

TO: Planning Commission

FROM: Kinsey O'Shea, AICP, Town Planner KS

TITLE: RZN19-0001/ORD 1892-Request to rezone 5.550 acres in the R-5 Transitional Residential and GC General Commercial zoning districts to PR Planned Residential zoning district on North Main Street, Montgomery Street and Broce Drive (Tax Map Nos. 226-20 9-11; 226-A 284-290; 226-A 293; 226-3 1-4) for the development of a mixed use student-oriented multi-family and commercial development by John Neel of Gay and Neel, Inc. (applicant) for Landmark Properties, Inc. (contract purchaser).

DATE: June 14, 2019

On Friday, May 31, 2019, the applicant sent an email to staff requesting that the June 4, 2019 Public Hearing be cancelled and rescheduled for July 2, 2019.

This memo contains the remaining traffic and utility items that were not discussed at the June 4, 2019 work session.

At the May 21, 2019 Planning Commission Work Session, there was discussion regarding several aspects of the revised application, plan, and proffer statement that were submitted on May 3, 2019, and at the time, there were several outstanding items remaining.

Many of the outstanding items from the May 21, 2019 Planning Commission work session were discussed at the June 4, 2019 work session, however revised traffic information was not provided to town staff with enough time to provide analysis prior to the June 4, 2019 work session. Remaining items for discussion from the revised materials submitted as of May 30, 2019 included:

- Traffic and Transportation
- Public Utilities
- Signage

No additional information or materials have been submitted by the applicant since May 30, 2019, with the exception of a right-of-way exhibit prepared by the applicant after discussions between the applicant and the Town staff.

The applicant submitted additional information at 9:30 pm on Tuesday, May 28, 2019:

- Revised traffic analysis ***was not included in the packet prior to the June 4, 2019 work session nor was discussed at the work session***

The applicant submitted additional information at 3:00 pm on Thursday, May 30, 2019:

- Right-of-way exhibit showing impacts to right-of-way for road widening to accommodate turn lanes ***was not included in the packet prior to the June 4, 2019 work session nor was discussed at the work session. This exhibit is not being included in this packet as it has been replaced with the revised exhibit received on June 12, 2019.***
- Location of existing fire hydrants for review by the Fire Code Official to ensure that adequate fire service is provided ***was not included in the packet prior to the June 4, 2019 work session***

nor was discussed at the work session. Additional comments from staff regarding hydrants is provided with this memo

The applicant submitted additional information on Wednesday, June 12, 2019, at 4:30 pm.

- Revised ROW exhibit showing widening of North Main Street to accommodate left turn lanes after coordination with the Town Staff following staff's review of the previous ROW exhibits.

TRAFFIC AND TRANSPORTATION

The applicant submitted the revised traffic analysis on May 30, 2019. The Town staff provided this analysis to a third party traffic engineer for review. The results of this review and analysis are provided as an attachment to this memo. In general, the traffic analysis concludes that a left turn lane is warranted on North Main Street at both Montgomery Street and the entrance to the parking garage. Town staff requested that the applicant provide an exhibit to show how the turn lanes could be accommodated and what improvements including additional right-of-way are necessary. The applicant is not proposing to install the warranted turn lanes. The applicant has indicated that they feel that the installation of turn lanes is not in the best interest of the project or the Town. After preliminary review of the revised exhibit provided on Wednesday June 12, 2019, Town staff believes that the configuration may be more impactful to adjacent properties than may be necessary, and still does not show the configuration of the right-of-way to the specifications requested by the Town. Further analysis of this exhibit will be provided at the June 18, 2019 work session.

The Planning Commission is asked to discuss and recommend whether the application and proffers as proposed adequately address the transportation impacts.

PUBLIC UTILITIES

The applicant provided a diagram showing locations of existing fire hydrants for review by the town's Fire Code Official. Town engineering staff has coordinated with the Fire Code Official and provides the following comments. An exhibit showing required hydrant locations is also attached:

- A fire hydrant must be located within 100' of the FDC
- Because of the traffic and number of lanes on North Main Street, we need to locate hydrants on the building side of N Main St.
- A hydrant should be located near the fire truck access off Broce Drive.
- A hydrant should be located on the backside of the building (middle to NE side of building)

SIGNAGE

No additional signage information has been provided by the applicant to date.

ATTACHMENTS

1. Staff Traffic and transportation memo
2. Revised right-of-way exhibits from the applicant
3. Staff fire hydrant exhibit

MEMORANDUM

TO: Kinsey O'Shea, Development Administrator

FROM: Randy Formica, Director, Engineering and GIS
Joshua Middleton, Town Engineer

DATE: June 12, 2019

SUBJECT: The Standards – Transportation Comments

Additional Review:

The Town solicited the services of Whitman, Requardt & Associates (WRA), a consultant traffic engineering firm, to provide additional comment on the traffic impact analysis. WRA's initial review was conducted in early May and resulted in several recommendations and adjustments to the traffic impact analysis. Upon revision of the analysis, WRA has conducted a subsequent review. The results of this review can be found in the attached memorandum dated June 7, 2019. The memorandum confirms that appropriate changes have been made to the traffic impact analysis to adequately represent the impacts presented by the development, as it is currently proposed.

Mitigation Measures:

The proposed development traffic warrants the inclusion of left turn lanes with storage for northbound North Main Street at both Montgomery Street and the Site Access. Additionally, tapers are warranted at both locations along southbound North Main Street. No turning lanes or other mitigation strategies are currently proposed for this development. This is contrary to the recommendation of both town staff and the consultant engineering firm. Town staff continues to recommend that turn lanes, full storage and tapers be included as part of the development master plan to provide the appropriate mitigation measures warranted by the proposed development traffic. These warranted mitigation measures would work to reduce the development's impact on traffic operations and safety along North Main Street.

Analysis Revisions:

Though mitigation measures have not been included as part of the proposed development, numerous revisions have been made, to the traffic impact analysis by the owner's consultant engineer. These changes have been necessary to best model and represent the impacts of the development as proposed. Adjustments have been made with regard to signal timing, lane utilization data, site entrance configurations and site trip distribution. The latest traffic impact analysis, stamped 5-28-19, incorporates the requested revisions. The following sections of this memorandum outline the impacts of the development as presented in the analysis. Please note that much of the following appears similar to the original transportation comments memorandum, dated April 11, 2019, with new data resultant from the requested revisions.

Overview

As indicated by the traffic impact analysis, the proposed development will add a significant amount of vehicular traffic to the existing road network. The trip generation data indicates the total number of vehicle trips generated by the site to be 4,620 trips per day, with AM Peak Hour volumes of 193 trips and PM Peak Hour volumes of 368 trips. The existing traffic volumes, obtained as part of the analysis, indicate that North Main Street currently operates at approximately 16,000 ADT (average daily traffic) with AM Peak hour volumes of 959 vehicles and PM Peak Hour volumes of 1367

vehicles, as measured adjacent to the proposed new site access entrance. The increases to the existing volumes presented by these figures represent a 20 – 30% increase in traffic volumes. As expected these increases will have varied degree of impact on the road network and intersections that have been summarized in the following sections.

Level of Service / Queuing Analysis

A review of the Level of Service and Queuing Analysis provided in the traffic study indicates that the intersections most impacted by the proposed development are the intersections of North Main Street/Progress Street, North Main Street/Montgomery Street, North Main Street/New Site & YMCA Access, and North Main Street/Patrick Henry Drive. The greatest impacts occur during the PM Peak Hour time frame and are summarized as follows;

➤ North Main Street / Progress Street

The Level of Service at this signalized intersection should remain at LOS B with an increase in delay of approximately 0.7 seconds per vehicle due to the proposed development. This Level of Service meets the requirement of Section 5-307 of the Subdivision Ordinance.

The Queuing Analysis indicates a queuing length increase of 155 to 165 feet for northbound traffic due to the proposed development. This results in projected total queue lengths of approx. 350 – 390 feet and would back-up traffic along North Main Street to the Kabrich Street intersection. There is also an increase to queue lengths of southbound traffic along North Main Street which could create back-ups to the Montgomery Street intersection, particularly during the PM Peak Hour. This is further discussed in the North Main/Montgomery Street intersection due to the potential compounding issue/s it could create.

Lesser queuing increases of 15 to 35 feet are indicated along Progress Street and McDonald Street during the PM Peak Hour. This results in projected total queue lengths of approx. 195 feet along Progress Street, creating backups up to Winston Avenue (NW side) and would approach Virginia Street (NE side). Similar backups would likely occur along McDonald Street.

➤ North Main Street / Montgomery Street

The Level of Service at this un-signalized intersection would change from A/B/C to B/D/C upon development with an increase in delay for all legs of the intersection. The greatest delays are experienced on the stop controlled approaches with a maximum average delay increase of 11.4 seconds per vehicle. This represents a significant (80%) increase in delay; however, it meets the requirements Section 5-307 of the Subdivision Ordinance.

The Queuing Analysis indicates an increase of 70 - 90 feet for northbound traffic and would have the potential to back up traffic along North Main Street. Additionally, there is the potential for southbound traffic along North Main Street to backup and block the Montgomery Street intersection during PM Peak Hour as indicated previously by the North Main and Progress Street impacts. This could further increase the potential queuing of traffic trying to enter Montgomery Street from the northbound lane.

➤ North Main Street / New Site Access

The Level of Service at this un-signalized intersection would change from A/*C to A/B/D upon development with an increase in delay for all existing legs of the intersection. The greatest delays are experienced on the stop controlled approaches from the new proposed site access and the YMCA access. The maximum average delay for the YMCA access would increase by 10.9 seconds and function at LOS D. The requirements of Section 5-307 of the Subdivision

Ordinance only apply to the public street and not the private accesses. As the Level of Service along North Main Street would remain LOS A both northbound and southbound, the requirements of Section 5-307 are met.

The Queuing Analysis indicates an increase of 93 feet for northbound traffic and would have the potential to backup traffic along North Main Street. Additionally, there may be times during the PM Peak Hour when traffic along southbound North Main Street will be blocking the site access, further increasing potential queuing of northbound traffic trying to enter the site.

➤ **North Main Street / Patrick Henry Drive**

The Level of Service at this signalized intersection should remain at LOS C with an overall increase in delay of approximately 1.5 seconds per vehicle due to the proposed development. This Level of Service meets the requirement of Section 5-307 of the Subdivision Ordinance.

The Queuing Analysis indicates a maximum increase of 85 feet for eastbound traffic on Patrick Henry Drive due to the proposed development. Lesser queuing increases of 15 to 20 feet are indicated along most other legs of North Main Street.

Conclusions:

In general, the requested revisions made to the traffic impact analysis have resulted in slight to moderate increases for both delay and queuing lengths. The one exception is with regard to the change made at the site access entrance. Due to the revisions made to the site access entrance design by restricting the left out movement, the site access changed from LOS F to LOS B. This change did, however, have an impact on the Montgomery Street intersection. The delay was further increased due to the reallocation of development traffic that facilitated the LOS improvement at the site access. Nearly all other points of analysis experienced increases as compared to the original analysis, as summarized in the previous transportation comments memorandum dated April 11, 2019.

As summarized above the development will have a significant impact on the road network. Increases to LOS delay as well and queuing will occur on nearly every segment and approach to the adjacent networks with the most significant impacts occurring at the North Main Street / Progress Street signalized intersection and the North Main Street / Montgomery Street un-signalized intersection. The LOS impacts do meet the requirements of Section 5-307 of the Subdivision Ordinance; however, turn lanes are warranted and should be included per Section 5-312, to limit the impacts to traffic operations and safety.



MEMORANDUM

Date: June 7, 2019

To: Joshua Middleton, PE

From: John Holst, PE

Subject: The Standard at Blacksburg TIA Review

CC: Randy Formica, PE

Work Order Number: 45879-000

Contract Number: P.O Number 190673

Project: Traffic Impact Analysis Review

As requested by the Town of Blacksburg, WRA has performed a review of the revised Traffic Impact Analysis report, dated May 28, 2019, for the redevelopment project called The Standard at Blacksburg. This memorandum contains the findings of this review.

SUMMARY OF FINDINGS

The Standard at Blacksburg Traffic Impact Analysis – Revised May 28, 2019

Comments based on the revised TIA report review are as follows:

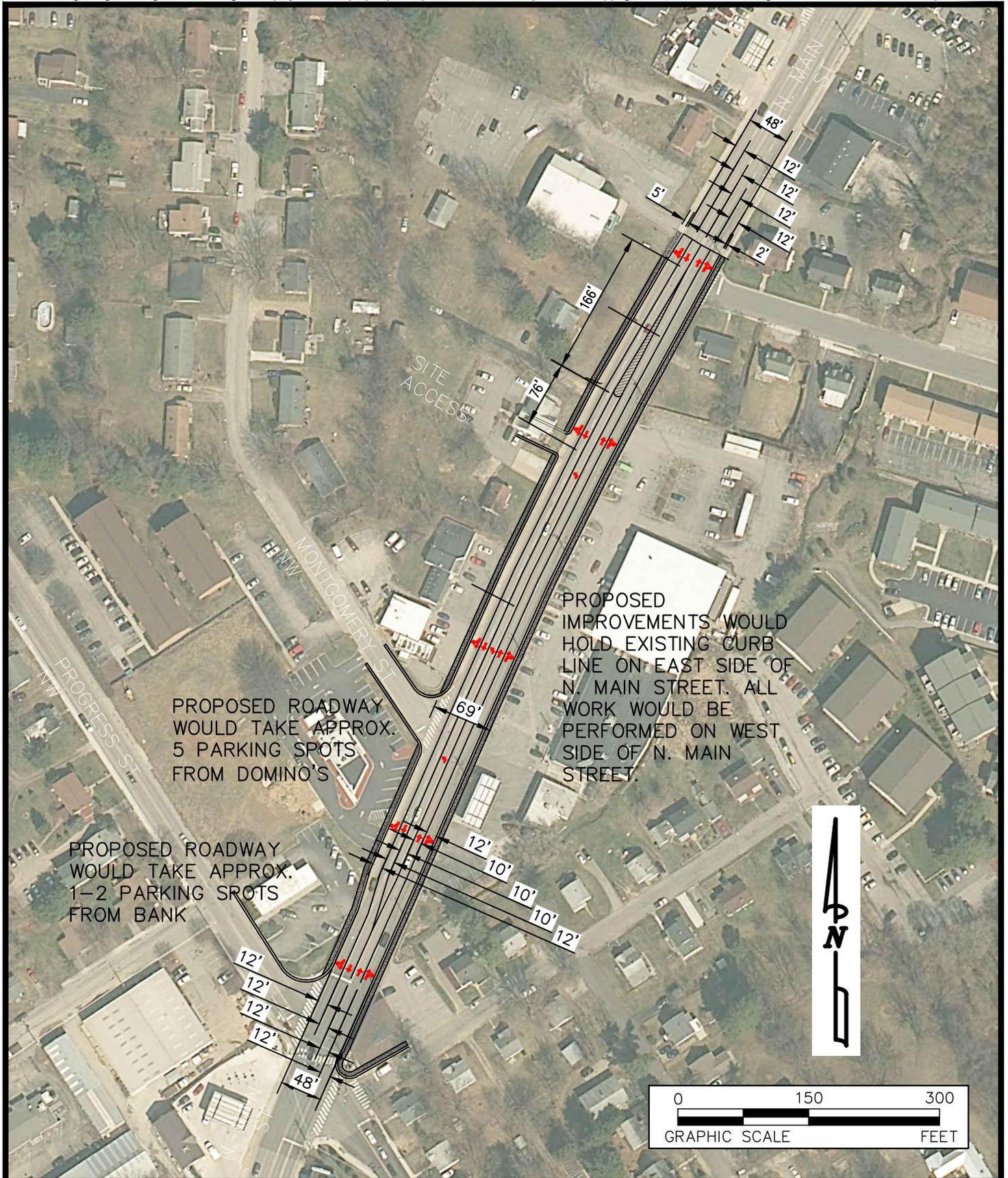
- Previous comments dated May 21, 2019 pertaining to suggested changes to the TIA report appear to have been fully addressed in the revised TIA report.
- Analysis results appear on the conservative side due to not reducing trips for factors such as pass-by, internal capture, or bike/pedestrian modal choices.
- Revised analysis indicates the potential for traffic queues along northbound North Main Street from the Progress Street intersection to block the Kabrich Street intersection during the PM peak hour; however, analysis and simulation results do not indicate that queues would extend to the roundabout at Prices Fork Road during typical daily conditions.
- Projected LOS of individual turning movements/lane groups and intersections are within acceptable ranges according to Town code requirements.
- TIA Appendix D turn lane warrants indicates that full-width left-turn lanes with storage are warranted along northbound North Main Street at both Montgomery Street and the site access, with southbound North Main Street requiring tapers at both locations. No turning lanes or other mitigation strategies are proposed with this project, nor were they analyzed in the TIA.

The addition of significant left-turning traffic along northbound North Main Street at Montgomery Street and at the site entrance will increase the risk for rear-end and lane-change collisions at both locations in the inside shared left-through lane, and will reduce the through capacity of North Main Street in this area. The project should include mitigation measures to reduce the development's impact on operations and safety along North Main Street.

The Standard at Blacksburg Synchro Files

Comments based on a review of these files are as follows:

- Previous comments dated May 21, 2019 appear to have been fully addressed in the Synchro files submitted with the revised TIA report.
- Truck percentages for the McDonald Street approach are shown at 2%, although count data shows 0%. This does not impact analysis results, however.
- Review of SimTraffic simulations confirm Synchro operational analysis results and did not reveal any conditions not documented within the TIA report that may be problematic.



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5 LANE CONCEPT MODIFIED

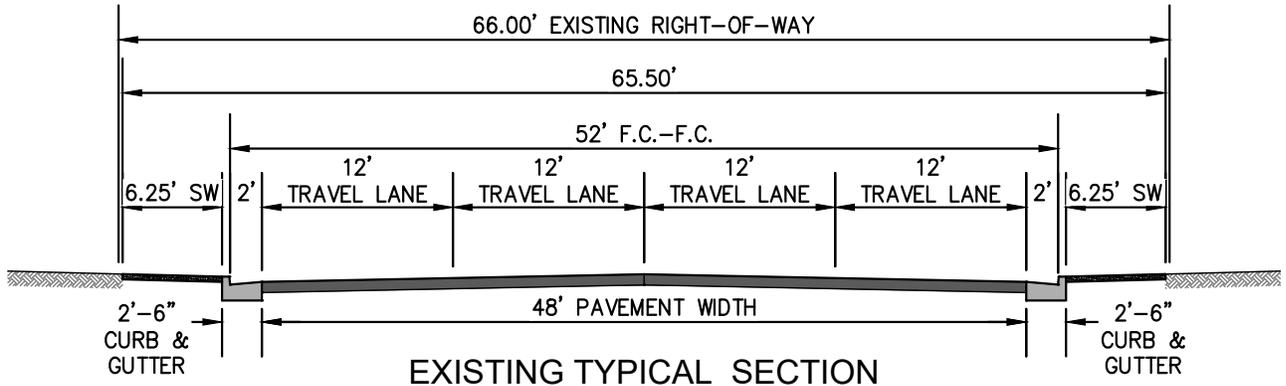
THE STANDARD
SITE DEVELOPMENT PLAN
TOWN OF BLACKSBURG, VIRGINIA

REVISIONS

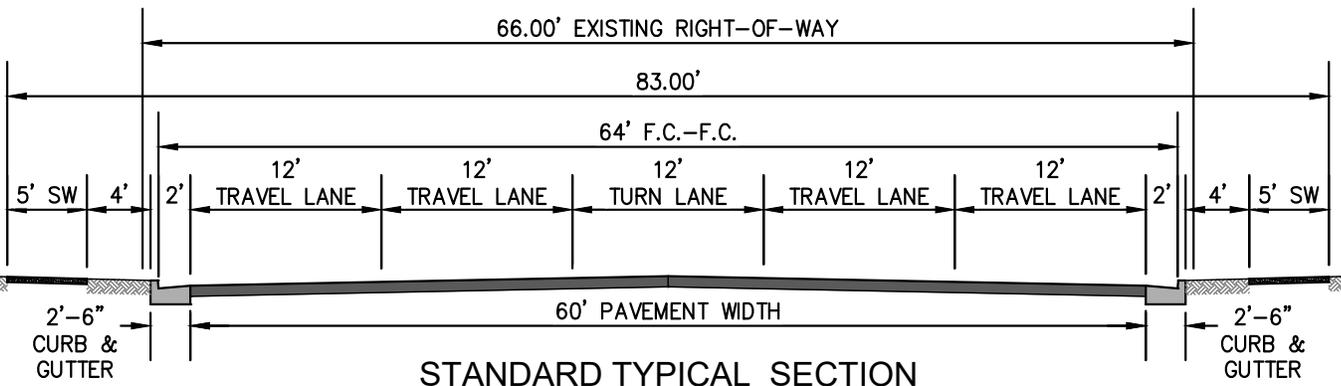
PROJECT TEAM

PIC	JOHN T. NEEL, PE
PM	MATTHEW P. TOMLINSON, PE
DSGN	JWM/MBL

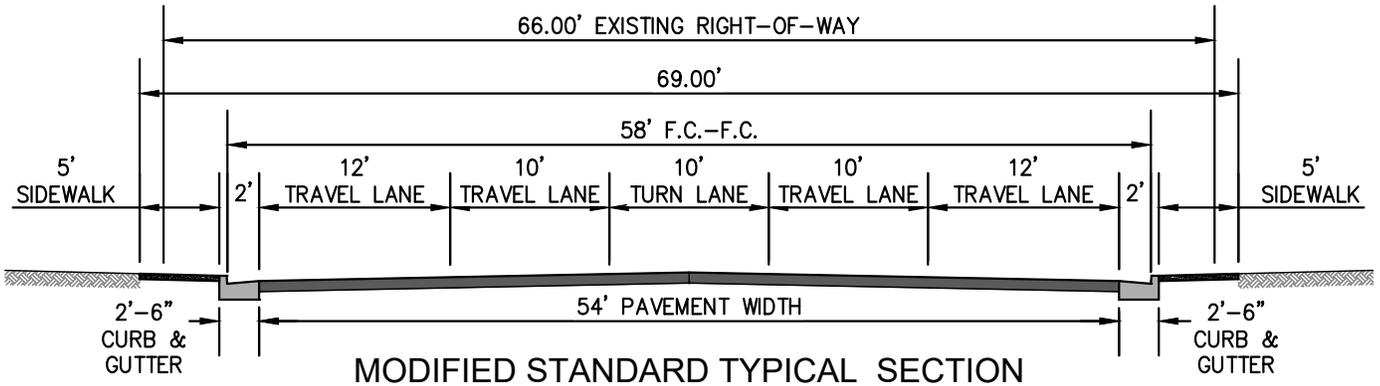
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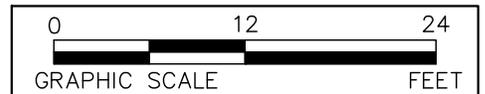
EXISTING TYPICAL SECTION



STANDARD TYPICAL SECTION



MODIFIED STANDARD TYPICAL SECTION



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TYPICAL ROAD CROSS-SECTIONS

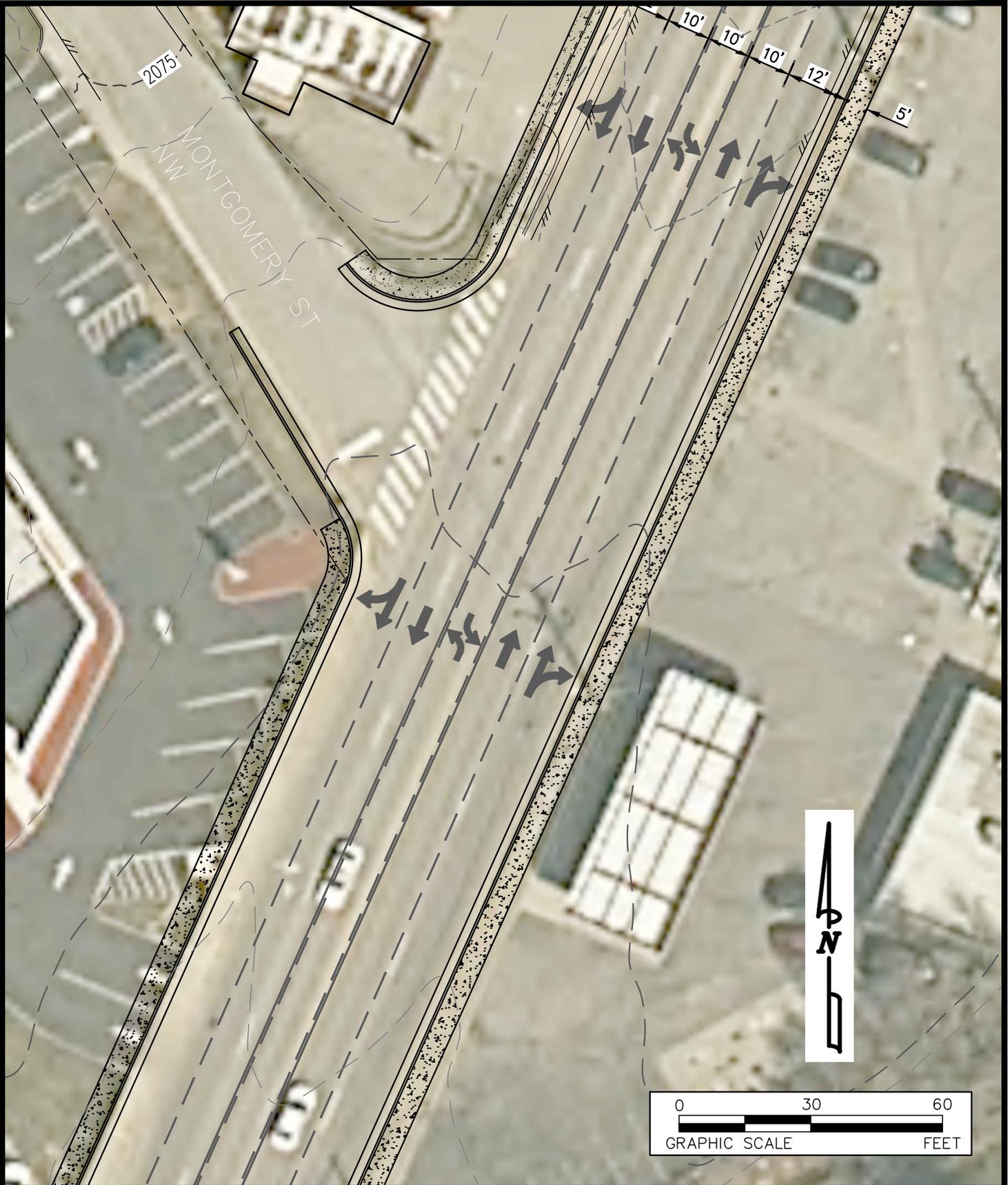
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MONTGOMERY STREET, N.W.
(40' R/W - D.B. 182 PG. 240)

BRUCE DRIVE, N.W.
(40' R/W - D.B. 175 PG. 256)

S.B.L. NORTH MAIN STREET U.S. ROUTE 460 BUSINESS
(66' R/W - HWY. P.B. 6 PG. 169)

RETAIL DELIVERY/TRASH

POOL & POND
1-STY. BRICK DRG.
(11,475 SQ. FT.)

NETH. SHED

GRAVEL PARKING AREA

UNPAVED SURF.
WOOD TRUCK LIFT-
LIFT FROM HUBBARD TRUCK

