Meeting Agenda
State College Borough Transportation Commission
Regular Meeting
September 13, 2016
12:15 p.m. / Room 304

I. **Call to Order**

II. **Roll Call**

III. **Approval of Minutes**

IV. **Public Hour**

V. **Discussion Items**

A. Easterly Parkway Reconstruction

B. Atherton Street Reconstruction

C. The Rise

D. MS4 Program

E. Allen Road Multimodal Safety Improvement Study

VI. **Liaison Reports**

VII. **Items of Information**

VIII. **Adjournment**

Documents:

Completed Transportation Commission Agenda 9-13-2016.pdf

Meeting Agenda
State College Borough Transportation Commission
Regular Meeting
September 13, 2016
12:15 p.m. / Room 304

I. Call to Order

II. Roll Call

Richard Garis
Greg Halpin
Paul Jovanis
Diana Malcom
Hugh Mose
Ray Najjar
Paul Rito

III. Approval of Minutes – May 10, 2016

IV. Public Hour – Hearing of Citizens

V. Discussion Items

A. Easterly Parkway Reconstruction

As part of the 2017 – 2021 Capital Improvement Plan, staff is recommending the reconstruction of Easterly Parkway from South Allen Street to South Garner Street. The reconstruction will provide opportunities for safety, drainage, and pedestrian and bicycle improvements. Amy Kerner will provide an update on the project plans and schedule.

B. Atherton Street Reconstruction

PENNDOT officials met with Borough Council and the College Heights Neighborhood Association on the Atherton Street reconstruction project slated for Fall 2017. Charlie Jones will provide an update on the project status.

C. The Rise

Demolition of existing structures is in progress at the site of The Rise, located at High Street and East College Avenue. Amy Kerner will provide a report on traffic accommodations during and after project construction.

D. MS4 Program

Amy Kerner will provide an update on the MS4 Program and the Borough's efforts to comply as road projects are planned and constructed.

E. Allen Road Multimodal Safety Improvement Study

Penn State completed a draft study of improvements along Allen Road south of Park Avenue. Amy Kerner and Charlie Jones will review the proposed improvements which are aimed at improving safety for motorists, pedestrians, and children at the University's day care center.

VI. Liaison Reports

A.	MPO/CRPA/COG Transportation	Tom Zilla/Trish Meek
B.	Centre Area Transportation Authority	Louwana Oliva
C.	Penn State Transportation	Robert DeMayo
D.	PENNDOT	Ryan Collins
E.	Borough Planning Commission	Ed LeClear
F.	Borough Engineer	Amy Kerner
G.	Environmental Coordinator	Alan Sam
H.	Parking Office	Patrick Ward
I.	State College Police	Lt. Barrett Smith/Cpt. Matt Wilson

VII. Items of Information

A. Future Meetings

1. The next meeting of the Commission will be on December 13, 2016 at 12:15 PM.

VIII. Adjournment

Meeting Agenda
State College Borough Transportation Commission
Regular Meeting
May 10, 2016
12:15 p.m. / Room 304

The State College Borough Transportation Commission (TC) met on Tuesday, May 10, 2016 in Room 304 of the Borough Municipal Building. Chairman Rito called the meeting to order at 12:20 p.m.

Members Present: Chairman Rito, Richard Garis, Greg Halpin, Paul Jovanis, Diana Malcolm, Ray Najjar

Others Present: Amy Kerner, Borough Engineer; Alan Sam, Environmental Coordinator/Arborist; Patrick Ward, Borough Parking Manager; Anne Messner, Zoning Officer/Planner; Courtney Hayden, Communication & Special Project Coordinator; Trish Meek, MPO, CRPA; Robert DeMayo, Penn State University (PSU) Transportation Director; Louwana Oliva, CATA Director; Officer White; Kelly Doyle, AmeriCorps volunteer; Margaret Gray; Sandra Lieb, Staff Assistant and other interested parties.

Approval of Minutes

Chairman Rito asked to have the five intersections recorded in the February 9, 2016 minutes.

Public Hour

Susan Venegoni, 323 W. Fairmount Avenue. Ms. Venegoni was speaking on behalf of the Highlands Civic Association concerning the five areas of study of the ten intersections. Ms. Venegoni stated that the intersection of Garner Street and Prospect Avenue recently had a hit and run, two pedestrians were hit and there were two accidents within the last week at that intersection. Ms. Venegoni asked if the five intersections that were selected were set in stone or if the Garner Street and Prospect Avenue intersection could be moved up the list.

Mr. Whitfield stated that they will look at that Intersection independently. On May 9, 2016, Mr. Whitfield presented to the State College Borough Council the findings of the report on that intersection.

Larry Jones, 357 E. Prospect Avenue, stated that this intersection has been a problem for some time. There have been some steps taken over the years, such as larger traffic signs, painting on the road, several older trees taken down and parking was removed for the bike lane. Mr. Jones noted that those changes seemed to help with the visibility and help to prevent accidents but now it is a problem once again. Mr. Jones stated that the Borough measures accidents, and he measures near misses. He said that on high volume days there is an average of four to five near misses in an hour.

Mr. Jones stated that the Garner Street corridor is a problem. He explained that Prospect Avenue has the highest volume of cars since it is the first access from University Drive. Mr. Jones also stated that pedestrian traffic has increased. He added that 90% of the time it is traffic going westbound on Prospect Avenue where people stop but don't look before pulling out or they don't stop at all. His hope is that there would be a series of steps to take before there was a study, such as, more signage or stop signs with flashing lights. Mr. Jones would like something done now.

Mike Blanco, 126 Hartswick Avenue. Mr. Blanco stated that at the McKee Street and Park Avenue crosswalk a death happened there. The area is being looked at. Mr. Blanco stated that he has to cross that intersection every day for work. He said that it seems that the biggest problem is that motorists don't pay attention to pedestrians. Mr. Blanco stated that he thinks that motorists are not aware that a crosswalk demands that they 5stop. He asked if it would be possible to put a pedestrian crossing with the bike crossing. He stated that this area needs a long term solution but wondered if, in the meantime, there was a short term solution. He stated that this is obviously a problem area.

Mr. Whitfield stated that PennDOT recently changed the regulation to the pedestrian channeling devices. Up until to two months ago, the Borough was required to do a pre-study and a post study before putting these devices out and then a second study had to done after the devices were out. He stated that these devices were required to be brought in at nighttime which had some logistical issues. PennDOT will now allow them to be out at night. Mr. Whitfield said the Borough will try these devices at the Park Avenue intersection and the Atherton Street and Fairmount Avenue intersection. This will be an interim solution for now until the project can be done. The Borough has applied for two different types of grants and they are hoping to get most of a pedestrian island funded through grant money. However, the pedestrian islands are in next year's Capital Improvement Plan and are to be a fully, funded Borough project in case we do not get the grant money. Mr. Whitfield stated that it is the intention of the Borough to have that island put in sooner rather than later.

Mr. Whitfield presented the following findings, over a five-year period, for the Garner Street Corridor.

Prospect & Garner Accidents

2011 – 1
2012 – 2
2013 – 3
2014 – 0
2015 – 5

Mr. Whitfield stated that a traffic study was just done in the Highlands and they took a look at traffic volumes.

Garner Street from (Fairmount to Prospect)

- No appreciable increase in volume or speed
- Speed did pick up on Garner Street from Prospect to Easterly
- Volume and speed are fairly consistent to what they had been back in the early 2000s.
- Of the 20 accidents in 2015 and 2016, 9 accidents were reportable – towing or injuring. Reportable accidents are anytime a vehicle needs to be towed or there is an injury.
- There were 13 daylight accidents.
- Two of the accidents happened at night and were both pedestrian accidents. One of the accidents was a DUI.
- Eight of the accidents involved cars traveling southbound on Garner & westbound on Prospect. This is what is being looked at as part of the problem.
- According to the police report they all did stop at the stop sign according to witnesses and speed was not an issue.

Mr. Whitfield stated that because there were more than five reportable accidents in a 12-month period the next step was to look at this intersection and contract with our traffic engineering consultant to take a closer look to complete the traffic study and see what is recommended from the study. Mr. Whitfield noted that all of the traffic data and accident data will be turned over to the consultant.

Ms. Venegoni would like them to take into consideration that the population density has increased as well. She stated that there are more people living in the neighborhood and walking, so she would like them to include that in the study and not just the speed and number of cars.

Mr. Halpin agreed that Garner Street is difficult to cross.

Mr. Jones asked if it would be possible to have selective enforcement in the mornings at the intersection of Park Avenue and McKee Street.

Mr. Halpin stated that Park Avenue is also difficult to cross. He suggested the use of crossing guards.

Mr. Whitfield stated that crossing guards are typically paid for use at elementary school crossings. The islands help to make crossing safer and you are only dealing with half the intersection once you are in the center. This was spurred by someone having a guide dog that would not leave the curb with traffic coming but the guide dog would go half way across.

Mr. Rito asked if the flashing lights were on all the time.

Mr. Whitfield answered yes. Mr. Whitfield had been asked if it could be push button activated, but it was unclear what the Borough permit is and how that works with PennDOT but that they could find out. Mr. Whitfield stated that push buttons can be a problematic issue, but that we would first need to look at whether it is permitted and secondly, what the cost would involve.

Mr. Jones had asked why the Park Avenue and McKee Street intersection only says bike crossing. Mr. Whitfield stated that McKee Street is a designated bike route and that is how the Borough got the funding to put the sign and signal there.
Mr. Najjar stated that most people don't realize that you have to stop at a crosswalk. He pointed out that there is a larger issue and suggested having more signage that notes that pedestrians have right of way to cross street and cars must stop.

Mr. Najjar thanked the citizens for coming out and speaking on this issue and he added that it empowers the case more when citizens come out and speak.

Discussion Items

Easterly Parkway Reconstruction

As part of the 2017 – 2021 Capital Improvement Plan, staff is recommending the reconstruction of Easterly Parkway from South Allen Street to South Garner Street. The reconstruction will provide opportunities for safety, drainage, and pedestrian and bicycle improvements. Ms. Kerner will present a preliminary plan for the section. Input from the Commission on the proposed improvements is requested.

Ms. Kerner presented the Easterly Parkway Reconstruction Plan. She divided the presentation into four photos since it is a long stretch of road.

Ms. Kerner stated that this project is on for next year, so the Borough needs to be in the design process. They need to decide what the goal is for this corridor so the design issues can be incorporated. There are several issues that need to be addressed.

- Creating a 10 foot shared use path on the south side of the street.
- There are tree and sidewalk conflicts.
- Two homes only have driveways onto Easterly so impacting their ability to park between the sidewalk and the street is something that will need to be considered.
- There is an overhead flashing school zone sign.
- A pedestrian node on Pugh Street on the northwest side.

The goal is to get ideas and discuss your concerns and suggestion.

- Pugh Street, east of the school, will continue the shared 10-foot path. It was discussed whether it would be logical to put in a school drop off or bus pull off. There is a very wide right of way in this area where everything would be located.

We talked about pedestrian level lighting around the school and other overhead flashing warning devices.

- To the East there is a center lane in this section. Since we would be reconstructing it, we could do an inverted crown and to have a bio-swale here would be a real boost for our stormwater requirements. There have been no designs done yet so the length and width of the bio-swale would be determined by design. This would prevent left turns. It would be a change with a right in and right out of the driveways

- Constructing a roundabout at the Pugh Street and/or Garner Street intersections. There is a little bit of an encroachment onto properties and this was talked about before. We wanted to see if the traffic circle should be considered. The triangle piece to the southeast of the roundabout is property owned by Borough and we may decide to do a very large rain garden style detention which is helpful for our stormwater requirements. This would be another project and not included in this project. Ms. Kerner asked for any discussion or other considerations.

Ms. Malcolm asked if a roundabout was for slowing traffic down.

Ms. Kerner stated that it was more about removing stop signs for better traffic movement verses a traffic signal.

Ms. Kerner asked Mr. Whitfield for more input.

Mr. Whitfield stated that they looked at two locations. One location was at Pugh Street and the other one was at Garner Street. Mr. Whitfield said some of it was for traffic flow and accident reductions which are less on a roundabout than with a regular stop sign intersection. Pugh Street had been studied for a signal but it has never met the warrants of necessitating a signal there and a roundabout was looked at as an alternative to a signal.

Ms. Malcolm stated that a roundabout seems like a better idea for Garner Street in terms of school pick up and drop off. She asked Ms. Kerner why it was not going all the way to the pathway on University Drive.

Ms. Kerner stated that at some point it will go all the way to University Drive but funding is keeping us at this section of roadway. Ms. Kerner added that this is a long section of roadway for reconstruction and there were budgetary reasons to break it up into sections but eventually it will all be completed.

Ms. Malcolm asked if a bio-swale was studied for speed.

Ms. Kerner stated that she believes anytime you have channelized mechanisms it helps to calm the traffic down because of the perception of lanes being narrower.

Mr. Whitfield stated that the initial thought is to connect Orchard Park bike path to the Garner Street bike path and have the two schools connected.

Mr. Najjar stated that he is torn between shared use paths and bike lanes. He believes that bike lanes are good for adults and bike paths are good for kids.

Ms. Kerner stated that shared use paths have driveways that are crossed and lanes on road prohibit being able to do some other things because you are using more of the road. The usage would be mostly students using the path to go to the schools.

Mr. Halpin asked how wide the sidewalk near the school is because it seemed wider.

Ms. Kerner stated that the sidewalk is five feet wide, so they would be doubling the width of sidewalk.

Ms. Malcolm asked if there would be paint to direct the people if the shared use path was asphalt.

Ms. Kerner stated that it was not typical unless there would be some issues that would come up, but she does not anticipate using paint.

Mr. Jovanis asked how far along in the thinking of a roundabout and if they had any data collection planned.

Ms. Kerner stated that there are two circles on plan. They have the vehicle counts, so they know what the volume of the traffic is and class of traffic.

Mr. Jovanis recalled some publications on the safety of roundabouts and the toughest issue concerning a roundabout is pedestrian safety issues.

Mr. Rito asked what would be in the middle of the roundabout.

Ms. Kerner said that because of its location and it is smaller than the inner circle concrete apron they may be able to have some low growing plants but that larger vehicles in the roundabout would have to be able to go over the apron.

<u>Atherton Street Reconstruction</u>

PennDOT officials have given design updates to Borough Council and the College Heights Neighborhood Association on the Atherton Street reconstruction project slated for Fall 2017. Mark Whitfield provided an update on the project.

Mr. Whitfield gave an update on the project. He stated that the project will run from Aaron Drive to the Nittany Lion Inn on North Atherton Street. The main purpose is because of inadequate drainage under the roadway and for storm water to get into the system. Mr.

Whitfield pointed out that there is one section of roadway that will be reconstructed from Woodland Drive to just below Hillcrest Avenue. All pedestrian islands will be maintained and be reconstructed.

The Borough requested the installation of curb gutter because it helps with drainage and because we do street sweeping with a steel broom degrades asphalt unless it abuts a concrete gutter. Also, traffic typically will not drive on a gutter and it gives a buffer between the sidewalk and where people will be traveling.

The overall project had to do with the pipes that are there now which are in very poor condition. In the early 80s, there was a project in which they offset an inlet. This worked somewhat but we were unable to get in and clean it, so the pipes have not been cleaned for a number of years. The inadequacy of drainage leads to roadway flooding and getting water off the roadway and into the pipe is one of the main goals. The final design will be done by next summer, the project is to be bid in August of 2017 and construction will begin in the fall of 2017 which will be mainly utilities. The main part of construction will begin in the spring and summer of 2018. Total completion will be in the fall of 2018.

Project Details:

- There will be 61 inlets installed.
- Replacing storm drainage piping
- Reconstructing pavement for 100 feet south of West Mitchell Avenue to 100 feet south of Woodland Avenue.
- Place drainage gutter to improve drainage performance and safety.

Proposed Widths:

- Maintain 10 foot lanes.
- Maintain 8-foot pedestrian island
- 1-foot gutter for drainage
- Curb to curb 52 feet at Hillcrest Avenue

There are two sections in the Borough for proposed roadway options which include Rodeway Inn to Hillcrest Avenue and Hillcrest Avenue to Park Avenue. PennDOT had to work around retaining walls and steps at residential properties. They also have to maintain the grades around the retaining walls and the driveway grades so it would not impact access in and out of driveways due to a steep slope.

Hillcrest Avenue to Park Avenue

There are 10-foot-wide turning lanes which would require taking some right of way in the section between Woodland Drive and Arbor Way. There would be a slight amount of right-of-way taken to move the sidewalk back for a turning lane.

There are four options for Park Avenue. New traffic signal mast arms are proposed. The existing ones are not big enough right now to hold the load for a dedicated signal, no turn on red sign, maintaining raised medians for pedestrians and time for pedestrian crossing will be increased. The project is anticipated to start in the fall of 2017 and completed in the fall of 2018.

Chairman Rito stated that other than the need for drainage improvements he cannot see widening Atherton any more. He stated the community will be impacted and he sees nothing positive to widening the corridor. He questioned whether we want a five lane highway into State College. The increase housing in Ferguson Township and Patton Township is benefitted but it impacts us. Widening the road will increase traffic flow into State College and he cannot support that.

Mr. Whitfield stated that during construct they will only be able to maintain two lanes in one direction and one lane in the other direction. The hope is that people will use the bypass.

Chairman Rito stated that, in his opinion, the problem is bigger than Atherton Street itself and not just that corridor.

Mr. Halpin agreed that in 10-15 years we will need to look at another alternative.

Mr. Jovanis asked what the College Heights resident's reaction was.

Mr. Whitfield stated that the next agenda item interested them more. They would have liked to have seen sidewalks pushed back but they understood the impact of loss of property.

Mr. Whitfield noted that looking at all signals between Hillcrest Avenue to bus terminal, we have done all that can be done at the Park Avenue intersection. Stahl Shaffer is looking to see if an all walk phase can be put in at Curtin Street and at the White Course. We found that almost 83% of the people using Park Avenue intersection were going to a core part of campus.

Mr. Jovanis asked about the walkway between Rodeway Inn and Hillcrest Avenue and can it be taken out of median space instead of property. Is it possible to have a 6-foot median instead of a 5-foot median and then you can save having to buy property. On Arbor Way the walkway going through a left turn lane seems to be a safety hazard and not an improvement.

Mr. Whitfield stated that having a T-intersection makes it fairly easy to do and we can discuss it with PennDOT.

Ms. Kerner stated that this did start as a drainage project but they found the pipes throughout the corridor were corroding and collapsing causing sinkholes. PennDOT found funding thru federal money and when using federal money, you have to follow their

standards. They looked at different scenarios to find the least intrusive and an 8-foot median is a requirement of that.

Mr. Whitfield stated that 10-15 years from now PennDOT is happy to have us take over the roadway. The municipality can consider this. The downside is we would have all future maintenance of that road, but it is a way to have control.

Atherton Street Signal Timing Update

Borough staff and Stahl Shaeffer Engineer Aaron Fayish met with the PennDOT engineers on April 19 to discuss traffic signal timing changes along the North Atherton Street corridor. The proposal consists of:

1. Maximize pedestrian crossing times at Hillcrest
2. Maximize pedestrian crossing times at Park (implemented 1/2016)
3. Implement ALL WALK phase at Curtin and White Course
4. Maintain existing timings at Bus Depot signal

Mr. Whitfield will provide an update to the Commission on the meeting with PennDOT.

Mr. Whitfield gave a brief update. We did meet with PennDOT and Mr. Fayish is continuing to do the study.

Highlands Traffic Counts

Ms. Kerner will provide a preliminary report on the traffic counts taken in the Highlands neighborhood in the Spring 2016. A draft report of the counts has been attached.

Mr. Whitfield stated that they have not yet gone through everything but Ms. Kerner has taken a look at it and can highlight it.

Mr. Jovanis stated that there are three time periods and in the middle a new consultant was hired.

Mr. Whitfield stated that they just supplied the raw data and did not do any analysis.

Ms. Kerner stated that we do have to quote this out. She noted that there was a different company that captured the data, but there was a strict criterion that they had to follow. Ms. Kerner noted that it does have to be a Tuesday, Wednesday or Thursday, and they have to look at that Penn State and the school district are in session. Ms. Kerner added that they must count for a 24-hour period on each day.

Mr. Jovanis questioned the measurement differences of the data periods.

Mr. Whitfield stated that data is invaluable to look at problems and identifying locations.

Ms. Kerner stated that the spreadsheet has the last three rounds that were done. She noted that the volumes either stayed the same or went down a little and speed stayed the same or went up a little.

Mr. Jovanis stated he did see that speed really went up and it could be a little misleading because of the percentages.

Mr. Whitfield stated that in the past we identified those segments and did a second count in the fall to determine whether there was something wrong with the counter.

Project Update

Mark Whitfield will provide an update on the various construction projects the Public Works will be overseeing during 2016.

Mr. Whitfield also gave a snapshot of the projects on the books and what will be worked on over the summer months. The CIP plan will be given at the July meeting,

Listing of all projects for 2016

- Street and Sidewalk projects
- Parking projects
- 2 stormsewer projects
- 1 park improvement project

Mr. Whitfield noted that for the street and sidewalks, we are doing our annual sidewalk inspections this year. The sidewalk project this year is in the Highlands neighborhood. The streets run from Old Boalsburg Road to South Atherton Street to East Whitehall Road; South Gill Street from West Foster Avenue to Hawk Alley; McCormick Avenue from South Pugh Street to University Drive; South Barnard Street from Sparrow Alley to West Fairmount Avenue; West Prospect Avenue from South Atherton Street to South Gill Street; New Alley from South Burrowes Street to Miller Alley.

Mr. Whitfield also stated that one of the big projects this year is the Smithfield Street Reconstruction Project. For this project, all of the curbs and storm pipes will be replaced as well as the reconstruction of Smithfield Street. He noted that we are partnering with the State College Borough Water Authority and Columbia Gas for replacement of their utilities.

Mr. Whitfield talked about the Central Business District Streetlight Replacement Project. This project will involve the replacement of new foundations, fixtures, and poles. He noted the south side of West College Avenue between South Atherton Street to South Fraser Street is scheduled from August to September. Mr. Whitfield added that South Burrowes Street from West College Avenue to West Beaver Avenue has been completed.

Mr. Whitfield stated that a project for the West End improvements will extend the new streetlights along both sides of West College Avenue from South Atherton Street to South Barnard Street.

Mr. Whitfield also updated the following projects:

- A bicycle connection from North Gill Street to Penn State and the IST building using money from a PennDOT grant and we are working with Penn State on this project.

- The Signal Pole Replacement project at the intersection of Westerly Parkway and South Atherton Street will replace the damaged pole, relocate control cabinet and replace the overhead electric feed with an underground electric feed.

- The Memorial Field Stormceptors have been installed.

- The canopy on the Fraser Garage will be removed and there is an opportunity to place his speech that he gave at Penn State.

Future projects – Park/McKee Ped island

Liaison Reports

MPO/CRPA/COG Transportation– Ms. Meek reported the MPO public meeting tomorrow in Room 220, 5-7 pm, on the upcoming transportation program. North Atherton Street reconstruction boards will be there. PennDOT is delaying the Branch Road construction until next year because the bids came in extremely high.

Borough Planning Commission – Ms. Courtney Hayden introduced Jenna Wargo the new Planner and stated that Jenna Wargo will be working with the Transportation Commission.

Environmental Coordinator – Mr. Sam stated that the trail at Highpoint is currently under construction and will be finished early summer. Four bike repair stations were purchased with PennDOT grant.

Ms. Kelly Doyle reported that May is bike month and Centre Bike is encouraging bike to work on Fridays. On centrebike.org details on the family fun bike ride on May 21 are available. Ms. Doyle stated that they are working on the bike friendly community application. State College is currently honorable mention. They are working on the new sustainability plan. We would like feedback from the community on the Borough website. We completed 1st year Driver's Ed share the road safely and it was a success. Ferguson Township is holding bike rodeo on June 4. We are closing up the anti-idling program. Ms. Doyle taught students about air quality at Easterly Elementary School and Radio Park Elementary School.

State College Police – Officer Smith had nothing to report. Officer Smith wanted to add that pedestrians cannot step into crossing until it is safe to do so to expect cars to stop. He stated that it is hard to enforce certain laws.

Chairman Rito questioned when it is legal.

Officer Smith stated that pedestrians cannot leave a position of safety and step into crosswalk if it would cause a hazard. Pedestrians cannot step into crosswalk if the pedestrian impedes the car. The problem is that pedestrians do not obey the pedestrian signal and the police cannot issue citations for not obeying the signal.

PADOT has a website on Just Drive PA for bike and pedestrian safety.

Items of Information

Future Meetings

1. The next meeting of the Commission will be July 12, 2016 at 12:15 pm

2. The ABC Dinner will be held at 6pm on May 12, 2016 at the Ramada Inn

Public Works will celebrate the completion of the construction of the new Service Facility with an open house next week at the Osmond Street facility May 16 from 1-6 pm.

Adjournment

With no further business to discuss, this meeting was adjourned at 1:50 p.m. by Chairman Rito.

Respectfully submitted:

Sandra Lieb
Staff Assistant

DRAFT

Allen Road
Multimodal Safety Improvement Study

The Pennsylvania State University
University Park Campus

Prepared For:
Office of Physical Plant

Submitted By:
McCormick Taylor
Innovation Park at PennState
329 Innovation Boulevard, Suite 116
State College, PA 16803

September 2, 2016

Table of Contents

Project Needs and Understanding	1
Traffic Analysis and Trip Generation for the Child Care Center	1
Parking Needs for the Child Care Center	2
Existing Characteristics and Features	3
Summary of Conceptual Alternatives	4
Preferred Conceptual Alternative (Alternative 6)	6
Preferred Conceptual Alternative – Potential Sub-Projects/Phases	8

Appendices

Appendix A – Design Criteria
Appendix B – Alternatives
Appendix C – Volume Diagrams
Appendix D – Traffic Count Data
Appendix E – Trip Distribution
Appendix F – Capacity Analysis
Appendix G – Signal Warrant
Appendix H – Turn Lane Warrant
Appendix I – Stakeholder Meeting Summaries

Project Understanding and Needs

Penn State and other community stakeholders met on May 31, 2016 to discuss the multi-modal transportation and safety issues within the Allen Road Corridor from Park Avenue to south of the southern entrance into the Hort Woods/Music Building parking lot. The meeting summaries are included in the appendices. During the meeting, the stakeholders identified the following concerns to be considered in the study:

- Pedestrian crosswalks feel unsafe
- Hort Woods (Child Care Center) Parking Lot does not have enough spaces
    - ADA spaces being used by non-ADA persons.
    - Traffic circulates in front of Child Care Center
- Vehicles pull into the Hort Woods/Child Care Center parking lot and stand next to Music Building II (curb along building)
- Students (and others) park illegally in the Hort Woods/Child Care Center parking lot
    - 6:00 PM non-restricted period is still within pick-up time for Child Care Center
- Allen Road is a barrier for pedestrians/using Nittany Deck as a pick-up/drop-off option
- Traffic delay at Allen Road/Fischer Road intersection
- NB Allen Road CATA Bus Stop → Vehicles bypass bus; enter opposing lane
- SB Allen Road → Vehicles wait to enter Hort Woods/Child Care Center parking lot
    - SB vehicles go around the queue; enter opposing lane
- Traffic delay at Allen Road/Park Avenue
- Child Care Center enrollment = 180 students; Capacity = 221 students
    - More parking needed for pick-up/drop-off?

These concerns were combined with other needs identified by Penn State and the consultant team during the data collection/observation part of the study.

Traffic Analysis and Trip Generation for the Child Care Center

Traffic analyses of the safety improvement alternatives developed for the Allen Road Corridor were completed using the Synchro software application. The analysis networks included the Allen Road intersections with Park Avenue, Fischer Road, and the Child Care Center/Music Building parking lot entrance. The intersections along Park Avenue were not included in the analysis network, since minimal impacts were expected and the signals are owned and regularly maintained by State College Borough.

Traffic volume assumptions were developed for each of the five (5) concept alternatives, based on spring 2016 traffic volume counts (Appendix D). The traffic count summaries from Quality Counts identified the traffic peaks for each intersection individually. Since the individual intersection peaks were all within 15 minutes of each other and the imbalance was minimal, the intersection peaks were utilized, rather than determining a “system” peak hour.

Based on the information provided at the Stakeholder Meeting, 180 students are currently enrolled at the Child Care Center, and capacity exists for up to 220 students. The capacity of 220 students was assumed in all of the future alternatives when estimating the traffic volume generated by the added enrollment. For Land use 565 (Day Care Center) the ITE Trip Generation Manual, 9th Edition provides the estimated trips shown in **Table 1** below. The Added Trips were distributed to the network based on existing traffic patterns, except for Alternative 3 where half of the new trips were routed to/from a new parking lot along Fischer Road.

Table 1. Trip Generation for Child Care Facility at Capacity

Students	Existing Enrollment 180 students	Capacity Enrollment 220 students	Added Trips
AM Fitted Curve Equation	*T=0.73(x)+4.67*		29 (15/14)
AM Trips "Total(Enter/Exit)"	136 (72/64)	165 (87/78)	
PM Fitted Curve Equation	*Ln(T)=0.88Ln(x)+0.27*		25 (12/13)
PM Trips "Total(Enter/Exit)"	126 (59/67)	151 (71/80)	

Notes:
In trip generation equations, "T" = Trips, "x" = Student Enrollment

Traffic volumes were re-distributed as necessitated by the roadway locations and access designs for each alternative. Volume diagrams are provided in Appendix C.

Parking Needs for the Child Care Center

Based on research into parking design at child care facilities, we discovered that parking regulations are established by local ordinance (i.e., zoning and subdivision/land development). The U.S. General Services Administration (USGSA) was the most referenced national guideline.[1] Regardless the local ordinances and USGSA recommend that local data be used to establish the type and quantity of parking needed.

During our observations of pick-up and drop-off times at the Child Care Center, we noted that the longest vehicle queue in the parking lot was 5 vehicles, including cars in the parking lot and cars waiting to turn left from Allen Road into the parking lot. This indicates the need for an additional 5 dedicated drop-off spots to satisfy current demand.

In the absence of local data, the USGSA also provides a generalized equation that may be used in calculating the needed pick-up/drop-off spaces as follows:

$$Spaces = \frac{Enrollment\ Capacity\ x\ 0.7}{8.57}$$

Based on this relationship, 18 pick-up/drop-off spaces would be required. However, the guideline also notes that "... a completely full building will be extremely rare due to illnesses or family vacations. In addition, many of the children in the facility will have a sibling enrolled at the center, further reducing auto traffic." As such, the required number of spaces is likely to be less than 18 spaces.

Finally, the USGSA recommends that staff parking space be provided for 80% of the employees required at peak capacity.

[1] *Child Care Center Design Guide*, U.S. General Services Administration, July 2003. http://www.gsa.gov/graphics/pbs/designguidesmall.pdf

Existing Characteristics and Features

- Existing Roadway features within the project area
  - 15 MPH posted speed limit.
  - 28' Minimum total pavement width in 2-lane sections.
  - 35' Minimum total pavement width in 3-lane section.

- Child Care Facility/Music Building parking lot
  - 25 total parking spaces (23 standard and 2 ADA).
  - One-way circulation through the Child Care Center/Music Building parking lot.
    - Enter at Music II end and Exit at Child Care Center end, opposite Fischer Road.
  - Larger service trucks and emergency vehicles enter the Music II and Theatre Building service area through the parking lot exit (as signed).
  - Maximum parking utilization observed:
    - 19 vehicles (83%) during AM peak.
    - 23+ vehicles (over capacity) during PM peak.
  - Longest standing queue of 2 vehicles observed in the parking lot during PM peak. Queued vehicles prevent other vehicles from entering the lot.

- Allen Road south of Fischer Road (2-lane section)
  - Southbound Allen Road configured with one shared through/left-turn lane (left-turn accesses the Child Care Center/Music Building parking lot).
    - Longest left-turn queue of 3 vehicles observed during PM peak.
    - Southbound Allen Road through vehicles were observed entering the opposing lane to bypass the left-turn queue.
  - Northbound Allen Road configured with one shared through/right-turn lane (right-turn accesses the Child Care Center/Music Building parking lot).
    - CATA buses block northbound traffic movement at bus stop just before the access to the parking lot.

- Allen Road north of Fischer Road (3-lane section, plus bus pull-out and kiosk)
  - Northbound Allen Road approaching Park Avenue configured with one shared through/left-turn lane (full lane) and one exclusive right-turn lane (pocket lane).
    - Through/left-turn lane ~ 250’ storage length; longest queue of 12 vehicles (~300’) observed during PM peak; queues blocked Fischer Road intersection and blocked vehicle access to the right-turn lane.
    - Right-turn lane = 100’ storage length (60’ taper); longest queue of 8 vehicles (~200’) observed during PM peak with shorter adjacent queue; queues longer than the pocket blocked the through/left-turn lane.
  - Southbound Allen Road approaching Fischer Road configured with one shared through/right-turn lane (full lane).
    - Bus-pull-out and kiosk west of Allen Road, along Southbound side.
    - Southbound Allen Road right turns to Fischer Road did not substantially impede through movements.
    - A right-turn lane is not warranted on southbound Allen Road at Fischer Road.
    - While the right-turn lane would improve vehicular movement, it would also widen the roadway, increasing the pedestrian crossing time and making the intersection more complex. Considering stakeholder comments, adding this turn lane runs counter to many concerns about pedestrian safety and comfort.

- Fischer Road (3-lane section)
  - Eastbound Fischer Road configured with one exclusive left-turn lane (pocket lane) and one exclusive right-turn lane (primary lane).
    - Left-turn lane = 100' striped storage length (60' taper) with center turn lane providing total of 475' of storage.
    - Queues on Fischer Road (PM peak) are due to backups on Allen Road extending back from the signal at Park Ave.
  - Westbound Fischer Road configured with one lane.
  - A traffic signal is not warranted at the intersection.
  - A right-turn lane is not warranted on southbound Allen Road at Fischer Road. While a dedicated right-turn lane would improve vehicular movement, it would also widen the roadway, increasing the pedestrian crossing time and making the intersection more complex. Considering stakeholder comments, adding this turn lane runs counter to many concerns about pedestrian safety and comfort.

Summary of Conceptual Alternatives

Common Physical Improvements for all alternatives

- 15 MPH posted and design speed.
- Minimum 11'-0" lane width, with curb.
- Intersection corner radii designed to accommodate a single-unit truck (SU-30) design vehicle.

- Allen Road north of Fischer Road (3-lane section, plus bus pull-out and kiosk)
  - Remove informational kiosk along SB Allen Road.
  - Eliminate bus pull off adjacent to Ford Building along SB Allen Road.

- Allen Road south of Fischer Road (2-lane section)
  - Eliminate the northernmost crosswalk near Music Building II.
  - Add left-turn lane on SB Allen Road to accommodate traffic entering the Child Care Center/Music Building parking lot.
  - Add concrete traffic island in the median of Allen Road, south of the Child Care Center/Music Building parking lot.

Alternative 1

- Child Care Facility/Music Building parking lot
  - **Physical Characteristics**
    - 42 total parking spaces (38 standard and 4 ADA).
    - North and south parking lot entrances for child care center remain; become one way for all vehicles.
    - Southern entrance widened to accommodate SU-30 design vehicle. However, the movement will be limited to trucks traveling northbound. Traveling southbound and turning into the lot from the left hand turn lane requires an SU-30 design vehicle to encroach on the south bound through lane.
  - **Traffic Analysis Summary**
    - Based on location of the additional parking spaces, McCormick Taylor does not feel that this alternative will alleviate the PM parking issue. McCormick Taylor predicts that the parking issue will still occur because some vehicles will still wait to find a parking space in the current lot. While the additional parking spaces would alleviate the occupancy problem many vehicles will not be able to immediately see the additional parking availability. Additionally these spaces are further away from the

entrance to the child care center which may discourage vehicles from parking in these spaces.

Alternative 2

- Child Care Facility/Music Building parking lot
  - **Physical Characteristics**
    - 38 total parking spaces (34 standard and 4 ADA).
    - North parking lot entrance closed.
    - South entrance widened for two-way traffic. However, this will not accommodate movement exiting lot to north Allen Road for SU-30 design vehicle.
    - 60-degree angled parking spaces, minimum maneuver area is 38 feet.
    - The curbing at the closed northern entrance will need to be mountable to allow for Emergency (Fire) vehicle access.
  - **Traffic Analysis Summary**
    - Reconfiguring the driveway and adding additional parking spaces will benefit the flow of vehicles entering and maneuvering through the lot. Pavement markings would be required to define the path that vehicles would need to travel in order to safely maneuver the driveway.
    - Pedestrian safety in the area of the closed northern entrance is improved.

Alternative 3

- Child Care Facility/Music Building parking lot
  - **Physical Characteristics**
    - 61 total parking spaces (57 standard and 4 ADA), including 32 spaces in the expanded Ford Building lot.
    - North and south parking lot entrances for child care center remain.
    - Traffic circulation is changed to one-way for all vehicles.
    - Southern entrance widened to accommodate SU-30 design vehicle in the northbound direction. A southbound SU-30 turning left into the lot will encroach on the southbound through lane.
  - **Traffic Analysis Summary**
    - The addition/expansion of the Ford Building parking lot will increase parking capacity but will also create additional pedestrian crossings of Allen Road at the intersection of Allen Road/Fischer Road intersection. Parents would likely be hesitant to cross the street with their children due to the high volume traveling through the intersection, particularly during the PM Peak hour period.

Alternative 4

- Child Care Facility/Music Building parking lot
  - **Physical Characteristics**
    - 42 total parking spaces (38 standard and 4 ADA).
    - North parking lot entrance closed.
    - South entrance widened for two way traffic. However, this will not accommodate movement exiting lot to north Allen Road for SU-30 design vehicle.
    - The curbing at the closed northern entrance will need to be mountable to allow for Emergency (Fire) vehicle access.
  - **Traffic Analysis Summary**
    - See Alternative 1.

Alternative 5 (McCormick Taylor Concept)

- Child Care Facility/Music Building parking lot
  - **Physical Characteristics**
    - 54 total parking spaces (50 standard and 4 ADA), including 7 dedicated spots for child care center pick up/drop off.
    - Dedicated pick up/drop off lane added.
    - North and south parking lot entrances for child care center remain.
    - Traffic circulation is changed to one-way for all vehicles.
    - Southern entrance widened to accommodate SU-30 design vehicle in the northbound direction. A southbound SU-30 turning left into the lot will encroach on the southbound through lane.
  - **Traffic Analysis Summary**
    - Reconfiguring the driveway and adding additional parking spaces will benefit vehicle flow on the driveway and parking maneuvers within the lot. The traffic flow for this alternative provides drivers with a defined route to travel throughout the parking lot. This alternative also provides an improved mid-block crossing of Allen Road near Music Building II.

- Allen Road south of Fischer Road (2-lane section)
  - Pedestrian refuge area added to southern Allen Road crossing within the median island.

- Allen Road north of Fischer Road (3-lane section, plus bus pull-out and kiosk)
  - Grass buffer added between sidewalk and travel lane along the east side of Allen Road, between Fischer Road and Park Avenue.

Preferred Conceptual Alternative (Alternative 6)

With Penn State and Stakeholder review of the aforementioned 5 concepts, a preferred conceptual alternative was developed by balancing the project needs with minimizing impacts and cost considerations—resulting in a final menu of potential upgrades. The menu of features incorporated in the Preferred Concept, along with their justifications and implications, is provided as follows:

- Child Care Facility/Music Building parking lot
  - Projected need for 7 dedicated parking spaces for the Child Care Center.
    JUSTIFICATION:
    - 2 to accommodate the queued vehicles observed in the lot.
    - 3 to accommodate the queued vehicles observed on Allen Road.
    - 2 to accommodate enrollment growth – Approximately 30 new trips added in AM and PM peak hour. With 15 entering per 60 minutes (1 every 4 minutes), assuming average pick-up time of 8 minutes, 2 additional spaces are needed.
  - Maintain one-way circulation with exception for emergency vehicles.
    - Enter at Music II end and Exit at Child Care Facility end, opposite Fischer Road.
    - Concrete bump out added at Child Care Center exit to reinforce one-way operation and provide additional sidewalk area for pedestrians at the entrance.

- Allen Road south of Fischer Road (3-lane section)
  - Revise roadway from 2-lane to 3-lane section.
  - Add southbound Allen Road left-turn lane with >100' storage length for vehicles entering the Child Care Center/Music Building parking lot.
    JUSTIFICATION:
    - Provides safer vehicle operations, compared to bypassing in the opposing lane.

- Reduced likelihood of rear-end collisions for vehicles waiting to enter the Child Care Center/Music Building parking lot.
- Provides queuing capacity to handle occasional traffic/parking demand spikes or disruptions in vehicle flow within the lot.
- Provides minor delay benefit (~1 second per vehicle) for Southbound Allen Road through movement.

  CONSIDERATION:
- If adequate parking is provided (and fully utilized) and the Child Care Center enrollment remains below capacity, there may be less of an immediate <u>operational</u> need for the left-turn lane.

- Add pedestrian refuge median island on Allen Road south of the Child Care Center/ Music Building parking lot entrance; eliminate/modify crosswalk and bus stop nearest to the parking lot entrance.

  JUSTIFICATION:
  - Utilizes the shadow area for the left-turn lane as a median refuge to offset the longer crossing distance.
  - Strongly discourages vehicles from entering the opposing lane to bypass vehicle queues and buses stopped on Allen Road.
  - Directs pedestrians away from the parking lot access.

- <u>Allen Road north of Fischer Road (3-lane section)</u>
  - Remove informational kiosk and bus pull-off west of Allen Road near Ford Building.

    JUSTIFICATION:
    - Roadway space is reallocated to better serve vehicular queuing/movement.
    - Unused roadway space is becomes additional greenspace.
    - Less driver distraction for vehicles entering the Campus Area from Park Avenue.

  - Reallocate roadway space to provide a full Northbound Allen Road right-turn lane (250’) allowing vehicles greater queuing length and permitting traffic from Fischer Road to enter either the through/left-turn lane or right turn lane directly.

    JUSTIFICATION:
    - Provides 150’ of additional storage for the right-turn lane.
    - Reduces lane blocking, where queues in one lane impede access to the adjacent turn lane. Modeled blockage was reduced in the PM peak from 42% to 1%.
    - Reduces modeled 95th Percentile vehicle queue lengths on Northbound Allen Road by up to 70 feet per lane during the AM peak, and up to 100 feet per lane during the PM peak.
    - Reduces modeled delay on Fischer Road during the PM peak hour by more than 2 seconds per vehicle (10+ minutes of total delay for ~300 vehicles).

- <u>Fischer Road (3-lane section)</u>
  - Add “Don’t Block the Box” pavement markings (MUTCD, Section 3B.17) at Allen Road/Fischer Road intersection.

    JUSTIFICATION:
    - Reduces the potential for queue blocking of the Fischer Road intersection and the turn lanes on Northbound Allen Road at Park Avenue.
    - Reduces the likelihood that pedestrians will have to cross between vehicles queued within the intersection.

Preferred Conceptual Alternative – Potential Sub-Projects/Phases

The features incorporated in the Preferred Concept were structured into logical and cohesive phases, which may form the framework for future design and construction efforts:

1. **Phase 1** – Improvements along Allen Road south of Fischer Road including the Child Care Center Parking Lot one-way circulation and for the SU-30 truck and the corresponding sidewalk and crossing improvements.

2. **Phase 2** – Improvements along Allen Road north of Fischer Road, including the removal of the existing bus pull-out and kiosk, new curb work, and configuration of the roadway to add traffic queuing and capacity.

3. **Phase 3** – Addition of 7 parking spaces to serve the Child Care Center need for additional pick-up/drop-off and staff.

APPENDIX A

Design Criteria

Allen Road Multimodal Safety Improvement Study

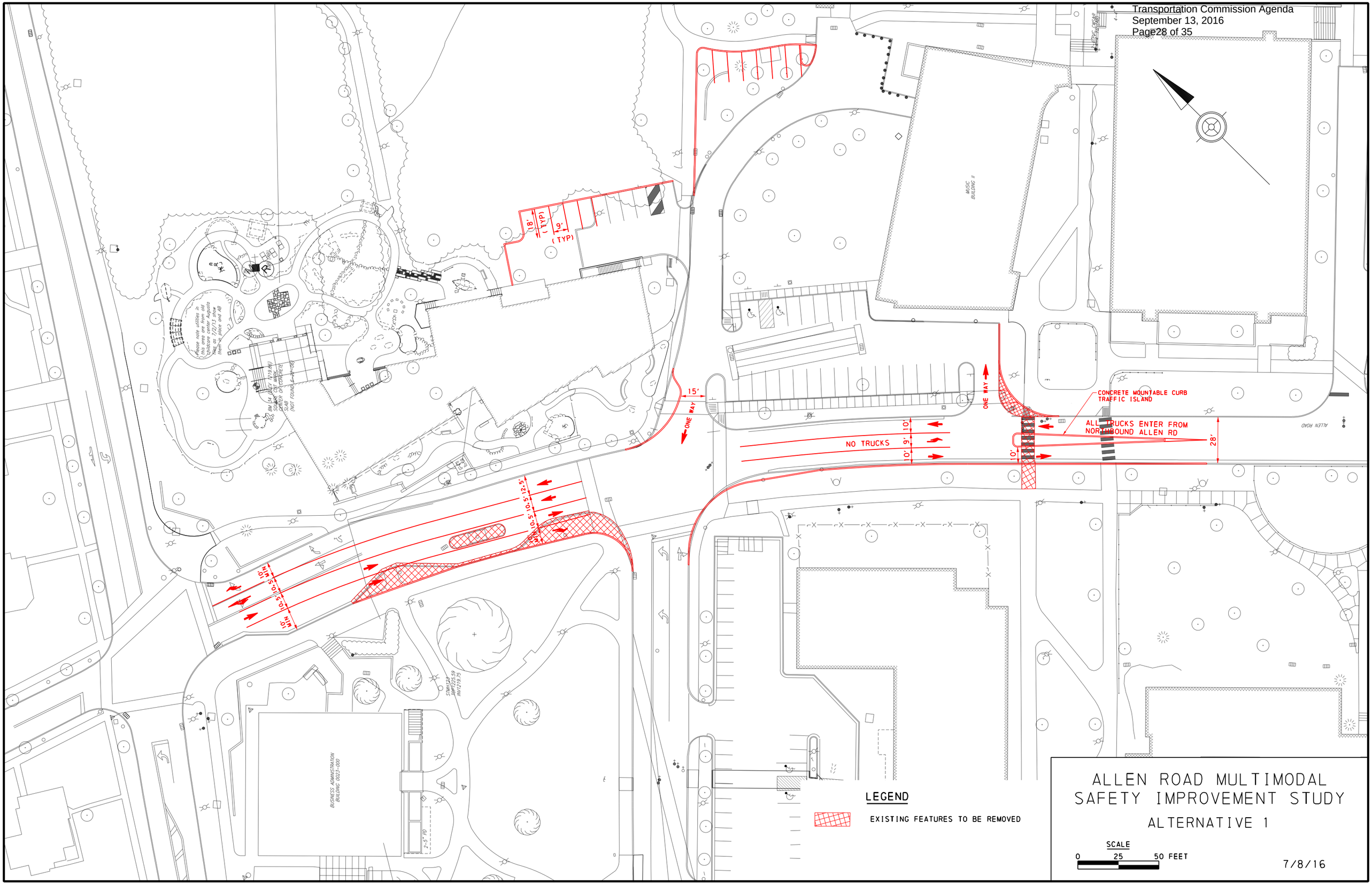
Design Criteria Table

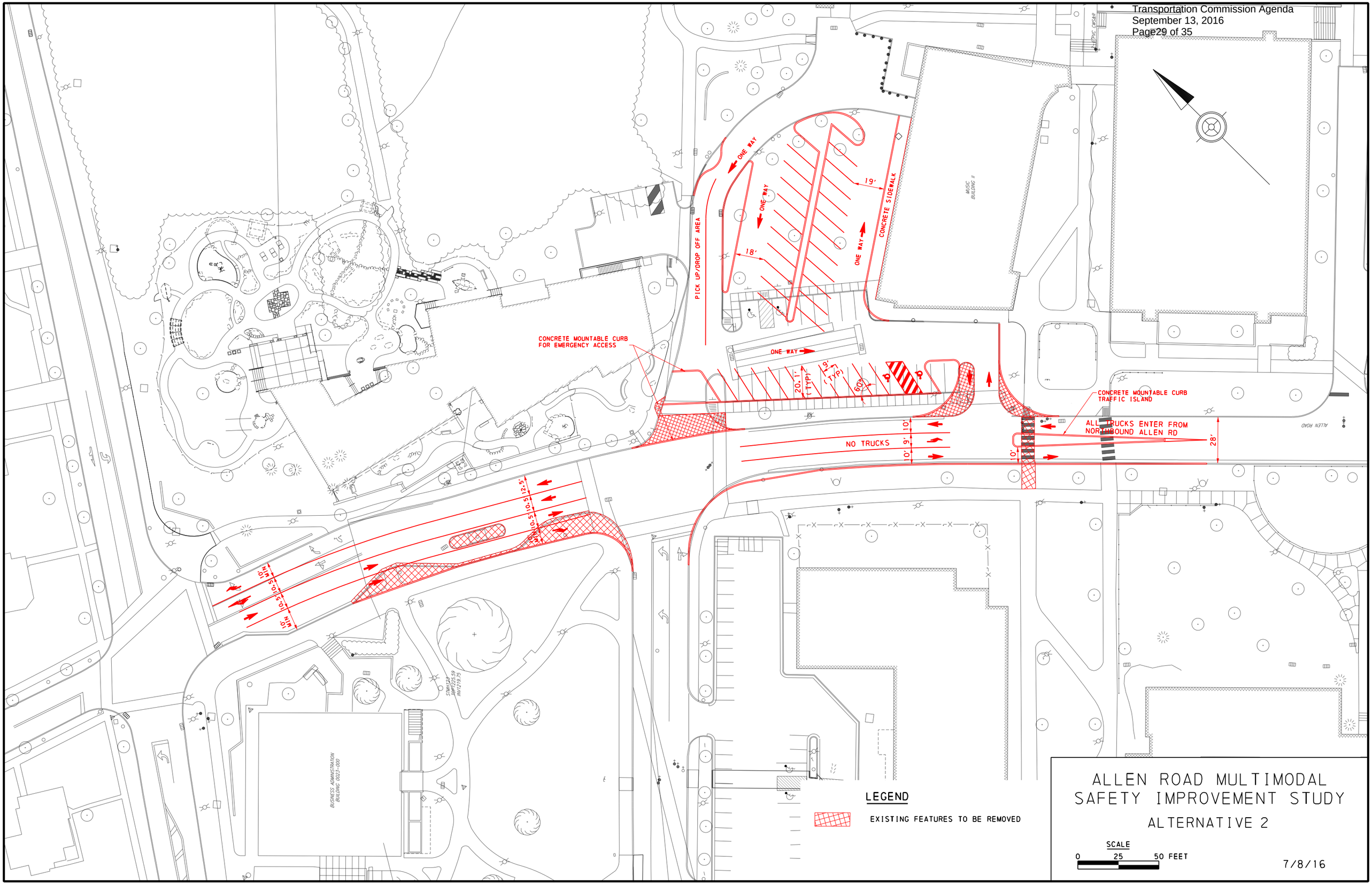
7/8/2016

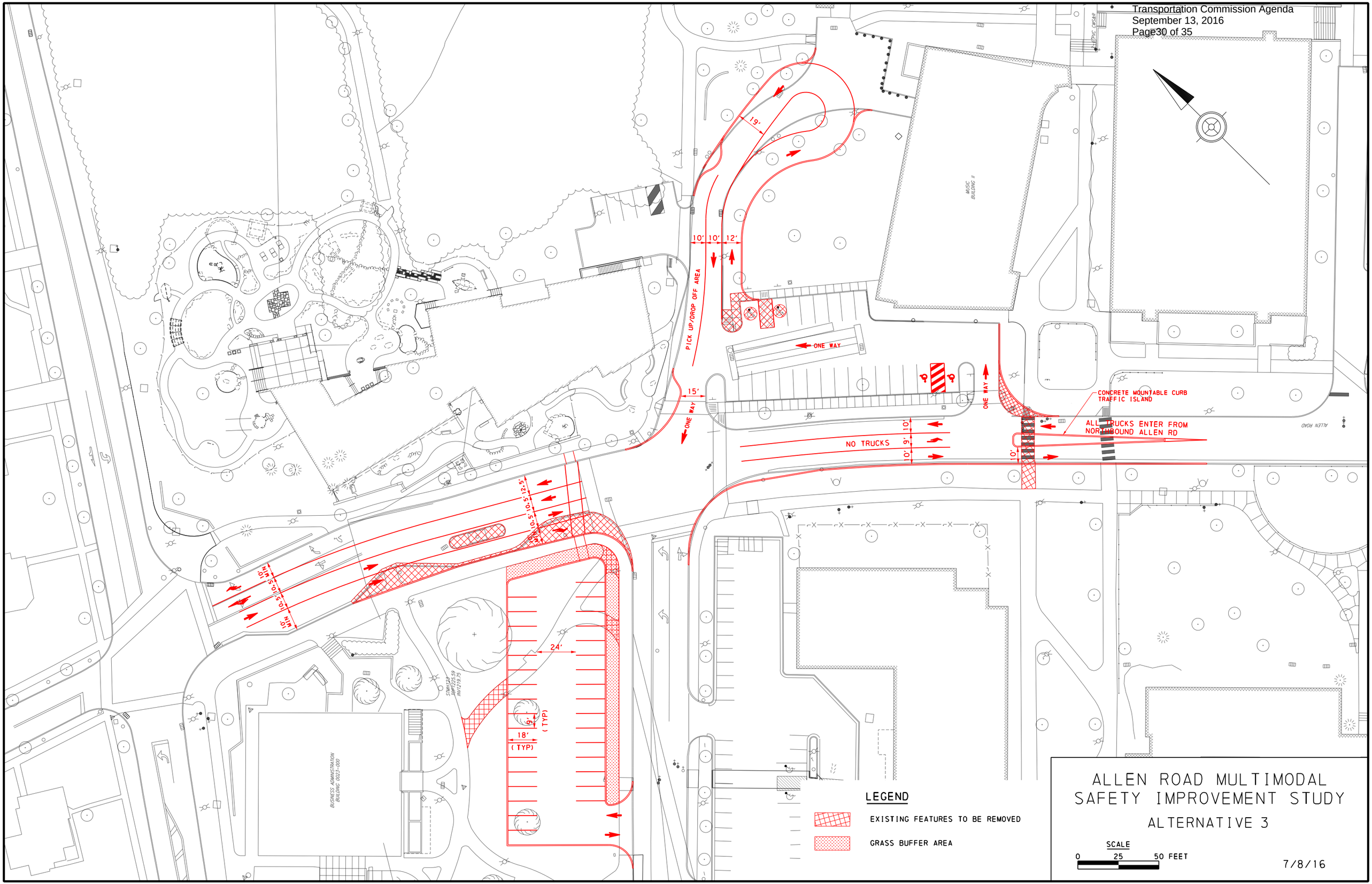
Design Element	***Existing Design Elements***	**Design Criteria from PennDOT Publication 13M, Design Manual 2**	**Proposed Design**
Roadway Typology	*Local Road-Town/Village Center*	*Local Road-Town/Village Center*	*Local Road-Town/Village Center*
Functional Classification	*Local Road-Urban*	*Local Road-Urban*	*Local Road-Urban*
Design Speed	15 mph Posted Speed	20 to 25 mph (DM-2 Table 1.7)	15 mph Posted & Design Speed
Sight Distance (Stopping)	Unknown	20 mph: 115' Minimum 25 mph: 155' Minimum (AASHTO 2004, Exhibit 3-1)	Unknown
Lane Widths	Varies, 14' Maximum to 10' Minimum	9' to 11' Lanes 1' to 2' offset to the curb desirable (DM-2 Table 1.7)	10' Minimum (Including 1' offset) 9' Left Turn Lane
Shoulder Widths	Curbed section, no shoulders	2' to 6' or Curbed (DM-2 Table 1.7)	Curbed section, no shoulders
Parking Lane	None	7' to 8' Parallel (DM-2 Table 1.7)	None
Curb Returns	Fischer Rd: Radius Varies 25' to 50' Parking Lot: Radius Varies 15' to 20'	5' to 25' (DM-2 Table 1.7)	Fischer Rd: Radius Varies 25' to 45' Parking Lot: Radius Varies 30' to 45'
Travel Lanes	Varies, 2 to 3 lanes	2 (DM-2 Table 1.7)	Varies, 2 to 3
Cross-Slopes	SE Varies	6.0% (Maximum) 2.0% (Minimum) (DM-2 Table 1.7)	Match Existing
Horizontal Radius	North of Fischer Rd: R=635.00' South of Fischer Rd: R=1024.00' (Best fit radii)	20 mph: 81' Minimum 25 mph: 144' Minimum (AASHTO 2004, Exhibit 3-26)	North of Fischer Rd: R=635.00' South of Fischer Rd: R=1024.00'
Vertical Grades	Unknown	0.5% (Minimum) 8% - 15% (Maximum) (DM-2 Table 1.7)	Unknown
Clear Sidewalk Width	West Side - 8' East Side - 6.5'	5' (DM-2 Table 1.7)	Varies 6' to 8'
Buffer	Varies, None to 15'	3' to 5' (DM-2 Table 1.7)	Varies, None to 13.5'
Total Sidewalk Width	Varies, 6.5' to 23'	10' to 13' (DM-2 Table 1.7)	Varies, 6.5' to 21.5'

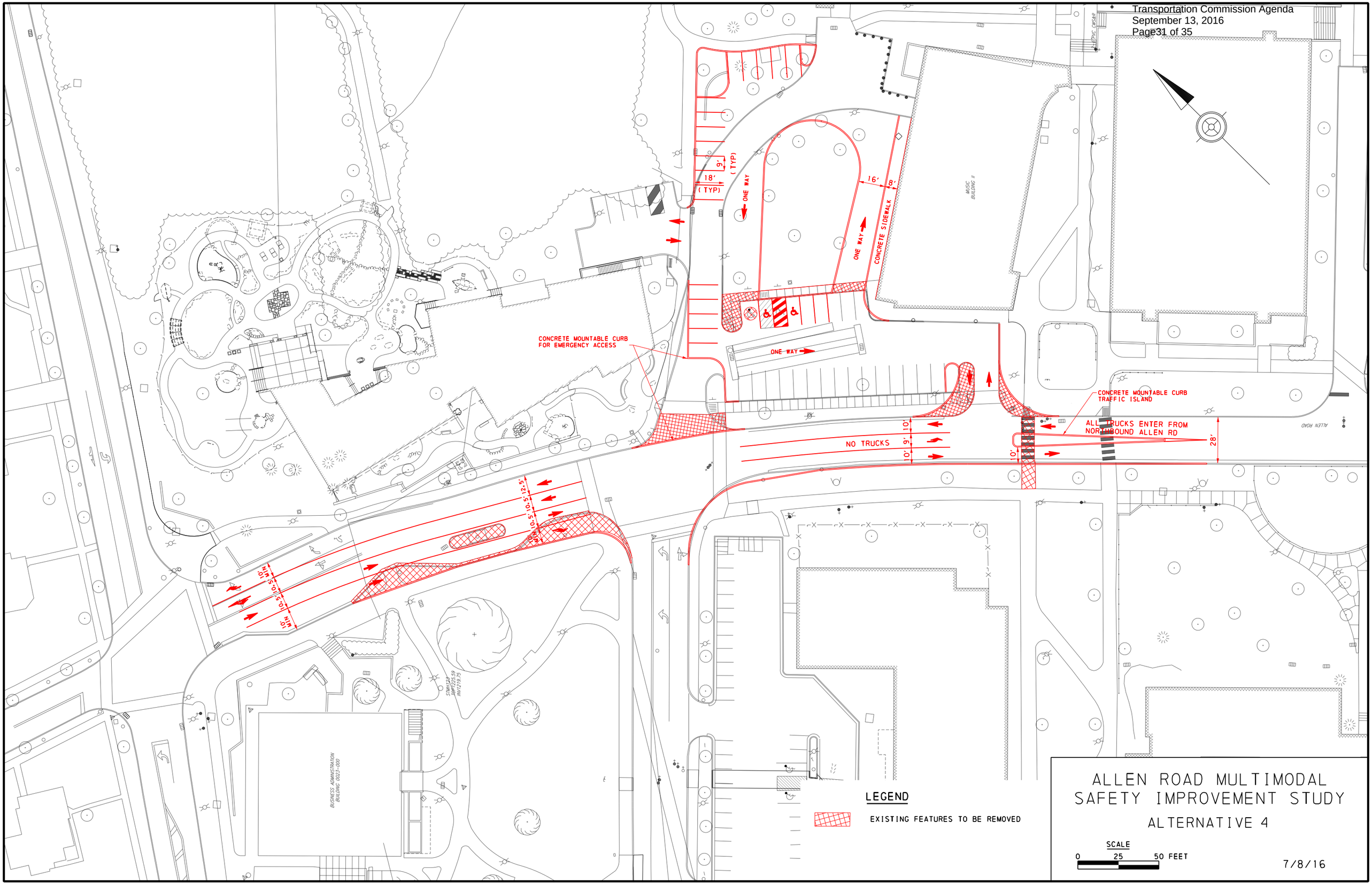
APPENDIX B

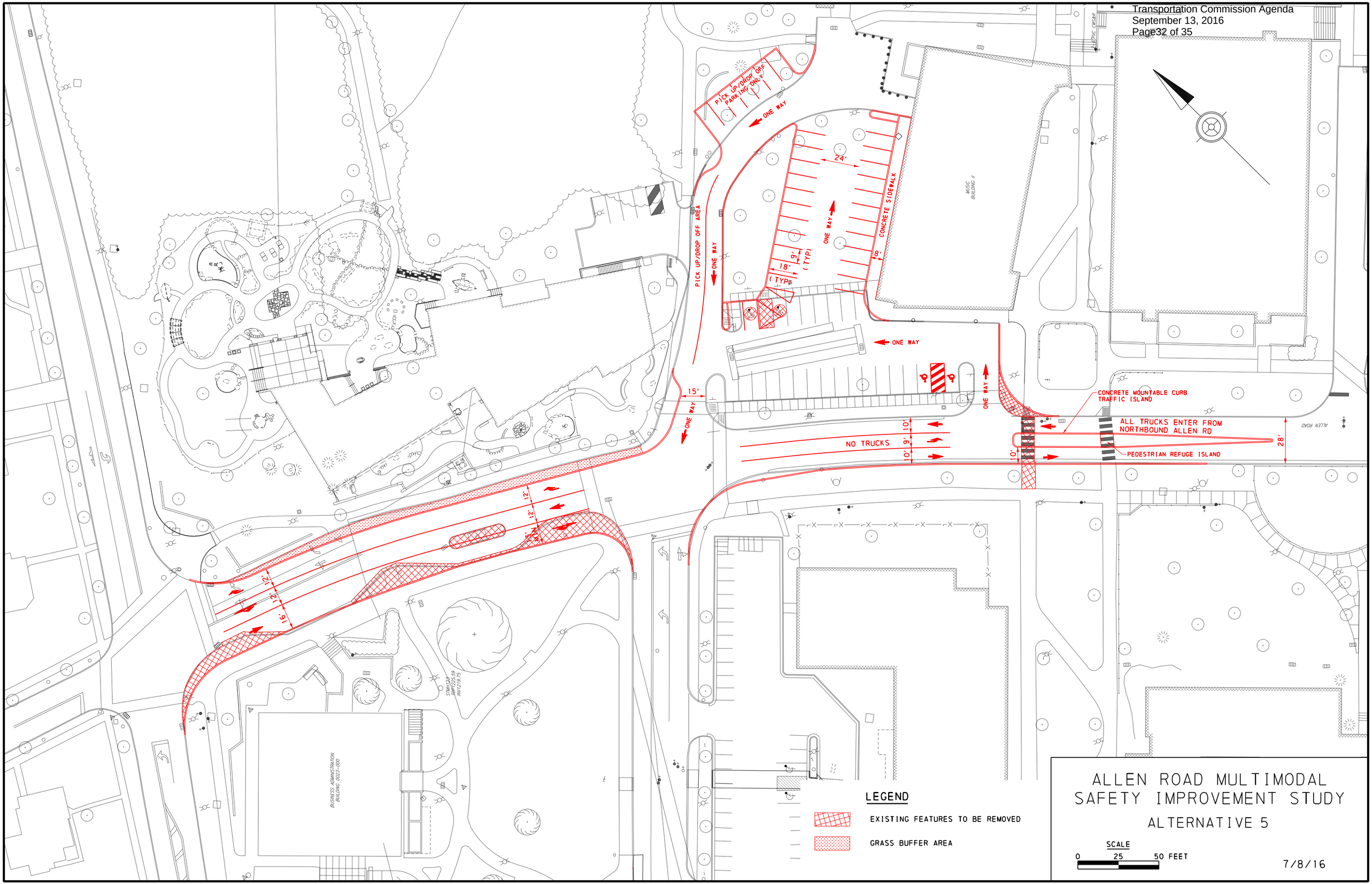
Alternatives


18'
(TYP)
9'
(TYP)
15'
ONE WAY
ONE WAY
NO TRUCKS
10'
9'
10'
10'
28'
CONCRETE MOUNTABLE CURB
TRAFFIC ISLAND
ALL TRUCKS ENTER FROM
NORTHBOUND ALLEN RD
ALLEN ROAD
MUSIC
BUILDING II
12.5'
10.5'
10.5'
12.5'
10'
10.5'
10.5'
10'
BUSINESS ADMINISTRATION
BUILDING 0023-000
2-5" PD
STMH123
INV=1224.59
INV=1219.75
Please note utilities in
this area are from old
Childcare center August
Year 2011 Utilities
then 2012 place and AB
SW 14 (July 1919.86)
SAWCUT CONCRETE
SLAB (NOT FOUND 6-4-08)
LEGEND
EXISTING FEATURES TO BE REMOVED
ALLEN ROAD MULTIMODAL
SAFETY IMPROVEMENT STUDY
ALTERNATIVE 1
SCALE
0
25
50 FEET
7/8/16


ONE WAY
ONE WAY
ONE WAY
ONE WAY
19'
18'
CONCRETE SIDEWALK
PICK UP/DROP OFF AREA
MUSIC BUILDING II
SEPTIC ONSAR
CONCRETE MOUNTABLE CURB FOR EMERGENCY ACCESS
20.1' (TYP)
9' (TYP)
60°
CONCRETE MOUNTABLE CURB TRAFFIC ISLAND
ALL TRUCKS ENTER FROM NORTHBOUND ALLEN RD
28'
10'
NO TRUCKS
10'
9'
10'
12.5'
10.5'
10.5'
10.5'
10.5'
ALLEN ROAD
BUSINESS ADMINISTRATION BUILDING 0023-000
STMH123 INV1225.59 INV1219.75
LEGEND
EXISTING FEATURES TO BE REMOVED
ALLEN ROAD MULTIMODAL SAFETY IMPROVEMENT STUDY
ALTERNATIVE 2
SCALE
0 25 50 FEET
7/8/16


19'
10' 10' 12'
PICK UP/DROP OFF AREA
ONE WAY
15'
ONE WAY
ONE WAY
NO TRUCKS
10' 9' 10'
10'
CONCRETE MOUNTABLE CURB TRAFFIC ISLAND
ALL TRUCKS ENTER FROM NORTHBOUND ALLEN RD
ALLEN ROAD
MUSIC BUILDING II
SEPTIC ONSAR
12.5' 10.5' 10.5' 12.5'
10' 10.5' 10.5' 10'
24'
9' (TYP)
18' (TYP)
STMH 23 INV=225.59 INV=219.75
BUSINESS ADMINISTRATION BUILDING 0023-000
LEGEND
EXISTING FEATURES TO BE REMOVED
GRASS BUFFER AREA
ALLEN ROAD MULTIMODAL SAFETY IMPROVEMENT STUDY
ALTERNATIVE 3
SCALE
0 25 50 FEET
7/8/16


CONCRETE MOUNTABLE CURB
FOR EMERGENCY ACCESS
ONE WAY
18'
(TYP)
9'
(TYP)
ONE WAY
16'
8'
ONE WAY
CONCRETE SIDEWALK
MUSIC
BUILDING II
SEPTIC CINDER
ONE WAY
NO TRUCKS
10'
9'
10'
10'
28'
CONCRETE MOUNTABLE CURB
TRAFFIC ISLAND
ALL TRUCKS ENTER FROM
NORTHBOUND ALLEN RD
ALLEN ROAD
12.5'
10.5'
10.5'
12.5'
10'
10.5'
10.5'
10'
BUSINESS ADMINISTRATION
BUILDING 0023-000
STMH123
INV=1225.59
INV=1219.75
LEGEND
EXISTING FEATURES TO BE REMOVED
ALLEN ROAD MULTIMODAL
SAFETY IMPROVEMENT STUDY
ALTERNATIVE 4
SCALE
0
25
50 FEET
7/8/16


PICK UP/DROP OFF PARKING ONLY
ONE WAY
24'
CONCRETE SIDEWALK
MUSIC BUILDING II
SEPTIC ONSAR
PICK UP/DROP OFF AREA
ONE WAY
9'
(TYP)
18'
(TYP)
8'
ONE WAY
ONE WAY
15'
ONE WAY
ONE WAY
CONCRETE MOUNTABLE CURB TRAFFIC ISLAND
ALL TRUCKS ENTER FROM NORTHBOUND ALLEN RD
PEDESTRIAN REFUGE ISLAND
28'
10'
9'
10'
NO TRUCKS
10'
12'
12'
ONE WAY
12'
12'
16'
ALLEN ROAD
BUSINESS ADMINISTRATION BUILDING 0023-000
STMH123
INV1225.59
INV1220.75
INV1219.75
LEGEND
EXISTING FEATURES TO BE REMOVED
GRASS BUFFER AREA
ALLEN ROAD MULTIMODAL
SAFETY IMPROVEMENT STUDY
ALTERNATIVE 5
SCALE
0
25
50 FEET
7/8/16

PROPOSED DESIGN FEATURES

15 MPH posted and design speed.

Minumum 11'-0" lane width, with curb.

All intersection returns and parking lot entrances accommodate a single-unit truck (SU-30) design vehicle.

Potential to add 7 dedicated parking spaces for the Child Care Center.

North and south parking lot entrances to become one way for all vehicles.

Remove informational kiosk along Allen Road.

Eliminate bus pull off adjacent to Ford Building and bus stop on northbound Allen Road near parking lot entrance.

Eliminate second crosswalk near Music Building II.

Left-turn lane with 123' storage length added for the southern entrance to the Child Care Center/Music Building parking lot.

Storage length increased to 245' for left/through movement at Park Avenue intersection.

Traffic island added for Allen Road, south of the Child Care Center/Music Building parking lot.

Concrete bump out added at Child Care Center entrance into northern parking lot entrance.

EXISTING DESIGN FEATURES

15 MPH posted speed limit.

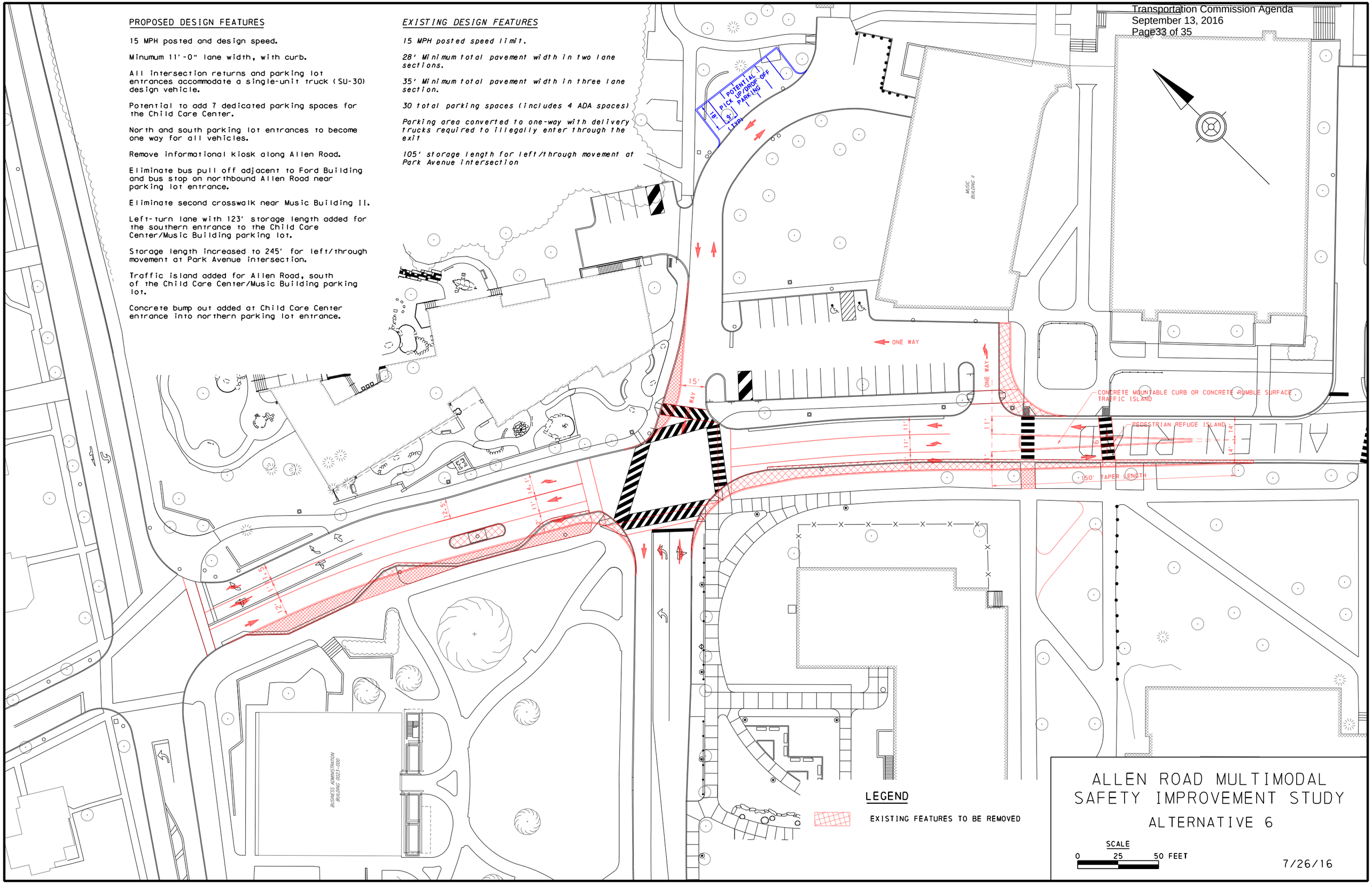
28' Minimum total pavement width in two lane sections.

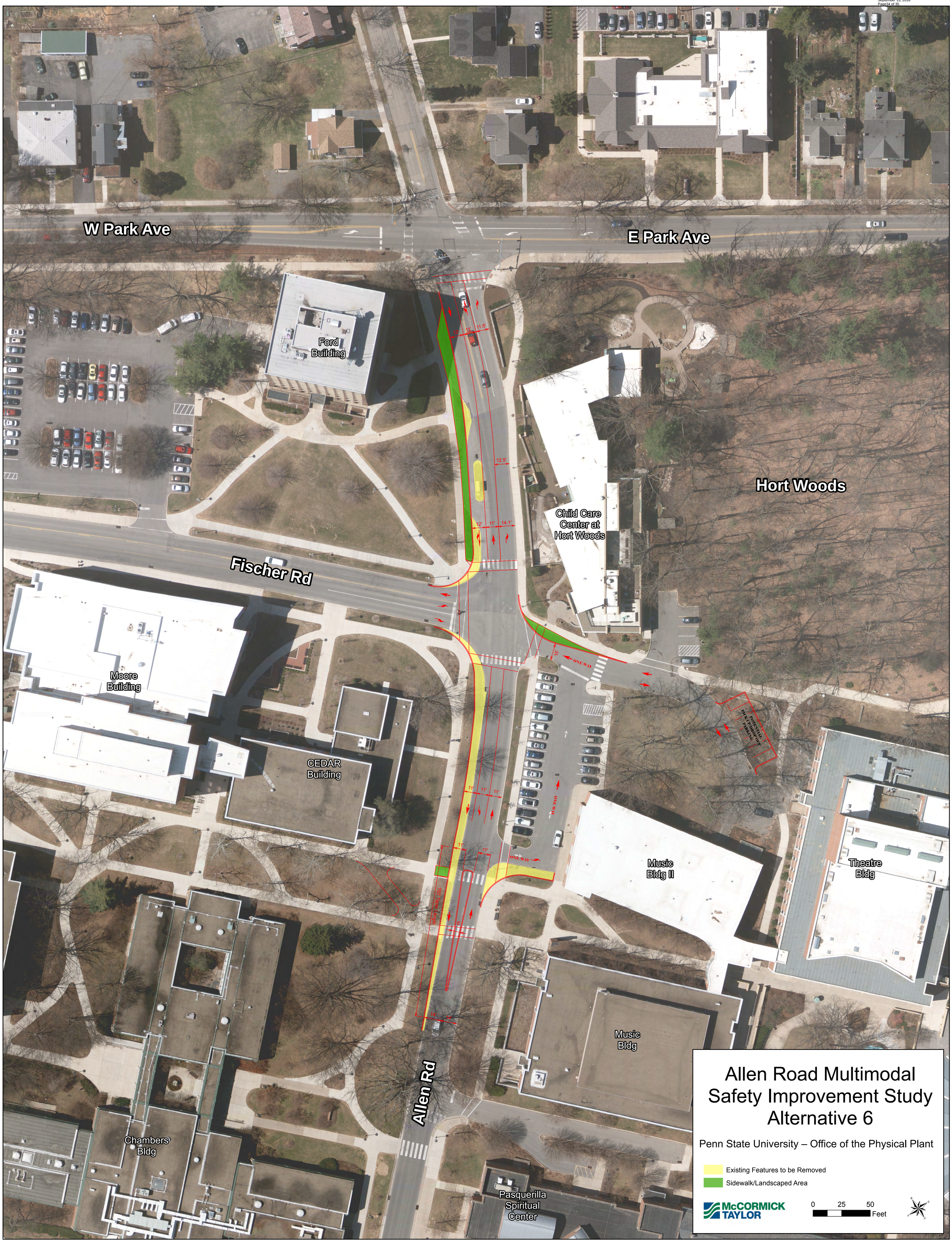
35' Minimum total pavement width in three lane section.

30 total parking spaces (includes 4 ADA spaces)

Parking area converted to one-way with delivery trucks required to illegally enter through the exit

105' storage length for left/through movement at Park Avenue intersection




W Park Ave
E Park Ave
Ford Building
Hort Woods
Child Care Center at Hort Woods
Fischer Rd
Moore Building
CEDAR Building
Music Bldg II
Theatre Bldg
Music Bldg
Allen Rd
Chambers Bldg
Pasquerilla Spiritual Center
ONE WAY
Allen Road Multimodal Safety Improvement Study Alternative 6
Penn State University – Office of the Physical Plant
Existing Features to be Removed
Sidewalk/Landscaped Area
McCORMICK TAYLOR
0 25 50 Feet

W Park Ave
E Park Ave
Ford Building
Hort Woods
Child Care Center at Hort Woods
Fischer Rd
Moore Building
CEDAR Building
Music Bldg II
Theatre Bldg
Music Bldg
Allen Rd
Chambers Bldg
Pasquerilla Spiritual Center
12'
11'
11.5'
12.5'
14.1'
15'
ONE WAY
POTENTIAL PICK UP/DROP OFF PARKING
11'
6'
150' Taper Length
14'
Allen Road Multimodal Safety Improvement Study Alternative 6
Penn State University – Office of the Physical Plant
Travel Lane Pavement
Sidewalk
Potential Landscaped Area
Potential Parking Area
McCORMICK TAYLOR
0
25
50
Feet