

CAI Project Description:

Black Rock Road (T-768) is an east-west collector roadway in Lower Makefield that connects Edgewood Road and Yardley Morrisville Road to River Road (S.R. 0032). This roadway is travelled by local and commuter traffic. The roadway provides a connection to River Road, which is an alternate route to the I-95/Scudder Falls and Calhoun Street bridges between Pennsylvania and New Jersey. Black Rock Road carries approximately 3,000 to 4,000 vehicles per day and has posted speed limit of 35 m.p.h. The roadway consists of two travel lanes and no sidewalks are provided. The roadway has no shoulder or curbing in most locations. However, curbing is provided in the vicinity of the Canal and an 8 foot shoulder exists along the south side of the roadway between the Canal and Westover Road.

Black Rock Road provides access to the Delaware Canal Towpath between Westover Road and Glen Drive. Parking for the path is provided on both the north and south sides of Black Rock Road between the Canal and a stream that lies just east of the Canal. Westover Road to the west and Glen Drive/Ivy Lane to the east are residential roadways that provide access to residential neighborhoods in the area. Based on the close proximity of these residential neighborhoods and the recreational towpath facility, pedestrian and bicycle activity is generated along Black Rock Road. In addition, Macclesfield Park, a Lower Makefield Township park is just north of the project area and contributes to pedestrian and bicycle generation.

Planning of this project was initiated due to the following conditions:

- Pedestrian/bicycle volumes combined with a lack of pedestrian and bicycle facilities along Black Rock Road.
- Measured 44 m.p.h. 85th percentile speed (the speed at which 85 percent of the vehicles are traveling at or below).
- Horizontal curve and 11% vertical grade along Black Rock Road between the Canal and Westover Road.

As a result of previous planning efforts, Lower Makefield Township investigated the feasibility of providing a separate 8 foot wide multi-use bicycle and pedestrian path along the south side of Black Rock Road from Westover Road to Glen Drive. Several constraints make this option infeasible including the inability to obtain the necessary right-of-way from private property owners, steep grades along the property frontage to the

west of the Canal and the cost of providing a separate pedestrian bridge over the Delaware Canal.

The resulting design includes the following elements:

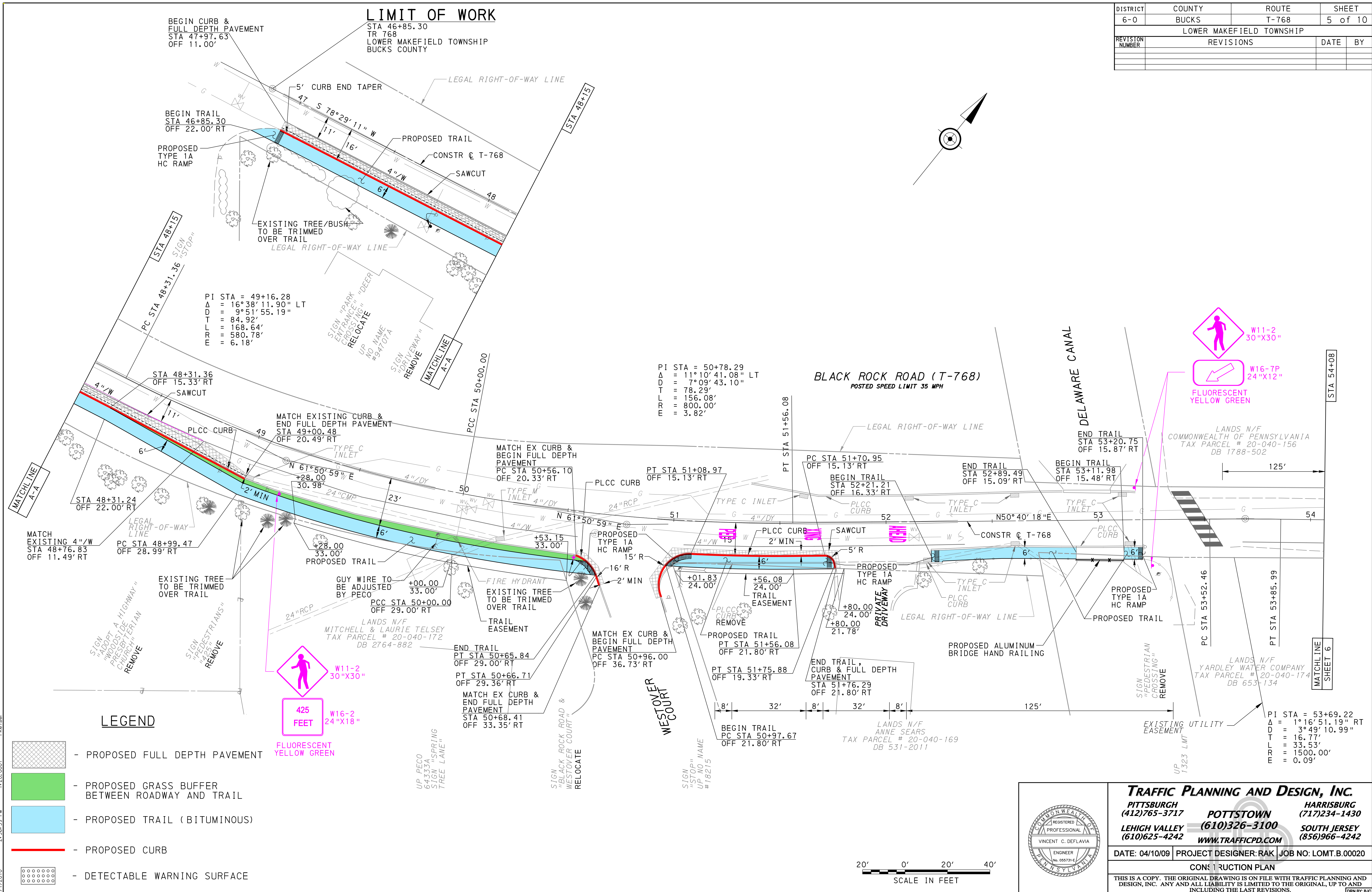
- Construct a six (6) foot bituminous pedestrian trail connection extending from Westover Road in the west to Glen Drive in the east.
- Pipe extension and headwall for stream crossing that is just east of the Canal.
- Replace deteriorated warning signs for the trail crossing.
- Implement advanced warning pavement markings and signage for the trail crossing.
- Align proposed path with the 6 foot sidewalk that was recently constructed over the Delaware Canal. This crossing was made feasibly as a result of the culvert replacement over the Delaware Canal that was completed in the spring of 2009.
- Extend the curbed section of Black Rock Road to Westover Court to provide a grade separation between the travel lane and the path along this section of roadway.
- Incorporate ADA design elements.

Lower Makefield Township has funded and completed the project through the design and environmental clearance phases

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|--------------------------|-----------|-------|---------|
| DISTRICT | COUNTY | ROUTE | SHEET |
| 6-0 | BUCKS | T-768 | 5 of 10 |
| LOWER MAKEFIELD TOWNSHIP | | | |
| REVISION NUMBER | REVISIONS | DATE | BY |
| | | | |

LIMIT OF WORK

STA 46+85.30
TR 768
LOWER MAKEFIELD TOWNSHIP
BUCKS COUNTY

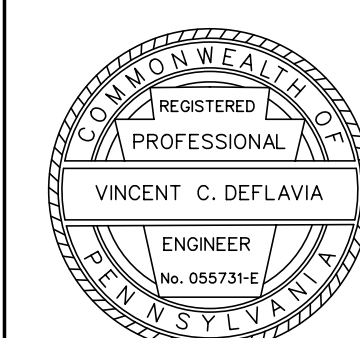


LEGEND

- PROPOSED FULL DEPTH PAVEMENT
- PROPOSED GRASS BUFFER BETWEEN ROADWAY AND TRAIL
- PROPOSED TRAIL (BITUMINOUS)
- PROPOSED CURB
- DETECTABLE WARNING SURFACE

425 FEET
FLUORESCENT YELLOW GREEN
W16-2
24"x18"

W11-2
30"x30"
W16-7P
24"x12"
FLUORESCENT YELLOW GREEN



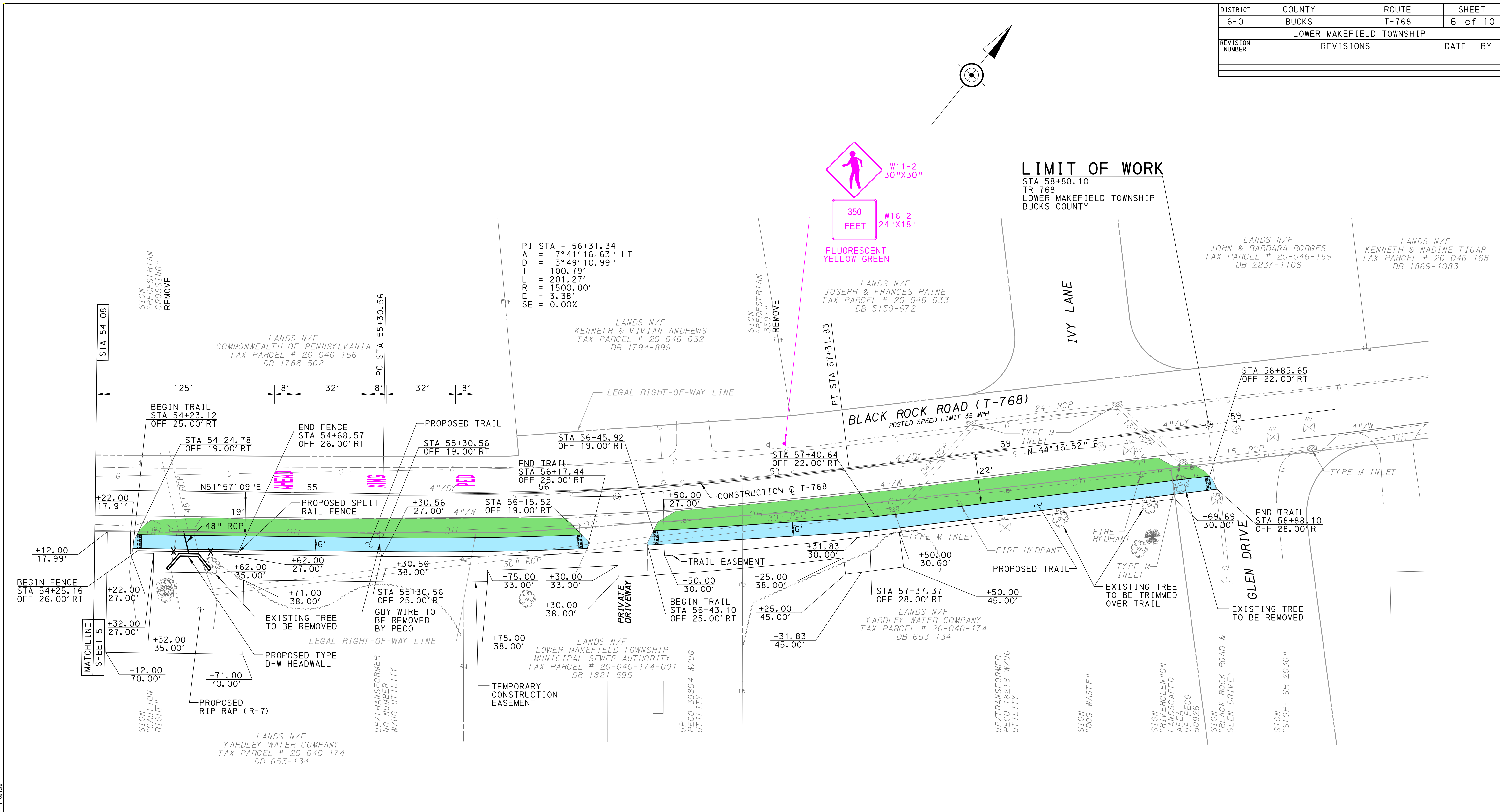
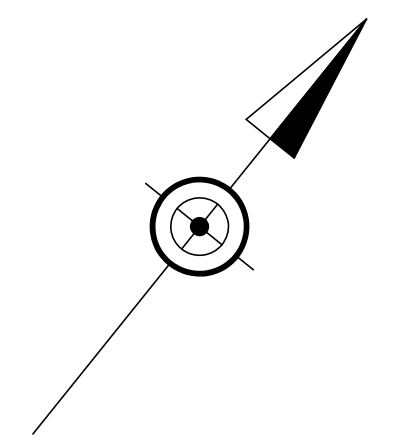
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 SOUTH JERSEY (856)966-4242
 WWW.TRAFFICPD.COM

DATE: 04/10/09 PROJECT DESIGNER: RAK JOB NO: LOMT.B.00020

CONSTRUCTION PLAN
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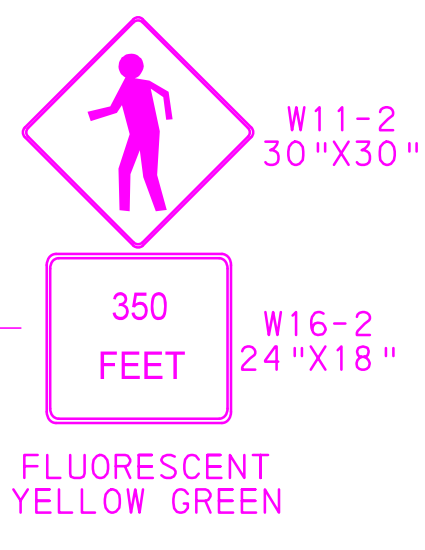
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| DISTRICT | COUNTY | ROUTE | SHEET |
| 6-0 | BUCKS | T-768 | 6 of 10 |
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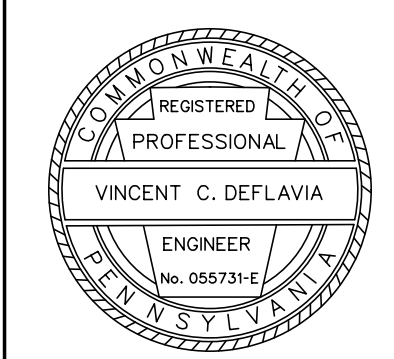
PI STA = 56+31.34
 Δ = 7°41' 16.63" LT
 D = 3°49' 10.99"
 T = 100.79'
 R = 201.27'
 E = 1500.00'
 SE = 3.38'
 E = 0.00%

LIMIT OF WORK
 STA 58+88.10
 TR 768
 LOWER MAKEFIELD TOWNSHIP
 BUCKS COUNTY



LEGEND

- PROPOSED GRASS BUFFER BETWEEN ROADWAY AND TRAIL
- PROPOSED TRAIL (BITUMINOUS)
- DETECTABLE WARNING SURFACE



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