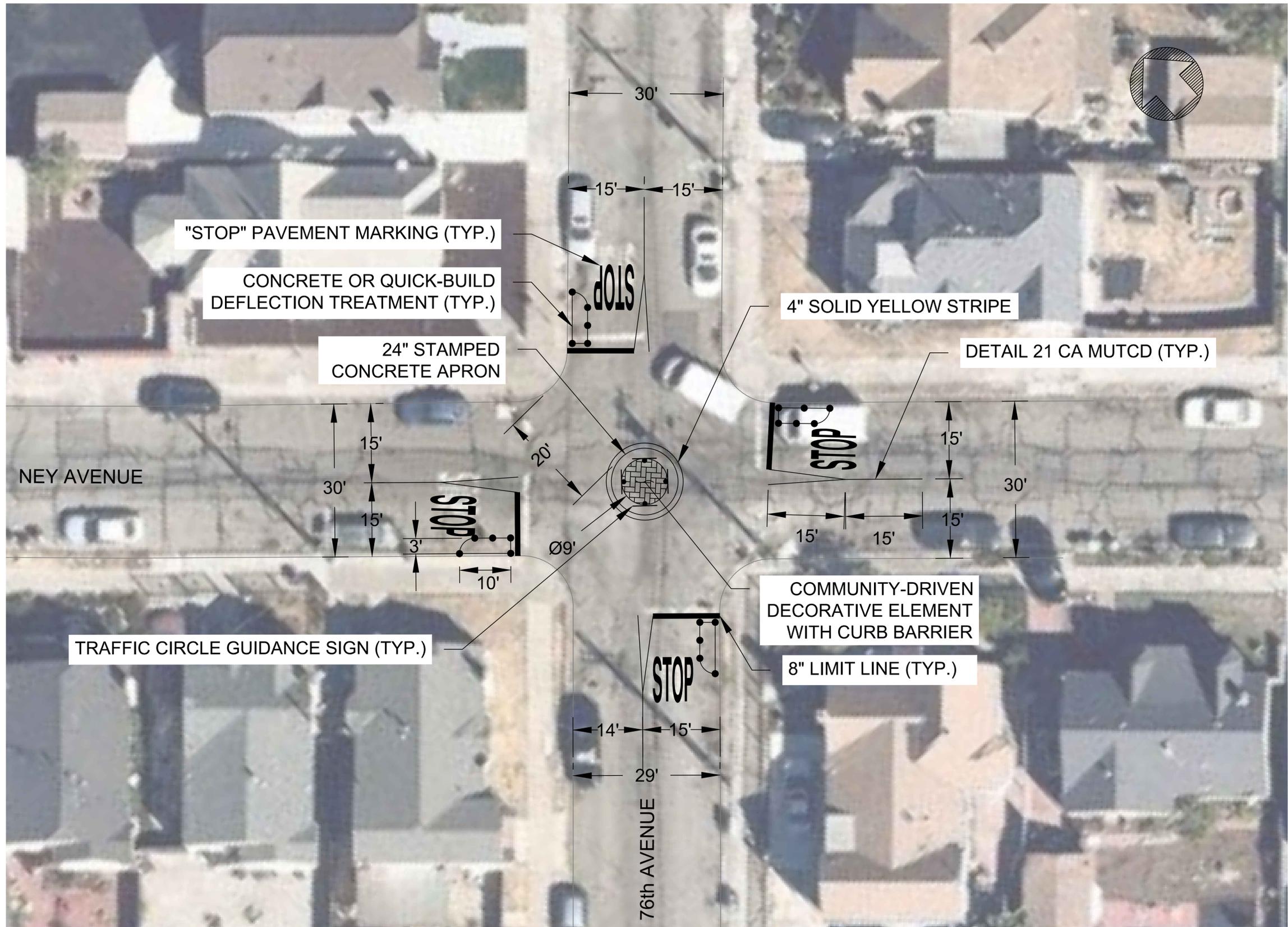
OAKLAND, CA

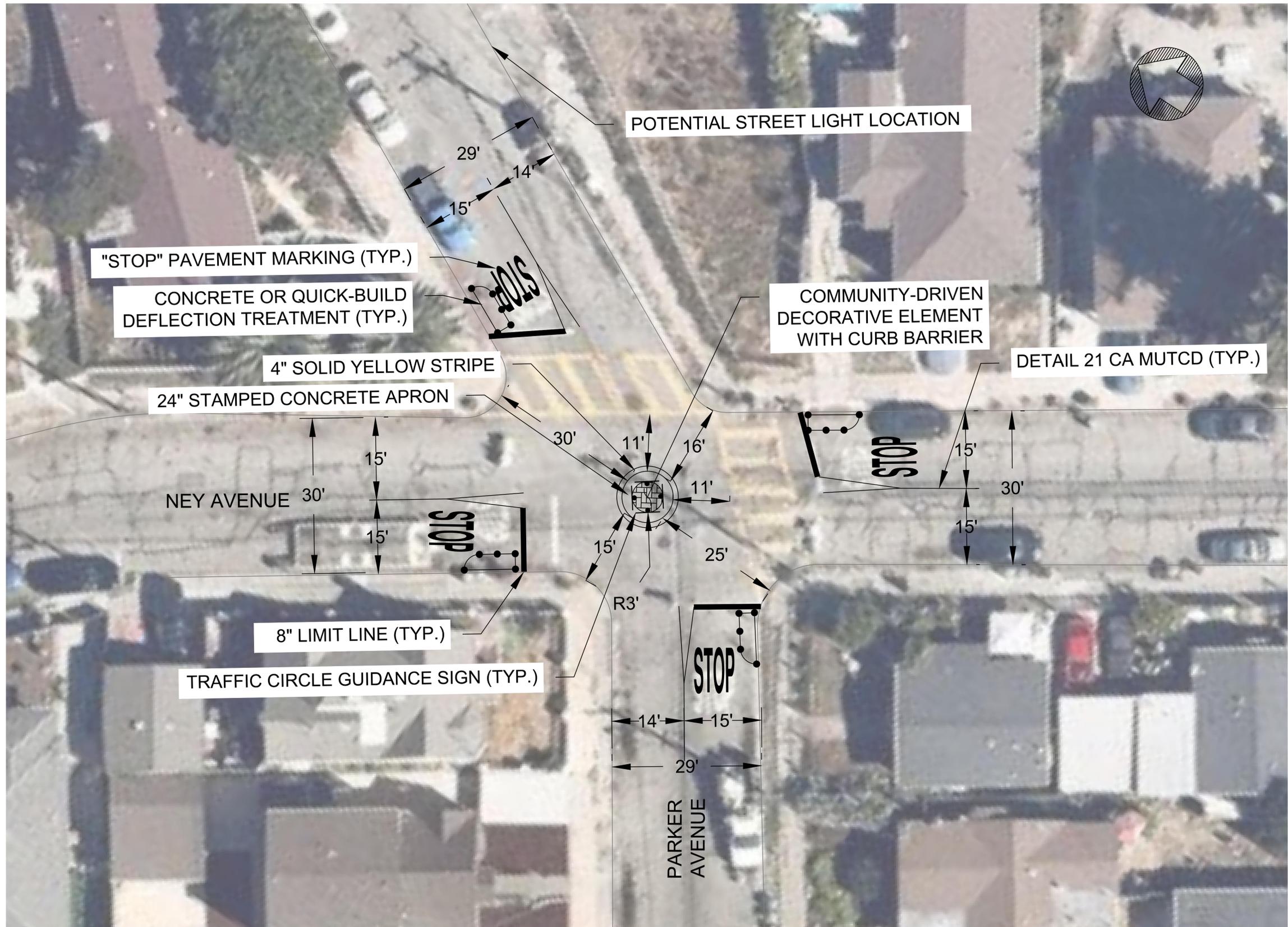


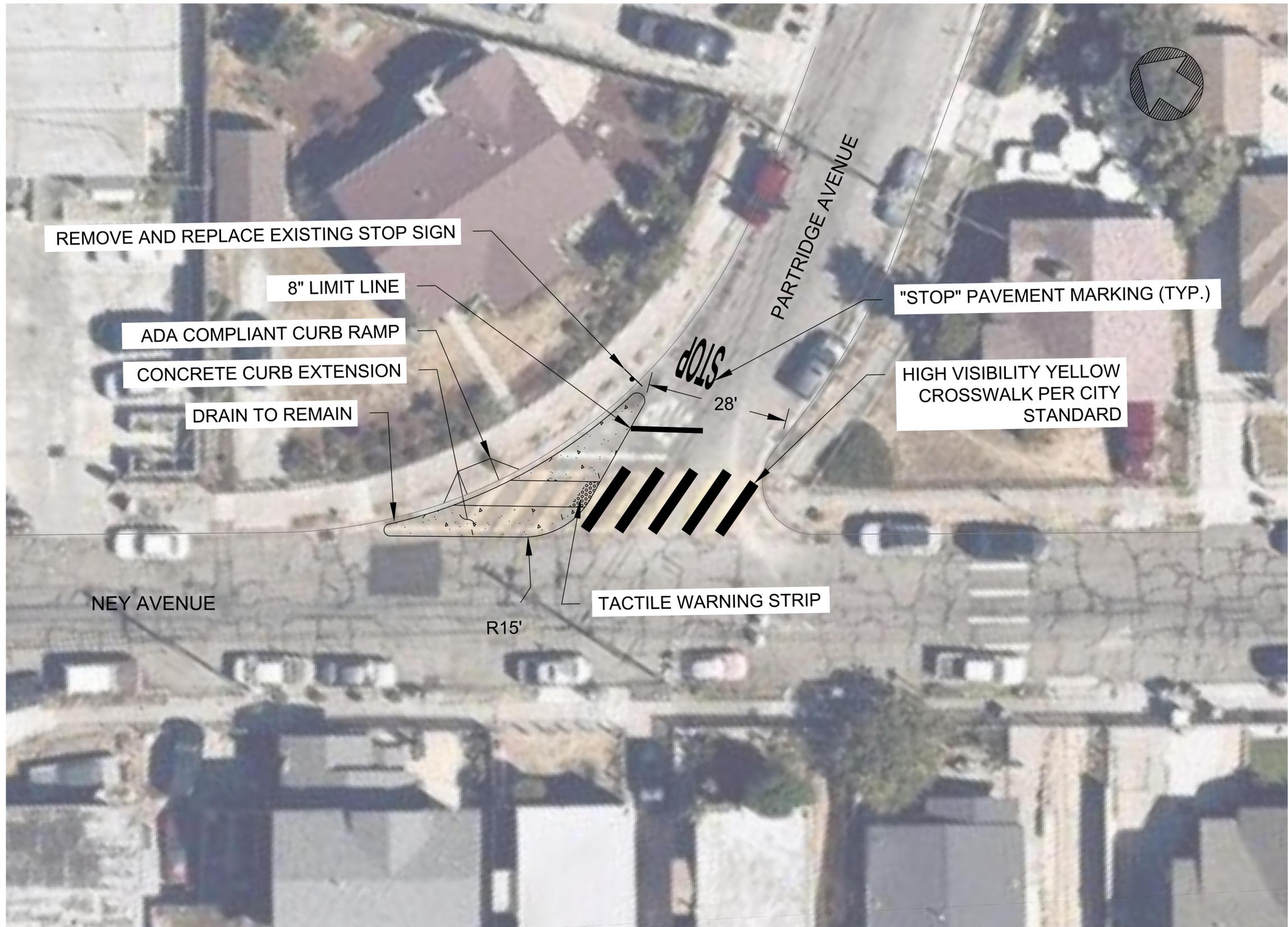
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**NEY AVENUE TRAFFIC CALMING**  
 NEY AVENUE AT 75TH AVENUE DIAGONAL DIVERTER - DECORATIVE PLANTERS  
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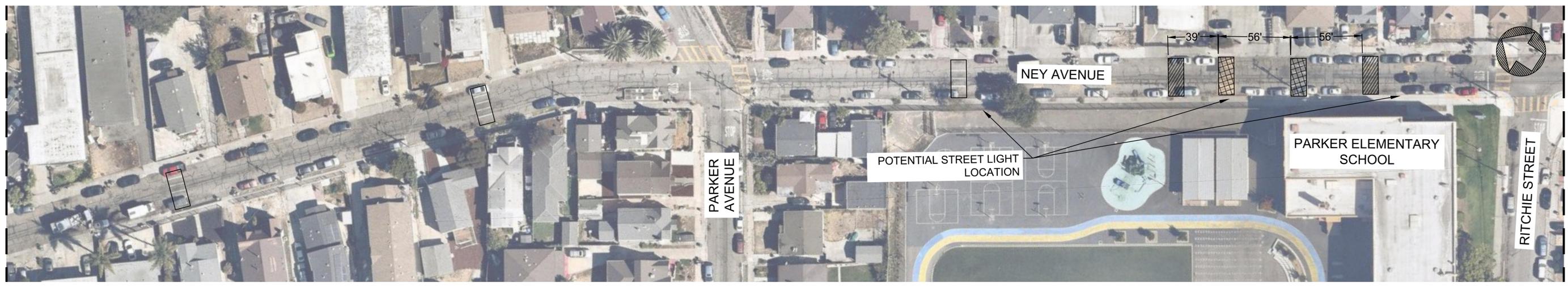








MATCHLINE 01 - SEE BELOW



MATCHLINE 01 - SEE ABOVE

MATCHLINE 02 - SEE BELOW



MATCHLINE 02 - SEE ABOVE

**GENERAL NOTES:**

-  1. INSTALL SPEED HUMPS PER CITY STANDARD TC-1.
-  2. REBUILD AND REPLACE EXISTING SPEED HUMPS PER CITY STANDARD TC-1.
-  3. REMOVE EXISTING FACILITY.



**NEY AVENUE TRAFFIC CALMING**  
SPEED HUMPS ALONG NEY AVENUE

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MATCHLINE - SEE BELOW



MATCHLINE - SEE ABOVE

GENERAL NOTES:

-  1. INSTALL SPEED HUMP PER CITY STANDARD TC-1.
-  2. REBUILD AND REPLACE EXISTING SPEED HUMP PER CITY STANDARD TC-1.
-  3. REMOVE EXISTING SPEED HUMP.

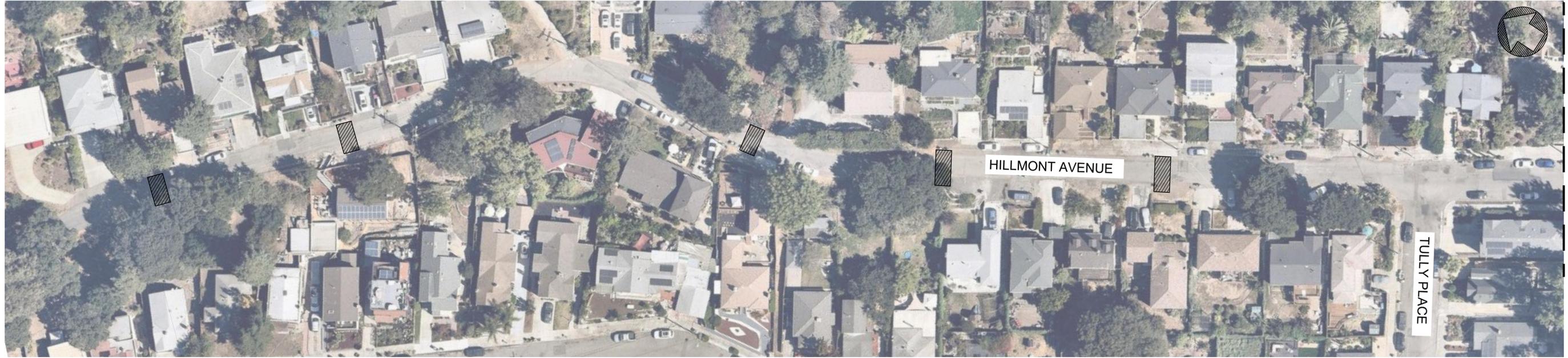


**NEY AVENUE TRAFFIC CALMING**  
SPEED HUMPS ALONG OUTLOOK AVENUE

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MATCHLINE - SEE BELOW



MATCHLINE - SEE ABOVE

GENERAL NOTES:

-  1. INSTALL SPEED HUMP PER CITY STANDARD TC-1.

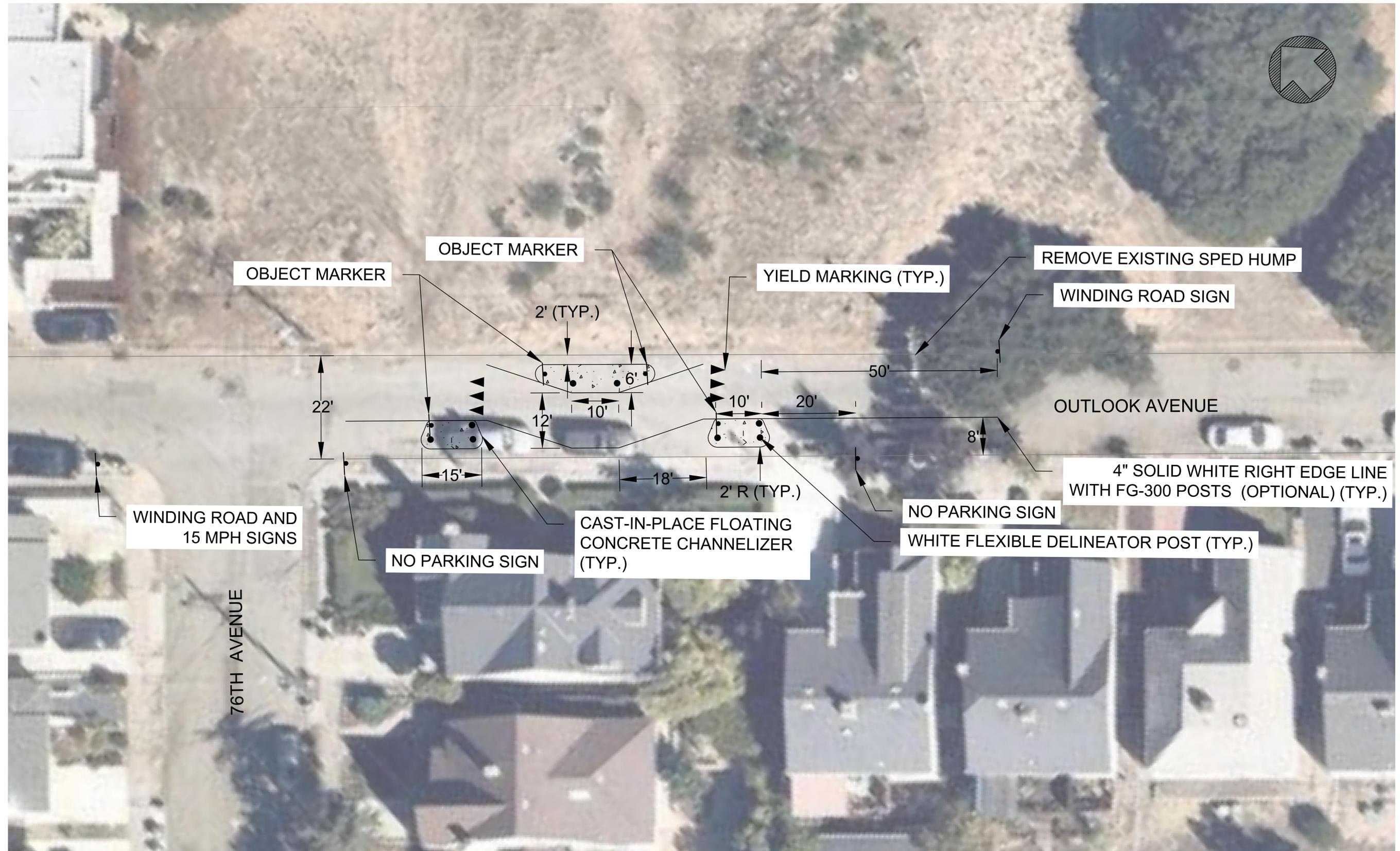
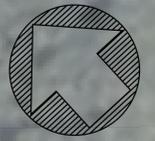


**NEY AVENUE TRAFFIC CALMING**  
SPEED HUMPS ALONG HILLMONT AVENUE

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 OUTLOOK AVENUE HORIZONTAL DEFLECTION ALTERNATIVE

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