

Traffic Engineering Services, Inc.

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August 17, 2001

Mr. Steve Lutz
City of Powell
47 Hall Street
Powell, Ohio 43065-1028

RE: Left Turn Changes - Liberty Street/Grace Drive

Dear Steve:

Please consider this letter as an interim report for the subject project. It is necessary to provide an interim report because data that was going to be collected as part of this project cannot be collected until Seldom Seen Rd. is open between Sawmill Pkwy. and Liberty St. When Seldom Seen Rd. opens, it will provide an alternative for traffic going to Sawmill Rd. that will likely reduce traffic on the north approach. These volumes will impact recommendations for signal timing at the Four Corners signal. Therefore, the interim report will cover items 1,2, and 5 of our proposal for this project. More specific information about turn lane lengths and signal timing will be part of the final report.

It is our understanding that the City of Powell is considering restricting eastbound and westbound left turns at the "Four Corners" intersection. Restricting turns has become feasible with the upgrade and extension of Grace Drive, which provides an alternative for these movements. Long queues can occur on Olentangy Street at almost anytime during the daytime hours. The constraint in this portion of the Olentangy St. corridor is the intersection of Olentangy Street and Liberty Street. There are other factors such as the railroad crossing and on street parking that contribute to the length of these queues as well. The problem at the intersection is that there are no left turn lanes so when a vehicle stops to wait for a gap to turn left, through traffic must wait as well. Therefore, restricting left turns would prevent through traffic from being delayed by turning vehicles. A turn restriction will cause the left turning vehicles to be inconvenienced. However, it is possible that if the queues are shorter as a result of a left turn restriction, left turning vehicles would not incur longer delay driving a farther distance than the delay they already incur by waiting in a long queue to get to the intersection.

A decision has not been made as to whether this restriction will be in effect during specific hours or during all hours of the day. To assist in this decision, a list of the pros and cons for implementing each type of left turn restriction has been provided.

Pros of restricting left turns at the "Four Corners" all the time:

- Ensures smooth flow through the "Four Corners" intersection at all times. This will account for off peak periods when there are short periods of time when traffic volumes are higher. Examples of these include after a train, traffic around the time of zoo opening or closing, and activity in the downtown area on Saturdays.
- Westbound advance signing can display one message clearly, which will make it easier for motorists to understand and make the appropriate maneuver.
- The turn restriction is more engrained in the mind of the drivers because there is no chance to turn left from SR 750 at the "Four Corners". After motorists become accustomed to the restriction, it will have a role in their route selection.

Cons of restricting left turns at the "Four Corners" all the time:

- Causes excess delay to motorists needing to make this maneuver when traffic volumes are lighter.
- Inconvenient for access to businesses near the "Four Corners." The businesses most dependent on traffic flow by their buildings have options and they may actually benefit from improved traffic flow. If there are concerns about how the merchants feel about a potential left turn restriction, it is suggested a working session be held to determine what those concerns are.

Pros of restricting left turns at the "Four Corners" during specified hours:

- Corrects the problems at the worst times so it does not cause excess delay when traffic is lighter.

Cons of restricting left turns at the "Four Corners" during specified hours:

- Can't provide consistent message on advance signing because left turns would be permitted during some hours of the day.
- The City will always be considering adjusting the hours in which the turn restriction is in affect. If changes are made to the hours frequently, it can confuse the motoring public.
- Enforcement is more difficult. Drivers will have more excuses for making the turn and it may be more difficult for officers to discern legitimate mistakes from blatant disregard.
- Because drivers have more excuses, it encourages violations

It is recommended that the turn restriction be in place at all times. It will cause some inconvenience to motorists during the late night and early morning hours but there are other alternatives in the area besides Grace Dr. For instance, a motorist driving through Powell using W. Olentangy St. and N. Liberty St. to get to N. Liberty Rd. could use Sawmill Pkwy. and Seldom Seen Rd. to get to N. Liberty Rd. and not be affected by the left turn restriction.

As part of this project, a sketch of the signage needed to direct motorists to the alternative route was developed. The westbound left turn is especially critical because motorists must be informed of the turn restriction before they get to the "Four Corners" intersection so that they can make the appropriate maneuver. Therefore, providing consistent signage is necessary.

One of the things that would be beneficial is to establish a street sign standard for all of the streets along Olentangy St. and Liberty St. in the City of Powell. This allows motorists to easily identify the streets. In addition, this standard should have similar reflectivity as the street signs that the City of Columbus and Franklin County are currently using. Presently, at the "Four Corners" intersection, the street signs are black with white letters. Others in the area are various types. The sign plan that was developed involves the installation of some street signs. If these street signs were all of a standard type design, it would help motorists identify them easily. A larger version of this sign could be placed on the advanced sign, which has a green background. This scenario is shown on the sketch of the sign plan. Figures 1, 2, and 3 show a sketch of the sign plan. It is estimated that implementing this plan will cost approximately \$7000. This cost does not include the cost of changing the signal timing at the "Four Corners" intersection. Several of the signs are variable length depending on the spacing of the letters in the sign. An estimate of length was used in determining the cost.

Included in the sign plan are "No Turn On Red" signs for the "Four Corners" intersection. These signs were originally recommended when the stop bars were moved back. The signs would help keep the area in front of the stop bars clear. As it is now, vehicles turning right may stop at the stop bar and then move up to see if it is safe to make a right turn on red. This defeats the purpose of moving the stop bars back because there is still a chance for a conflict when a larger vehicle tries to turn at the intersection. Since the left turn restriction requires signs being added to the span, it would be a good time to add the "No Turn on Red" Signs.

At the time the City was considering moving the stop bars back, it was recommended that "Stop Here on Red" signs be added at the stop bars to supplement the pavement markings. Another recommendation that time was to remove the parking stall that is currently in front of the eastbound stop bar. These signs are also shown on the signage plan although they do not directly relate to the left turn restriction. However, they do relate to the operation of the intersection.

Also, included in the sign plan are some guide signs for the southbound to eastbound movement indicating that Grace Dr. goes through to SR 750. Since this current turn restriction study does not include restricting this left turn, signs are optional. The intent

of these signs is to make people aware that they can "by-pass" the "Four Corners", by providing the necessary signing, if they choose to use Grace Dr. When data is collected later, the options for this movement will be addressed in more detail.

To implement the eastbound and westbound turn restriction, it would be beneficial to get this information out to the public prior to the restriction. Maps showing the restricted movements and the corresponding alternatives would be helpful. Perhaps the local papers would be able to publish these maps.

After the staff and City council have had a chance to review and make comments about the signage, we can provide full size sheets and put quantities on them. If you have any questions concerning this interim report, please call me.

Sincerely,

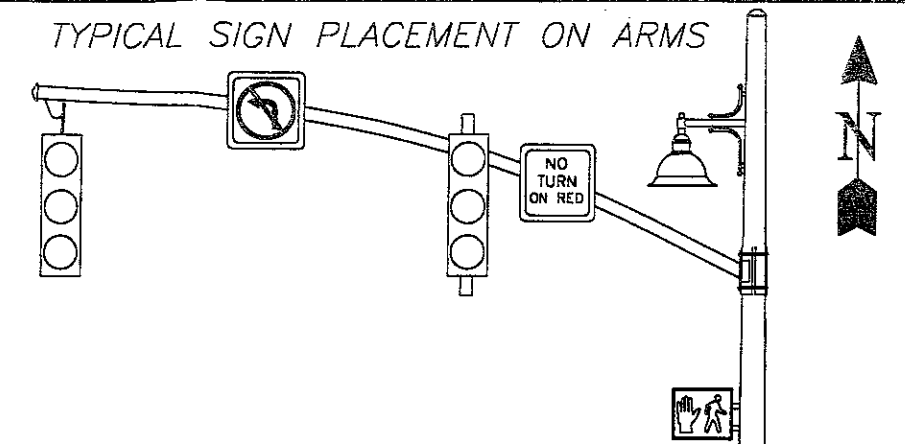
A handwritten signature in black ink, appearing to read "Todd J. Stanhope". The signature is fluid and cursive, with a large initial "T" and "S".

Todd J. Stanhope, P.E.

LEGEND

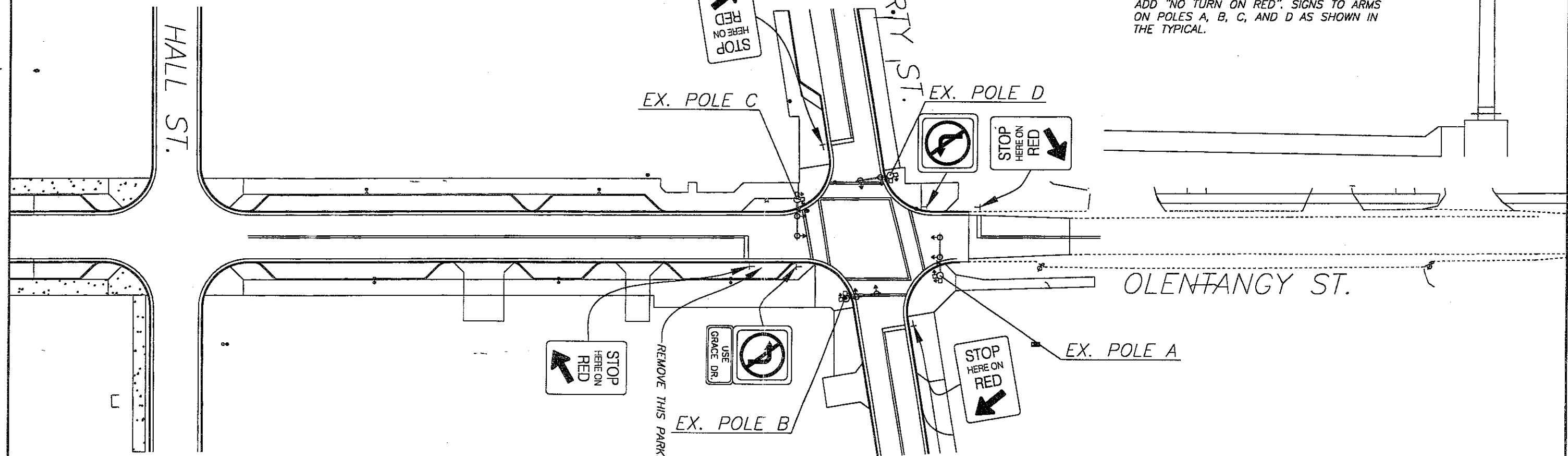


TYPICAL SIGN PLACEMENT ON ARMS



NOTE:
ADD "NO LEFT TURN". SIGNS TO ARMS ON
POLE A AND POLE C AS SHOWN IN THE
TYPICAL.

NOTE:
ADD "NO TURN ON RED". SIGNS TO ARMS
ON POLES A, B, C, AND D AS SHOWN IN
THE TYPICAL.



EX. POLE C

EX. POLE D

EX. POLE A

EX. POLE B

REMOVE THIS PARKING STALL

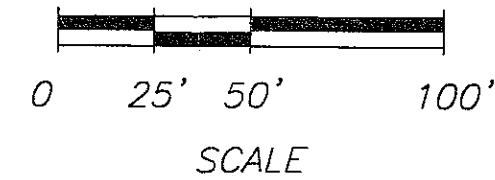


FIGURE 1
"FOUR CORNERS SIGNAGE"
OLENTANGY STREET
LEFT TURN CHANGES
TRAFFIC STUDY

PREPARED BY:
TRAFFIC ENGINEERING SERVICES, INC.

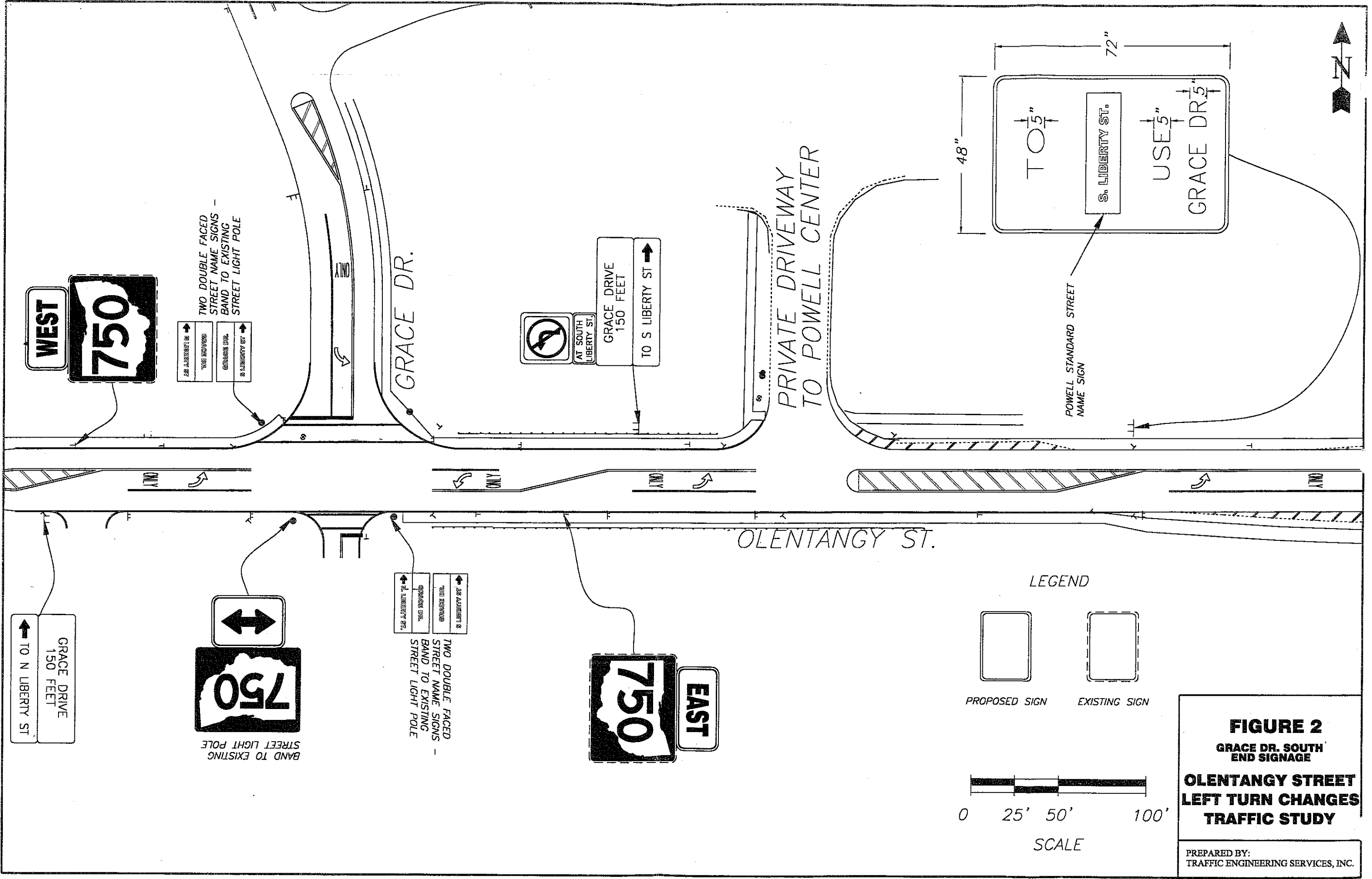


FIGURE 2
GRACE DR. SOUTH
END SIGNAGE
OLENTANGY STREET
LEFT TURN CHANGES
TRAFFIC STUDY
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 TRAFFIC ENGINEERING SERVICES, INC.

LEGEND

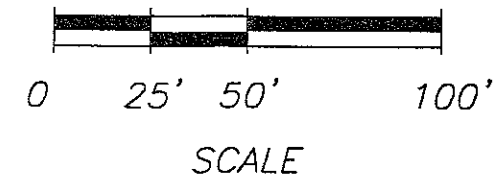
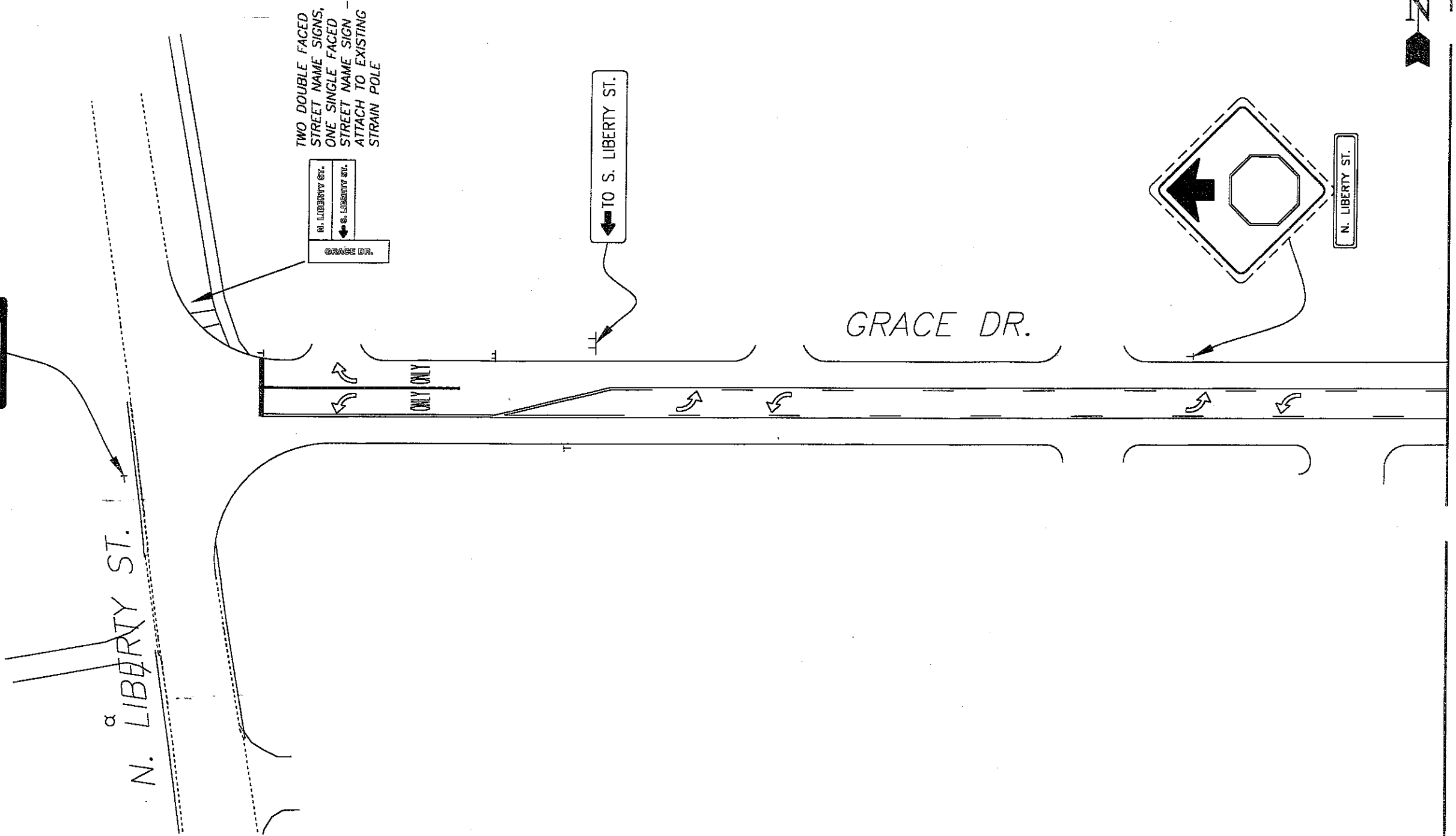
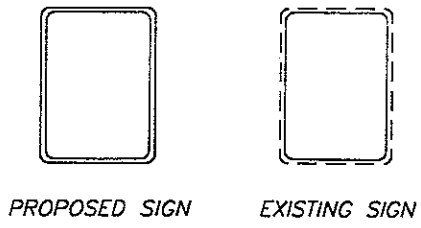


FIGURE 3
GRACE DR. NORTH
END SIGNAGE
**OLENTANGY STREET
LEFT TURN CHANGES
TRAFFIC STUDY**

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