

Level 2 Categorical Exclusion Reevaluation

SR0078 Section LBR

I-78 Lenhartsville Bridge Replacement Project

Greenwich Township, Berks County

October 2022

Prepared by:
District 5-0
1002 Hamilton Street
Allentown, PA 18101



LEVEL 2 CATEGORICAL EXCLUSION REEVALUATION
for the
SR 0078 SECTION LBR BERKS COUNTY
INTERSTATE 78 LENHARTSVILLE BRIDGE REPLACEMENT PROJECT

MPMS #97274

Prepared by:
US Department of Transportation
Federal Highway Administration
and
Pennsylvania Department of Transportation
Engineering District 5-0

Pursuant to 42 U.S.C. 4332(2)(c) and, as applicable:
Executive Order 11990, Protection of Wetlands; Executive Order 11988, Floodplain Management;
Executive Order 12898, Environmental Justice; and 49 U.S.C. Section 303(c), Section 4(f)

Level 2 CE Reevaluation Approval

As supported by the attached Categorical Exclusion Reevaluation, this project qualifies for a Level 2 Categorical Exclusion in accordance with 23 CFR 771.117(d), Item Number 13. Furthermore, the project will not result in any of the four circumstances cited in 23 CFR 771.117(b).

County: Berks **SR/Sec:** 0078/LBR **MPMS:** 97274 **Project:** I-78 Lenhartsville Bridge

Prepared By: Diane Nulton, HDR

Title: Senior Environmental Project Manager **Date:** 10/14/2022

Approved By: JONATHAN P CRUM **Date:** Digitally signed by JONATHAN P CRUM
Date: 2022.10.19 10:49:27 -04'00'

Title:

The following individuals concurred with the statement above.

Environmental Manager: *Drew Ames* **Date:** 10/14/22

Bureau Director: *Christine Norris* **Date:** 10/14/22

HDTs: Eastern Region: Brian Shunk **Date:** Digitally signed by Brian Shunk
Date: 2022.10.17 14:14:29 -04'00' 10/17/22

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ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-Containing Material
ALPP	Agricultural Land Preservation Policy
AOC	Areas of Concern
APE	Area of Potential Effect
ATON	Aids to Navigation
BMPs	Best Management Practices
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CRPs	Cultural Resource Professionals
CWF	Cold Water Fishes
DCNR	Department of Conservation & Natural Resources
DEP	Department of Environmental Protection
E&S	Erosion & Sedimentation
EA	Environmental Assessment
EB	Eastbound
ECMTS	Environmental Commitments & Mitigation Tracking System
EDD	Environmental Due Diligence
ESA	Environmental Site Assessment
ESF	Environmental Stewardship Fund Act
EV	Exceptional Value
FCIR	Farmland Conversion Impact Rating
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
GG2	Growing Greener Bond Fund
H&H	Hydrology and Hydraulics
HOV	High Occupancy Vehicle
HQ	High Quality
HQ-CWF	High Quality-Cold Water Fishes
I-78	Interstate 78

I-80	Interstate 80
I-81	Interstate 81
I-476	Interstate 476
Key 93	Keystone Recreation, Park and Conservation Fund
LWCF	Land and Water Conservation Fund
MBP3	Major Bridge Public Private Partnership
MF	Migratory Fishes
MIT	Massachusetts Institute of Technology
MPMS	Multimodal Project Management System
MPO	Metropolitan Planning Organization
MSATs	Mobile Source Air Toxics
NAC	Noise Abatement Criteria
NAAQS	National Ambient Air Quality Standards
NB	Northbound
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	The National Register of Historic Places
OSHA	Occupational Safety and Health Administration
P3	Public Private Partnership
PA	Pennsylvania
PA DCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PAGWIS	Pennsylvania Groundwater Information System
PASPGP	Pennsylvania State Programmatic General Permit
PCSM	Post Construction Stormwater Management
PEL	Alternative Funding Planning and Environmental Linkages Study
PEM	Palustrine Emergent
PennDOT	Pennsylvania Department of Transportation
PFBC	Pennsylvania Fish and Boat Commission

PFO	Palustrine Forested
PNDI	Pennsylvania Natural Diversity Inventory
PSA	Project Study Area
PSS	Palustrine Scrub Shrub
RFFAs	Reasonably Foreseeable Future Actions
RIRA	Recreational Improvement and Rehabilitation Act
ROW	Right-of-Way
SB	Southbound
SR	State Route
TCE	Temporary Construction Easement
TIP	Transportation Improvement Program
TMC	Traffic Management Center
TNM	Traffic Noise Model
TSF	Trout Stocked Fishes
TYP	Twelve Year Program
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UNT	Unnamed Tributary
VMT	Vehicle Miles Traveled
WB	Westbound
WSE	Water Surface Elevation
WUS	Waters of the United States
WWF	Warm Water Fishes

1.0 INTRODUCTION

This Level 2 Categorical Exclusion (CE) Reevaluation has been prepared to replace the Environmental Assessment (EA) previously made available on May 4, 2022, because PennDOT is no longer going to toll the Interstate 78 (I-78) Lenhartsville Bridge. This CE Reevaluation compares the effects of the Build Alternative without tolling to the No Build (or do nothing) Alternative.

Project History

The I-78 Lenhartsville Bridge, which was originally constructed in 1955, has experienced wear and is approaching the end of its serviceable lifespan. As a result, the Pennsylvania Department of Transportation (PennDOT) in coordination with the Federal Highway Administration (FHWA) prepared a CE in accordance with the National Environmental Policy Act (NEPA). The CE was approved in December 2019, and the project moved into the final design phase.

In fall of 2020, PennDOT began a statewide Planning and Environmental Linkages (PEL) study to identify potential funding options to fill an \$8.1 billion (and growing) funding gap for maintaining and improving the State's highways and bridges. The *Alternative Funding PEL Study* identified near-term and long-term potential funding solutions that could be implemented. Tolling major bridges and using the toll money to cover the costs of rehabilitating or replacing and maintaining the bridge over a period of time was identified as a near-term solution that could be implemented relatively quickly. In February 2021, PennDOT identified nine candidate bridges for tolling, one of which was the I-78 Lenhartsville Bridge project.

Upon identification as a candidate bridge, the effects of tolling the I-78 Lenhartsville Bridge were evaluated, including: effects on low-income persons using the bridges, effects associated with constructing toll equipment, and effects associated with people choosing to divert onto local roadways to avoid paying the toll. A low-income program was adopted to off-set effects on low-income persons and improvements along diversion routes were incorporated into the project to off-set the effects on local roadways. Diversion route improvements included:

- Install pedestrian warning signs on Old US 22 approaching Friedens Church.
- Conduct additional studies of traffic conditions at the intersections of SR 143/ Old US 22 following implementation of tolling, and if warranted, appropriate, and negotiated in a maintenance agreement with the municipalities, replace on a permanent basis the temporary incident management signal to be installed by PennDOT at this intersection.
- Conduct additional studies of traffic conditions at the intersections of SR 737/ Old US 22 following implementation of tolling, and if warranted, appropriate, and negotiated in a maintenance agreement with the municipalities, replace on a permanent basis the temporary incident management signal to be installed by PennDOT at this intersection.
- Restrict trucks from using SR 4035 (Fourth Street) in Hamburg Borough as a secondary toll diversion route including advance warning signs on I-78. Evaluate and install other truck restrictions if appropriate based upon follow-up engineering study with Hamburg Borough.
- PennDOT will coordinate winter maintenance on Old US 22 (SR 4026) with Greenwich Township

Supporting documentation for Chapter 1 includes:

- *Alternative Funding: Planning and Environmental Linkages Study* (September 2021)
- *I-78 Lenhartsville Bridge CE1b Evaluation* (Approved December 2019)

An EA comparing the effects of the No Build Alternative and the Build Alternative with bridge tolling was prepared and was made available for official public review and comment on May 4, 2022. A Public Hearing was scheduled to be held on May 19, 2022.

On May 18, 2022, as a result of a lawsuit, the court issued an injunction and all work related to the Major Bridge Public Private Partnership (MBP3) initiative ceased, so the May 19, 2022 public hearing was cancelled. Other litigation resulted in a ruling on the viability of the MBP3 as a Public-Private Transportation Project (P3). Subsequently, Act 84 of 2022 amended the P3 law and revoked PennDOT's ability to implement mandatory tolls such as the proposed bridge tolling under the MBP3, but preserved the contract resulting from the MBP3.

As a result of the lawsuits and the subsequent enactment of Act 84 of 2022, PennDOT is moving the I-78 Lenhartsville Bridge project forward, but without tolling. Since tolling will not be initiated, diversion of traffic onto local roads to avoid the tolls will not occur; therefore, the proposed improvements along the diversion routes will no longer be included in the project.

The PennDOT MBP3 was established to accelerate the replacement or rehabilitation of major bridges. Under MBP3, PennDOT entered into an agreement with a Development Entity to design, build, finance, and maintain (DBFM) a "package" (or group) of PennDOT bridges – including the I-78 Lenhartsville Bridge. PennDOT will repay the amounts financed by the Development Entity through recurring availability payments over 30 years. Act 84 of 2022 authorizes the bridges identified in the MBP3 to be carried out via DBFM by the Development Entity, without mandatory tolling.

Funding to make the availability payments will consist of a blend of federal and state funds that could have been used on other projects. PennDOT will take advantage of additional funding opportunities arising out of the federal Infrastructure Investment Jobs Act ("IIJA"), also known as the Bipartisan Infrastructure Law ("BIL") and potentially supplemented by funds that are currently included in the outer years of the Twelve Year Program (TYP) or by the deferral or elimination of some other (TYP) projects. NOTE: IIJA (BIL) funding was not available at the start of MBP3, but those additional funding sources will provide additional opportunities for PennDOT to pursue the Build Alternative without tolling with less effect to other projects.

This CE Reevaluation documents and compares the effects associated with the No Build Alternative and the Build Alternative without tolling. Effects associated with constructing tolling equipment, improving diversion routes, and paying tolls have been removed from the document.

The comments received during the EA comment period (May 4 to June 3, 2022) have been reviewed and considered. The overwhelming majority of comments received during the EA comment period were related to tolling and diversion of traffic and are no longer applicable to the project since tolling is no longer being implemented. Comments received on the EA relevant to the project without tolling were considered and additional information incorporated into the respective sections within this document as appropriate.

2.0 I-78 LENHARTSVILLE BRIDGE PROJECT OVERVIEW

2.1 Project Bridge

The I-78 Lenhartsville Bridge that crosses over Maiden Creek in Greenwich Township in Berks County was built in 1955 and is located in a rural setting. It also serves as an overpass to SR 143. The bridge carries approximately 50,000 vehicles daily, approximately 35% of which is truck traffic. **Figure 1 – Project Location Map** shows the location of the I-78 Lenhartsville Bridge and the Project Study Area (PSA).

2.2 Project Purpose and Needs

Purpose: The purpose of the project is to provide a safe crossing of I-78 over Maiden Creek and SR 143. The project will improve traffic flow and operations on I-78 at the I-78/SR 143 interchange.

Needs: The SR 143 to eastbound I-78 has practically no acceleration lane, and therefore traffic must come to a stop prior to merging onto eastbound I-78. This creates both potential safety and operating issues on I-78 as vehicles merging onto I-78 from the interchange are traveling at low speeds.

The shoulders on the bridge are too narrow to provide for emergency vehicle access along I-78. Adjacent sections of I-78 will have shoulders wide enough for emergency vehicle access. Narrow shoulders also contribute to the safety issues related to the lack of an eastbound acceleration lane. This is because drivers use shoulders as an area to stop if they are unable to merge with traffic on the mainline.

The bridge requires frequent repairs and maintenance due to deteriorated structural elements. These frequent repairs and maintenance include substructure concrete repairs, bearing replacements, superstructure steel repairs and retrofits, concrete deck repairs and joint replacements. The bridge is 67 years old and is approaching the end of its serviceable lifespan.

2.3 Project Setting and Distinct Project Features

The structure, which carries I-78 over SR 143 and Maiden Creek in Greenwich Township, Berks County, is located in a rural setting. Although the Lenhartsville interchange ramps may not experience heavy traffic, the substandard interchange ramps with extremely tight curvature and the substandard acceleration/deceleration lanes pose potential safety hazards along I-78 considering the heavy average daily traffic of which a significant portion are trucks operating at high speeds. Lane restrictions have the potential to create extremely long traffic delays. The project area to the east of the bridge is forested. To the west is the Lenhartsville interchange and beyond is agricultural land (National Register of Historic Places (NRHP) Listed Property) and to the south is Lenhartsville.

Describe the involvement with utilities with this project:

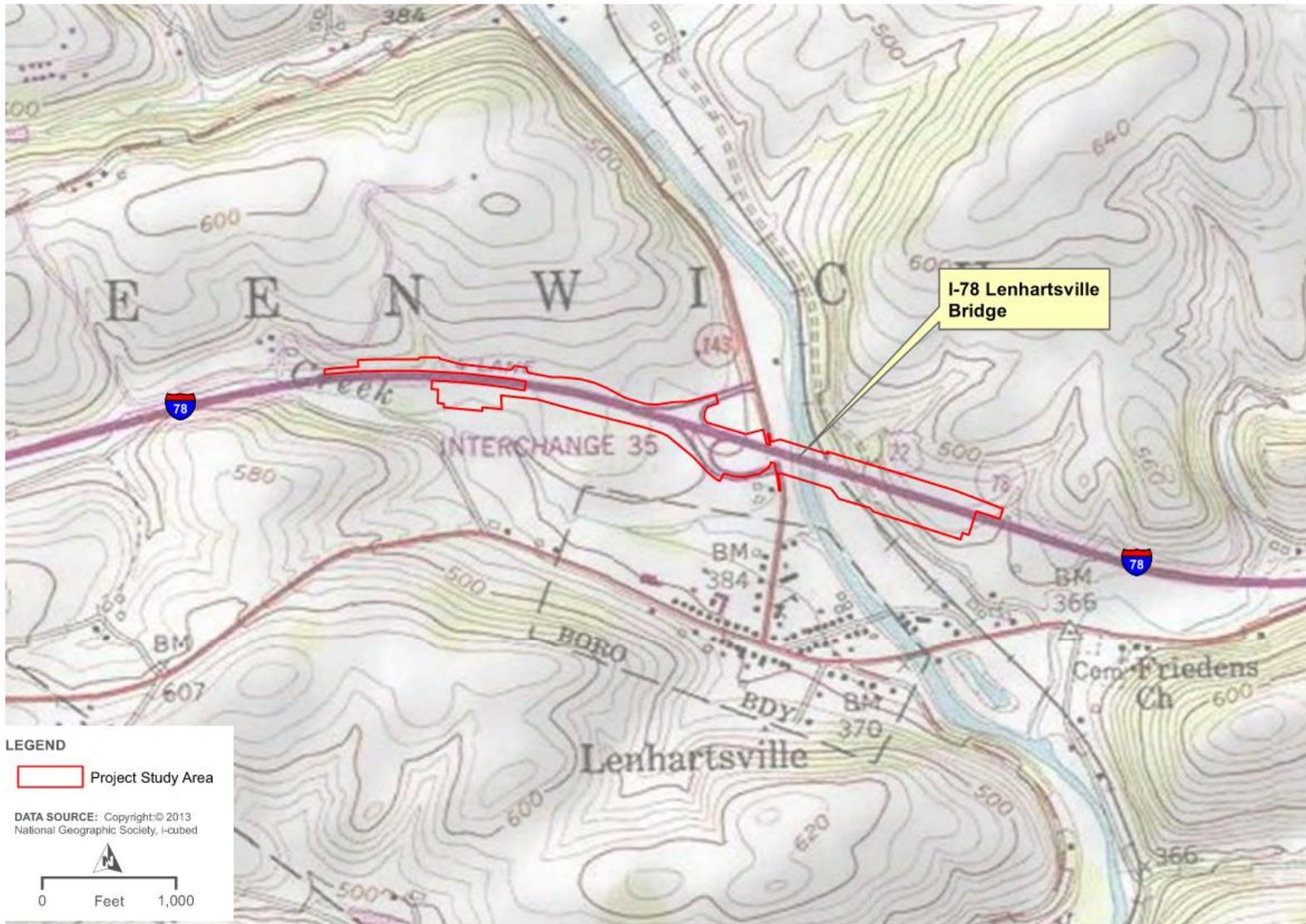
There are overhead utilities in the project area along SR 143 that span under and over I-78 that will be impacted by the project. There are overhead utilities in the project area at the western approach to the structure that cross over I-78. Coordination with utilities is ongoing and will be continued by the development entity/contractor.

Describe the involvement with any railroad (active or inactive) including all rail lines, crossings, bridges, or signals:

I-78 crosses over an apparent abandoned rail line property on the east bank of Maiden Creek.

Describe changes to access control:

There are no changes to access control.



I-78 LENHARTSVILLE BRIDGE REPLACEMENT PROJECT
PROJECT LOCATION MAP



3.0 ALTERNATIVES

3.1 No-Build Alternative

Under the no-build alternative, regular maintenance would be assumed to occur. This alternative would fail to address other project needs such as addressing the inadequate shoulder width for emergency vehicles and the identified bridge deterioration. The I-78 Lenhartsville Bridge is nearing the end of its useful life. The bridge requires frequent maintenance and repairs of substructure concrete, bearings, superstructure steel, and concrete deck and joints. Without replacement, the bridge structure will need more frequent maintenance and repairs. However, such maintenance can only extend the service life of the bridge for so long before it is at risk of failure.

I-78 is a critical east-west interstate in southcentral Pennsylvania, extending 77 miles from I-81 to the New Jersey state line, providing access to New Jersey, the New York City Metropolitan Area and New England to the east and via I-81, to the northern and southern United States. In the project area, the I-78 corridor is a vital link between I-81 to the west and I-476 to the east and is critical for the movement of people and goods through southcentral Pennsylvania and beyond. As a critical link in the regional and national highway network, allowing the deterioration of the I-78 Lenhartsville Bridge to reach a level of failure is not reasonable; therefore, due to the project needs, the no-build alternative would not be a reasonable alternative.

The no-build alternative is presented in this CE Reevaluation as a baseline for comparison purposes only.

3.2 Proposed Action

The project will consist of the replacement of the I-78 Lenhartsville Bridge in Greenwich Township, Berks County, carrying I-78 over SR 143 and Maiden Creek. Additionally, the roadway approaches to the structure will be widened to provide a consistent typical section along the I-78 corridor. The proposed structure will be widened to accommodate acceleration and deceleration lanes for the interchange loop ramps (Ramps B & C) and to provide full inside and outside shoulders. The proposed road profile will match existing at the ends of the project and across the structure. An existing vertical sag curve located just west of the bridge will be lengthened to meet headlight sight distance requirements.

Reconstruction of 1,800 feet of the western approach roadway and approximately, 1,000 feet of the eastern approach roadway is required to accommodate widening of the roadway and the addition of acceleration and deceleration lanes. Additionally, reconstruction of approximately 200 feet of each of the interchange ramps is required to accommodate the widening and addition of acceleration and deceleration lanes.

Staged construction will be utilized to complete the project. It is anticipated that approximately seven stages will be required to facilitate construction while maintaining two travel lanes along I-78 in each direction. The stages will shift the travel lanes away from work areas to allow the contractor to complete the work. Temporary barriers will separate traffic from the work areas. Long-term closures of any I-78 or SR 143 travel lane will be prohibited. However, one 15-minute total stoppage will be permitted every hour during off-peak hours. Single lane closures along I-78 will also be permitted during off-peak hours. Long-term I-78 and SR 143 interchange ramp closures are necessary to complete the interchange reconstruction. Only half of the interchange will be permitted to be closed at one time. It is anticipated the ramp detours will be in place for no longer than two weeks for each detour. No full detour will be needed for the reconstruction of the bridge. Additional information

Supporting documentation for Chapter 3 includes:

- *I-78 Lenhartsville Bridge CE1b Evaluation* (Approved December 2019)

is provided in **Table 1 – Construction Station and Length**, Appendix A – Engineering Information and Appendix B – Preliminary Design Plans.

**Table 1
Construction Station and Length**

Limits of Work (Segment/Offset)		Construction Stations	
Start:	End:	Start:	End:
0344/2188	0360/1482 EB	255+65.00	327+50.00
0345/2214	0361/1458 WB		
Total Length:			
6,985 feet			

For the bridge replacement and roadway improvements, acquisition of Right-of-Way (ROW) will be required for 10 parcels: 8 parcels include both permanent take and a Temporary Construction Easement (TCE), 1 parcel includes a permanent slope easement and a TCE, and 1 parcel includes a combination of permanent take, TCE, and slope easement. Permanent takes will be in the form of strip takes and total 2.956 acres. An additional 0.807 and 0.113 acres will be required for TCEs and slope easements, respectively.

3.3 Impact Summary Table

**Table 2
Impact Summary Table**

Environmental Resource Category	No-Build Alternative¹	Proposed Action	Mitigation for Proposed Action
Aquatic Resources			
Streams, Rivers, & Watercourses	No Impact	Streams: TSF, MF, stocked trout 595 linear feet permanent impact 311 linear feet temporary impact	No in-stream construction will be permitted from February 15 to June 1. 127 linear feet restoration/enhancement
Wild & Scenic Rivers and Streams	Not Present	Not Present	None
Navigable Waterways	No Impact	Maiden Creek - Recreational Navigable Stream Temporary Impacts during construction due to the widening of the existing bridge, placement/removal of piers, and contractor access.	Aids to Navigation (ATON) Plan to be implemented during construction.
Groundwater	No Impact	Residential wells in project area, no impact	None
Wetlands	No Impact	Wetlands: 0.350 acre permanent impact, 0.146 acre requiring mitigation 0.503 acre temporary impact	Details of mitigation for permanent wetland impact will be determined in final design. Mitigation measures will be entered into the Environmental Commitments & Mitigation Tracking System (ECMTS). Orange protective fencing will be placed at limits of work for Wetlands A, B, C, E and F.

Environmental Resource Category	No-Build Alternative ¹	Proposed Action	Mitigation for Proposed Action
			Wetland A, B, and E will require temporary wooden matting during construction.
Floodplains	No Impact	No significant floodplain encroachment would occur.	None
Soil Erosion and Sedimentation	No Impact	Erosion and Sediment (E&S) Control Plan will be implemented during construction.	<ul style="list-style-type: none"> - Best Management Practices (BMPs) will be defined and implemented as a component of the E&S plan and waterway encroachment permit. - The approved E&S Control Plan will be implemented prior to any earth disturbance, during construction. - Installed BMPs will be inspected and maintained throughout the duration of construction. - All areas of earth disturbance will be stabilized immediately following completion of earthwork. - Post Construction Stormwater Management (PCSM) controls will be evaluated in final design and included in the NPDES permit application, if required.
Land Use			
Agricultural Resources	No Impact	Productive Agricultural Land: 1.1 acre permanent impact 0.18 acre temporary impact Prime and Important Farmland Soils	None

Environmental Resource Category	No-Build Alternative¹	Proposed Action	Mitigation for Proposed Action
		2.87 acre direct conversion 0.27 acre indirect conversion	
Vegetation	No Impact	Minor impacts to forested land, maintained lawn, and roadside vegetation	Care will be taken not to transplant roots or seeds of noted invasive, non-native plants during earth moving operations. All disturbed areas will be restored and revegetated with non-invasive vegetation as part of construction.
Geologic Resources	Not Present	Not Present	None
Parks and Recreation Facilities	No Impact	Not Present	None
State Forest and Gamelands	Not Present	Not Present	None
Wilderness, Natural, & Wild Areas	Not Present	Not Present	None
Hazardous or Residual Waste Sites	No Impact	Potential for heavy metals in paint on bridge structure	Special provisions will be included in the construction contract for heavy metals in paint to ensure worker protection and that BMPs be implemented to provide protection to the environment.
Wildlife			
Wildlife Refuges & Critical Habitat	Not Present	Not Present	None

Environmental Resource Category	No-Build Alternative¹	Proposed Action	Mitigation for Proposed Action
			temporary use to the Lenhart Farm, further Section 4(f) coordination will be required.
Air Quality and Noise			
Air Quality	No Impact	Exempt; no impact	None
Noise	No Impact	Type III Project; Noise analysis is not required	None
Socioeconomic Areas			
Regional & Community Growth	No Impact	No Impact	None
Public Facilities & Services	No Impact	Positive Impacts: Access for public facilities and services will be improved due to design improvements resulting from the project. The project will improve access to I-78 for emergency services.	None
Community Cohesion	No Impact	No impact	None
Right-of-Way Acquisitions	No Impact	10 parcels: 8 parcels include both permanent take and a TCE, 1 parcel includes a permanent slope easement and a TCE, and 1 parcel includes a combination of permanent take, TCE, and slope easement	Property acquisitions conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended; Title VI of the Civil Rights Act of 1964; and the Pennsylvania Eminent Domain Code of 1964.

Environmental Resource Category	No-Build Alternative ¹	Proposed Action	Mitigation for Proposed Action
			<ul style="list-style-type: none"> • While no residential relocations are anticipated, any individual or family displaced by the project would be offered the full extent of benefits and payments. • Provisions would be made to ensure that any person with a disability who is displaced is offered replacement housing that meets any special needs. Based on current design plans, no displacements are anticipated
Displacements	No Impact	No relocation of people, businesses, or farms	None
Aesthetics	No Impact	No impact	None
Environmental Justice	No Impact	No disproportionately high and adverse effects on low-income or minority populations have been identified.	None

Footnote:

¹ While the No-Build Alternative would not directly affect resources, should the bridge deteriorate to the point where it would have to be weight-posted, closed, or should it experience a partial collapse, there would be impacts to the resources below the bridge. A full or partial closure would have a profound effect on commerce reliant on I-78 and would detour vehicles onto local roads.

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 Aquatic Resources

	PRESENCE	IMPACTS
STREAMS, RIVERS & WATERCOURSES	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	
Intermittent (streams only)	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Perennial	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Wild trout streams	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Stocked trout streams	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes

Identify all streams and their classifications per Chapter 93 of 25 PA Code (e.g. CWF, WWF, HQ, EV)

Maiden Creek (Channel 1), its unnamed tributaries (Channels 2-4), unnamed tributary to Furnace Creek (Channel 6), and Channels 5 and 7 (only retain channel characteristics in portions of the project area), which were identified within the immediate project area are designated, under PA DEP's Chapter 93 Water Quality Standards, as having water uses protected for Trout Stocked Fishes and Migratory Fishes (TSF, MF).

Linear feet of Streams permanently impacted: 595

Describe Any Permanent Impacts

There will be approximately 595 linear feet of permanent stream impacts due to the widened bridge and construction activities. Channel 1 - 147 linear feet, Channel 2 - 127 linear feet, Channel 4 - 138 linear feet and Channel 6 - 183 linear feet.

Describe Any Temporary Impacts

There will be approximately 311 linear feet of temporary stream impacts due to the widened bridge and construction activities. Channel 1 - 164 linear feet, Channel 4 - 58 linear feet, and Channel 6 - 89 linear feet.

Is mitigation incorporated? No Yes

Project Specific Restoration/Enhancement: 127 linear feet

Mitigation Remarks

There is an in-stream construction timing restriction (meaning work cannot be performed in the stream) from February 15 to June 1 for Channels 1-4. Channel 6 work activities are greater than 0.5 mile upstream from the trout stocked section of Maiden Creek, thus the February 15 to June 1 in-stream timing restriction would not apply to Channel 6.

Stream restoration of Channel 2 will be required due to permanent impacts. The Development Entity Contractor will provide a special provision for streambed substrate and will include the excavation, stockpiling, and handling of streambed substrate (silt, sand, gravel, cobbles, rocks, and boulders) from the existing channel, furnishing of borrow substrate, and placement of the streambed substrate within the bed of the proposed stream channel to achieve the proposed depth and grade. Substrate is excavated from the existing channel and placed in the proposed channel. If

Supporting documentation for Chapter 4.1 includes:

- *I-78 Lenhartsville Bridge Wetland Delineation and Phase II/III Bog Turtle Survey* (September 2018)
- *I-78 Lenhartsville Bridge Wetland and Watercourse Update* (August 2019)
- *Preliminary Aquatic Resource Impacts* (August 2021)
- *I-78 Lenhartsville Bridge Stream Mitigation Plan* (April 2021)
- *I-78 Lenhartsville Bridge Roadway Drainage Report* (February 2021, Revised June 2021)
- *I-78 Lenhartsville Bridge Hydrologic and Hydraulic Report* (February 2022)
- *I-78 Lenhartsville Bridge PCSM Design Memo* (September 2021)
- *I-78 Lenhartsville Bridge Aids-to-Navigation Plan* (April 2019)
- *I-78 Lenhartsville Bridge Aids-to-Navigation Approval* (May 2019)

insufficient substrate is available from the existing channel, the contractor will provide streambed substrate meeting a specified streambed gradation. Borrow substrate must be approved by the engineer.

Remarks

Seven channels and one stormwater management facility were identified within the immediate project area (Channels 1-7 and SWM 1). Channel 1 (main channel), Maiden Creek, is characterized as a perennial stream. Channels 2-4 are unnamed tributaries to Maiden Creek and are characterized as perennial streams. Channel 5 is an ephemeral drainage corridor culverted under I-78 which maintains channel characteristics only upstream of the culvert crossing. Channel 6 is an unnamed tributary to Furnace Creek and is an intermittent stream. Channel 7 is an intermittent drainage corridor culverted under the existing railroad grade and only maintains channel characteristics upstream of the culvert crossing. Stormwater Management Feature 1 is an active stormwater management corridor for I-78.

According to the PFBC, Maiden Creek is designated as a stocked trout stream, therefore, an in-stream construction timing restriction from February 15 to June 1 will apply. Additionally, the unnamed tributaries to Maiden Creek are located within 0.5 mile of the trout stocked section of Maiden Creek, therefore, they are also subject to the time of year restriction.

	PRESENCE	IMPACTS
FEDERAL WILD & SCENIC RIVERS & STREAMS	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

Remarks

There are no federal Wild and Scenic Rivers in the project area according to the National Wild and Scenic River System.

	PRESENCE	IMPACTS
STATE SCENIC RIVERS & STREAMS	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

Remarks

There are no state Wild and Scenic Rivers in the project area according to the DCNR's Scenic Rivers Program.

	PRESENCE	IMPACTS
NAVIGABLE WATERWAYS	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	
Coast Guard Navigable	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
PFBC Water Trail	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Recreational Boating Waterway	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes

Documentation

- PFBC Aids to Navigation Plan
- Coast Guard Coordination

Describe Any Permanent and Temporary Impacts

There will be permanent impacts to Channel 1 (Maiden Creek) due to the widening of the existing bridge and placement/removal of piers. There will be additional temporary impacts due to contractor access. Impacts will not affect the resulting navigability of the stream.

Is mitigation incorporated? No Yes

Describe Mitigation

Implement the approved Aids to Navigation (ATON) Plan to protect recreational boaters during construction.

Remarks

According to the PFBC, Maiden Creek, its unnamed tributaries, and the unnamed tributary to Furnace Creek are not designated water trails, nor are they U.S. Army Corps of Engineers' (USACE) navigable watercourses. However, Maiden Creek is designated as a recreationally navigable stream according to the Keystone Canoeing Guidebook (Gertler, 2004), an ATON plan has been completed and approved by the PFBC.

	PRESENCE	IMPACTS
OTHER SURFACE WATERS	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	
Reservoirs	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Lakes	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Farm ponds	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Detention basins	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Stormwater Management Facilities	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Others (describe in remarks)	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

Describe Any Permanent and Temporary Impacts

Permanent impact will occur to 158 linear feet of SWM 1 due to expanded fill limits.

Is mitigation incorporated? No Yes

Remarks

A stormwater management facility (SWM 1) was identified on the southeastern bridge quadrant and is a stormwater channel determined to be non-jurisdictional per the jurisdictional determination. Impacts to SWM 1 will be authorized under the NPDES permit. The SR 0078, Section LBR Lenhartsville Bridge project will require a NPDES general permit to be filed as a major amendment to the SR 0078, Section 12M NPDES Permit for activities associated with SWM 1.

	PRESENCE	IMPACTS
GROUNDWATER RESOURCES	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	
State, County, Municipal, or Local Public Supply Wells	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Residential Well	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Well Head Protection Area	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Springs, Seeps	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Potable Water Source	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Sole Source and/or Exceptional Value Aquifers	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

Describe Any Permanent and Temporary Impacts

There will be no impacts to any groundwater resources as a result of the project. Permanent and temporary impacts are not anticipated to any residential wells within the project area as there is no excavation proposed within 180 feet of the closest residential well that is located west of SR 0143 and south of Ramp A.

Is mitigation incorporated? No Yes

Remarks

There are no anticipated impacts to groundwater resources as part of project implementation.

	PRESENCE	IMPACTS
WETLANDS	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	
Open Water	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Vegetated		
Emergent	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Scrub Shrub	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Forested	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Exceptional Value	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

Documentation

- Data Forms
- Wetland Identification and Delineation Report
- Conceptual Mitigation Plan
- 404 (b)(1) Alternative Analysis
- Jurisdictional Determination Functional
- Functional Assessment Analysis

Methodology

An on-site wetland and watercourse investigation was conducted using the Routine On-Site Wetland Delineation Method for Small Areas described in the USACE Wetland Delineation Manual, Technical Report Y-87-1 (1987) and the Regional Supplement to the USACE's Wetland Delineation Manual: Eastern Mountains and Piedmont (2012). If present, wetlands identified were classified in accordance with the USFWS' Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979). The Munsell Soil Color chart was used to determine matrix and mottle colors for each soil sample.

Number of Wetlands permanently impacted: 3

Acreage of Wetlands permanently impacted: 0.350 (0.146 requiring mitigation)

Describe Any Permanent Impacts

There will be permanent impacts to Wetlands A, B, and E as a result of the placement of the new piers and cut/fill during construction. Mitigation, however, will not be required for all of the impacted area in Wetland A. A total of 0.312 acres of Wetland A will be underneath the western span of the bridge. Within that area, 0.108 acres will be permanently impacted by two piers and their associated riprap protection. Mitigation will not be required for the acreage of Wetland A that is underneath the span, but not impacted by the piers or the riprap protection. This was determined through coordination with USACE and DEP at the April 22, 2019, May 14, 2019 and July 18, 2019 Pre-Application Meetings (Appendix C). USACE and DEP agreed that the vertical height of the bridge is far enough above Wetland A that the span will not impact the functions and values of the wetland resource. The 0.108 acreage of Wetland A under the piers and surrounding riprap protection will require mitigation consistent with a recent DEP policy revision (March 1, 2022). The total permanent impacts requiring mitigation are 0.146 acres (Wetland A, 0.108 acres, Wetland B - 0.002 acres and Wetland E - 0.036 acres).

Describe Any Temporary Impacts

There will be temporary impacts to Wetlands A, B, C, E and F totaling 0.503 acres, as a result of contractor access

and construction of the new bridge.

Is mitigation incorporated? No Yes

Mitigation Remarks

The details of wetland mitigation will be determined in final design through consultation with Pennsylvania Department of Environmental Protection (PADEP) and USACE, in accordance with current regulations and practices. Possible mitigation for wetland impacts could include debiting credits from an approved wetland mitigation bank or performing wetland mitigation on-site. Mitigation measures will be entered into the Environmental Commitments & Mitigation Tracking System (ECMTS). ECMTS is a computer application for tracking mitigation commitments from inception during preliminary design through construction, to be used by construction inspectors to ensure mitigation measures are completed as intended for protection of environmental resources.

Orange protective fencing will be placed at the limits of work for Wetlands A, B, C, E and F. Wetland A, B, and E will require temporary wooden matting during construction activities to avoid additional permanent impacts to these wetlands.

Remarks

Seven wetlands were identified within the immediate project area; Wetlands A-G. Wetland A is a Palustrine Emergent (PEM) and Palustrine Forested (PFO) system located in the northwest quadrant. Wetland B is a PEM and Palustrine Scrub-Shrub (PSS) system located in the southwest quadrant. Wetland C is a PSS system located within Maiden Creek. Wetland D is a PEM and PSS system located in the southeast quadrant. Wetland E is a PEM, PSS and PFO system located in the southeast quadrant. Wetland F is a PEM system located near the western edge of the project boundary. Wetland G is a PEM system located along the railroad grade. Coordination was conducted with USACE regarding wetland impacts for the project. USACE and DEP determined that the impacted wetlands under the bridge do not require mitigation.

Executive Order 11990 Compliance

Compliance requires the determination that there is no practicable alternative to the proposed construction in wetlands and the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

Options/design modifications were investigated to avoid impacts to wetlands: Yes No N/A

There are no practicable alternatives to construction within the wetlands: Yes No N/A

Alternative chosen (proposed project) includes all practicable measures to minimize harm to wetlands:

Yes No N/A

	PRESENCE	IMPACTS
COASTAL ZONE	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

Remarks

There are no coastal zones in Berks County.

	PRESENCE	IMPACTS
FLOODPLAINS	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

No significant floodplain encroachment would occur.

Describe Any Permanent and Temporary Impacts

There will be no impacts to the floodplains.

Is mitigation incorporated? No Yes

Remarks

The 100-year floodplain of Maiden Creek is present within the project area. There are no anticipated impacts to the 100-year floodplain as part of project implementation.

Based on the Hydrology and Hydraulics (H&H) analysis conducted for the project, the project will have no significant floodplain encroachment, as defined in 23 CFR Part 650, Subpart A, Section 650.105(q), since the project will not: (1) Have a significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route, (2) Have a significant risk, (3) Have a significant adverse impact on natural and beneficial flood plain values. The H&H report is in the project technical files.

SOIL EROSION & SEDIMENTATION

Are there activities that could cause erosion or sedimentation and would require E&S Controls?

Yes No N/A

Documentation

- Coordination w/County Conservation
- District E&S Control Plan
- NPDES Stormwater Construction Permit

Is mitigation incorporated? No Yes

Remarks

Efforts to minimize potential erosion and sedimentation impacts will include following proper construction sequencing and implementing an Erosion and Sedimentation (E&S) Control Plan approved by the PADEP and in accordance with PennDOT criteria.

Mitigation:

- Best Management Practices (BMPs) will be defined and implemented as a component of the erosion and sedimentation plan and waterway encroachment permit.
- The E&S Control Plan will be reviewed by the PADEP and coordination will be conducted to ensure the selected BMPs are adequate for the project.
- The approved E&S Control Plan will be implemented prior to any earth disturbance, during construction.
- Installed BMPs will be inspected and maintained throughout the duration of construction.
- All areas of earth disturbance will be stabilized immediately following completion of earthwork.
- PCSM controls will be evaluated in final design and included in the NPDES permit application, if required.

4.2 Land

	PRESENCE	IMPACTS
AGRICULTURAL RESOURCES	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	
Productive Agricultural Land	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Agricultural Security Areas	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

- | | | |
|---------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------|
| Prime Agricultural Land | <input type="radio"/> Not Present <input checked="" type="radio"/> Present | <input type="radio"/> No <input checked="" type="radio"/> Yes |
| Agricultural Conservation Easements | <input type="radio"/> Not Present <input checked="" type="radio"/> Present | <input type="radio"/> No <input checked="" type="radio"/> Yes |
| Farmland Enrolled in Preferential Tax Assessments | <input type="radio"/> Not Present <input checked="" type="radio"/> Present | <input type="radio"/> No <input checked="" type="radio"/> Yes |
| Agricultural Zoning | <input type="radio"/> Not Present <input checked="" type="radio"/> Present | <input type="radio"/> No <input checked="" type="radio"/> Yes |
| Soil Capability Classes I, II, III, IV | <input type="radio"/> Not Present <input checked="" type="radio"/> Present | <input type="radio"/> No <input checked="" type="radio"/> Yes |
| Prime or Unique Soil | <input type="radio"/> Not Present <input checked="" type="radio"/> Present | <input type="radio"/> No <input checked="" type="radio"/> Yes |
| Statewide or Locally Important Soils | <input type="radio"/> Not Present <input checked="" type="radio"/> Present | <input type="radio"/> No <input checked="" type="radio"/> Yes |

Documentation

- Farmland Assessment Report
- ALCAB Approval
- Agricultural Land Preservation Policy Conformance Statement
- Form AD-1006 - Farmland Conversion Impact Rating or Form NRCS-CPA-106 for Corridor Type Projects
- Coordination with County Tax Assessor

Describe Any Permanent and Temporary Impacts

A new stormwater basin is proposed on the southwest quadrant, within the area of productive agricultural land. There will be approximately 1.1 acre of permanent impacts to productive agricultural land associated with construction of the stormwater basin on the southwest quadrant. Temporary impacts will total 0.18 acre to the productive agricultural land on the northwest and southwest quadrants.

Is mitigation incorporated? No Yes

Remarks

Productive agricultural land exists on the southwest, northwest, and northeast quadrants. Prime Farmland protected under Pennsylvania’s Agricultural Land Preservation Policy (ALLP) Act is present and impacted. All three quadrants contain Act 319 (Clean and Green) properties and contain soils with capability classes I-IV. The northeast quadrant contains an agricultural conservation easement and an agricultural security area, which has been avoided entirely by the proposed project. A conservation easement exists on the southwest quadrant (Donald Ryan property) and will result in 1.1 acres of direct permanent impact due to construction of stormwater basin 2. Temporary impacts to productive agricultural land total 0.18 acre on the northwest and southwest quadrants. Impacts to Prime Farmland are unavoidable to meet the project needs. Therefore, there is no feasible alternative to the conversion of Prime Farmland under 4 PA Code Chapter 7, & 7.301 et seq. Agricultural Land Preservation Policy. Additionally, this project is an upgrade of existing transportation facility and is exempt from PA Acts 43 and 100.

According to Web Soil Surveyor, the project area contains soils classified as protected under the federal Farmland Protection Policy Act (FPPA) Prime Farmland Soils and Soils of Statewide Importance. A Farmland Conversion Impact Rating (FCIR) form was completed for the direct conversion of 2.87 acres and indirect conversion of 0.27 acres of FPPA soils to transportation use. The NRCS office concurred with the FCIR on August 28, 2019. Additionally, bridge replacements are exempt from FPPA provisions as per Farmland Protection Policy Manual, 523.11, C. Activities Not Subject to Provisions of FPPA, (10) Restoration, maintenance, renovation, or replacement of existing structures prior to the time of Federal Assistance.

	PRESENCE	IMPACTS
VEGETATION	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	
Landscaped	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Agricultural	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Forest Land	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes
Rangeland	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes
Other (describe in remarks)	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input type="radio"/> No <input checked="" type="radio"/> Yes

Describe Any Permanent and Temporary Impacts

There will be permanent impacts to forested land, maintained lawn, agricultural lands (as discussed above), and roadside vegetation as a result of construction activities.

Mitigation:

Are measures being taken to minimize movement of invasive plant parts (roots, tubers, seeds)? Yes No

Will native plants be used in project landscaping or mitigation? Yes No

Other? Yes No

Describe Mitigation

In accordance with PennDOT’s invasive species guidance (Publication 756, 2014), care will be taken not to transplant roots or seeds of noted invasive, non-native plants during earth moving operations. Re-vegetation of impacted areas will be implemented through the E&S plan. Prior to completion of construction, all remaining areas of earth disturbance will be restored by re-seeding with standard PennDOT seed formulas. These seed formulas may contain native plant species; but per Executive Order 13112, will avoid those plant species that are listed on the Noxious Weed Control List.

	PRESENCE	IMPACTS
GEOLOGIC RESOURCES	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	

Remarks

A review of the Pennsylvania Geological Survey's Outstanding Scenic Geological Features of Pennsylvania - Parts 1 and 2 and DCNR's Heritage Geology Site indicate that there are no unique geologic resources with in the project study area.

	PRESENCE	IMPACTS
PARKS & RECREATION FACILITIES	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	

Remarks

Map analysis and field reconnaissance did not identify any public parks or recreation areas in the project area.

	PRESENCE	IMPACTS
FOREST & GAMELANDS	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	

Remarks

Map analysis and field reconnaissance did not identify any state forest or gamelands in the project area.

	PRESENCE	IMPACTS
WILDERNESS, NATURAL & WILD AREAS	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	

Remarks

Map analysis and field reconnaissance did not identify any wilderness, natural or wild areas within the project area.

PRESENCE

IMPACTS

NATIONAL NATURAL LANDMARKS Not Present Present

No Yes

Remarks

A review of the National Park Service's National Registry of Natural Landmarks indicated that there are no National Natural Landmarks in the project area.

PRESENCE

IMPACTS

HAZARDOUS OR RESIDUAL WASTE SITES Not Present Present

No Yes

Documentation

- Phase I
- Phase II
- Phase III
- Other
- No Documentation Required

Supporting documentation for Chapter 4.2 includes:

- *USDA FCIR Concurrence letter (August 2019)*
- *I-78 Lenhartsville Bridge Phase I ESA report (December 2021)*
- *Heavy Metals in Paint Report (December 2017)*

Describe Any Permanent and Temporary Impacts

There will be impacts to portions of the bridge found to contain lead-based paint due to the construction/removal of piers and expansion of the bridge.

Is remediation/mitigation incorporated? No Yes Unknown at this time

Describe Remediation/Mitigation

Special provisions will be included in the construction contract for heavy metals in paint to ensure worker protection and that BMPS be implemented to provide protection to the environment.

Remarks

PennDOT Bridge Management System 2 indicates that the bridge is listed as an "A" type bridge for asbestos indicating that the bridge has no asbestos-containing material (ACM), or ACM is present below threshold values. A heavy metals-in-paint inspection was conducted for the bridge. One paint coating suspected of containing heavy metals was identified on the steel stringer and girders on the underside of the bridge. Laboratory analysis confirmed this suspicion. Special provisions will be included in the construction contract to ensure worker protection and that BMPs be implemented to provide protection to the environment.

A Phase I Environmental Site Assessment (ESA) was completed for the PSA. This Phase I ESA included record reviews, site reconnaissance, compilation of data, data evaluation, and recommendations. A regulatory records file review at the Department of Environmental Protection (DEP) Southcentral Regional Office in Harrisburg was conducted on December 14, 2021. Field reconnaissance was also conducted to identify existing conditions and land uses at proposed signage locations on September 9, 2021. The Phase I ESA did not identify any waste sites that have any Areas of Concern (AOCs) which would require further investigation beyond this Phase I ESA, based on the proposed engineering available at the time of this Report. Should the boundaries or nature of the actions

change from the therein-assumed proposed project, it is recommended that this Phase I ESA be revised or amended by the Development Entity.

4.3 Wildlife

	PRESENCE	IMPACTS
WILDLIFE & HABITAT	<input checked="" type="radio"/> Not Present <input type="radio"/> Present	

Remarks

Map analysis and field reconnaissance did not reveal any wildlife sanctuaries/refuges or critical/unique habitat within the project area.

	PRESENCE	IMPACTS
THREATENED & ENDANGERED PLANTS & ANIMALS	<input type="radio"/> Not Present <input checked="" type="radio"/> Present <input type="radio"/> No Coordination Needed	<input type="checkbox"/> No Potential Impacts <input checked="" type="checkbox"/> Potential Impacts with Avoidance Measures <input type="checkbox"/> Potential Impacts with Conservation Measures <input type="checkbox"/> Potential Impacts

Documentation

PNDI ER Receipt

Agency Documentation

- PFBC Correspondence
- PGC Correspondence
- DCNR Correspondence
- USFWS Correspondence

Describe Avoidance Measures to be Implemented

PFBC avoidance measures for Eastern red belly turtle will be implemented:

- Any dewatering or disturbance to Maiden Creek during the brumation period could cause harm or even death to turtles that are in a dormant state and unable to move away. Therefore, no construction activities will be conducted in the water during the overwintering period. All in-stream construction activities will take place between May 1 and October 31 to allow turtles to avoid the project area while they are active. If causeways or coffer dams are required for construction, they can be removed during this period if the project schedule requires. *Note that there is also a time of year restriction for stocked trout prohibiting work in the streams beginning February 15 through June 1. In combination, the effective avoidance measure is all in-stream construction activities will take place between June 1 and October 31.*
- A Super Silt Fence barrier will be placed around the perimeter of the proposed area of disturbance to prevent turtles from accessing active work zones. This fence will be installed during the inactive period of the red belly turtle (November 1 to April 30) so that turtles do not get trapped in the work zone. *In-stream work is not allowed February 15 through June 1; therefore, super silt fence barrier to be installed in streams will be placed November 1 through February 15.*
- Prior to the start of construction, potential basking habitat features (e.g., downed trees, rock piles, debris piles) will be removed from the construction area during the turtle’s active period (May 1 to October 31). Removal of the basking sites prior to construction should serve to discourage turtles from using the project area for foraging or hibernating and allow them time to find alternative habitats. Basking features will be replaced where feasible once the project has been completed. *In-stream work is not allowed February 15*

through June 1; therefore, basking sites within streams will be removed June 1 to October 31.

- If any turtles are found within the work area, animals will be photo-documented and moved to a safe location outside the work area. PFBC will be notified immediately.

Although not addressed in the PNDI review, a decision is expected in 2023 to list the tri-colored bat as Endangered. A mitigation commitment is added to Chapter 7.0: During final design, the project team will initiate conferencing with USFWS regarding the project's potential effects to the tri-colored bat and measures to avoid and minimize harm.

Remarks

A PNDI review conducted in March 2021 indicated a potential impact to a PFBC Threatened Species and a USFWS species, the Bog Turtle. The PNDI receipt and agency coordination letters are included in Appendix D. Coordination with the PFBC, in a letter dated April 1, 2021 indicated potential impacts to the Eastern Redbelly Turtle (*Pseudemys rubriventris*). It was concluded that no species surveys for the Redbelly Turtle were required; however, implementation of avoidance measures would be necessary.

A Phase I Bog Turtle Survey was completed on July 11, 2017 by a USFWS/PFBC-recognized Qualified Bog Turtle Surveyor (QBTS) and determined that suitable habitat was present in two of the five wetlands. Phase II and Phase III surveys were conducted during the 2018 survey season by a USFWS/PFBC QBTS. The surveys determined that although the habitat is suitable, no bog turtles were located within the project area. In a letter signed April 20, 2021, the USFWS concurred with the findings of all Phase I, II, and III Bog Turtle surveys.

4.4 Cultural Resources

Were Cultural Resource Professionals (CRPs) needed for project scoping? Yes No

CRP Scoping Field View Date: 06/12/13

CRP Architectural Historian in Attendance: Kris Thompson

CRP Archaeologist in Attendance: Kevin Mock

Was a Project Early Notification / Scoping Results Form completed? Yes No

Is the project exempted from review by the District Designee or CRP as per Appendix C of the Statewide Section 106 Programmatic Agreement? Yes No

Is the project exempted from review by the District Designee or CRP as per Stipulation III of the Emergency Relief Projects Programmatic Agreement (2005)? Yes No

	<u>PRESENCE</u>				<u>LEVEL OF EFFECTS</u>		
	Not Present	Potentially Eligible Resource Present	Eligible Resource Present	Listed Resource Present	No Historic Properties Affected	No Adverse Effect	Adverse Effect
CULTURAL RESOURCES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Archaeology</u>							
Pre-Contact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contact Native American:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historic:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Above-Ground Historic Properties</u>							
Structure/Building:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
District:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Documentation

For projects not having a known adverse effect, one from each column:

Above-Ground Historic Properties

- Above-Ground Historic Properties Field Assessment and Finding
- Above-Ground Historic Properties Finding Letter
- Section 106 (Above-Ground Historic Properties) Effect Concurrence Letter
- TE Project Field Assessment and Finding Checklist

Archaeology

- Archaeology Field Assessment and Finding
- Archaeology Finding Letter
- Section 106 (Archaeology) Effect Concurrence Letter
- TE Project Field Assessment and Finding Checklist
- Deferred Archaeological Testing Form
- Project Specific Programmatic Agreement

Supplemental documentation should be completed as warranted:

- Historic Structures Survey / Determination of Eligibility Report
- Phase IA Archaeological Sensitivity Report
- Geomorphological Survey Report
- Archaeological Disturbance Report
- Archaeology Identification (Phase I) Report
- Archaeology Negative Survey Form
- Archaeology Evaluation (Phase II) Report
- Combined Archaeology Identification/Evaluation Report
- Determination of Effects Report
- (Bridge) Feasibility Report
- Other

Describe Any Permanent and Temporary Impacts

There are no current impacts to any cultural resources as a result of project implementation.

Are mitigation and/or standard treatments required? No Yes

Remarks, Footnotes, Supplemental Data

The Lenhart Farm, a national register-listed resource, exists adjacent to I-78 in the southwest quadrant and is adjacent to the interchange. Project implementation will completely avoid the Lenhart Farm. The Grims Mill Farmstead was reevaluated and was determined not eligible.

A Phase I Archaeological survey was completed for the project area as documented in the Negative Survey Report, March 2019. Deferred archaeology on the Grims Mill Farmstead was completed during final design in the area of the stormwater basin on the southwestern quadrant. A combined finding documenting No Effect to Historic Properties was prepared. The finding was later revised, with no change to the finding, after roadway and bridge lighting was added to the project scope. Section 106 documentation is located in Project PATH at <https://path.penndot.gov/ProjectDetails.aspx?ProjectID=47917> .

Additional Section 106 Consultation was conducted with the CRPs regarding the expanded project study area associated with the tolling action, including the proposed diversion route improvements. A subsequent addendum was posted to PATH on 8/8/2022 to remove the toll facility and diversion route traffic improvements from the proposed project. The project will have no effect to archaeological and above ground historic properties (No Historic Properties Affected).

4.5 Section 4(f) Resources

	PRESENCE	USE
SECTION 4(f) RESOURCES	<input type="radio"/> Not Present <input checked="" type="radio"/> Present	<input checked="" type="radio"/> No <input type="radio"/> Yes

Will temporary easements during construction be necessary from Section 4(f) resources? No Yes

Describe Any Permanent and Temporary Impacts

There will be no permanent or temporary impacts to the Lenhart Farm as a result of this project; therefore, there is no use of the Section 4(f) resource.

Is mitigation incorporated? No Yes

Mitigation Remarks

Section 4(f) resources will be avoided. If project design plans change during final design and result in a permanent or temporary use to the Lenhart Farm, further Section 4(f) coordination will be required.

Remarks

The National Register listed Lenhart Farm is present in the southwest quadrant of the project area adjacent to the interchange ramp and S.R. 0143. The property will not be impacted as part of project implementation. As such, there is no permanent or temporary use of the Lenhart Farm.

4.6 Air Quality and Noise

AIR QUALITY

Is the project exempt from regional ozone conformity analysis and a CO, PM10 & PM2.5 Hot- Spot analysis? Yes No

Mobile Source Air Toxics (MSATs)

Is the project exempt from an analysis for MSATs based on Pub #321? Yes No

Remarks

A review of PennDOT Publication 321, Project-Level Air Quality Handbook (October 2017), indicates that the proposed project is exempt from Project-level and Regional Conformity Analysis.

NOISE

Is the project a:

A. Type I Project? Yes No

B. Type II Project? Yes No

C. Type III Project? Yes No

The project meets the criteria for a Type III project established in 23 CFR 772. Therefore, the project requires no analysis for highway traffic noise impacts. Type III projects do not involve added capacity, construction of new through lanes or auxiliary lanes, changes in the horizontal or vertical alignment of the roadway or exposure of noise sensitive land uses to a new or existing highway noise source. PennDOT acknowledges that a noise analysis is required if changes to the proposed project result in reclassification to a Type I project.

4.7 Socioeconomic Areas

REGIONAL & COMMUNITY GROWTH

Will the project induce impacts (positive and negative) on planned growth, land use, or development patterns for the area? Yes No

Is the project consistent with planned growth? Yes No

Basis of this determination:

The project is programmed on the 2023-2026 Interstate Transportation Improvement Program (TIP) . The project replaces existing infrastructure and is not anticipated to induce growth.

Will the project induce secondary growth? Yes No

PUBLIC FACILITIES & SERVICES

Will the project induce negative impacts on health and educational facilities; public utilities; fire, police and emergency services; civil defense; religious institutions; or public transportation? Yes No

Does the project incorporate bicycle or pedestrian facilities into the overall design or operations (including construction)? Yes No

This project involves improvements to a limited access highway; bicyclists and pedestrians are prohibited.

Will the project have a positive impact to the public facilities and services listed above? Yes No

The project will improve access to I-78 for emergency services.

COMMUNITY COHESION

Will the project induce impacts to community cohesion? Yes No

Will the project induce impacts to the local tax base or property values? Yes No

ENVIRONMENTAL JUSTICE (see Chapter 6.0 of this CE Reevaluation)

RIGHT-OF-WAY ACQUISITIONS OR DISPLACEMENTS OF PEOPLE, BUSINESSES OR FARMS

How many parcels require right-of-way acquisition, either partial or total? Ten

The P3 Development Entity will be responsible for final design and construction of the project. If area is required outside of the PSA, the P3 Development Entity is required to coordinate with PennDOT to determine necessary NEPA Reevaluation studies and documentation (Chapter 7.0, Environmental Commitments and Mitigation).

Describe the extent and locations of acquisitions. Indicate for each acquisition whether it is temporary or permanent.

ROW will be required for 10 parcels: 8 parcels include both permanent take and a TCE, 1 parcel includes a permanent slope easement and a TCE, and 1 parcel includes a combination of permanent take, TCE, and slope easement. Permanent takes will be in the form of strip takes and total 2.956 acres. An additional 0.807 and 0.113 acres will be required for TCEs and slope easements, respectively.

Will the project require the relocation of people, businesses or farms? Yes No

Will the project induce impacts to economic activity, including employment gains and losses? Yes No

Mitigation

Property acquisitions conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended; Title VI of the Civil Rights Act of 1964; and the Pennsylvania Eminent Domain Code of 1964.

- While no residential relocations are anticipated, any individual or family displaced by the project would be offered the full extent of benefits and payments.
 - Provisions would be made to ensure that any person with a disability who is displaced is offered replacement housing that meets any special needs. Based on current design plans, no displacements are anticipated
-

MAINTENANCE AND OPERATING COSTS OF THE PROJECT AND RELATED FACILITIES

Will the project induce increases of operating or maintenance costs? Yes No

AESTHETIC AND OTHER VALUES

Will the project be visually intrusive to the surrounding environment? Yes No

Will the project include "multiple use" opportunities? Yes No

Will the project involve "joint development" activities? Yes No

4.8 Permits Checklist

No Permits Required

United States Army Corps of Engineers Section 404 and/or Section 10 Permit

Individual Nationwide PASPGP

DEP Waterway Encroachment (105) Permit

Standard Small Project General Other

DEP 401 Water Quality Certification

Coast Guard Permit

NPDES Permit

General Individual Exempt

Other Permits

Remarks

Although it is anticipated that the permits indicated above will be required for the project, a final determination of their applicability will be determined during Final Design. The P3 Development Entity will prepare the permit applications for submission, and secure necessary permit authorizations prior to construction.

Permit conditions will be added to ECMTS as mitigation commitments.

5.0 PUBLIC INVOLVEMENT

	#	Comments
<input checked="" type="checkbox"/> Plans Display	2	See Remarks
<input checked="" type="checkbox"/> Public Officials Meetings	2	See Remarks
<input checked="" type="checkbox"/> Public Meetings	1	See Remarks
<input type="checkbox"/> Public Hearing		See Remarks
<input checked="" type="checkbox"/> Special Purpose Meetings (specify)	2	Diversion Route Workshop 8/10/2021 and follow-up briefing 10/25/2021. See Remarks
<input type="checkbox"/> Section 106 Public Involvement / Consulting Parties		
<input checked="" type="checkbox"/> Section 106 Tribal Consultation		The following tribes were notified: Absentee-Shawnee Tribe of Oklahoma, Delaware Nation - Oklahoma, Delaware, Eastern Shawnee Tribe of Oklahoma, Onondaga Nation, Shawnee Tribe and St. Regis Mohawk Tribe.
<input checked="" type="checkbox"/> Environmental Justice Community Involvement		Knowledgeable Parties emails and flyers
<input type="checkbox"/> Other information dissemination activities		
<input checked="" type="checkbox"/> Commitment for Further Public Involvement		The contractor will continue to coordinate with local municipalities and the public.

Remarks

A Public Officials/Public Plans Display meeting was held October 28, 2019, at the Greenwich Township building. Display boards were presented and consisted of preliminary design concept plans including typical sections, structure information, construction staging and roadway plans. Comments were solicited.

After the original CE for the I-78 Lenhartsville project was approved, the project was identified as a candidate for bridge tolling through PennDOT Pathways Program: The Major Bridge P3 Initiative. Additional virtual public meeting and public outreach activities were conducted beginning in November 2020 for the PennDOT Pathways program under an Alternative Funding Planning and Environmental Linkages (PEL) Study. In addition, and specific to the I-78 Lenhartsville project,

- Project information was posted on a project-specific website in February 2021 at <https://www.penndot.pa.gov/RegionalOffices/district-5/ConstructionsProjectsAndRoadwork/Pages/I-78-Lenhartsville-Bridge.aspx>
- A diversion route workshop was conducted on August 10, 2021, to gather additional information on potential issues along the diversion routes (mainly Old Route 22 and its secondary diversion routes).
- The diversion route workshop attendees were invited to attend a follow-up briefing on October 25, 2021, to review the proposed diversion route improvements included in the public meeting materials.
- A project-specific virtual public meeting was held from October 25 through November 24, 2021. The online meeting was comprised of text, graphics and videos that provided a project overview and explained the project purpose and need, project design, proposed funding, traffic studies and associated diversion route improvements, environmental studies, comment process and next steps. The online meeting website provided a comment form that allowed individuals to submit their comments directly within the virtual public meeting. The website also noted other ways in which comments could be submitted, including the comment form on the general project website, project phone number, project email and a physical mailing address.
- An in-person public open house was held on Monday November 1, 2021, at the Kempton Community Center in Kempton, PA. At the in-person public open house display boards were provided for project purpose and need, project design, proposed funding, traffic studies and associated diversion route improvements, environmental studies, and schedule. Comment forms were provided for individuals to submit their comment while in attendance or at their convenience. While the comment period for the public meeting has closed, the online meeting materials are available for reference via the project website. In-person meeting materials were printed versions of the online content.

Supporting documentation for Chapter 5 includes:

- *I-78 Lenhartsville Bridge Replacement Project Virtual Public Meeting (October 25 to November 24, 2021)*
- *I-78 Lenhartsville Bridge Replacement Project Public Meeting Summary (January 2022)*

Prior to and during the public comment period for the second public meeting, the project team executed several outreach strategies to maximize public participation at the public meeting or online consultation of the Virtual Public Meeting on project website. The outreach activities are listed in **Table 3.**

Table 3
Public Outreach Activities for Public Meeting

Outreach Type	Number of Recipients	Type of Recipients	Date Sent
Virtual Public Meeting Website	N/A	-General Public via https://www.penndot.pa.gov/RegionalOffices/district-5/ConstructionsProjectsAndRoadwork/Pages/I-78-Lenhartsville-Bridge-VPM.aspx	Launched 10/25/21
Postcard	5,591	- General Public - Mailed via Every Door Direct Mail Service - Sent to all postal routes within the direct project area and along the diversion route.	Mailed week of 10/18/21
Legal Ad	Print circulation approx. 37,000	- General Public - Placed in <i>the Reading Eagle</i>	Ran 10/12/21
Stakeholder & Public Mailing List Email	172	- Key stakeholders, legislators and those who requested to be put on the project’s mailing list. - Email with information about the virtual public meeting and in-person open house.	10/25/21
Knowledgeable Parties Email & Flyer	17	- Knowledgeable parties identified in environmental justice analysis. This list was provided by the consultant environmental justice studies lead - Email with information about virtual and in-person meetings, along with a flyer to be distributed in the community and copies of social media art for sharing	11/1/21
Press Release	N/A	- Sent to area media to distribute via news stories and calendars of events for the general public.	10/25/21
Public Officials Briefing	N/A	- Invited public officials to a pre-launch briefing to get a first look at the materials to launch in the virtual public meeting	11/1/21 at 9:30 a.m.
Social Media Posts As of 11/24/21	22,571 people reached	- Social media posts on PennDOT social media regarding how to participate in the public meeting and comment period - 147 engagements across the 3 posts	10/27/21 11/1/21 11/22/21

An EA comparing the effects of the No Build Alternative and the Build Alternative with bridge tolling was prepared and was made available for official public review and comment on May 4, 2022. A Public Hearing was scheduled to be held on May 19, 2022, but was cancelled when all work related to the MBP3 initiative ceased May 18, 2022 due to a court ordered injunction. The comments received during the EA comment period (May 4 to June 3, 2022) have been reviewed, considered, and where appropriate, additional information was incorporated into this CE Reevaluation. During the public

comment period for the EA, the project team executed several outreach strategies to maximize public participation as listed in **Table 4**.

**Table 4
Public Outreach Activities for the EA**

Outreach Type	Number of Recipients	Type of Recipients	Date Sent
Virtual Public Hearing Website	N/A	<ul style="list-style-type: none"> General Public via https://www.penndot.pa.gov/RegionalOffices/district-5/ConstructionsProjectsAndRoadwork/Pages/I-78-Lenhartsville-Bridge.aspx 	5/4/22
Postcard	5,591	<ul style="list-style-type: none"> General Public Mailed via Every Door Direct Mail Service Sent to all postal routes within the direct project area and along the diversion route. 	Mailed week of 5/2/22
Legal Ad	Print circulation approx. 37,000	<ul style="list-style-type: none"> General public Placed in the <i>Reading Eagle</i> 	Ran 5/4/22
Stakeholder & Public Mailing List Email	304	<ul style="list-style-type: none"> Key stakeholders, legislators and those who requested to be put on the project's mailing list. Email with information about the Virtual Open House and Public Hearing. 	5/4/22
Knowledgeable Parties Email & Flyer	11	<ul style="list-style-type: none"> Knowledgeable parties identified in environmental justice analysis Email with information about virtual open house and in-person hearing, along with a flyer to be distributed in the community and copies of social media art for sharing 	5/4/22
News Release	N/A	<ul style="list-style-type: none"> Sent to area media to distribute via news stories and calendars of events for the general public. 	5/4/22
Social Media Posts	1,890	<ul style="list-style-type: none"> Social media posts on PennDOT social media regarding how to participate in the public hearing and comment period 	5/11/2022
Elected Official Notification	Key Elected Officials List	<ul style="list-style-type: none"> Elected officials (State and Local) Direct reach out by District 5 	5/3/22

On May 18, 2022, as a result of a lawsuit, the court issued an injunction and all work related to the MBP3 initiative ceased. Subsequently, Act 84 of 2022 amended the P3 law and revoked PennDOT's ability to implement mandatory tolls such as the proposed bridge tolling under the MBP3 initiative. As

a result of the lawsuits and the subsequent enactment of Act 84 of 2022, PennDOT is moving the I-78 Lenhartsville Bridge project forward, but without tolling.

As the project is reverting back to a bridge replacement with associated approach roadway work, this CE Reevaluation was prepared to document the current effects of the Build Alternative without tolling. The project team completed outreach in September 2022 to educate and inform the public about the CE Reevaluation with the removal of tolling. Outreach activities are summarized in **Table 5**.

Table 5
Public Outreach Activities for the CE Reevaluation

Outreach	Audience & Subject
News Releases	Two news releases to media: <ol style="list-style-type: none"> 1. Statewide release regarding removal of tolling from MBP3 program. 2. I-78 Lenhartsville Bridge Project specific release with information on the CE Reevaluation.
Email Blasts	Two email blasts to mailing list sign-ups: <ol style="list-style-type: none"> 1. Statewide email blast regarding removal of tolling from MBP3 program. 2. I-78 Lenhartsville Bridge Project specific email blast with information on the CE Reevaluation.
Social Posts	Two social posts on Facebook and Twitter. <ol style="list-style-type: none"> 1. Statewide social post regarding removal of tolling from MBP3 program. 2. I-78 Lenhartsville Bridge Project specific social post with information on the CE Reevaluation.
Bridge Website Update & Online Educational Resource	The bridge project website was updated to include information on the project’s current status, description and history. An online educational resource about the CE Reevaluation and Potential Impacts was also developed to provide information to the public on what is presented in the CE Reevaluation. A comment form was available on the website for those who wished to provide feedback on the project. Comments were considered as the CE Reevaluation was finalized.

Public involvement documentation covering the NEPA process for the project is located in the project technical files.

6.0 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (February 11, 1994), directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority and low-income populations. To achieve effective and equitable decision-making, the U.S. Department of Transportation (USDOT) identifies three fundamental principles of environmental justice to consider in all USDOT programs, policies, and activities:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on environmental justice communities of concern.
- To ensure the opportunity for full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or substantial delay in the receipt of benefits by any environmental justice community of concern.

The *I-78 Lenhartsville Environmental Justice Analysis*, March 2022, was prepared to address the effects of bridge tolling and associated traffic diversion to avoid tolls on low-income and minority populations; a copy is included in the project technical files. While bridge tolling is no longer under consideration, the report contains relevant background information describing low-income and minority populations in the vicinity of the proposed project.

The Environmental Justice analysis for the project was performed by completing the following process:

- **Step 1: Define the Study Area.** Consistent with NEPA practices, identify the reasonable and logical boundaries by considering the potential for direct and indirect impacts related to the project.

The project study area is approximately 1.3 miles of I-78 and includes replacement of the bridge carrying the interstate over Maiden Creek, reconstruction of approach roadway east and west of the bridge, and reconstruction of the Lenhartsville interchange ramps (Exit 35, SR 143).

- **Step 2: Identify Low-income and Minority Populations.** Collect recent data on race, color, national origin, income, tribal governments, and seasonal and migrant workers in the study area, and apply FHWA and PennDOT methodology to identify low-income and minority populations.

Low-income and minority populations are identified in the *I-78 Lenhartsville Environmental Justice Analysis*, March 2022.

- **Step 3: Solicit Input from Low-income and Minority Populations.** Using PennDOT's *Public Involvement Handbook* and other environmental justice outreach guidance, identify

Supporting documentation for Chapter 6 includes:

- *I-78 Lenhartsville Environmental Justice Analysis* (March 2022)

appropriate outreach techniques. Through targeted outreach to potentially affected low-income and minority populations, identify transportation needs and concerns about the project to inform Steps 4, 5, and 6.

Public outreach was conducted throughout the development of the project including plans display/public meetings and additional stakeholder outreach targeted to parties knowledgeable about environmental justice issues (see Chapter 5.0).

- **Step 4: Evaluate Adverse and Beneficial Effects.** Analyze whether the project would create impacts to communities or populations in the near, medium, or long term. Then, with input from the community, assess whether the impacts are adverse, beneficial, or both.

Since the project involves on-location reconstruction of existing roadway and replacement of an existing bridge in a rural setting, the effects on the local community are minimal. During construction, some diversion through the community may occur as some travelers may opt to avoid the construction zone even with two lanes largely being retained in each direction; however, once the project is completed the reconstructed roadway and replaced bridge would provide improved service along the I-78 corridor.

- **Step 5: Identify Disproportionately High and Adverse Effects.** Determine whether adverse effects are predominately borne by low-income persons and minorities, and if these effects are more or greater than those effects borne by the general population.

As a result of this analysis and associated outreach effort, no disproportionately high and adverse effects on low-income or minority populations have been identified for the I-78 Lenhartsville Bridge Project since adverse effects to these populations are not anticipated as a result of the project.

- **Step 6. Evaluate Mitigation Measures.** If adverse effects would be predominately borne by low-income and minority populations and are more or greater in magnitude than the adverse effect that would be suffered by the general population, consult with the community to identify measures to avoid, minimize, or mitigate the impacts. Determine whether the mitigation measures are practical. Practical mitigation measures are those that are: effective and do not create other adverse effects that are more severe; feasible in terms of implementation and operation; and cost effective, while maintaining the financial viability of the project.

As no disproportionately high and adverse effects on low-income or minority populations are anticipated to occur, evaluation of mitigation measures was not necessary.

- **Step 7: Re-evaluate Disproportionately High and Adverse Effects and Document Decision.** If practical mitigation measures have been identified, re-evaluate whether adverse effects borne by low-income and minority populations are appreciably more severe or greater than those effects borne by non-environmental justice populations.

Re-evaluation of effects on low-income and minority populations was not necessary.

7.0 ENVIRONMENTAL COMMITMENTS AND MITIGATION

The mitigation measures summarized in this section shall be incorporated into the project's design documents. In order to track and transfer mitigation commitments through the project development process, Environmental Commitments & Mitigation Tracking System (ECMTS) documentation shall be prepared and submitted through appropriate channels, as the project moves through Final Design and Construction.

Impacts and mitigation commitments are based on Preliminary Design and may change as the project moves through Final Design and Construction. Final design information and final mitigation commitments will be included in the ECMTS documentation.

STREAMS

Permanent Stream Impacts: *595 linear feet*

Project Specific Restoration/Enhancement: *127 linear feet*

Mitigation Remarks:

There is an in-stream construction timing restriction (meaning work is not permitting in the stream) from February 15 to June 1 for Channels 1-4.

Stream restoration of Channel 2 will be required due to permanent impacts. The Development Entity Contractor will provide a special provision for streambed substrate and will include the excavation, stockpiling, and handling of streambed substrate (silt, sand, gravel, cobbles, rocks, and boulders) from the existing channel, furnishing of borrow substrate, and placement of the streambed substrate within the bed of the proposed stream channel to achieve the proposed depth and grade.

Substrate is excavated from the existing channel and placed in the proposed channel. If insufficient substrate is available from the existing channel, the contractor will provide streambed substrate meeting a specified streambed gradation. Borrow substrate must be approved by the engineer.

NAVIGABLE WATERWAYS

Implement the approved ATON Plan to protect recreational boaters during construction.

WETLANDS

Permanent Wetland Impacts: *0.350 acres, 0.146 acre requiring mitigation*

Mitigation Remarks:

The details of wetland mitigation will be determined in final design through consultation with PADEP and USACE, in accordance with current regulations and practices. Mitigation measures will be entered into ECMTS.

Orange protective fencing should be placed at the limits of work for Wetlands A, B, C, E and F. Wetland A, B, and E will require temporary wooden matting during construction activities to avoid additional permanent impacts to these wetlands.

SOIL AND EROSION & SEDIMENTATION

Mitigation Remarks:

- BMPs will be defined and implemented as a component of the erosion and sedimentation plan and waterway encroachment permit.
- The E&S Control Plan will be reviewed by the PADEP and coordination will be conducted to ensure the selected BMPs are adequate for the project.
- The approved E&S Control Plan will be implemented prior to any earth disturbance, during construction.
- Installed BMPs will be inspected and maintained throughout the duration of construction.
- All areas of earth disturbance will be stabilized immediately following completion of earthwork.
- PCSM controls will be evaluated in final design and included in the NPDES permit application, if required.

VEGETATION

In accordance with PennDOT's invasive species guidance (Publication 756, 2014), care will be taken not to transplant roots or seeds of noted invasive, non-native plants during earth moving operations. Re-vegetation of impacted areas will be implemented through the E&S plan. Prior to completion of construction, all remaining areas of earth disturbance will be restored by re-seeding with standard PennDOT seed formulas. These seed formulas may contain native plant species; but per Executive Order 13112, will avoid those plant species that are listed on the Noxious Weed Control List.

HAZARDOUS OR RESIDUAL WASTE SITES

Special provisions will be included in the construction contract for heavy metals in paint to ensure worker protection and that BMPs be implemented to provide protection to the environment.

THREATENED & ENDANGERED PLANTS & ANIMALS - AVOIDANCE MEASURES

PFBC avoidance measures for Eastern red belly turtle:

- Any dewatering or disturbance to Maiden Creek during the brumation period could cause harm or even death to turtles that are in a dormant state and unable to move away. Therefore, no construction activities will be conducted in the water during the overwintering period. All in-stream construction activities will take place between May 1 and October 31 to allow turtles to avoid the project area while they are active. If causeways or coffer dams are required for construction, they can be removed during this period if the project schedule requires. *Note that there is also a time of year restriction for stocked trout prohibiting work in the streams beginning February 15 through June 1. In combination, the effective avoidance measure is all in-stream construction activities will take place between June 1 and October 31.*
- A Super Silt Fence barrier will be placed around the perimeter of the proposed area of disturbance to prevent turtles from accessing active work zones. This fence will be installed during the inactive period of the red belly turtle (November 1 to April 30) so that turtles do not get trapped in the work zone. *In-stream work is not allowed February 15 through June 1; therefore, super silt fence barrier to be installed in streams will be placed November 1 through*

February 15.

- Prior to the start of construction, potential basking habitat features (e.g., downed trees, rock piles, debris piles) will be removed from the construction area during the turtle's active period (May 1 to October 31). Removal of the basking sites prior to construction should serve to discourage turtles from using the project area for foraging or hibernating and allow them time to find alternative habitats. Basking features will be replaced where feasible once the project has been completed. *In-stream work is not allowed February 15 through June 1; therefore, basking sites within streams will be removed June 1 to October 31.*
- If any turtles are found within the work area, animals will be photo-documented and moved to a safe location outside the work area. PFBC will be notified immediately.

USFWS coordination for tri-colored bat:

During final design, the project team will initiate conferencing with USFWS regarding the project's potential effects to the tri-colored bat and measures to avoid and minimize harm.

SECTION 4(F) RESOURCES

Section 4(f) resources will be avoided. If project design plans change during final design and result in a permanent or temporary use to the Lenhart Farm, further Section 4(f) coordination will be required.

COMMITMENTS FOR FURTHER PUBLIC INVOLVEMENT

The contractor will continue to coordinate with local municipalities and the public.

NON-RESOURCE SPECIFIC MITIGATION COMMITMENTS

- NPDES and waterway permit conditions will be added to ECMTS as mitigation commitment.
- Property acquisitions will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended; Title VI of the Civil Rights Act of 1964; and the Pennsylvania Eminent Domain Code of 1964
 - While no residential relocations are anticipated, any individual or family displaced by the project would be offered the full extent of benefits and payments.
 - Provisions would be made to ensure that any person with a disability who is displaced is offered replacement housing that meets any special needs. Based on current design plans, no displacements are anticipated.
- If the P3 Development Entity requires area outside of the PSA delineated in this CE Reevaluation, the P3 Development Entity is required to coordinate with PennDOT to determine necessary NEPA Reevaluation studies and documentation.
This NEPA Reevaluation may include but not be limited to:
 - Delineation of aquatic resources in accordance with USACE protocol;
 - Phase I ESA or Environmental Due Diligence (EDD) statement;
 - PNDI review and coordination with resource protection agencies;
 - Section 106 Consultation; and
 - Public outreach.

Appendix A
Engineering Information

Project Identification

Originating Office: 5-0

Date: 01/11/22

Federal Project Number: N/A

Township/Municipality: Greenwich Township

Local Name: Lenhartsville Bridge

Limits of Work (Segment/Offset)

Start:	End:
0344/1423	0360/1482
0345/1449	0361/1458

Construction Stations

Start:	End:
255+65.00	326+50.00

Total Length: 6985 ft

Date of First Federal Authorization for Preliminary Engineering:

6/27/16

Date of Federal Authorization Time Extension(s) for Preliminary Engineering(if applicable):

N/A

Design Criteria

Roadway Description: SR 0078

Functional Classification: Freeways/Interstates

Urban Rural

Current ADT: 49,648

Design Year No-Build ADT: N/A

Current LOS: N/A

Design Year Build ADT: N/A

Design Year Build LOS: N/A

DHV: 5,552

Truck %: 33

D (Directional Distribution) 54
%:

Design Speed: 70 mi/h

Posted Speed: 65 mi/h

Required Minimum Widths

Lane Width: 12 ft

Shoulder Width: 12 ft, 10 ft

Bridge Curb-to-Curb: 118 ft

Design Exception Required?

Yes No

The interchange will not be impacted by this project. The scope of the project is a bridge widening to obtain the standard length required on the accel/decel lanes.

a) Ramp B & C radii – The minimum 20 MPH loop ramp design speed requires ramp radii of 134'-0". This would require extensive reconstruction of the interchange, affecting the historic farmstead to the south of the Ramp A off-ramp from SR 0078 to SR 0143. Acceleration and deceleration lane lengths will be set to meet the requirements established in PennDOT Publication 13M. Mitigation for the design exception will include a 20 MPH ramp advisory speed sign. This design deficiency can be eliminated via interchange realignment in a future project.

b) SR 0078 superelevation – A portion of the existing horizontal curve at the beginning of the project along SR 0078 is to be reconstructed matching the existing 5700' radius. The proposed superelevation of 3.2% matches existing; however, this is below the required 3.6%. Eliminating this design exception for the existing curve would require extending the project limits to the west, resulting in additional full depth pavement reconstruction.

Typology: Limited Access Freeway – Rural Interstate

Topography: Level Rolling Mountainous

Proposed Design Criteria: New and Reconstruction

Traffic Control Measures

The following traffic control measures will be implemented:

- Temporary Bridge(s)
- Temporary Roadway
- Detour
- Ramp Closure
- Other (specify)
- None

Other Description: Staged construction

If any of the above traffic control measures will be implemented, indicate the following conditions.

Provisions for access by local traffic will be made and so posted. True False

Through-traffic dependent business will not be adversely affected. True False

There will be no interference with any local special event or festival. True False

There will be no substantial environmental consequences associated with the traffic control measure(s). True False

There is no substantial controversy associated with the traffic control measure(s). True False

There are no substantial impacts to bicycle or pedestrian routes. True False

If the answer to any of the above questions was "False", please explain.

Estimated Costs

Engineering: \$ 200,000

Right-of-Way: \$ 902,000

Construction: \$ 56,583,000

Utilities: \$ 481,000

Roadway

Roadway Description SR 0078

	Existing	Proposed
Number of Lanes:	4	4 & 2 auxiliary
Lane Width:	12 ft	12 ft
Shoulder Width:	varies ft	10 inside, 12 outside ft
Median Width:	4 ft	22 ft
Sidewalk Width:	N/A ft	N/A ft
Bicycle Lane Width:	N/A ft	N/A ft
Clear Zone Width:	30 ft	30 ft

Structure

BMS Number: 06-0078-0354-0688

BRKEY: 4677

Description:

SR 0078 over SR 0143 and Maiden Creek

	Existing	Proposed
Structure Type:	Steel Girder/Beam	Prestressed Concrete Beam
Weight Restrictions:	none	none
Height Restrictions:	none	none
Curb to Curb Width:	64.9 ft	118 ft
Lane Width:	12 ft	12 ft
Shoulder Width:	1 inside, 6.5 outside ft	9.3 inside, 12 outside ft
Sidewalk Width:	none	none
Total Bridge Width*:	69.5 ft	121.4 ft
*Total Bridge Width is measured from outside of barrier to outside of barrier, which should include sidewalks, when present.		
Under Clearance:	17.0 ft	17.1 ft
Lateral Clearance:	14 ft to SR 143	15 ft to SR 143
Sufficiency Rating:	77.0	
Structure Length:	667 ft	615 ft

Appendix B
Preliminary Design Plans

12\06\2021
PLOTTED:

OPERATOR: Y:\Leh\gh\60100s\60188_02\Eng_Docs\Construct\for\Plans\Cover.dgn (Default)

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS
5-0	BERKS	GREENWICH	-	0078	LBR	59

ECMS NO. 97274

SR 0078 PREVIOUSLY KNOWN AS LR 285 AND LR 285 SPUR

COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF TRANSPORTATION

DRAWINGS FOR CONSTRUCTION OF

STATE ROUTE 0078 SECTION LBR
IN BERKS COUNTY

FROM STA 255+65.00 TO STA 327+50.00 LENGTH 6,985.00 FT 1.323 MI

FROM SEG 0344 OFFSET 2188 TO SEG 0360 OFFSET 1482 EB

FROM SEG 0345 OFFSET 2214 TO SEG 0361 OFFSET 1458 WB

ALSO

STATE ROUTE 0143

FROM STA 333+40.00 TO STA 343+30.00

ALSO

STATE ROUTE 8018

FROM STA 500+00.00 TO STA 511+50.85 (RAMP A)

FROM STA 600+00.00 TO STA 617+86.24 (RAMP B)

FROM STA 400+00.00 TO STA 404+98.10 (RAMP AB)

FROM STA 700+00.00 TO STA 714+57.60 (RAMP C)

FROM STA 800+00.00 TO STA 828+90.65 (RAMP D)

FROM STA 900+00.00 TO STA 903+49.66 (RAMP CD)

ALSO INCLUDED:

TRAFFIC CONTROL PLAN	91 SHEETS
SIGNING AND PAVEMENT MARKING PLAN	15 SHEETS
EROSION AND SEDIMENT POLLUTION CONTROL PLAN	39 SHEETS
STREAM MITIGATION PLAN	8 SHEETS
HIGHWAY LIGHTING PLAN	10 SHEETS
ITS PLAN	2 SHEETS
STRUCTURE PLAN S-40059	122 SHEETS
CROSS SECTIONS	110 SHEETS
EXISTING STRUCTURE PLAN	
S-1601	17 SHEETS
S-12408	16 SHEETS
S-32905	8 SHEETS
S-29596D	14 SHEETS
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	23 SHEETS

LIMITS OF SIGNING

STATE ROUTE 0078 SECTION LBR
IN BERKS COUNTY

FROM SEG 0344 OFFSET 1423 TO SEG 0360 OFFSET 1482 EB

FROM SEG 0345 OFFSET 1449 TO SEG 0361 OFFSET 1458 WB

SCALE

HORIZONTAL 0 25 50 FEET

VERTICAL 0 5 10 FEET

DESIGN DESIGNATION

HIGHWAY CLASSIFICATION - LIMITED ACCESS FREEWAY - RURAL INTERSTATE
DESIGN SPEED - 70 MPH
PAVEMENT WIDTH - 2-12' LANES (EACH DIRECTION)
SHOULDER WIDTH - 12' (OUTSIDE)
10' (INSIDE)

TRAFFIC DATA

CURRENT ADT - 49,648 (2022)
DESIGN YEAR ADT - 79,315 (2042)
DHV - 5,552 (K=7%)
D - 54%
T - 33%

PREPARED BY:



Alfred Benesch & Company
250 Cetronia Road, Suite 150
Allentown, Pennsylvania 18104
610-439-7066

60% DESIGN
NOT FOR
CONSTRUCTION

SENIOR PROJECT MANAGER

DATE: _____

PREPARED BY:



Alfred Benesch & Company
250 Cetronia Road, Suite 150
Allentown, Pennsylvania 18104
610-439-7066

60% DESIGN
NOT FOR
CONSTRUCTION

PROJECT MANAGER

DATE: _____

RECOMMENDED DATE: _____

ACTING DISTRICT EXECUTIVE

RECOMMENDED DATE: _____

ACTING DEPUTY SECRETARY

APPROVED DATE: _____

SECRETARY OF TRANSPORTATION

(ON BEHALF OF THE GOVERNOR
AS WELL AS THE SECRETARY)

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	2 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

SHEET INDEX

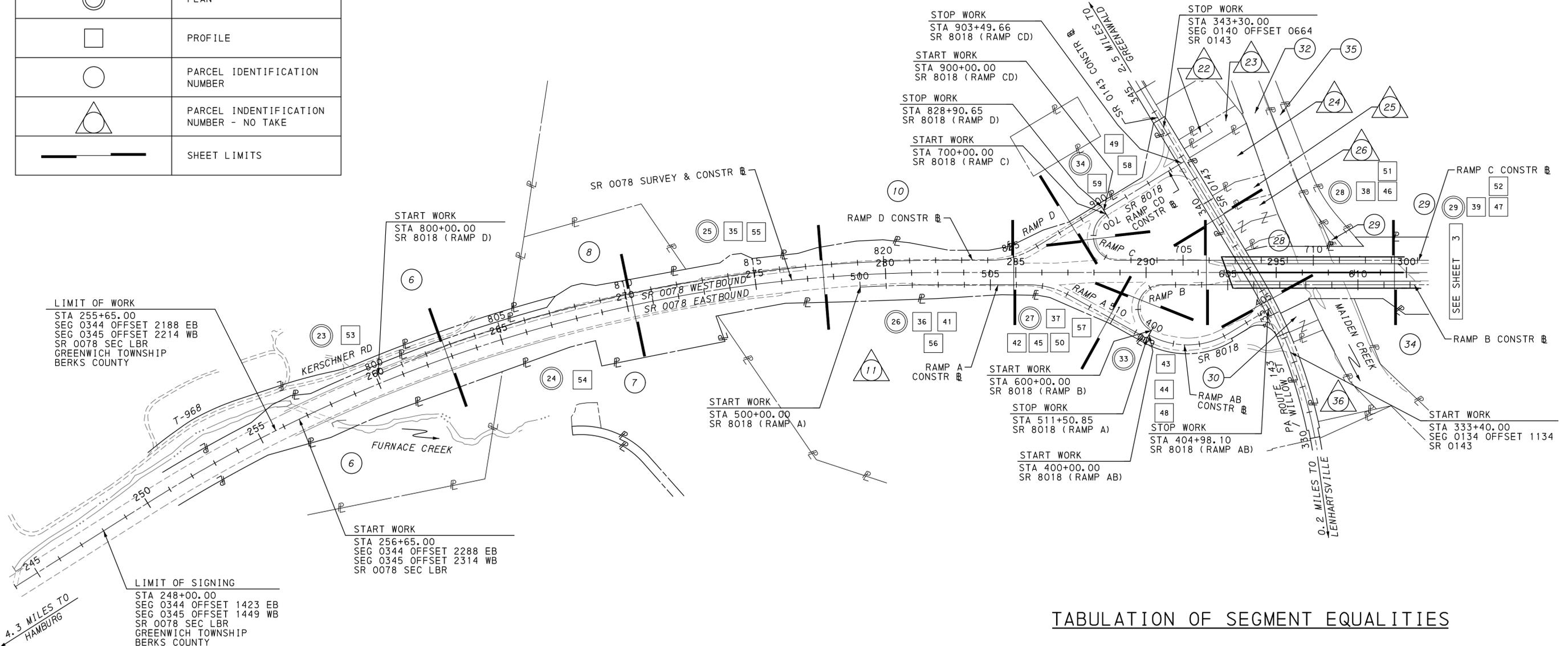
DESCRIPTION	SHEET
TITLE SHEET	1
INDEX MAP	2-3
RECORD OF EXISTING TYPES OF ROADWAY PAVEMENT	4
GENERAL NOTES / LOCATION MAP	5
SUMMARY OF PROJECT COORDINATES	6
TYPICAL SECTIONS	7-12
SPECIAL DETAILS	13-22
PLAN SHEETS	23-34
PROFILE SHEETS	35-59

PROPERTY OWNERS

- | | | | |
|---------------------------------------------------------|-------------------------|----------------------------------------------------|------------------------------------------------------------------------|
| 6 TERRY L. FEGLEY & RONALD J. FEGLEY, TENANTS IN COMMON | 23 JANET HAYES | 29 ERNEST O. MILLER | 36 DANIEL L. LOEB |
| 7 TEN THOUSAND DAYS, L.L.C. | 24 JANET L. HAYES | 30 P&W LAND COMPANY, LLC | 50 KRICK LAND REALTY, L.L.C., A PENNSYLVANIA LIMITED LIABILITY COMPANY |
| 8 LAWRENCE A. SHRAWDER | 25 DAVID P. WEAVER, JR. | 32 UNKNOWN OWNER | 51 STEVEN SCOTT DIEHL |
| 10 PETER BROTHERS, INC. | 26 DONALD H. KERCHNER | 34 GAIL GERBERICH RARICK & GWEN MICHELLE GERBERICH | 52 FLEET REPAIR SOLUTIONS, L.L.C. |
| 11 P&W LAND COMPANY, LLC | 28 MARK F. TENAGLIA | 35 READING R/W COMPANY, INC. | 53 RICHARD A. PYLE AND GRACE E. PYLE, HIS WIFE |
| 22 ARLAN SHWOYER | | | |

LEGEND

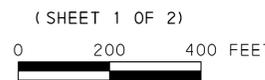
	PLAN
	PROFILE
	PARCEL IDENTIFICATION NUMBER
	PARCEL IDENTIFICATION NUMBER - NO TAKE
	SHEET LIMITS



TABULATION OF SEGMENT EQUALITIES

SR 0078 EB		
SEG 0344 OFFSET 2624 =	SEG 0350 OFFSET 0000 =	STA 260+01.38
SEG 0350 OFFSET 2629 =	SEG 0354 OFFSET 0000 =	STA 286+30.38
SEG 0354 OFFSET 2638 =	SEG 0360 OFFSET 0000 =	STA 312+68.38
SR 0078 WB		
SEG 0345 OFFSET 2650 =	SEG 0351 OFFSET 0000 =	STA 260+01.38
SEG 0351 OFFSET 2659 =	SEG 0355 OFFSET 0000 =	STA 286+60.38
SEG 0355 OFFSET 2632 =	SEG 0361 OFFSET 0000 =	STA 312+92.38
SR 0143		
SEG 0134 OFFSET 1460 =	SEG 0140 OFFSET 0000 =	STA 336+65.76

INDEX MAP



60% DESIGN
 NOT FOR
 CONSTRUCTION

12\06\2021
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 OPERATOR:
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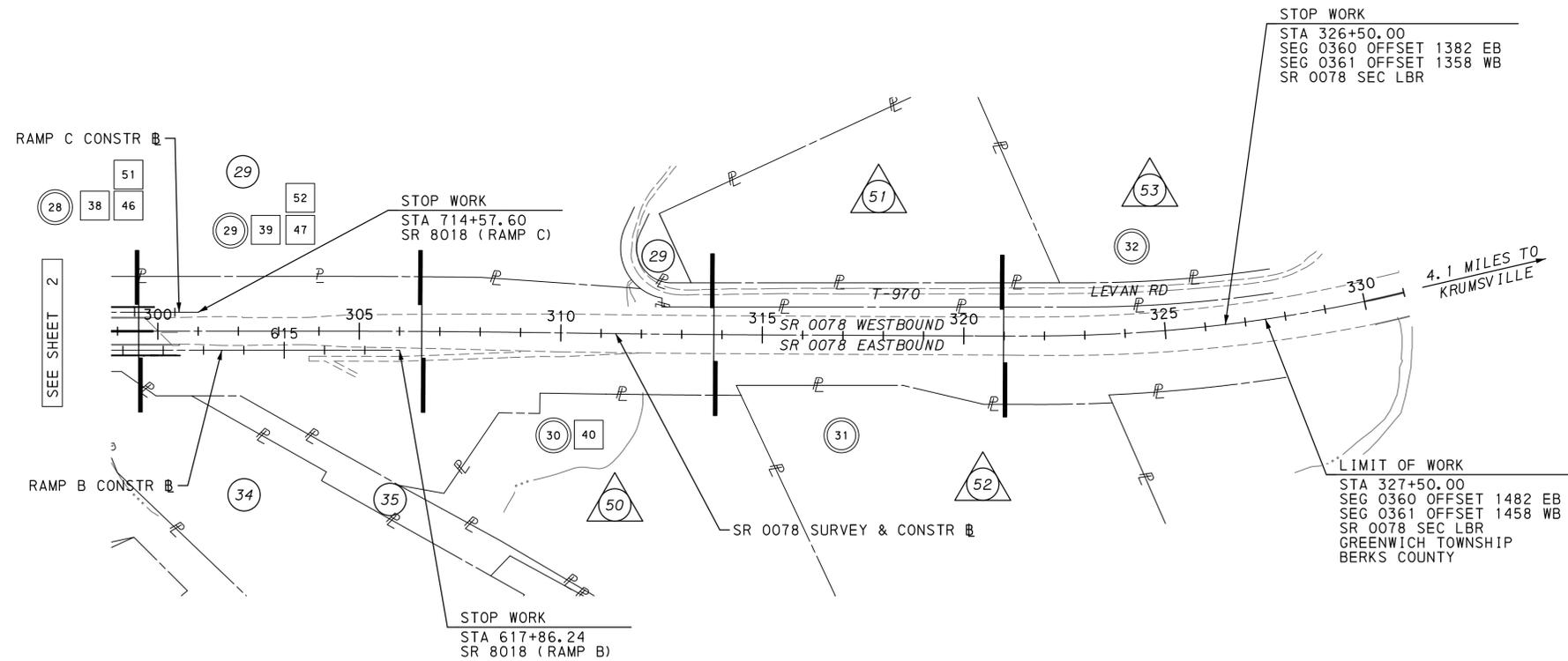
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	3 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

LEGEND	
	PLAN
	PROFILE
	PARCEL IDENTIFICATION NUMBER
	PARCEL IDENTIFICATION NUMBER - NO TAKE
	SHEET LIMITS

PROPERTY OWNERS

- | | | | |
|---------------------------------------------------------|-------------------------|----------------------------------------------------|------------------------------------------------------------------------|
| 6 TERRY L. FEGLEY & RONALD J. FEGLEY, TENANTS IN COMMON | 23 JANET HAYES | 29 ERNEST O. MILLER | 36 DANIEL L. LOEB |
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| 8 LAWRENCE A. SHRAWDER | 25 DAVID P. WEAVER, JR. | 32 UNKNOWN OWNER | 51 STEVEN SCOTT DIEHL |
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| 11 P&W LAND COMPANY, LLC | 28 MARK F. TENAGLIA | 35 READING R/W COMPANY, INC. | 53 RICHARD A. PYLE AND GRACE E. PYLE, HIS WIFE |
| 22 ARLAN SHWOYER | | | |



INDEX MAP

(SHEET 2 OF 2)

0 200 400 FEET



60% DESIGN
NOT FOR
CONSTRUCTION

RECORD OF EXISTING TYPES OF ROADWAY PAVEMENT

DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	4 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY

SR 0078 EASTBOUND

LIMIT OF WORK

ADJACENT TO

SEG 0344 OFFSET 2188

24' OF 12" DOWELLED PCCP - 20' JOINT SP
 24' OF 0" BITUMINOUS BOND BREAKER FJ-1
 24' OF 0" DOUBLE PLY POLY BOND BREAKER
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 8" CONT REINF CONC (CRC) PVMNT
 24' OF 3" 2A SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0360 OFFSET 0704 TO
 SEG 0360 OFFSET 1482

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 4.63" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 4.63" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 1.5" MILLING (AVERAGE DEPTH)
 24' OF 1" HEAVY DUTY BIT WEAR CRSE ID-2
 24' OF 0.5" SCRATCH BIT WEAR COURSE ID-2
 24' OF 10" RCCP 61.5' JNT SPACING/DOWEL
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE
 24' OF 0" DRAINABLE BASE - NO EDGE DRAIN

SEG 0355 OFFSET 1697
 SEG 0355 OFFSET 2632

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 4.63" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 4.63" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 1.5" MILLING (AVERAGE DEPTH)
 24' OF 1" HEAVY DUTY BIT WEAR CRSE ID-2
 24' OF 0.5" SCRATCH BIT WEAR COURSE ID-2
 24' OF 10" RCCP 61.5' JNT SPACING/DOWEL
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE
 24' OF 0" DRAINABLE BASE - NO EDGE DRAIN

SEG 0344 OFFSET 2188 TO
 SEG 0344 OFFSET 2624

24' OF 12" DOWELLED PCCP - 20' JOINT SP
 24' OF 0" BITUMINOUS BOND BREAKER FJ-1
 24' OF 0" DOUBLE PLY POLY BOND BREAKER
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 8" CONT REINF CONC (CRC) PVMNT
 24' OF 3" 2A SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

LIMIT OF WORK

ADJACENT TO

SEG 0360 OFFSET 1482

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 4.63" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 4.63" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 1.5" MILLING (AVERAGE DEPTH)
 24' OF 1" HEAVY DUTY BIT WEAR CRSE ID-2
 24' OF 0.5" SCRATCH BIT WEAR COURSE ID-2
 24' OF 10" RCCP 61.5' JNT SPACING/DOWEL
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE
 24' OF 0" DRAINABLE BASE - NO EDGE DRAIN

SEG 0361 OFFSET 0000
 SEG 0361 OFFSET 1365

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 4.63" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 4.63" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 1.5" MILLING (AVERAGE DEPTH)
 24' OF 1" HEAVY DUTY BIT WEAR CRSE ID-2
 24' OF 0.5" SCRATCH BIT WEAR COURSE ID-2
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0350 OFFSET 1309 TO
 SEG 0350 OFFSET 2044

24' OF 12" DOWELLED PCCP - 20' JOINT SP
 24' OF 8" 2A SUBBASE
 24' OF 0" UNKNOWN SUBGRADE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS

SR 0078 WESTBOUND

LIMIT OF WORK

ADJACENT TO

SEG 0345 OFFSET 2214

24' OF 13" DOWELLED PCCP - 20' JOINT SP
 24' OF 8" 2A SUBBASE
 24' OF 0" UNKNOWN SUBGRADE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS

SEG 0361 OFFSET 1365
 SEG 0361 OFFSET 1458

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 4.63" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 4.63" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 1.5" MILLING (AVERAGE DEPTH)
 24' OF 1" BITUMINOUS WEARING CRSE ID-2
 24' OF 0.5" SCRATCH BIT WEAR COURSE ID-2
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0350 OFFSET 2300 TO
 SEG 0350 OFFSET 2500

36' OF 0.38" SURF TRT TYPE A DOUBLE APP
 36' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 36' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 36' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 36' OF 2" ID-2 BINDER COURSE
 36' OF 0" DRAINABLE BASE W/EDGE DRAINS
 36' OF 10" DOWELLED RCCP
 36' OF 6" SPECIAL SUBBASE
 36' OF 0" UNKNOWN SUBGRADE

SEG 0345 OFFSET 2214
 SEG 0351 OFFSET 2055

24' OF 13" DOWELLED PCCP - 20' JOINT SP
 24' OF 8" 2A SUBBASE
 24' OF 0" UNKNOWN SUBGRADE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS

LIMIT OF WORK

ADJACENT TO

SEG 0361 OFFSET 1458

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 4.63" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 4.63" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 1.5" MILLING (AVERAGE DEPTH)
 24' OF 1" BITUMINOUS WEARING CRSE ID-2
 24' OF 0.5" SCRATCH BIT WEAR COURSE ID-2
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0350 OFFSET 2500 TO
 SEG 0354 OFFSET 0688

24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 24' OF 2" ID-2 BINDER COURSE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0351 OFFSET 2055
 SEG 0351 OFFSET 2400

36' OF 0.38" SURF TRT TYPE A DOUBLE APP
 36' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 36' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 36' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 36' OF 2" ID-2 BINDER COURSE
 36' OF 0" DRAINABLE BASE W/EDGE DRAINS
 36' OF 10" DOWELLED RCCP
 36' OF 6" SPECIAL SUBBASE
 36' OF 0" UNKNOWN SUBGRADE

SEG 0354 OFFSET 0688 TO
 SEG 0354 OFFSET 1355

33' OF BRIDGE DECK

SEG 0351 OFFSET 2400
 SEG 0355 OFFSET 0678

24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 24' OF 2" ID-2 BINDER COURSE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0354 OFFSET 1355 TO
 SEG 0354 OFFSET 1433

24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 2" MILLING (AVERAGE DEPTH)
 24' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 24' OF 2" ID-2 BINDER COURSE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0355 OFFSET 0678
 SEG 0355 OFFSET 1345

33' OF BRIDGE DECK

SEG 0355 OFFSET 1345
 SEG 0355 OFFSET 1429

24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 2" MILLING (AVERAGE DEPTH)
 24' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 24' OF 2" ID-2 BINDER COURSE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0354 OFFSET 1433 TO
 SEG 0354 OFFSET 1650

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 6.13" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 6.13" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 2" MILLING (AVERAGE DEPTH)
 24' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 24' OF 2" ID-2 BINDER COURSE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0355 OFFSET 1429
 SEG 0355 OFFSET 1697

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 6.13" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 6.13" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 2" MILLING (AVERAGE DEPTH)
 24' OF 1.5" BITUMINOUS WEARING CRSE ID-2
 24' OF 2" ID-2 BINDER COURSE
 24' OF 0" DRAINABLE BASE W/EDGE DRAINS
 24' OF 10" DOWELLED RCCP
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE

SEG 0354 OFFSET 1650 TO
 SEG 0360 OFFSET 0704

24' OF 0.5" SURF TRT TYPE A DOUBLE APP
 14' OF 4.63" SPAV, HMA BNDR, 76-22, 19 MM
 14' OF 4.63" MILLING (AVERAGE DEPTH)
 24' OF 0.38" SURF TRT TYPE A DOUBLE APP
 24' OF 1.5" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 0.75" SPAV, HMA WRGLVL, 76-22, 9.5, L
 24' OF 2" SPAV, HMA WRG, 76-22, 12.5 MM, E
 24' OF 1.5" MILLING (AVERAGE DEPTH)
 24' OF 1" BITUMINOUS WEARING CRSE ID-2
 24' OF 0.5" SCRATCH BIT WEAR COURSE ID-2
 24' OF 10" RCCP 61.5' JNT SPACING/DOWEL
 24' OF 6" SPECIAL SUBBASE
 24' OF 0" UNKNOWN SUBGRADE
 24' OF 0" DRAINABLE BASE - NO EDGE DRAIN

NOTES

THE DEPTHS OF MATERIAL SHOWN ARE FOR DESIGN PURPOSES ONLY. ANY RISK OF UNANTICIPATED COSTS ASSOCIATED WITH THE DIFFERENCES BETWEEN THE LISTED DEPTHS AND THE ACTUAL DEPTHS SHALL BE ACCEPTED BY THE CONTRACTOR.

THIS RECORD DOES NOT INCLUDE THE PAVEMENT TYPES FROM THE ONGOING ADJACENT SR 0078, SECTION 12M (ECMS NO. 10466) AND SR 0078, SECTION 13M (ECMS NO. 72822) PROJECTS.

60% DESIGN
 NOT FOR
 CONSTRUCTION

12\06\2021

OPERATOR: Y:\Leh\16100s\60188_02\Eng_Docs\Construct\Plan\Plans\Record of EX Road Types.dgn (Default)

12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188_02\Eng_Docs\Construct\Plans\General\Nores.dgn (Default)

LIST OF PUBLIC UTILITIES

MET ED 2800 POTTSVILLE PIKE READING, PA 19605 ATTN: AL NERINO (610) 921-6757
VERIZON 409 WASHINGTON STREET READING, PA 19601 ATTN: JEFF KRAMER (610) 858-8715

TABULATION OF OVERALL LENGTH

STA 255+65.00 TO STA 327+50.00 = 7,185.00 FT = 1.361 MI

TABULATION OF CONSTRUCTION LENGTH

STA 256+65.00 TO STA 326+50.00 = 6,985.00 FT = 1.323 MI

LIST OF EQUALITIES

NONE

GENERAL NOTES

THE LEGAL RIGHT-OF-WAY ON SR 0078, FORMERLY LR 285, FROM STATION 262+50.00 TO STATION 288+54.15 IS VARIABLE FROM 170 FEET TO 477 FEET, BASED ON PLAN OF LR 285 SECTION 15M, SIGNED BY THE GOVERNOR ON APRIL 25, 1983, AND RECORDED ON MAY 13, 1983, IN THE BERKS COUNTY RECORDERS OFFICE IN HIGHWAY PLAN BOOK 130, PAGE 8.

THE LEGAL RIGHT-OF-WAY ON SR 0078, FORMERLY LR 285 AND LR 285 SPUR, FROM STATION 288+54.15 TO STATION 298+04 IS VARIABLE FROM 120 FEET TO 857 FEET BASED ON CONDEMNATION OF RIGHT-OF-WAY PLANS OF SR 285 SECTION 6C AND SR 285 SPUR SECTION 2, SIGNED BY THE GOVERNOR ON DECEMBER 2, 1955, AND RECORDED ON JANUARY 12, 1956, IN THE BERKS COUNTY RECORDERS OFFICE IN PLAN BOOK 17, PAGE 11.

THE LEGAL RIGHT-OF-WAY ON SR 0078, FORMERLY LR 285 SPUR, FROM STATION 298+04 TO STATION 302+32 IS VARIABLE FROM 196 FEET TO 311 FEET BASED ON PLAN OF SR 0078 SECTION 12M, SIGNED BY THE SECRETARY ON 2/27/2017 AND RECORDED IN THE BERKS COUNTY RECORDER OF DEEDS AS INSTRUMENT #2017017852.

THE LEGAL RIGHT-OF-WAY ON TOWNSHIP ROAD T-968 IS 33 FEET BASED ON PLAN OF L.R. 285, SECTION 2, SIGNED BY THE GOVERNOR ON DECEMBER 2, 1955 AND RECORDED ON APRIL 25, 1956 IN THE BERKS COUNTY RECORDER'S OFFICE IN PLAN BOOK 17 PAGE 13.

THE LEGAL RIGHT-OF-WAY ON SR 143, FORMERLY L.R. 06168, IS 50 FEET BASED ON PLAN OF ROUTE NO. 285 SECTION NO. 3, SIGNED BY THE GOVERNOR ON OCTOBER 18, 1932.

THE DEPARTMENT RESERVES THE RIGHT TO ELIMINATE ANY OR ALL OF THIS WORK. DO NOT PERFORM WORK EXCEPT THAT WHICH IS WITHIN THE HIGHWAY RIGHT-OF-WAY UNTIL SO ORDERED IN WRITING BY THE ENGINEER.

DETAILS OTHER THAN THOSE INDICATED, ARE ON THE FOLLOWING STANDARD DRAWINGS:

Table listing standard drawings including RC-10M through RC-92M and TC-8600 through TC-8717, with dates ranging from 2010 to 2021.

PA ONE CALL SYSTEM logo and text: DIAL 8-1-1 OR 1-800-242-1776 NOT LESS THAN 3 BUSINESS DAYS NOR MORE THAN 10 BUSINESS DAYS PRIOR TO THE START OF EXCAVATION. COORDINATE YOUR PROJECTS VIA COORDINATE PA AT WWW.PAONECALL.ORG

EARTHWORK SUMMARY ENTIRE PROJECT table with columns for CLASS 1-4, CUBIC YARDS OF EXCAVATION, CUBIC YARDS OF COMPLETED EMBANKMENT, CUBIC YARDS OF BORROW EXCAVATION, CUBIC YARDS OF SELECT BORROW, and CUBIC YARDS OF WASTE.

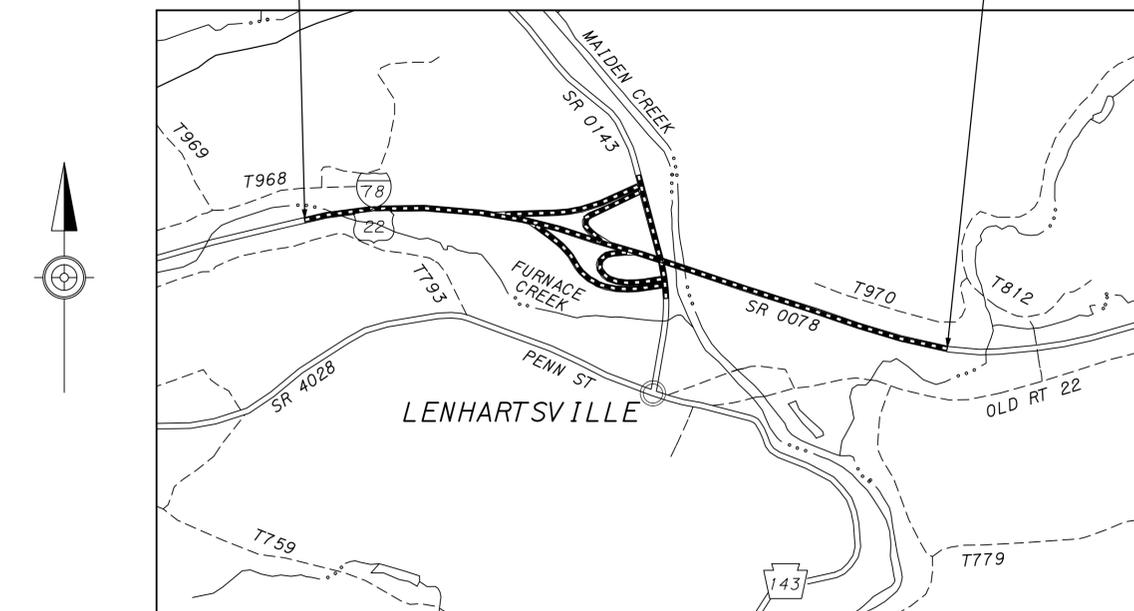
* INCLUDES ALL BORROW ITEMS
** ----- CY PART OF LUMP SUM STRUCTURE ITEMS

LIMIT OF WORK

STA 255+65.00
SEG 0344 OFFSET 2188 EB
SEG 0345 OFFSET 2214 WB
SR 0078 SEC LBR
GREENWICH TOWNSHIP
BERKS COUNTY

LIMIT OF WORK

STA 327+50.00
SEG 0360 OFFSET 1482 EB
SEG 0361 OFFSET 1458 WB
SR 0078 SEC LBR
GREENWICH TOWNSHIP
BERKS COUNTY



LEGEND

- PROJECT (dashed line)
STATE HIGHWAY (solid line)
MUNICIPAL ROAD (dotted line)
STREAMS (dotted line with wavy pattern)

LOCATION MAP



THIS IS A FEDERAL-AID PROJECT AND AS SUCH IS SUBJECT TO INSPECTION BY REPRESENTATIVES OF THE FEDERAL HIGHWAY ADMINISTRATION AND THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION.

THREE (3) TO TEN (10) WORKING DAYS PRIOR TO EXCAVATION BASED ON THE COMPLEXITY OF THE PROJECT, THE CONTRACTOR MUST CONTACT THE PA ONE CALL SYSTEM, INC., PHONE 1-800-242-1776, SERIAL NO. 20210851267 FOR GREENWICH TOWNSHIP AND 20210851268 FOR THE BOROUGH OF LENHARTSVILLE. ADDITIONAL INFORMATION IS AVAILABLE AT https://www.pa1call.org/PA811/Public/.

THE CONTRACTOR IS REQUIRED TO NOTIFY THE DEPARTMENT AND SUBMIT AN ALLEGED VIOLATION REPORT (AVR) TO THE PA PUBLIC UTILITY COMMISSION THROUGH THE PA ONE CALL SYSTEM, WWW.PA1CALL.ORG, WITHIN TEN (10) BUSINESS DAYS AFTER A UTILITY LINE IS STRUCK, DAMAGED, OR PREVIOUS DAMAGE IS DISCOVERED AS REQUIRED BY PENNSYLVANIA'S UNDERGROUND UTILITY LINE PROTECTION LAW ACT 50 (P.L.852, NO. 287 AMENDED OCT. 30, 2017).

SLOPE EASEMENT. AN EASEMENT FOR THE SUPPORT AND PROTECTION OF THE HIGHWAY, INCLUDING THE RIGHT TO CONSTRUCT, INSPECT, MAINTAIN, REPAIR, RECONSTRUCT AND ALTER DRAINAGE FACILITIES AND THE CONTOUR OF THE LAND. THE EASEMENT SHALL NOT PREVENT THE PROPERTY OWNER FROM MAKING ANY LEGAL USE OF THE AREA WHICH IS NOT DETRIMENTAL TO THE NECESSARY SUPPORT AND PROTECTION OF THE HIGHWAY RIGHT-OF-WAY AND THE SAFETY OF THE TRAVELING PUBLIC.

TEMPORARY CONSTRUCTION EASEMENT. AN EASEMENT TO USE THE LAND AS NECESSARY DURING CONSTRUCTION OF THE PROJECT. THE EASEMENT IS REQUIRED ONLY UNTIL THE CONSTRUCTION OR WORK INDICATED BY THE PLAN IS COMPLETED, UNLESS SOONER RELINQUISHED IN WRITING BY THE DEPARTMENT.

HORIZONTAL CONTROL IS BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83-2011(EPOCH 2010) ESTABLISHED BY GPS-RTK-KEYNET-VRS. COMBINED GRID FACTOR = 0.99994826.

VERTICAL CONTROL IS BASED ON NORTH AMERICAN VERTICAL DATUM NAVD 88, ESTABLISHED BY DIFFERENTIAL LEVELS FROM EXISTING PA DOT CONTROL POINTS E-164 & E-165.

SR 0078 PREVIOUSLY KNOWN AS LR 285 AND LR 285 SPUR.

Table with columns: DISTRICT (5-0), COUNTY (BERKS), ROUTE (0078), SECTION (LBR), SHEET (5 OF 59). Includes GREENWICH TOWNSHIP and REVISIONS table.

60% DESIGN
NOT FOR
CONSTRUCTION

12\06\2021

PLOTTED:

OPERATOR: Y:\Leh\160100s\60188_02\Eng_Docs\Construct\Plan\Plans\Proj_Coord\Inates.dgn (Default)

SUMMARY OF PROJECT COORDINATES

BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83-2011(EPOCH 2010) ESTABLISHED BY GPS-RTK-KEYNET-VRS. COMBINED GRID FACTOR = 0.99994826.

Table with columns: ROUTE, STATION, POINT, COORDINATES (NORTH, EAST), BEARING. Rows include SR 0078 SURVEY & CONSTR, SR 0143 CONSTR, RAMP A CONSTR, RAMP B CONSTR, RAMP AB CONSTR, RAMP C CONSTR, RAMP D CONSTR, and RAMP CD CONSTR.

FOUR PLACE COORDINATES ARE FOR COMPUTATIONAL PURPOSES ONLY AND DO NOT IMPLY PRECISION BEYOND TWO DECIMAL PLACES.

SURVEY CONTROL POINT COORDINATES

BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83-2011(EPOCH 2010) ESTABLISHED BY GPS-RTK-KEYNET-VRS. COMBINED GRID FACTOR = 0.99994826.

Table with columns: CONTROL POINT, TYPE, COORDINATES (NORTH, EAST). Lists points 1 through 17 and E164, E165.

FOUR PLACE COORDINATES ARE FOR COMPUTATIONAL PURPOSES ONLY AND DO NOT IMPLY PRECISION BEYOND TWO DECIMAL PLACES.

TABULATION OF REQUIRED RIGHT-OF-WAY BREAK POINT COORDINATES

BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83-2011(EPOCH 2010) ESTABLISHED BY GPS-RTK-KEYNET-VRS. COMBINED GRID FACTOR = 0.99994826.

Table with columns: ROUTE, STATION, OFFSET, COORDINATES (NORTH, EAST). Lists break points for SR 0078 SURVEY & CONSTR with right-of-way monuments.

FOUR PLACE COORDINATES ARE FOR COMPUTATIONAL PURPOSES ONLY AND DO NOT IMPLY PRECISION BEYOND TWO DECIMAL PLACES.

⊕ - RIGHT-OF-WAY MONUMENT (PROPOSED)

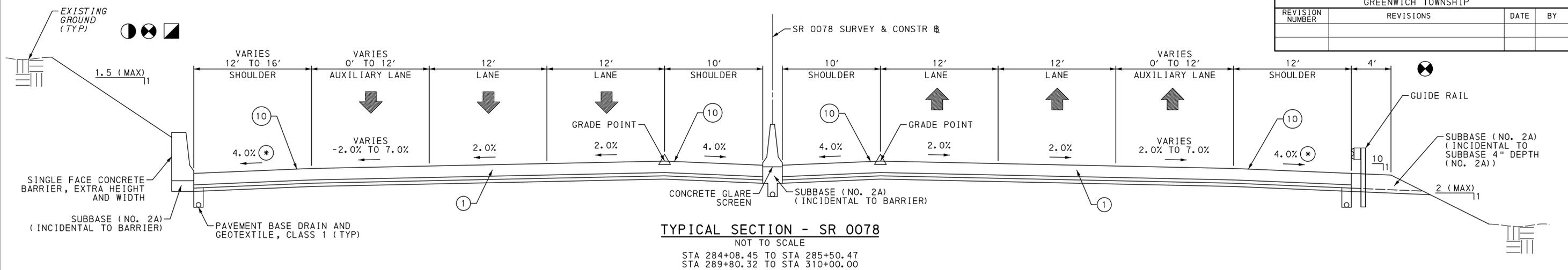
60% DESIGN NOT FOR CONSTRUCTION

SURVEY BOOK NO. 25029 & 25030

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	7 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12/06/2021

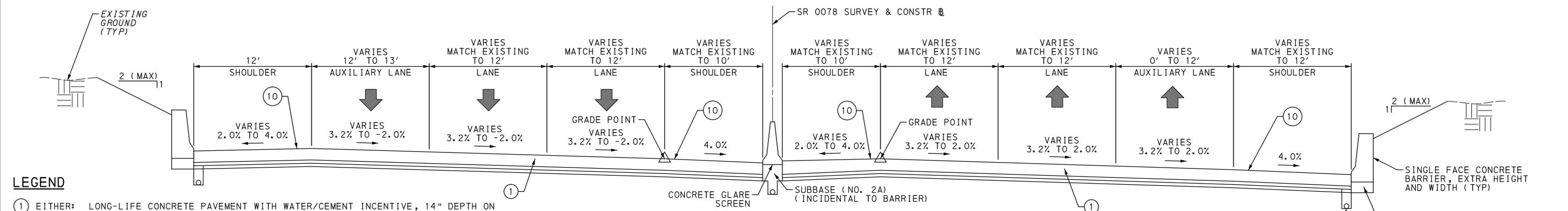
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TYPICAL SECTION - SR 0078

NOT TO SCALE

STA 284+08.45 TO STA 285+50.47
STA 289+80.32 TO STA 310+00.00



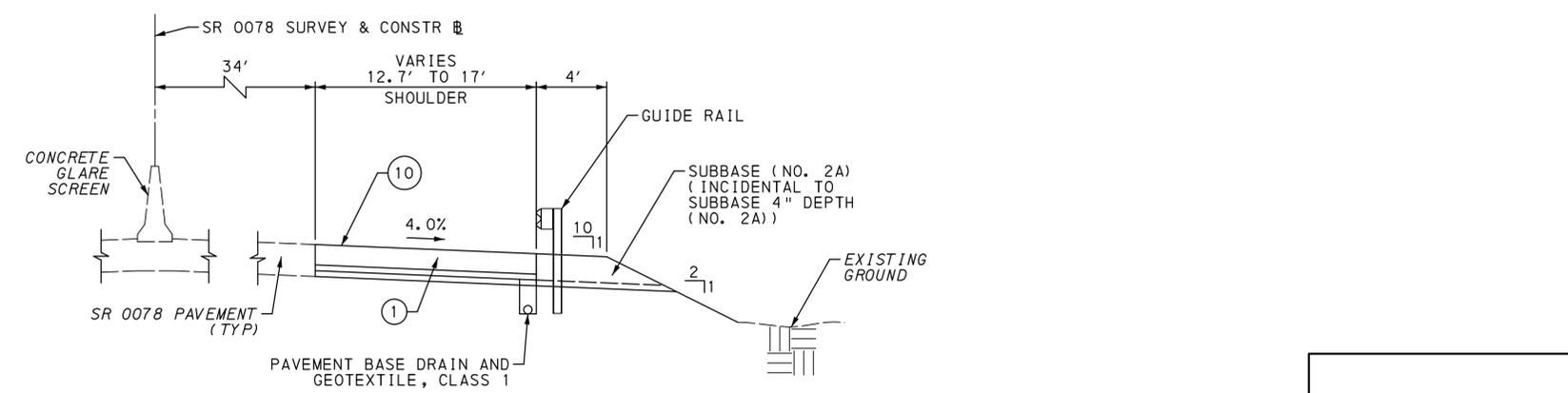
TYPICAL SUPERELEVATED SECTION - SR 0078

NOT TO SCALE

STA 275+00.00 TO STA 284+08.45

LEGEND

- ① EITHER: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON CEMENT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
OR: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON ASPHALT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
- ② MILLING OF ASPHALT PAVEMENT SURFACE, 2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR
- ③ BITUMINOUS TACK COAT
- ④ SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64E-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H
- ⑤ SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE (SCRATCH), PG 64S-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-L (60 LB/SY)
- ⑥ SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH ON SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH ON SUBBASE 8" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A
- ⑦ SELECTED MATERIAL SURFACING (6" DEPTH)
- ⑧ PAVED SHOULDERS, TYPE 6-SP
- ⑨ SUBBASE (NO. 2A)
- ⑩ MILLED CONCRETE PAVEMENT SHOULDER/GORE RUMBLE STRIPS FOR INTERSTATES, EXPRESSWAYS AND FREEWAYS
- * SHOULDER SLOPE TO MATCH SLOPE OF LANE WHEN SLOPE EXCEEDS 4.0%
- + VARIES MATCH EXISTING TO 2.0%



TYPICAL SECTION - SR 0078 - SHOULDER RECONSTRUCTION

NOT TO SCALE

STA 272+50.00 TO STA 275+00.00 RT

TYPICAL SECTIONS

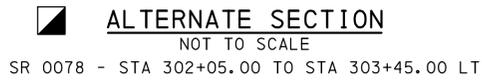
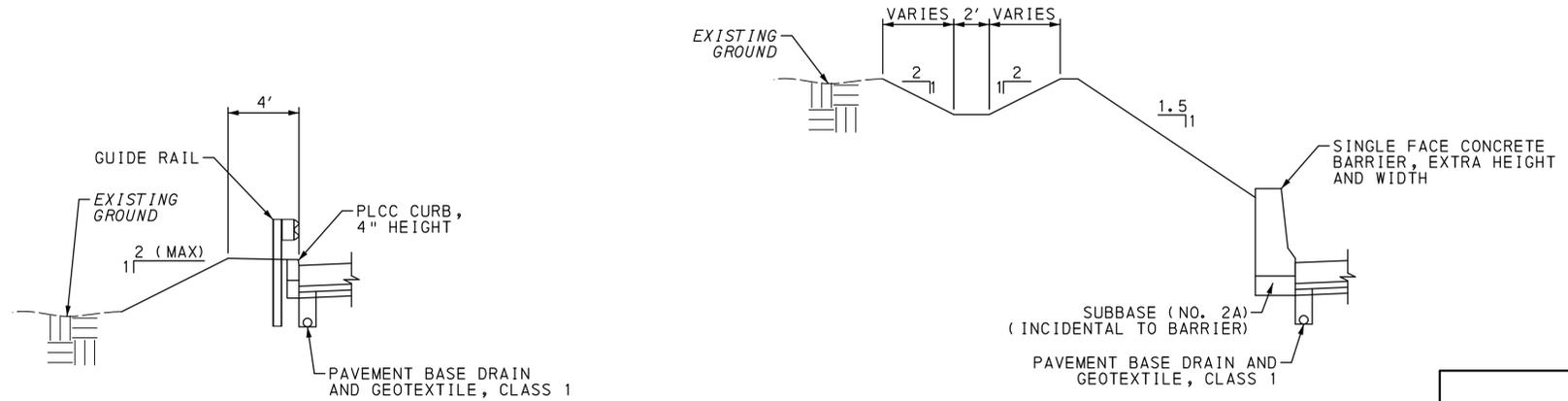
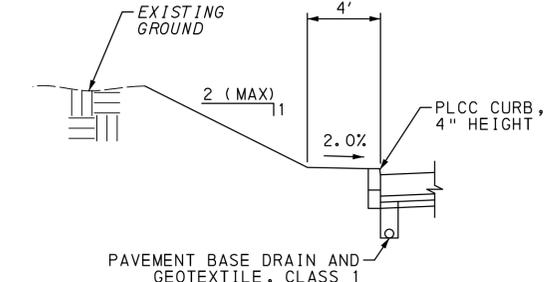
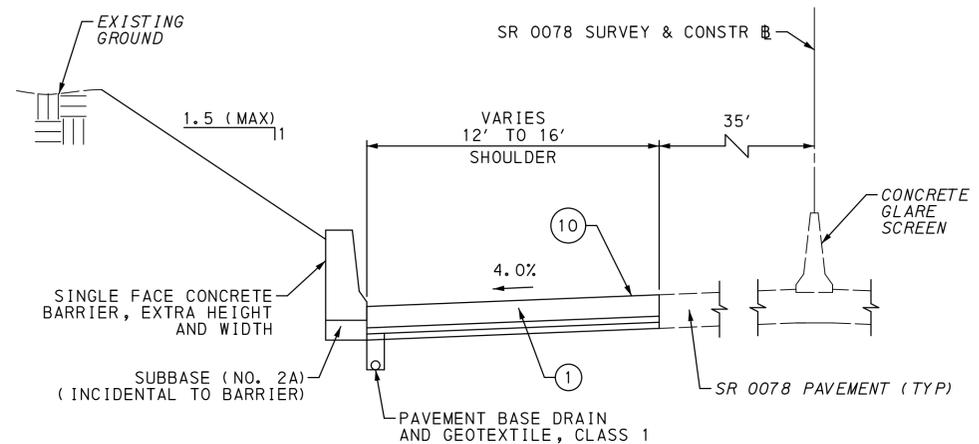
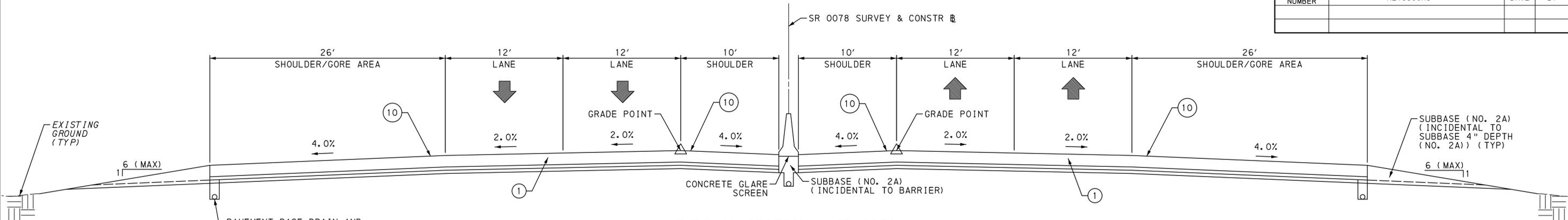
60% DESIGN
NOT FOR
CONSTRUCTION

OPERATOR:

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	8 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:

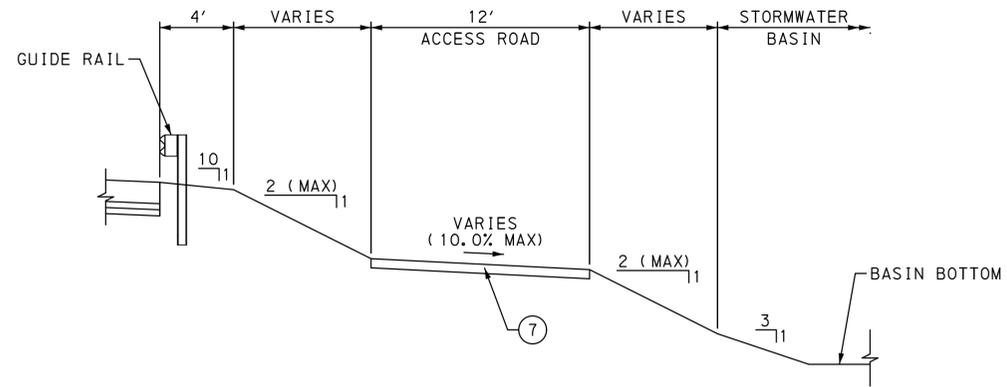


- LEGEND**
- ① EITHER: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON CEMENT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
OR: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON ASPHALT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
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 - ③ BITUMINOUS TACK COAT
 - ④ SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64E-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H
 - ⑤ SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE (SCRATCH), PG 64S-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-L (60 LB/SY)
 - ⑥ SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH ON SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH ON SUBBASE 8" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A
 - ⑦ SELECTED MATERIAL SURFACING (6" DEPTH)
 - ⑧ PAVED SHOULDERS, TYPE 6-SP
 - ⑨ SUBBASE (NO. 2A)
 - ⑩ MILLED CONCRETE PAVEMENT SHOULDER/GORE RUMBLE STRIPS FOR INTERSTATES, EXPRESSWAYS AND FREEWAYS
 - * SHOULDER SLOPE TO MATCH SLOPE OF LANE WHEN SLOPE EXCEEDS 4.0%
 - + VARIES MATCH EXISTING TO 2.0%

TYPICAL SECTIONS

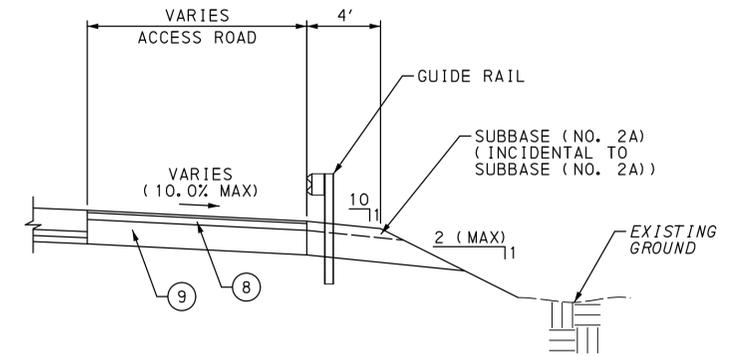
60% DESIGN
NOT FOR
CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	9 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



TYPICAL SECTION - SR 0078 - STORMWATER BASIN ACCESS DRIVEWAY (UNPAVED)
NOT TO SCALE

SR 0078 - STA 269+10.00 TO STA 271+55.00 RT
 SR 0078 - STA 303+75.00 TO STA 306+00.00 RT
 RAMP AB - STA 400+92.00 TO STA 401+80.00 LT

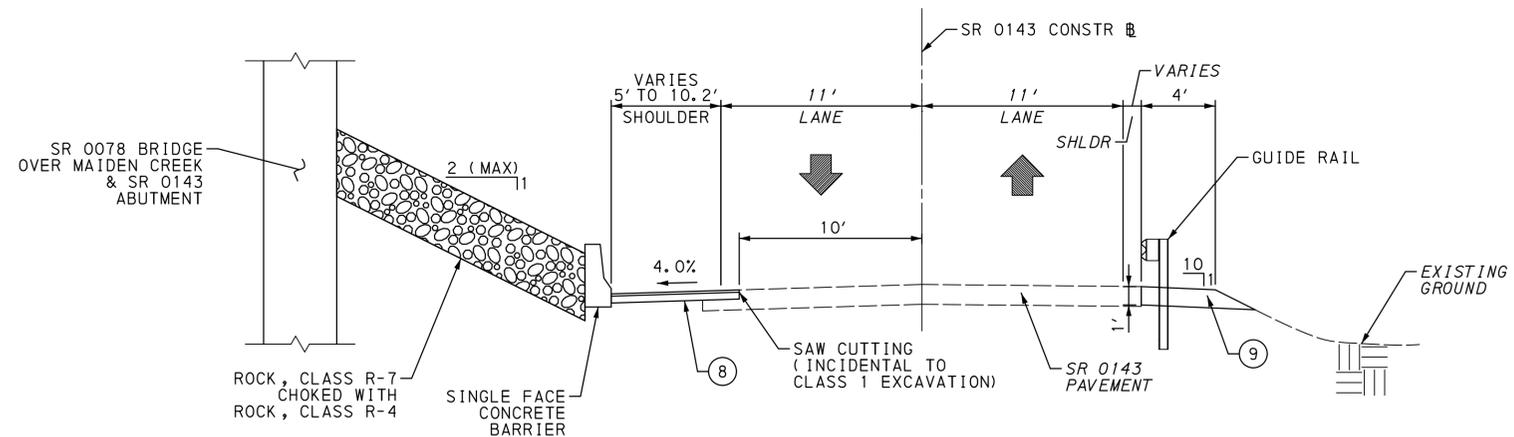


TYPICAL SECTION - SR 0078 - STORMWATER BASIN ACCESS DRIVEWAY (PAVED)
NOT TO SCALE

SR 0078 - STA 271+55.00 TO STA 274+00.00 RT
 SR 0078 - STA 306+00.00 TO STA 312+00.00 RT

LEGEND

- ① EITHER: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON CEMENT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
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- ⑤ SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE (SCRATCH), PG 64S-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-L (60 LB/SY)
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- ⑦ SELECTED MATERIAL SURFACING (6" DEPTH)
- ⑧ PAVED SHOULDERS, TYPE 6-SP
- ⑨ SUBBASE (NO. 2A)
- ⑩ MILLED CONCRETE PAVEMENT SHOULDER/GORE RUMBLE STRIPS FOR INTERSTATES, EXPRESSWAYS AND FREEWAYS
- * SHOULDERS TO MATCH SLOPE OF LANE WHEN SLOPE EXCEEDS 4.0%
- + VARIES MATCH EXISTING TO 2.0%



TYPICAL SECTION - SR 0143
NOT TO SCALE

STA 335+95.00 TO STA 338+50.00

TYPICAL SECTIONS

60% DESIGN
NOT FOR
CONSTRUCTION

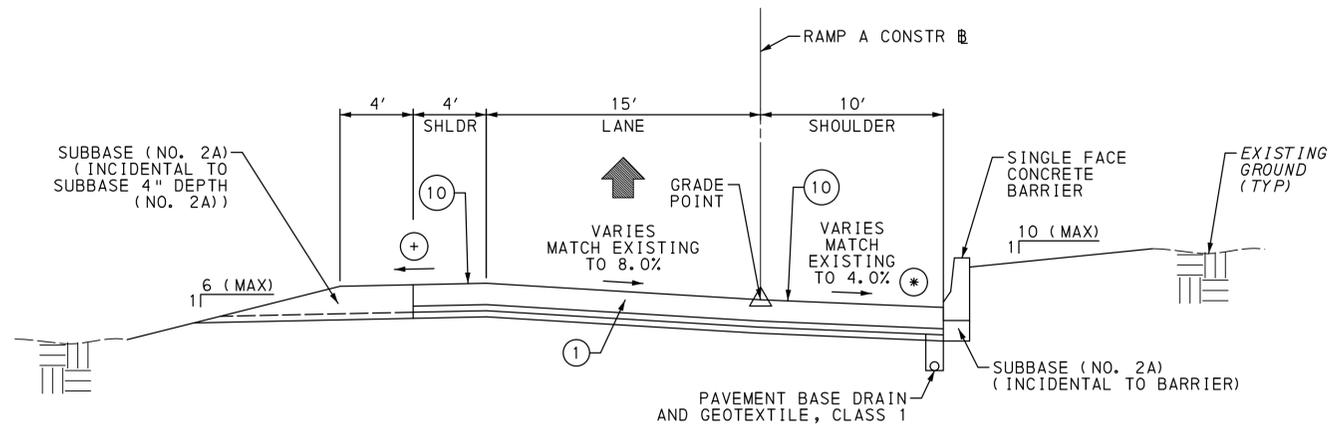
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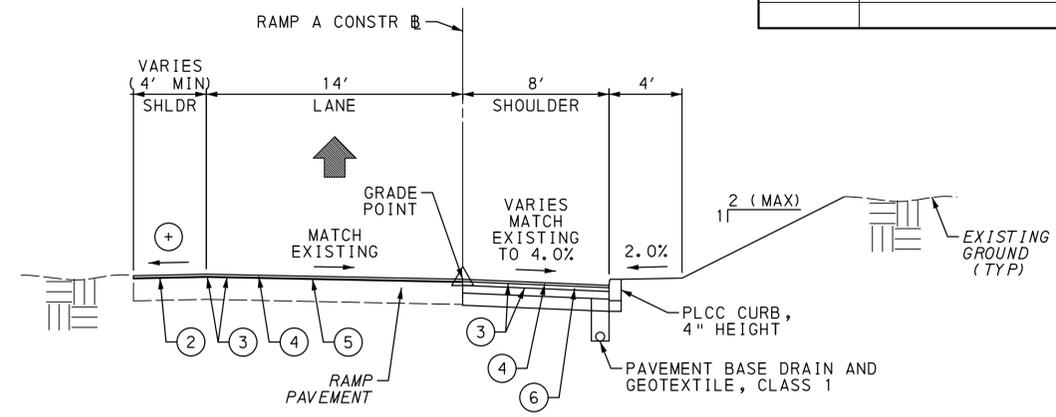
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	10 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021

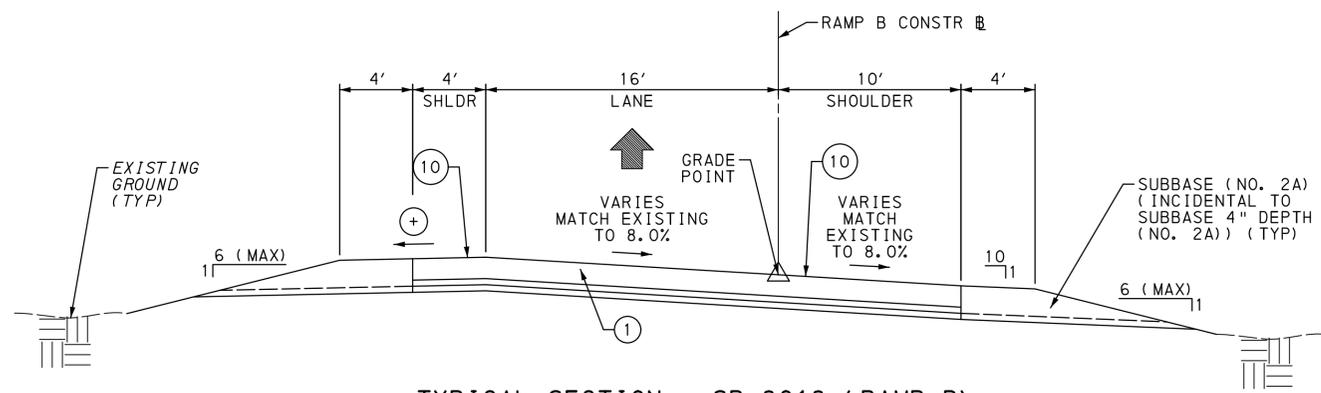
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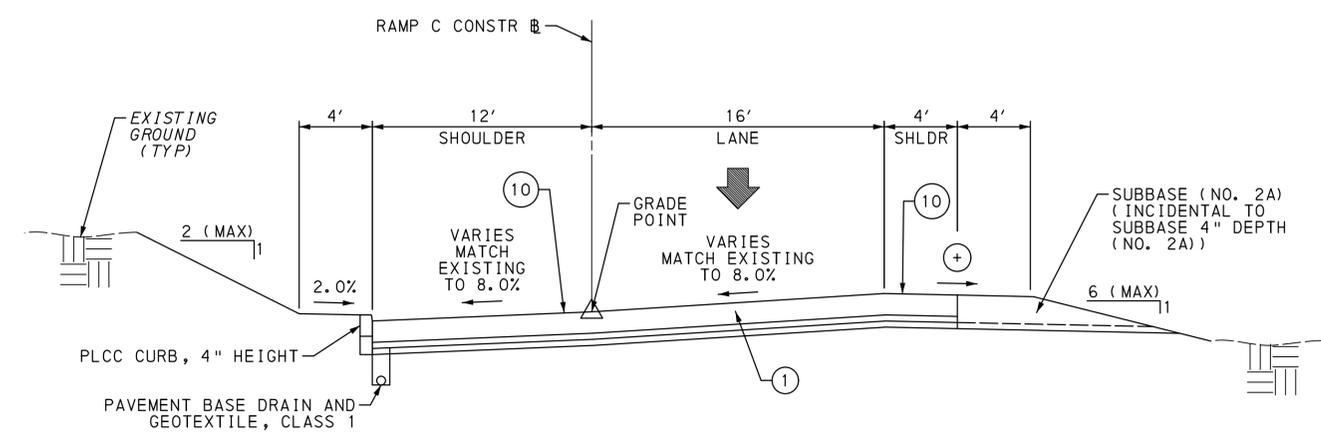
TYPICAL SECTION - SR 8018 (RAMP A)
NOT TO SCALE
STA 505+66.96 TO STA 509+70.00



TYPICAL SECTION - SR 8018 (RAMP A)
NOT TO SCALE
STA 509+70.00 TO STA 510+75.00



TYPICAL SECTION - SR 8018 (RAMP B)
NOT TO SCALE
STA 600+80.00 TO STA 603+12.42



TYPICAL SECTION - SR 8018 (RAMP C)
NOT TO SCALE
STA 700+80.00 TO STA 703+12.73

LEGEND

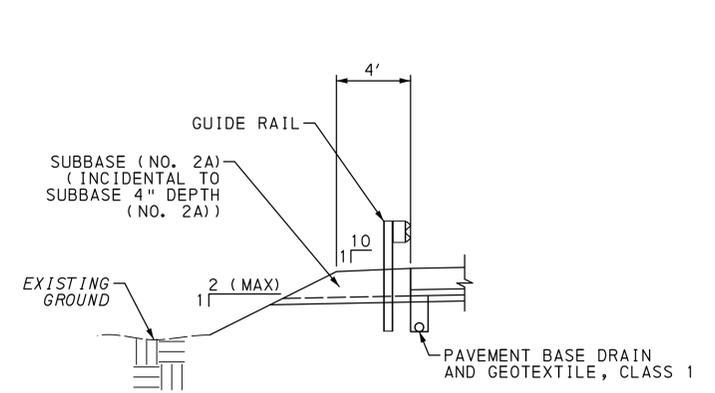
- ① EITHER: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON CEMENT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A
PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
OR: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON ASPHALT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A
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SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH ON
SUBBASE 8" DEPTH (NO. 2A) ON
GEOTEXTILE, CLASS 4, TYPE A
- ⑦ SELECTED MATERIAL SURFACING (6" DEPTH)
- ⑧ PAVED SHOULDERS, TYPE 6-SP
- ⑨ SUBBASE (NO. 2A)
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- * SHOULDER SLOPE TO MATCH SLOPE OF LANE WHEN SLOPE EXCEEDS 4.0%
- + VARIES MATCH EXISTING TO 2.0%

60% DESIGN
NOT FOR
CONSTRUCTION

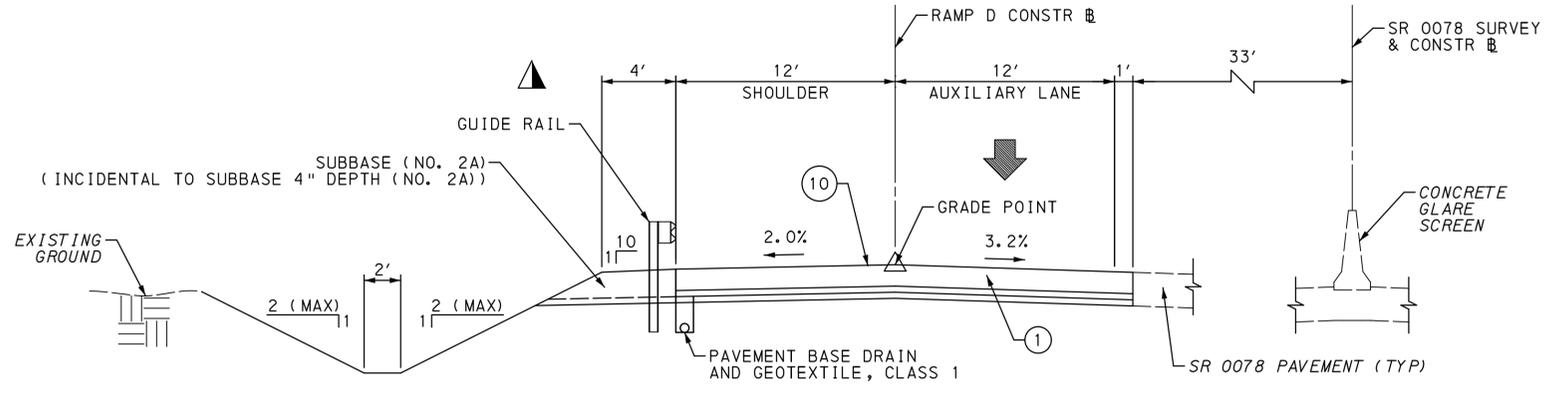
TYPICAL SECTIONS

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	11 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:



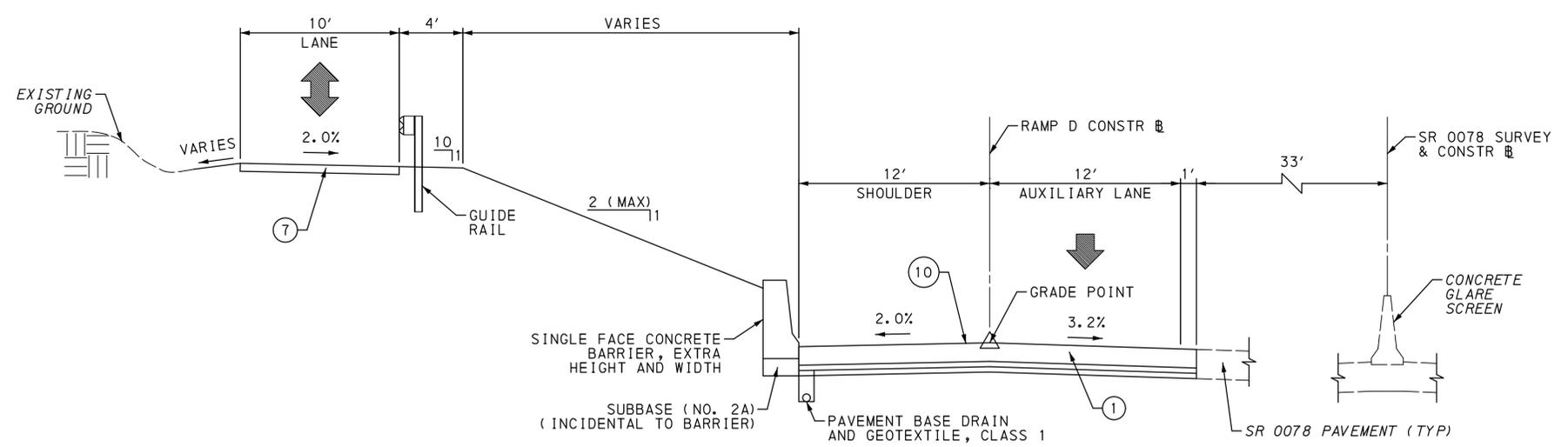
▲ ALTERNATE SECTION
NOT TO SCALE
RAMP D (AUXILIARY LANE) - STA 800+00.00 TO STA 801+45.00



TYPICAL SECTION - SR 8018 (RAMP D (AUXILIARY LANE))
NOT TO SCALE
STA 800+00.00 TO STA 801+45.00
STA 807+35.00 TO STA 815+01.85

LEGEND

- ① EITHER: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON CEMENT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
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- ⑨ SUBBASE (NO. 2A)
- ⑩ MILLED CONCRETE PAVEMENT SHOULDER/GORE RUMBLE STRIPS FOR INTERSTATES, EXPRESSWAYS AND FREEWAYS
- * SHOULDERS TO MATCH SLOPE OF LANE WHEN SLOPE EXCEEDS 4.0%
- + VARIES MATCH EXISTING TO 2.0%



TYPICAL SECTION - SR 8018 (RAMP D (AUXILIARY LANE))
NOT TO SCALE
STA 801+45.00 TO STA 807+35.00

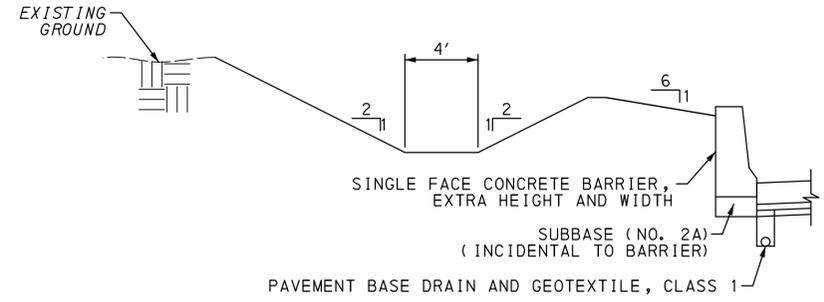
TYPICAL SECTIONS

60% DESIGN
NOT FOR
CONSTRUCTION

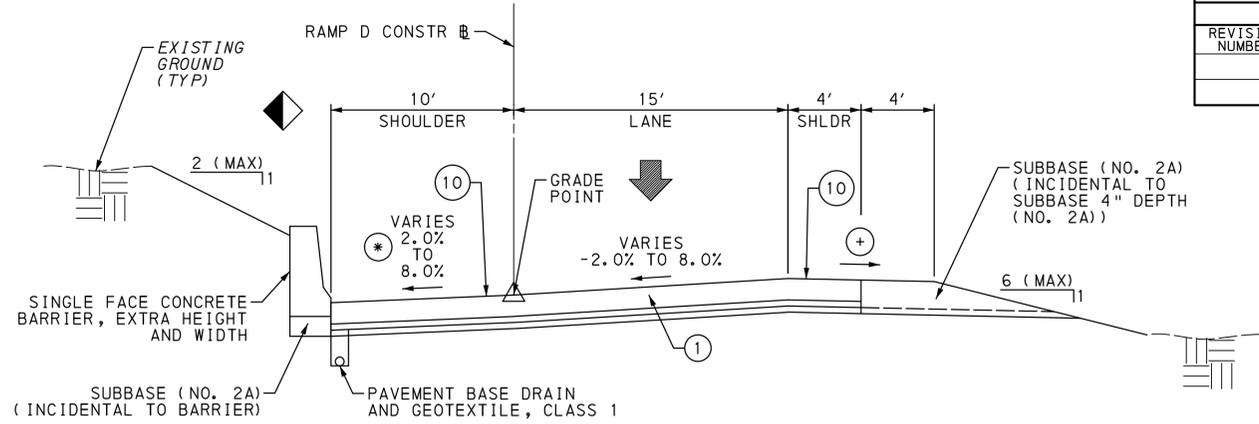
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	12 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

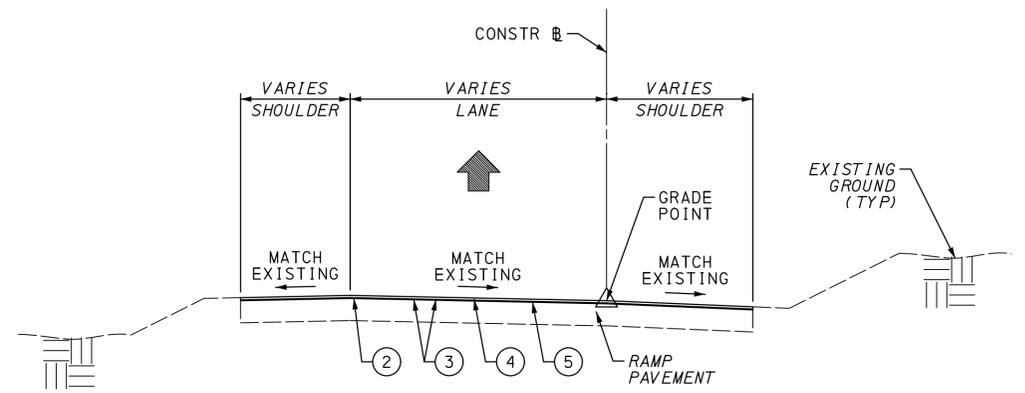
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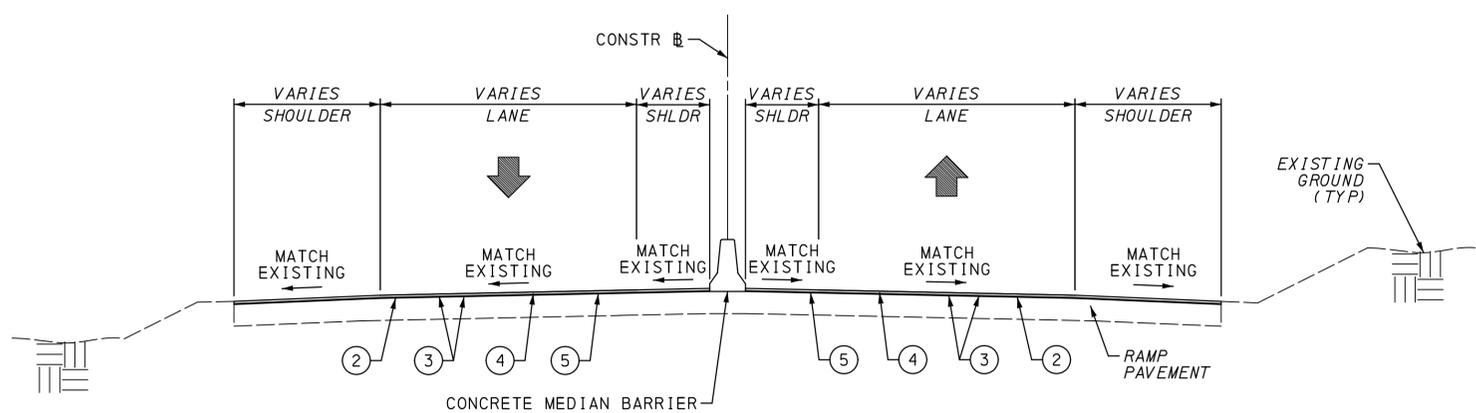
ALTERNATE SECTION
NOT TO SCALE
RAMP D - STA 824+60.00 TO STA 825+80.00 LT



TYPICAL SECTION - SR 8018 (RAMP D)
NOT TO SCALE
STA 822+36.22 TO STA 827+35.00



TYPICAL SECTION - SR 8018 (RAMPS A THRU D)
NOT TO SCALE
RAMP A - STA 510+75.00 TO STA 511+50.85
RAMP B - STA 600+00.00 TO STA 600+80.00
RAMP C - STA 700+00.00 TO STA 700+80.00
RAMP D - STA 827+35.00 TO STA 828+90.65



TYPICAL SECTION - SR 8018 (RAMPS AB AND CD)
NOT TO SCALE
RAMP AB - STA 400+00.00 TO STA 401+00.00
RAMP CD - STA 900+00.00 TO STA 900+75.00

LEGEND

- ① EITHER: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON CEMENT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
OR: LONG-LIFE CONCRETE PAVEMENT WITH WATER/CEMENT INCENTIVE, 14" DEPTH ON ASPHALT TREATED PERMEABLE BASE COURSE, 4" DEPTH ON SUBBASE 4" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A PROTECTIVE COATING FOR CEMENT CONCRETE PAVEMENTS AND SHOULDERS
- ② MILLING OF ASPHALT PAVEMENT SURFACE, 2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR
- ③ BITUMINOUS TACK COAT
- ④ SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64E-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H
- ⑤ SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE (SCRATCH), PG 64S-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-L (60 LB/SY)
- ⑥ SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH ON SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH ON SUBBASE 8" DEPTH (NO. 2A) ON GEOTEXTILE, CLASS 4, TYPE A
- ⑦ SELECTED MATERIAL SURFACING (6" DEPTH)
- ⑧ PAVED SHOULDERS, TYPE 6-SP
- ⑨ SUBBASE (NO. 2A)
- ⑩ MILLED CONCRETE PAVEMENT SHOULDER/GORE RUMBLE STRIPS FOR INTERSTATES, EXPRESSWAYS AND FREEWAYS
- * SHOULDERS TO MATCH SLOPE OF LANE WHEN SLOPE EXCEEDS 4.0%
- + VARIES MATCH EXISTING TO 2.0%

TYPICAL SECTIONS

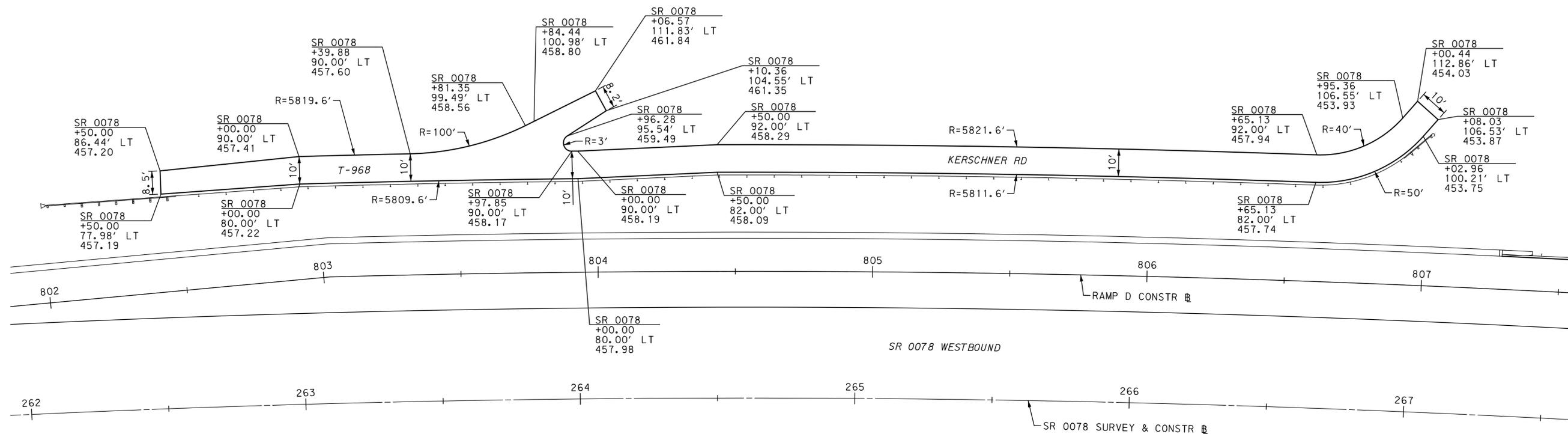
60% DESIGN
NOT FOR
CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	13 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY



12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188-02\Eng_Docs\Construction\Plans\Detail\Kerschner Rd.dgn (Default)

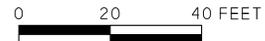


LEGEND

- BASELINE
- STATION
- OFFSET
- ELEVATION

NOTES:
 1. ALL ELEVATIONS SHOWN REPRESENT THE TOP OF PROPOSED PAVEMENT AND ARE LOCATED AT THE BASELINE, THE EDGE OF TRAVEL LANE, THE EDGE OF SHOULDER, OR THE GUTTERLINE AT THE FACE OF CURB/BARRIER.

T-968 (KERSCHNER RD)



**SPOT ELEVATION PLAN
 SPECIAL DETAILS**

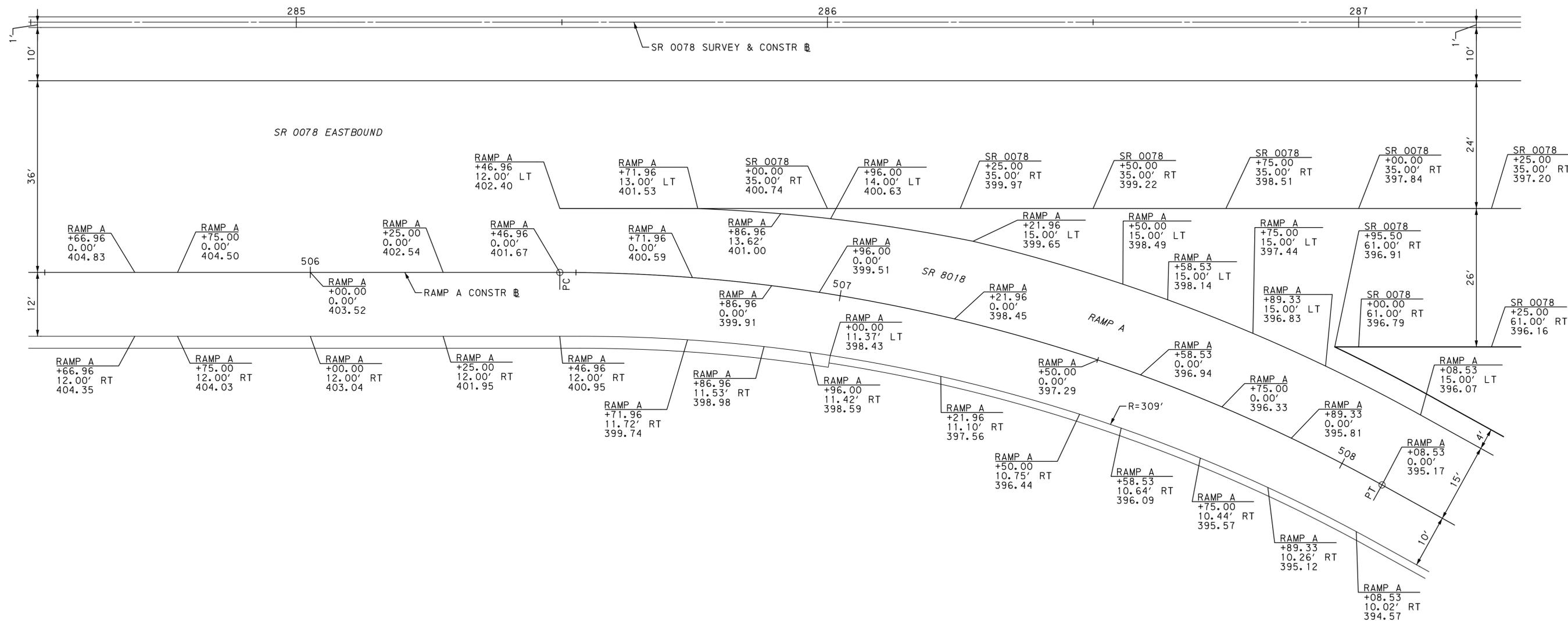
60% DESIGN
 NOT FOR
 CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	14 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188-02\Eng_Docs\Construction\Plans\Detail_Ramp_A.dgn (Default)



LEGEND

- BASELINE
- STATION
- OFFSET
- ELEVATION

NOTES:

1. ALL ELEVATIONS SHOWN REPRESENT THE TOP OF PROPOSED PAVEMENT AND ARE LOCATED AT THE BASELINE, THE EDGE OF TRAVEL LANE, THE EDGE OF SHOULDER, OR THE GUTTERLINE AT THE FACE OF CURB/BARRIER.

SR 0078 & SR 8018 (RAMP A)



**SPOT ELEVATION PLAN
SPECIAL DETAILS**

60% DESIGN
NOT FOR
CONSTRUCTION

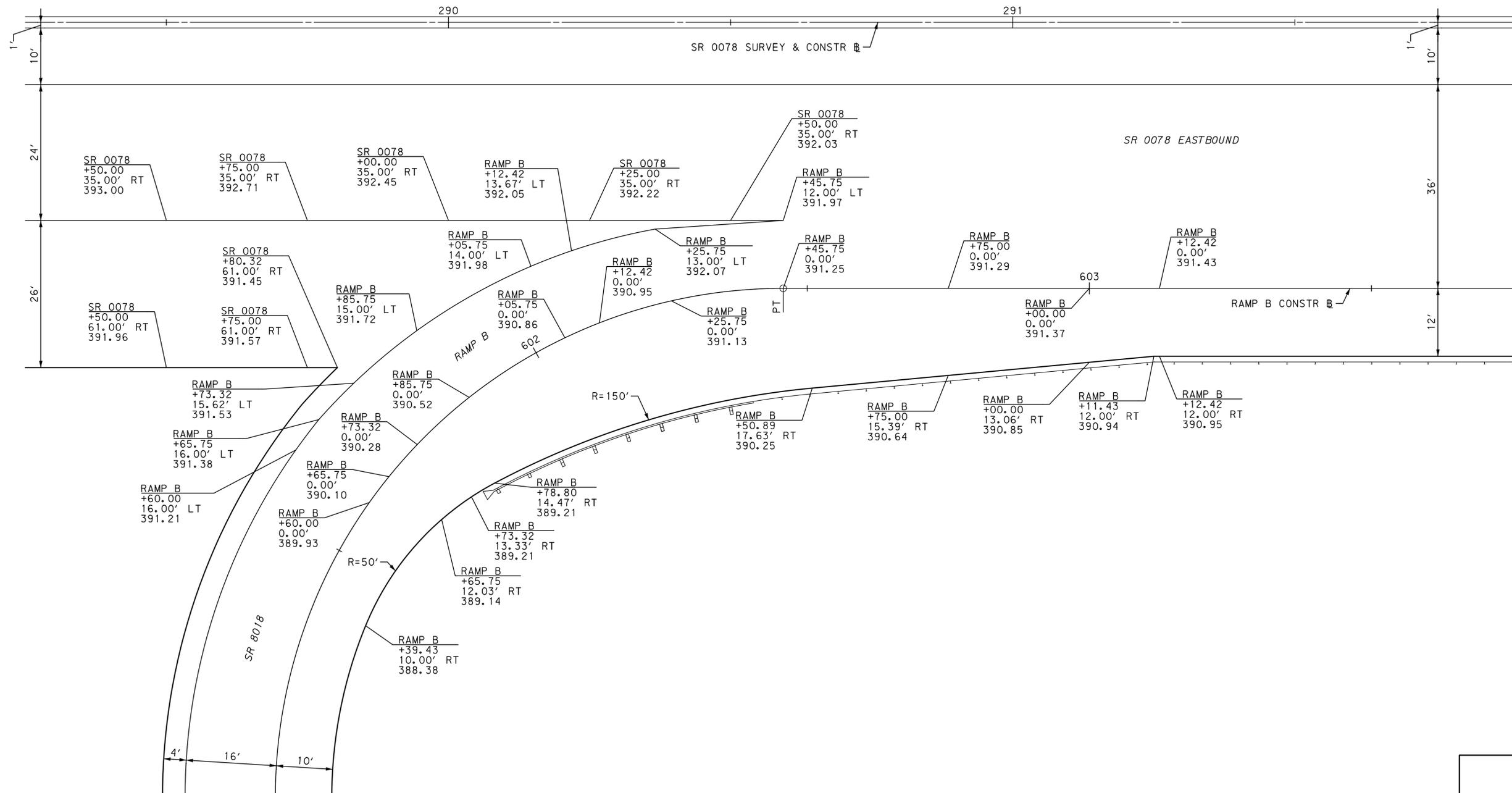
LEGEND

BASELINE
STATION
OFFSET
ELEVATION

NOTES:

1. ALL ELEVATIONS SHOWN REPRESENT THE TOP OF PROPOSED PAVEMENT AND ARE LOCATED AT THE BASELINE, THE EDGE OF TRAVEL LANE, THE EDGE OF SHOULDER, OR THE GUTTERLINE AT THE FACE OF CURB/BARRIER.

DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	15 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY



SR 0078 & SR 8018 (RAMP B)



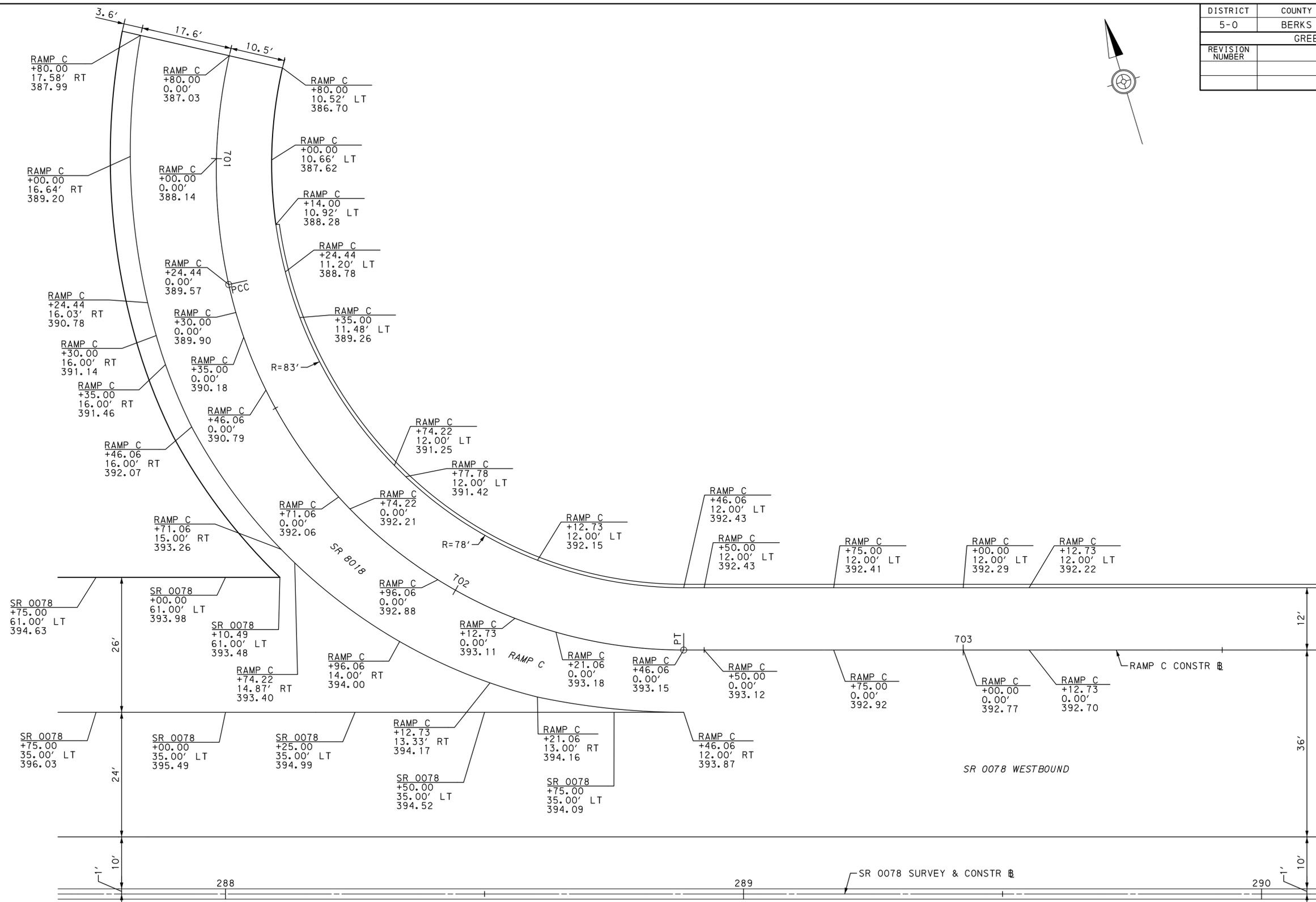
SPOT ELEVATION PLAN
SPECIAL DETAILS

60% DESIGN
NOT FOR
CONSTRUCTION

12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188-02\Eng_Docs\Construction\Plans\Detail_Ramp_B.dgn (Default)

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	16 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



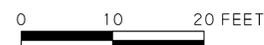
LEGEND

- BASELINE
- STATION
- OFFSET
- ELEVATION

NOTES:

1. ALL ELEVATIONS SHOWN REPRESENT THE TOP OF PROPOSED PAVEMENT AND ARE LOCATED AT THE BASELINE, THE EDGE OF TRAVEL LANE, THE EDGE OF SHOULDER, OR THE GUTTERLINE AT THE FACE OF CURB/BARRIER.

SR 0078 & SR 8018 (RAMP C)



**SPOT ELEVATION PLAN
SPECIAL DETAILS**

60% DESIGN
NOT FOR
CONSTRUCTION

12\06\2021

PLOTTED:

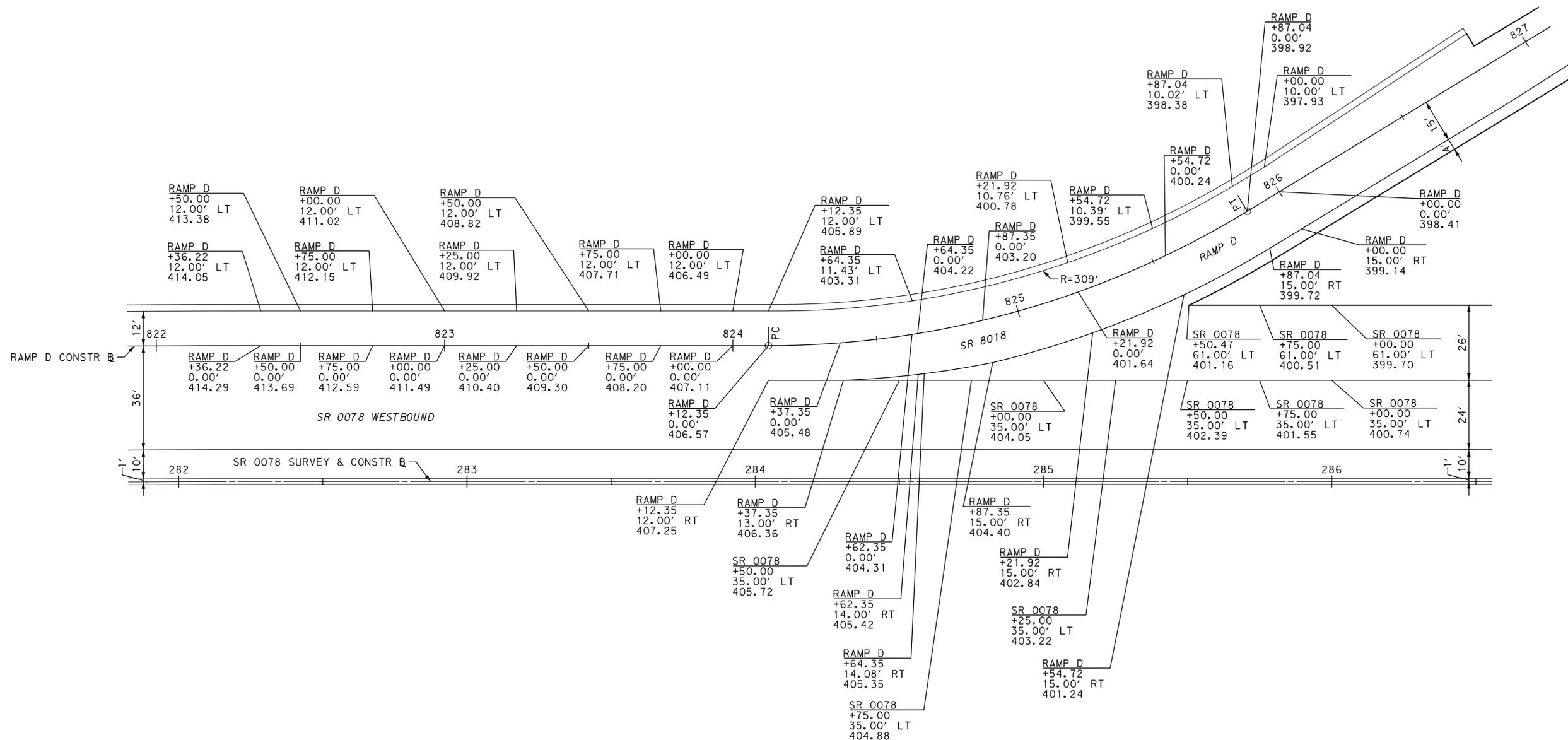
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	17 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188_02\Eng_Docs\Construction\Plans\Detail_Ramp_D.dgn (Default)



LEGEND

- BASELINE
- STATION
- OFFSET
- ELEVATION

NOTES:

1. ALL ELEVATIONS SHOWN REPRESENT THE TOP OF PROPOSED PAVEMENT AND ARE LOCATED AT THE BASELINE, THE EDGE OF TRAVEL LANE, THE EDGE OF SHOULDER, OR THE GUTTERLINE AT THE FACE OF CURB/BARRIER.

SR 0078 & SR 8018 (RAMP D)



**SPOT ELEVATION PLAN
SPECIAL DETAILS**

60% DESIGN
NOT FOR
CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	18 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY

I-01 STA 805+18.76, 12.0' LT
RAMP D
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 446.04'
INV (IN-N) = 441.35'
INV (OUT-S) = 441.09'

I-12 STA 276+50.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 431.46'
INV (OUT-S) = 427.25'

I-05 STA 276+53.00, 51.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 430.39'
INV (IN-N) = 426.18'
INV (OUT-E) = 426.02'

I-06 STA 278+49.00, 57.4' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 424.63'
INV (IN-N) = 420.42'
INV (IN-W) = 420.42'
INV (OUT-E) = 420.26'

I-07 STA 501+44.00, 12.0' RT
RAMP A
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 418.04'
INV (IN-N) = 413.46'
INV (IN-W) = 413.83'
INV (OUT-E) = 413.29'

I-08 STA 504+45.00, 12.0' RT
RAMP A
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 408.41'
INV (IN-N) = 404.20'
INV (IN-W) = 403.66'
INV (OUT-E) = 403.49'

I-09 STA 506+45.00, 12.0' RT
RAMP A
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 401.04'
INV (IN-W) = 396.21'
INV (OUT-E) = 396.04'

I-10 STA 507+29.00, 11.0' RT
RAMP A
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 5 INLET BOX,
HEIGHT < />= 10'
TG = 397.28'
INV (IN-NE) = 392.26'
INV (IN-NW) = 392.53'
INV (OUT-SE) = 391.38'

I-11 STA 510+72.00, 8.0' RT
RAMP A
TYPE C CONCRETE TOP UNIT
AND GRATE
TYPE 5 INLET BOX,
HEIGHT < />= 10'
TG = 387.52'
INV (IN-NW) = 381.62'
INV (OUT-NE) = 381.46'

I-42 STA 600+57.40, 23.9' LT
RAMP B
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 5 INLET BOX,
HEIGHT < />= 10'
TG = 386.20'
INV (IN-SW) = 380.30'
INV (IN-NW) = 381.99'
INV (OUT-SE) = 380.14'

I-37 STA 818+56.00, 12.0' LT
RAMP D
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 427.06'
INV (OUT-E) = 422.85'

I-13 STA 278+49.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 425.81'
INV (OUT-S) = 421.60'

I-14 STA 278+49.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 426.01'
INV (IN-N) = 421.58'
INV (OUT-S) = 421.41'

I-15 STA 820+16.00, 12.0' LT
RAMP D
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 421.78'
INV (IN-W) = 417.57'
INV (OUT-S) = 417.41'

I-16 STA 280+45.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 419.28'
INV (IN-N) = 415.08'
INV (OUT-S) = 414.92'

I-17 STA 281+95.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 414.41'
INV (OUT-N) = 410.15'

I-18 STA 281+95.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 414.29'
INV (IN-S) = 410.08'
INV (OUT-E) = 409.92'

I-19 STA 823+07.00, 12.0' LT
RAMP D
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 410.71'
INV (OUT-S) = 406.81'

I-20 STA 283+25.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 409.95'
INV (IN-N) = 406.05'
INV (IN-W) = 405.74'
INV (OUT-S) = 405.58'

I-21 STA 824+98.00, 27.8' LT
RAMP D
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 403.45'
INV (OUT-E) = 399.20'

I-22 STA 825+60.00, 27.0' LT
RAMP D
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 400.88'
INV (IN-W) = 396.63'
INV (OUT-S) = 396.46'

I-40 STA 825+61.00, 10.3' LT
RAMP D
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 399.32'
INV (IN-N) = 394.57'
INV (OUT-S) = 394.40'

I-23 STA 285+94.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 401.01'
INV (IN-N) = 393.45'
INV (OUT-S) = 393.28'

I-24 STA 285+95.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 400.99'
INV (IN-N) = 393.25'
INV (OUT-S) = 393.08'

I-43 STA 601+19.89, 65.4' LT
RAMP B
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 386.90'
INV (OUT-S) = 383.19'

I-38 STA 289+00.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 393.77'
INV (OUT-S) = 389.56'

I-39 STA 289+00.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 393.77'
INV (IN-N) = 389.54'
INV (OUT-E) = 389.37'

I-31 STA 290+87.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 391.89'
INV (IN-N) = 387.66'
INV (IN-W) = 387.66'
INV (OUT-E) = 387.49'

I-27 STA 291+75.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT > 10' AND < />= 20'
TG = 391.68'
INV (IN-N) = 380.83'
INV (IN-E) = 387.07'
INV (IN-W) = 387.07'
INV (OUT-S) = 380.66'

I-30 STA 290+87.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 391.89'
INV (OUT-S) = 387.68'

I-32 STA 292+62.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 391.89'
INV (OUT-S) = 387.68'

I-33 STA 292+62.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 391.89'
INV (IN-N) = 387.66'
INV (OUT-W) = 387.49'

I-36 STA 604+53.81, 12.0' RT
RAMP B
TYPE C CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 391.12'
INV (OUT-W) = 386.91'

I-44 STA 701+20.00, 31.4' RT
RAMP C
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 390.64'
INV (OUT-E) = 386.43'

I-45 STA 701+20.00, 11.1' LT
RAMP C
TYPE C CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 388.58'
INV (IN-W) = 384.37'
INV (OUT-S) = 384.21'

I-46 STA 701+80.00, 12.0' LT
RAMP C
TYPE C CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 391.54'
INV (IN-N) = 383.96'
INV (OUT-E) = 383.79'

I-47 STA 702+50.00, 12.0' LT
RAMP C
TYPE C CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 392.43'
INV (IN-W) = 383.51'
INV (OUT-E) = 383.34'

I-28 STA 704+46.00, 12.0' LT
RAMP C
TYPE C CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 391.09'
INV (IN-W) = 382.38'
INV (OUT-E) = 382.22'

I-34 STA 706+20.00, 12.7' LT
RAMP C
TYPE C CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 391.06'
INV (OUT-W) = 386.82'

I-29 STA 705+77.00, 12.0' LT
RAMP C
TYPE C CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 390.94'
INV (IN-E) = 386.62'
INV (OUT-W) = 386.45'

I-25 STA 705+35.00, 12.0' LT
RAMP C
TYPE C CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT > 10' AND < />= 20'
TG = 390.88'
INV (IN-E) = 386.26'
INV (IN-W) = 381.79'
INV (OUT-S) = 381.02'

I-26 STA 291+75.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT > 10' AND < />= 20'
TG = 391.68'
INV (IN-N) = 381.02'
INV (OUT-S) = 380.85'

I-59 STA 309+64.40, 51.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 7 INLET BOX,
HEIGHT < />= 10'
TG = 420.90'
INV (OUT-W) = 416.63'

I-58 STA 308+66.16, 51.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 9 INLET BOX,
HEIGHT < />= 10'
TG = 420.05'
INV (IN-N) = 414.23'
INV (IN-E) = 415.68'
INV (OUT-S) = 414.00'
INV (OUT-W) = 415.51'

I-57 STA 305+91.00, 51.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 415.65'
INV (IN-S) = 411.26'
INV (OUT-W) = 411.26'

I-54 STA 303+20.00, 52.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 410.22'
INV (IN-E) = 404.48'
INV (OUT-S) = 404.33'

I-55 STA 303+05.45, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 410.66'
INV (IN-N) = 403.99'
INV (OUT-S) = 403.99'

I-56 STA 303+03.31, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 410.62'
INV (IN-N) = 403.94'
INV (OUT-S) = 403.94'

60% DESIGN
NOT FOR
CONSTRUCTION

**DRAINAGE DATA
SPECIAL DETAILS**

12\06\2021 PLOTTED:

OPERATOR: Y:\Leh\16100s\60188_02\Eng_Docs\Construct\Plans\Drawings\Data_01.dgn (Default)

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	19 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

I-52 STA 300+08.00, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 404.73'
INV (OUT-N) = 400.52'

I-51 STA 300+08.00, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 404.73'
INV (IN-S) = 400.50'
INV (OUT-N) = 400.33'

I-50 STA 713+65.00, 12.0' LT
RAMP C
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 403.92'
INV (IN-S) = 399.38'
INV (OUT-E) = 399.21'

I-53 STA 714+45.00, 12.0' LT
RAMP C
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 405.50'
INV (IN-W) = 398.83'
INV (OUT-E) = 398.60'

I-60 STA 305+13.21, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 414.82'
INV (OUT-S) = 410.46'

I-61 STA 305+13.17, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX WITH
MODIFIED TOP SLAB,
HEIGHT < />= 10'
TG = 414.81'
INV (IN-N) = 410.45'
INV (OUT-E) = 410.28'

I-62 STA 305+79.33, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX,
HEIGHT < />= 10'
TG = 416.14'
INV (IN-N) = 410.58'
INV (OUT-S) = 410.41'

I-63 STA 305+79.31, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX WITH
MODIFIED TOP SLAB,
HEIGHT < />= 10'
TG = 416.14'
INV (IN-N) = 410.39'
INV (IN-E) = 411.27'
INV (IN-W) = 409.97'
INV (OUT-S) = 409.80'

I-64 STA 307+00.07, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 418.46'
INV (OUT-S) = 414.09'

I-65 STA 306+99.98, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 4 INLET BOX WITH
MODIFIED TOP SLAB,
HEIGHT < />= 10'
TG = 418.46'
INV (IN-N) = 414.08'
INV (OUT-W) = 413.91'

I-66 STA 308+53.79, 1.0' LT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 420.64'
INV (IN-N) = 413.59'
INV (OUT-S) = 413.42'

I-67 STA 308+52.08, 1.0' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 420.62'
INV (IN-N) = 413.39'
INV (OUT-S) = 413.22'

I-41 STA 269+24.00, 136.5' RT
SR 0078
TYPE M CONCRETE TOP UNIT
AND GRATE
STANDARD INLET BOX,
HEIGHT < />= 10'
TG = 420.50'
INV (OUT-W) = 417.75'

I-71 STA 403+78.58, 83.0' LT
RAMP AB
TYPE M CONCRETE TOP UNIT
AND GRATE
TYPE 6 INLET BOX,
HEIGHT < />= 10'
TG = 375.50'
INV (OUT-SE) = 367.00'

I-72 STA 403+95.94, 18.7' LT
RAMP AB
TYPE C CONCRETE TOP UNIT
AND GRATE
TYPE 6 INLET BOX,
HEIGHT < />= 10'
TG = 369.29'
INV (IN-N) = 363.48'
INV (IN-W) = 363.20'
INV (IN-S) = 363.83'
INV (OUT-E) = 362.83'

M-01 STA 269+11.04, 62.9' RT
SR 0078
MANHOLE FRAME AND COVER
TYPE 5 MANHOLE, STORM WATER,
HEIGHT > 10' AND < />= 20'
RIM = 433.69'
INV (IN-E) = 418.57'
INV (OUT-SW) = 418.40'

M-02 STA 272+05.00, 65.5' RT
SR 0078
MANHOLE FRAME AND COVER
TYPE 5 MANHOLE, STORM WATER,
HEIGHT > 10' AND < />= 20'
RIM = 434.84'
INV (IN-E) = 420.29'
INV (OUT-W) = 420.29'

M-03 STA 274+70.75, 62.5' RT
SR 0078
MANHOLE FRAME AND COVER
TYPE 5 MANHOLE, STORM WATER,
HEIGHT > 5' AND < />= 10'
RIM = 429.62'
INV (IN-N) = 421.95'
INV (OUT-W) = 421.84'

M-04 STA 269+99.76, 74.0' RT
SR 0078
MANHOLE FRAME AND COVER
TYPE 4 MANHOLE, STORM WATER,
HEIGHT > 5' AND < />= 10'
RIM = 427.71'
INV (IN-N) = 422.74'
INV (OUT-S) = 420.00'

M-05 STA 271+69.21, 55.9' RT
SR 0078
MANHOLE FRAME AND COVER
TYPE 4 MANHOLE, STORM WATER,
HEIGHT > 10' AND < />= 20'
RIM = 436.51'
INV (IN-N) = 426.70'
INV (OUT-S) = 426.69'

M-06 STA 272+99.02, 39.4' RT
SR 0078
MANHOLE FRAME AND COVER
TYPE 4 MANHOLE, STORM WATER,
HEIGHT > 5' AND < />= 10'
RIM = 436.47'
INV (IN-N) = 431.61'
INV (OUT-SW) = 431.50'

M-07 STA 814+36.98, 5.1' LT
RAMP D
MANHOLE FRAME AND COVER
TYPE 4 MANHOLE, STORM WATER,
HEIGHT > 10' AND < />= 20'
RIM = 436.89'
INV (IN-N) = 425.50'
INV (OUT-S) = 425.50'

M-08 STA 603+61.43, 8.5' RT
RAMP B
MANHOLE FRAME AND COVER
TYPE 5 MANHOLE, STORM WATER,
HEIGHT > 10' AND < />= 20'
RIM = 391.02'
INV (IN-N) = 380.00'
INV (IN-E) = 386.42'
INV (OUT-S) = 379.83'

M-09 STA 805+16.06, 20.0' LT
RAMP D
MANHOLE FRAME AND COVER
TYPE 4 MANHOLE, STORM WATER,
HEIGHT > 10' AND < />= 20'
RIM = 452.53'
INV (IN-N) = 447.22'
INV (OUT-S) = 441.58'

M-10 STA 508+00.00, 5.9' RT
RAMP A
MANHOLE FRAME AND COVER
TYPE 5 MANHOLE, STORM WATER,
HEIGHT > 5' AND < />= 10'
RIM = 395.07'
INV (IN-NW) = 389.17'
INV (OUT-SE) = 389.01'

M-12 STA 614+72.15, 6.1' RT
RAMP B
MANHOLE FRAME AND COVER
TYPE 4 MANHOLE, STORM WATER,
HEIGHT > 5' AND < />= 10'
RIM = 409.72'
INV (IN-NE) = 403.57'
INV (OUT-SW) = 403.40'

M-13 STA 615+10.56, 56.9' RT
RAMP B
MANHOLE FRAME AND COVER
TYPE 5 MANHOLE, STORM WATER,
HEIGHT > 10' AND < />= 20'
RIM = 404.52'
INV (IN-NW) = 391.00'
INV (IN-E) = 396.24'
INV (OUT-W) = 391.00'

M-15 STA 400+51.25, 21.5' LT
RAMP AB
MANHOLE FRAME AND COVER
TYPE 5 MANHOLE, STORM WATER,
HEIGHT > 5' AND < />= 10'
RIM = 381.14'
INV (IN-W) = 375.24'
INV (OUT-E) = 373.00'

M-16 STA 613+38.98, 3.6' RT
RAMP B
MANHOLE FRAME AND COVER
TYPE 6 MANHOLE, STORM WATER,
HEIGHT > 30'
RIM = 407.14'
INV (IN-N) = 382.76'
INV (OUT-S) = 377.33'

M-17 STA 305+90.55, 40.2' LT
SR 0078
MANHOLE FRAME AND COVER
STANDARD INLET BOX,
HEIGHT < />= 10'
RIM = 416.07'
INV (IN-E) = 411.43'
INV (OUT-N) = 411.26'
INV (OUT-SW) = 410.75'

H-01 STA 808+22.11, 33.4' LT
RAMP D
TYPE D-W ENDWALL
FOR 48" PIPE
INV (OUT) = 430.63'

H-02 STA 814+33.28, 32.1' LT
RAMP D
TYPE D ENDWALL
FOR 24" PIPE
INV (OUT) = 426.00'

H-03 STA 301+38.81, 76.0' LT
SR 0078
TYPE D-W ENDWALL
FOR 48" PIPE
INV (OUT) = 394.43'

E-01 STA 268+66.06, 95.2' RT
SR 0078
TYPE D ENDWALL
FOR 36" PIPE
INV (OUT) = 418.00'

E-04 STA 270+00.17, 109.3' RT
SR 0078
CONCRETE END SECTIONS
FOR 18" PIPE
INV (OUT) = 418.00'

E-05 STA 271+77.72, 105.5' RT
SR 0078
CONCRETE END SECTIONS
FOR 18" PIPE
INV (OUT) = 418.00'

E-06 STA 272+54.86, 103.6' RT
SR 0078
CONCRETE END SECTIONS
FOR 18" PIPE
INV (OUT) = 418.00'

E-07 STA 613+35.19, 72.8' RT
RAMP B
TYPE D-W ENDWALL
FOR 48" PIPE
INV (OUT) = 375.67'

E-08 STA 603+89.93, 74.9' RT
RAMP B
TYPE D ENDWALL
FOR 24" PIPE
INV (OUT) = 371.00'

E-12 STA 614+37.94, 60.4' RT
RAMP B
CONCRETE END SECTIONS
FOR 18" PIPE
INV (OUT) = 387.78'

E-20 STA 335+52.72, 25.6' RT
SR 0143
TYPE D ENDWALL
FOR 42" PIPE
INV (OUT) = 361.00'

E-40 STA 268+87.32, 140.2' RT
SR 0078
CONCRETE END SECTIONS
FOR 18" PIPE
INV (OUT) = 417.25'

E-42 STA 401+61.81, 71.8' LT
RAMP AB
TYPE D-W ENDWALL
FOR 36" PIPE
INV (OUT) = 371.00'

E-53 STA 301+17.40, 78.7' LT
SR 0078
CONCRETE END SECTIONS
FOR 18" PIPE
INV (OUT) = 398.00'

60% DESIGN
NOT FOR
CONSTRUCTION

**DRAINAGE DATA
SPECIAL DETAILS**

12\06\2021

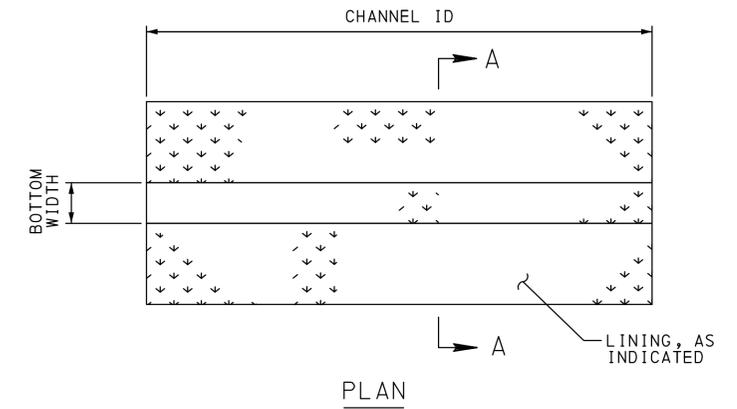
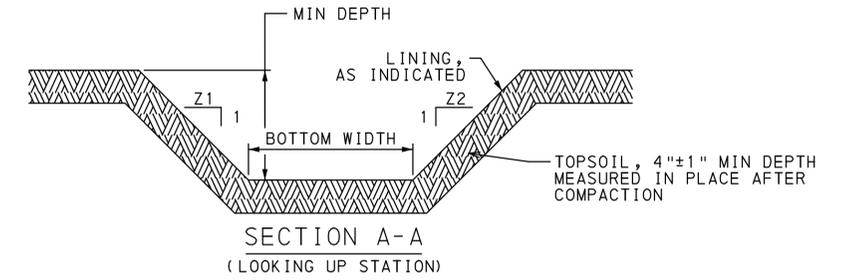
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	20 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY

CHANNEL SCHEDULE

ID	STATION, OFFSET			SLOPE %	BOTTOM WIDTH (FT)	DEPTH (FT)	Z1 (FT)	Z2 (FT)	LINING
	BASELINE	FROM	TO						PERM
CH-01.1	SR 0078	267+40.0, 62.0 LT	267+63.2, 71.7 LT	18.0%	2.0	1.0	2	2	TRM 5C (GRASS)
CH-01.2	SR 0078	267+63.2, 71.7 LT	268+19.0, 88.7 LT	14.0%	2.0	1.0	2	2	TRM 5C (GRASS)
CH-02.1	SR 0078	269+87.3, 67.0 LT	268+92.1, 73.2 LT	1.1%	2.0	1.5	2	2	TRM 5C (GRASS)
CH-02.2	SR 0078	268+92.1, 73.2 LT	268+31.8, 88.7 LT	11.5%	2.0	1.5	2	2	TRM 5C (GRASS)
CH-03.1	SR 0078	269+87.3, 67.0 LT	271+01.8, 67.0 LT	1.0%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-03.2	SR 0078	271+01.8, 67.0 LT	271+49.8, 70.3 LT	2.0%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-03.3	SR 0078	271+49.8, 70.3 LT	271+92.3, 73.5 LT	4.7%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-03.4	SR 0078	271+92.3, 73.5 LT	273+19.8, 75.1 LT	1.7%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-03.5	SR 0078	273+19.8, 75.1 LT	274+24.6, 85.2 LT	6.5%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-04.1	SR 0078	276+08.2, 69.0 LT	274+85.5, 78.0 LT	2.1%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-04.2	SR 0078	274+85.5, 78.0 LT	274+40.0, 84.8 LT	6.1%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-05.1	RAMP D	824+62.6, 38.2 LT	824+75.4, 29.8 LT	30.0%	4.0	2.0	2	2	TRM 5C (GRASS)
CH-05.2	RAMP D	824+75.4, 29.8 LT	825+65.4, 26.9 LT	4.5%	4.0	2.0	2	2	TRM 5C (GRASS)
CH-06.1	SR 0078	303+45.0, 102.6 LT	302+90.3, 103.3 LT	3.5%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-06.2	SR 0078	302+90.3, 103.3 LT	302+68.6, 102.4 LT	13.5%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-06.3	SR 0078	302+68.6, 102.4 LT	301+80.4, 79.8 LT	40.0%	2.0	2.0	2	2	TRM 5C (GRASS)
CH-06.4	SR 0078	301+80.4, 79.8 LT	301+38.4, 85.9 LT	2.0%	2.0	2.0	2	2	TRM 5C (GRASS)



60% DESIGN
NOT FOR
CONSTRUCTION

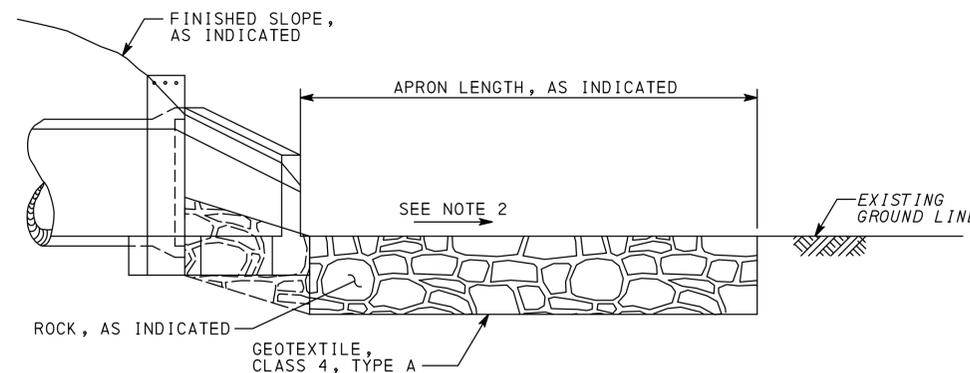
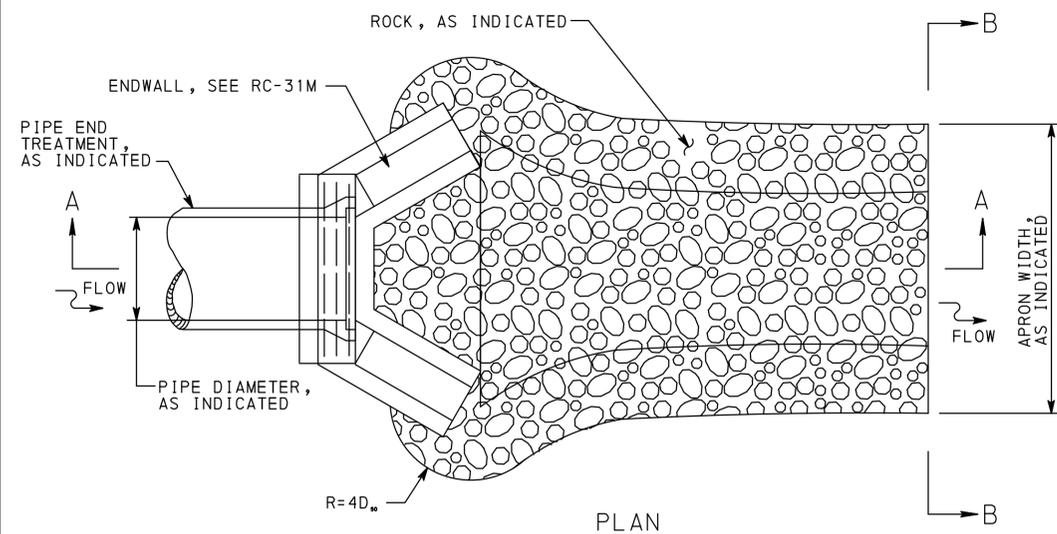
SPECIAL DETAILS

12\06\2021 PLOTTED:

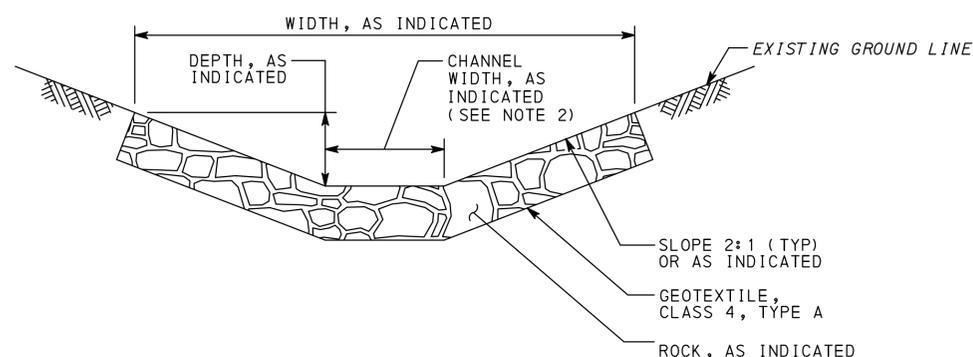
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	21 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

- NOTES
1. PROVIDE GEOTEXTILE MATERIAL ALONG ALL INTERFACE AREAS WITH GROUND CONTACT.
 2. SLOPE SHOULD BE LEVEL OR AS CLOSE TO LEVEL AS REASONABLY POSSIBLE BASED ON SITE CONDITIONS.



SECTION A-A

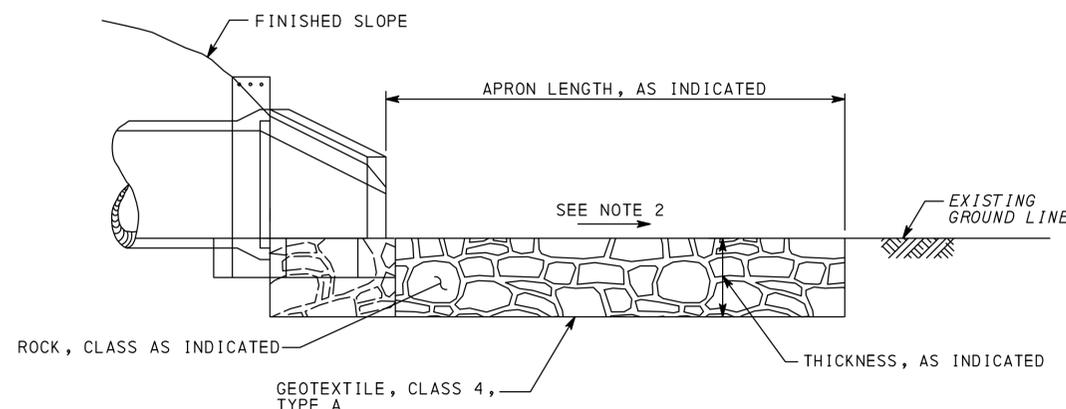
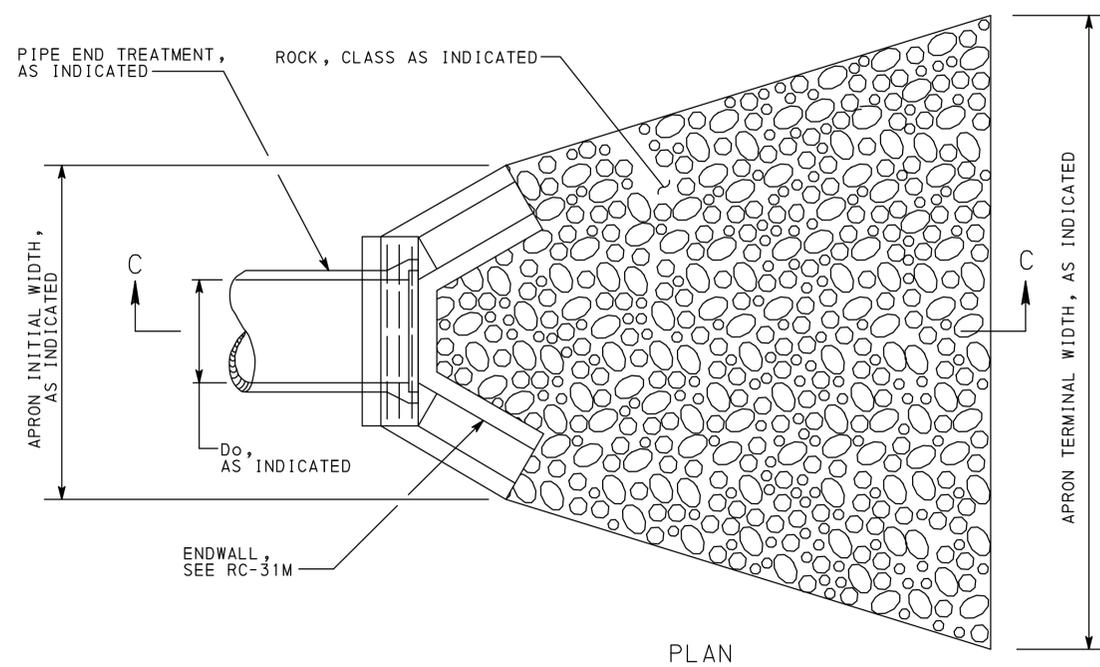


SECTION B-B

ROCK APRON (DEFINED CHANNEL)
NOT TO SCALE

ROCK APRON SCHEDULE							
ID	PIPE END TREATMENT	Do (IN)	RIPRAP		APRON		
			SIZE (R-)	THICKNESS (IN)	LENGTH (FT)	INITIAL WIDTH (FT)	TERMINAL WIDTH (FT)
E-01	EW	36	6	30	20	11	16
E-04	ES	18	4	18	9	9	27
E-05	ES	18	4	18	9	31	15
E-06	ES	18	4	18	11	5	20
E-07	EW	48	8	48	41	5	23
E-08	EW	24	6	30	13	7	31
E-09	CHANNEL OUTLET	-	4	18	45	2	8
E-12	ES	18	8	48	11	5	10
E-20	EW	42	6	30	22	7	13.5
E-40	ES	18	4	18	14	5	17
E-42	EW	36	8	48	20	4	20
E-53	ES	18	4	18	17	5	9
H-01	EW	48	4	18	42	5	15
H-02	EW	24	4	18	15	5	37
H-03	EW	48	4	18	15	5	12

NOTE: ES = END SECTION
EW = ENDWALL



SECTION C-C

ROCK APRON (FLAT AREA)
NOT TO SCALE

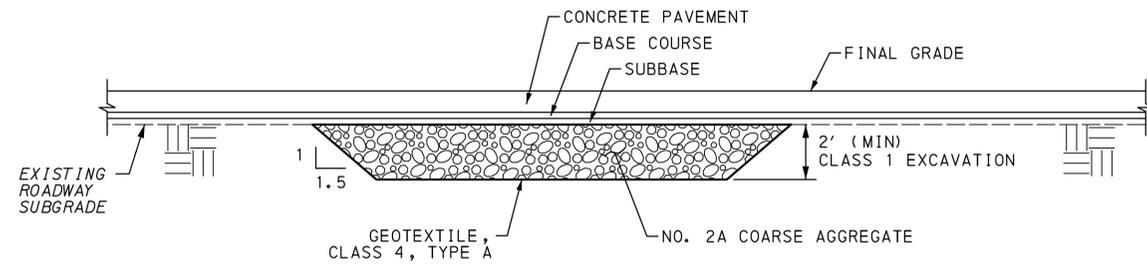
SPECIAL DETAILS

60% DESIGN
NOT FOR
CONSTRUCTION

12\06\2021 PLOTTED:

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	22 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

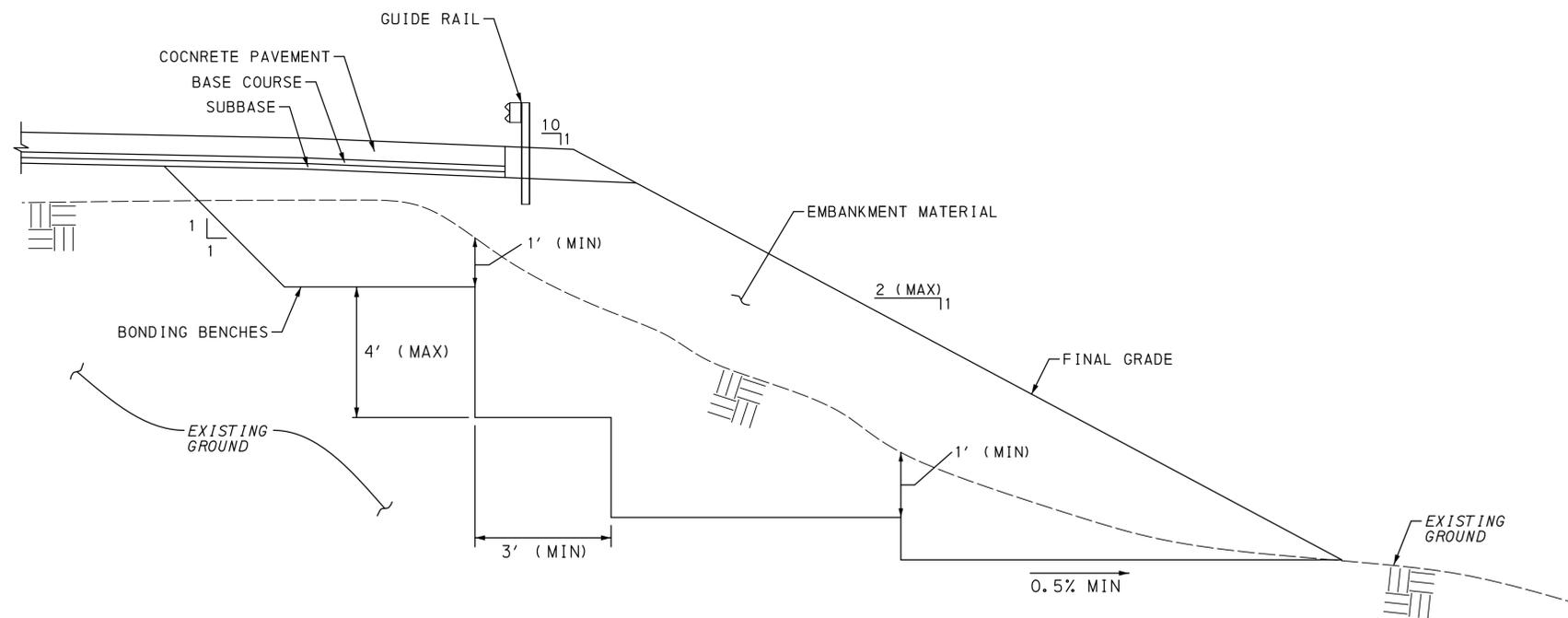


NOTES:

1. UNDERCUT TO COMPETENT MATERIAL WHERE UNSUITABLE AND/OR UNSTABLE MATERIALS ARE IDENTIFIED BY VISUAL INSPECTION OR AS DIRECTED.
2. DIVERT SURFACE WATER FROM UNDERCUT AREA. MAINTAIN EXCAVATION FREE OF WATER.
3. FIELD GRADE THE UNDERCUT AREA TO OUTLET TO THE TOE-OF-EXCAVATION AS DIRECTED.
4. PLACE NO. 2A COARSE AGGREGATE IN ACCORDANCE WITH PUBLICATION 408, SECTION 206.

UNDERCUT EXCAVATION

NOT TO SCALE



NOTES:

1. THIS DETAIL IS PROVIDED AS A GUIDE FOR COMPLETING BENCHING OPERATIONS. FIELD ADJUSTMENTS MAY BE REQUIRED AS DIRECTED.
2. EXCAVATE TOE BENCH EITHER TO A DEPTH OF 3 FEET, OR TO COMPETENT SOIL, AS DIRECTED AND SHOWN ON THE PLAN DRAWINGS AND CROSS SECTIONS.
3. PLACE THE TOP 5 FEET OF NEW EMBANKMENT IN LAYERS NOT EXCEEDING AN 8 INCH LIFT AT 100% COMPACTION IN ACCORDANCE WITH SECTION 206.3 (B). DO NOT PLACE MATERIAL WHICH IMPEDES GUIDE RAIL INSTALLATION.

SIDEHILL BENCHING AREAS		
BASELINE	STATION	SIDE
SR 0078	270+50 TO 274+50	RT
SR 0078	279+50 TO 280+50	LT
SR 0078	292+50 TO 293+00	LT
SR 0078	293+00 TO 293+43	RT
SR 0078	300+00 TO 303+00	RT
SR 0078	301+25 TO 301+75	LT
SR 0143	337+50 TO 338+25	LT
RAMP D	807+75 TO 808+25	LT
RAMP D	813+00 TO 815+00	LT

SIDEHILL BENCHING

NOT TO SCALE

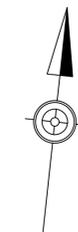
60% DESIGN
NOT FOR
CONSTRUCTION

SPECIAL DETAILS

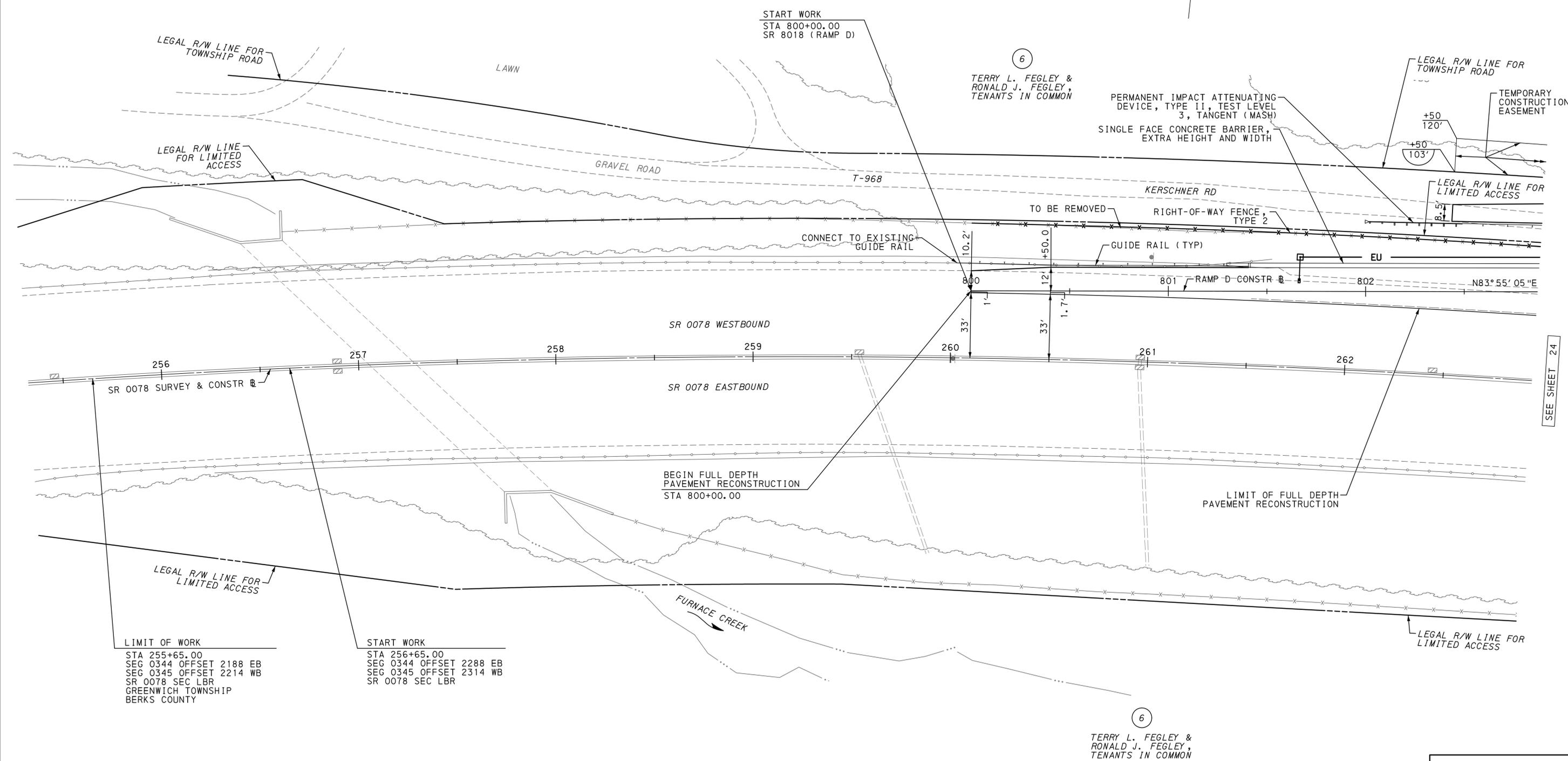
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	23 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



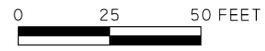
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SR 0078 CURVE DATA
 PI STA 266+55.08
 $\Delta = 32^\circ 13' 28''$ RT
 T = 1655.08'
 L = 3222.45'
 R = 5729.58'
 E = 234.26'
 PC STA 250+00.00
 PT STA 282+22.45
 SUPERELEVATE 3.2%

LEGEND

 PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE



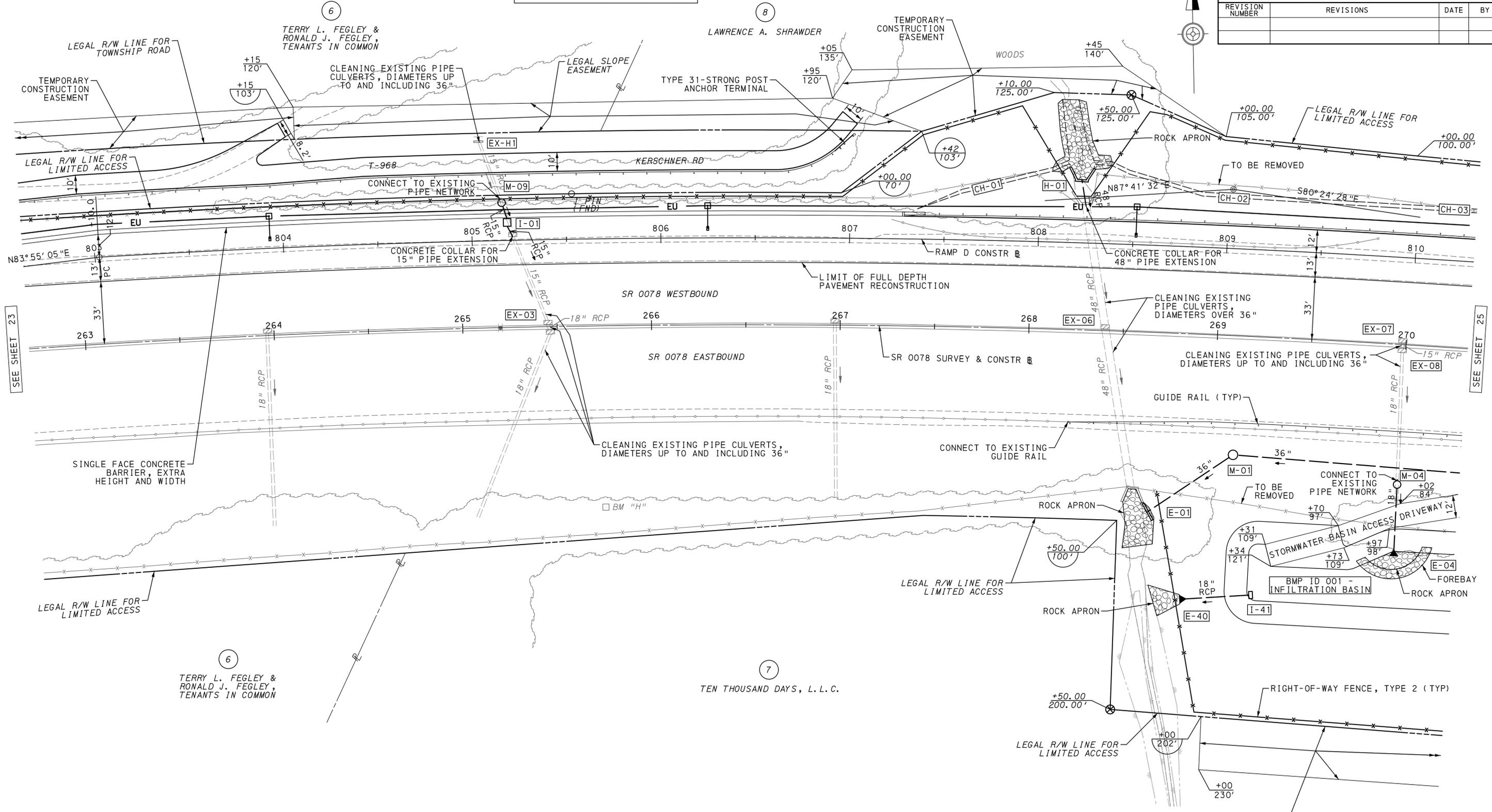
FOR PROFILE, SEE SHEET NO. 53
 SURVEY BOOK NO. 25029 & 25030

60% DESIGN
 NOT FOR
 CONSTRUCTION

BM "H" ELEV 423.79'
 96' RT STA 265+75
 RR SPIKE IN 10" WALNUT TREE

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	24 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:



SEE SHEET 23

SEE SHEET 25

LEGEND
 □ — PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE

SR 0078 CURVE DATA
 PI STA 266+55.08
 $\Delta = 32^\circ 13' 28''$ RT
 T = 1655.08'
 L = 3222.45'
 R = 5729.58'
 E = 234.26'
 PC STA 250+00.00
 PT STA 282+22.45
 SUPERELEVATE 3.2%

RAMP D CURVE DATA
 PI STA 809+04.24
 $\Delta = 11^\circ 54' 00''$ RT
 T = 601.94'
 L = 1199.55'
 R = 5775.58'
 E = 31.28'
 PC STA 803+02.30
 PT STA 815+01.85
 SUPERELEVATE 3.2%



FOR PROFILE, SEE SHEET NO. 54
 SURVEY BOOK NO. 25029 & 25030

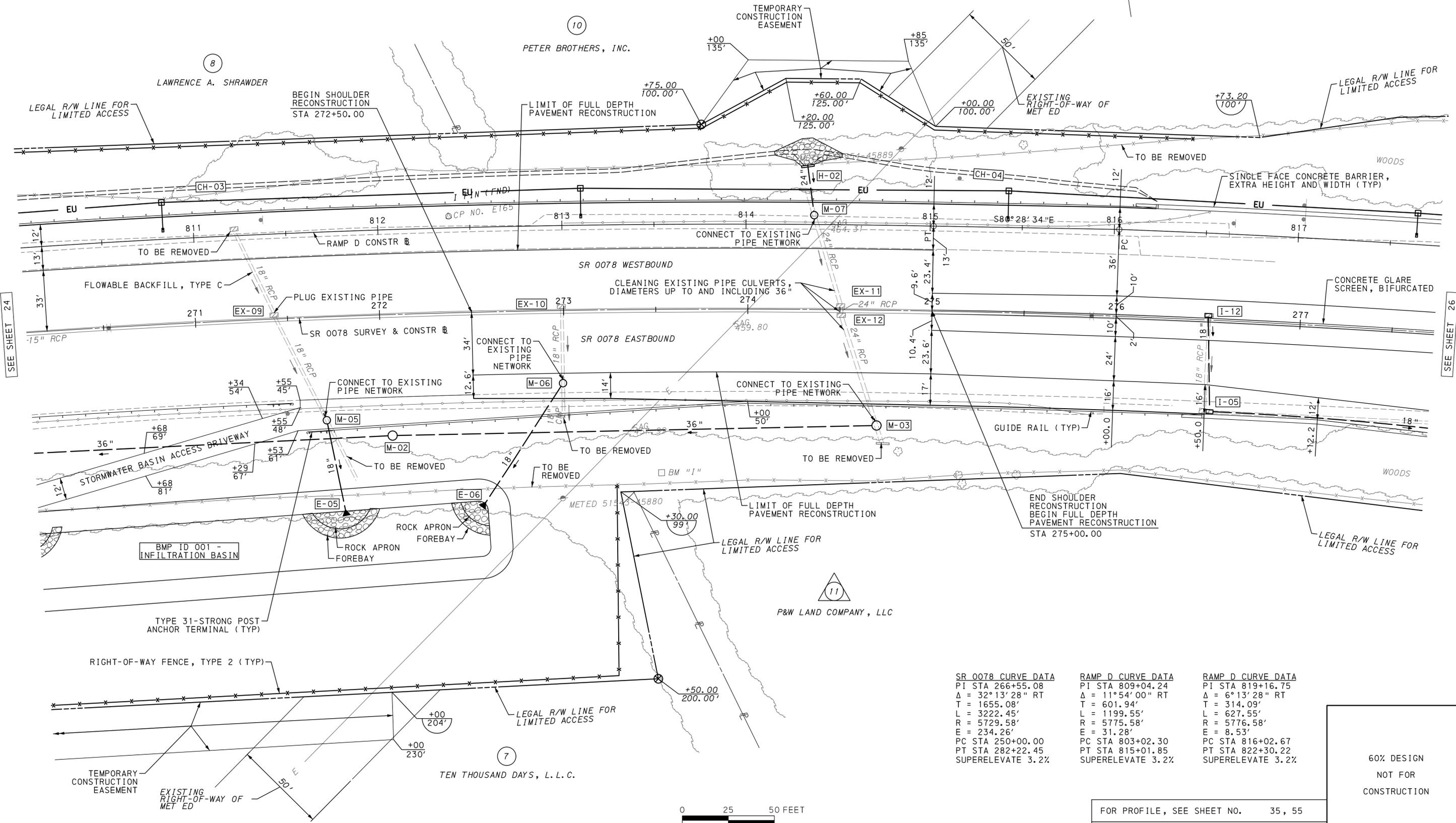
60% DESIGN
 NOT FOR
 CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	25 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

LEGEND

☐— PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE

BM "I" ELEV 422.80'
 88° RT STA 273+53'
 RR SPIKE IN 15" WALNUT TREE



SR 0078 CURVE DATA	RAMP D CURVE DATA	RAMP D CURVE DATA
PI STA 266+55.08	PI STA 809+04.24	PI STA 819+16.75
Δ = 32° 13' 28" RT	Δ = 11° 54' 00" RT	Δ = 6° 13' 28" RT
T = 1655.08'	T = 601.94'	T = 314.09'
L = 3222.45'	L = 1199.55'	L = 627.55'
R = 5729.58'	R = 5775.58'	R = 5776.58'
E = 234.26'	E = 31.28'	E = 8.53'
PC STA 250+00.00	PC STA 803+02.30	PC STA 816+02.67
PT STA 282+22.45	PT STA 815+01.85	PT STA 822+30.22
SUPERELEVATE 3.2%	SUPERELEVATE 3.2%	SUPERELEVATE 3.2%



FOR PROFILE, SEE SHEET NO. 35, 55
 SURVEY BOOK NO. 25029 & 25030

60% DESIGN
 NOT FOR
 CONSTRUCTION

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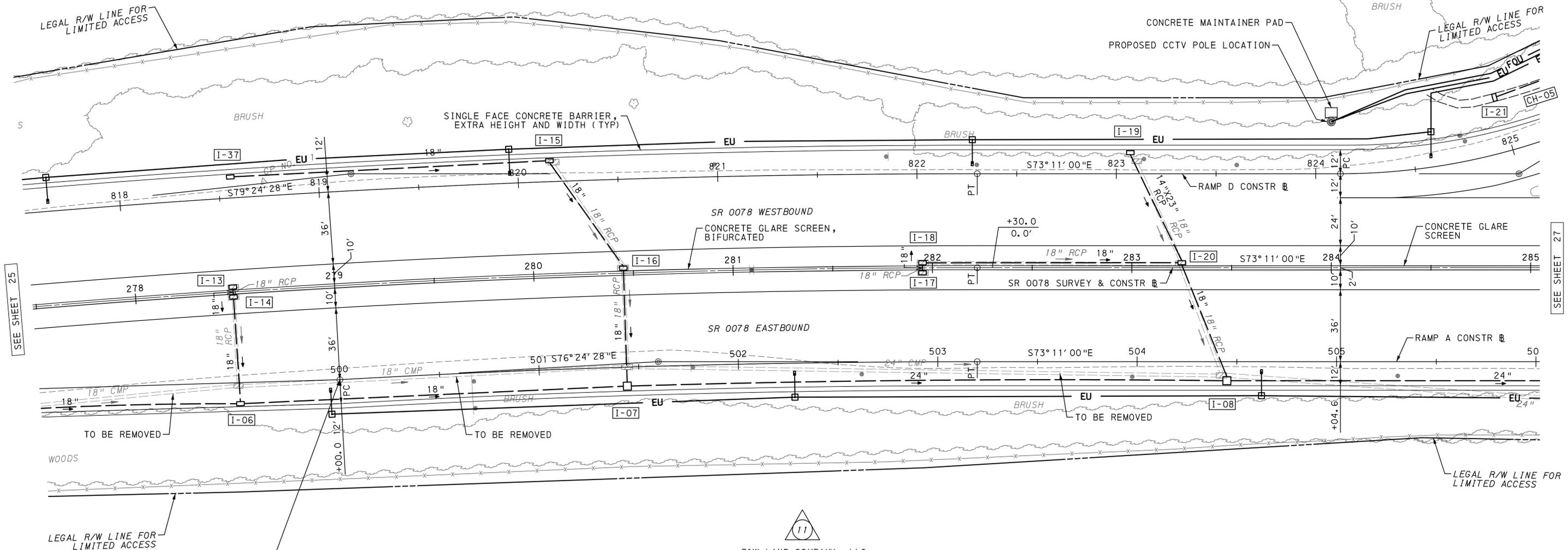
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	26 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



RAMP D CURVE DATA
 PI STA 825+01.93
 $\Delta = 31^{\circ}16'40''$ LT
 T = 89.58'
 L = 174.69'
 R = 320.00'
 E = 12.30'
 PC STA 824+12.35
 PT STA 825+87.04
 SUPERELEVATE 8.0%

(10)

PETER BROTHERS, INC.



SEE SHEET 25

SEE SHEET 27

(11)

P&W LAND COMPANY, LLC

START WORK
 STA 500+00.00
 SR 8018 (RAMP A)

SR 0078 CURVE DATA
 PI STA 266+55.08
 $\Delta = 32^{\circ}13'28''$ RT
 T = 1655.08'
 L = 3222.45'
 R = 5729.58'
 E = 234.26'
 PC STA 250+00.00
 PT STA 282+22.45
 SUPERELEVATE 3.2%

RAMP A CURVE DATA
 PI STA 501+59.94
 $\Delta = 3^{\circ}13'28''$ RT
 T = 159.94'
 L = 319.80'
 R = 5682.58'
 E = 2.25'
 PC STA 500+00.00
 PT STA 503+19.80
 SUPERELEVATE 3.2%

RAMP D CURVE DATA
 PI STA 819+16.75
 $\Delta = 6^{\circ}13'28''$ RT
 T = 314.09'
 L = 627.55'
 R = 5776.58'
 E = 8.53'
 PC STA 816+02.67
 PT STA 822+30.22
 SUPERELEVATE 3.2%

LEGEND

☐ — PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE



FOR PROFILE, SEE SHEET NO. 36, 41, 56
 SURVEY BOOK NO. 25029 & 25030

60% DESIGN
 NOT FOR
 CONSTRUCTION

OPERATOR: Y:\Lehigh\60100s\60188-02\Eng_Docs\Construct\Plan\lan_04.dgn (Default)
 FILE NAME: Y:\Lehigh\60100s\60188-02\Eng_Docs\Construct\Plan\lan_04.dgn (Default)
 60188-02 nwoods 12\06\2021 13:07:39

12\06\2021 PLOTTED:

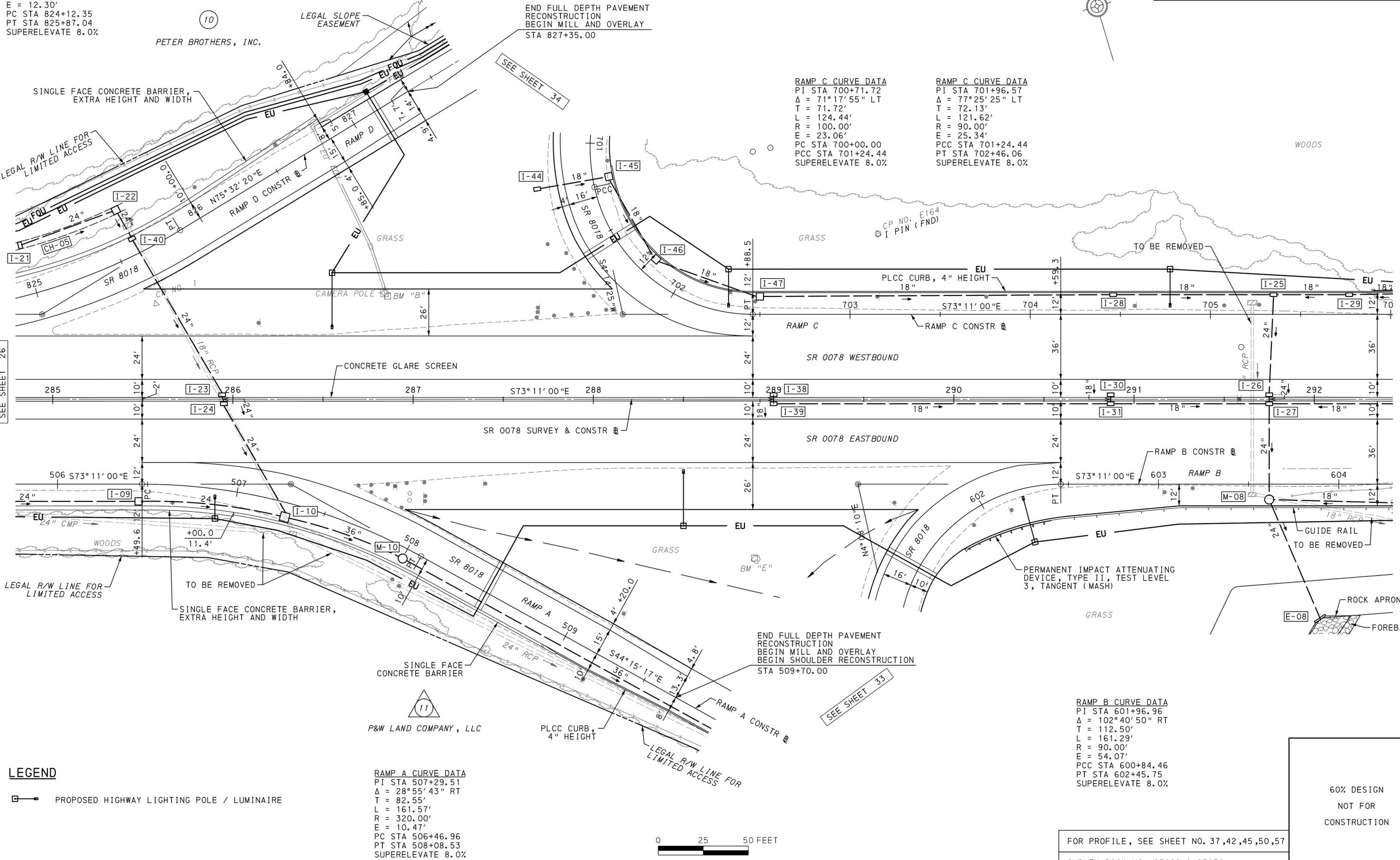
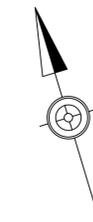
OPERATOR: FILE NAME: Y:\Lehigh\60100s\601188_02\Eng-Docs\Construct\for\Plans\Plan_05.dgn (Default)

RAMP D CURVE DATA
PI STA 825+01.93
 $\Delta = 31^\circ 16' 40''$ LT
T = 89.58'
L = 174.69'
R = 320.00'
E = 12.30'
PC STA 824+12.35
PT STA 825+87.04
SUPERELEVATE 8.0%

BM "B" ELEV 398.16'
57' LT STA 286+86
CHISLED SQUARE SET IN SE CORNER
OF CONCRETE BASE OF CAMERA POLE

BM "E" ELEV 391.92'
88' RT STA 288+89
RR SPIKE SET IN BASE OF 24"
MAPLE

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	27 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



LEGEND
[Symbol] PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE

RAMP A CURVE DATA
PI STA 507+29.51
 $\Delta = 28^\circ 55' 43''$ RT
T = 82.55'
L = 161.57'
R = 320.00'
E = 10.47'
PC STA 506+46.96
PT STA 508+08.53
SUPERELEVATE 8.0%

RAMP C CURVE DATA
PI STA 700+71.72
 $\Delta = 71^\circ 17' 55''$ LT
T = 71.72'
L = 124.44'
R = 100.00'
E = 23.06'
PCC STA 700+00.00
PT STA 701+24.44
SUPERELEVATE 8.0%

RAMP C CURVE DATA
PI STA 701+96.57
 $\Delta = 77^\circ 25' 25''$ LT
T = 72.13'
L = 121.62'
R = 90.00'
E = 25.34'
PCC STA 701+24.44
PT STA 702+46.06
SUPERELEVATE 8.0%

RAMP B CURVE DATA
PI STA 601+96.96
 $\Delta = 102^\circ 40' 50''$ RT
T = 112.50'
L = 161.29'
R = 90.00'
E = 54.07'
PCC STA 600+84.46
PT STA 602+45.75
SUPERELEVATE 8.0%

60% DESIGN
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CONSTRUCTION

FOR PROFILE, SEE SHEET NO. 37,42,45,50,57
SURVEY BOOK NO. 25029 & 25030

12\06\2021

OPERATOR: Y:\Leh\gh\60100s\60188_02\Eng_Docs\Construct\Plan\60188_02.dgn (Default)

BM "D" ELEV 369.04'
188' LT STA 292+74
CHISELED SQUARE ON TOP OF
SOUTHEAST CORNER OF HEADWALL

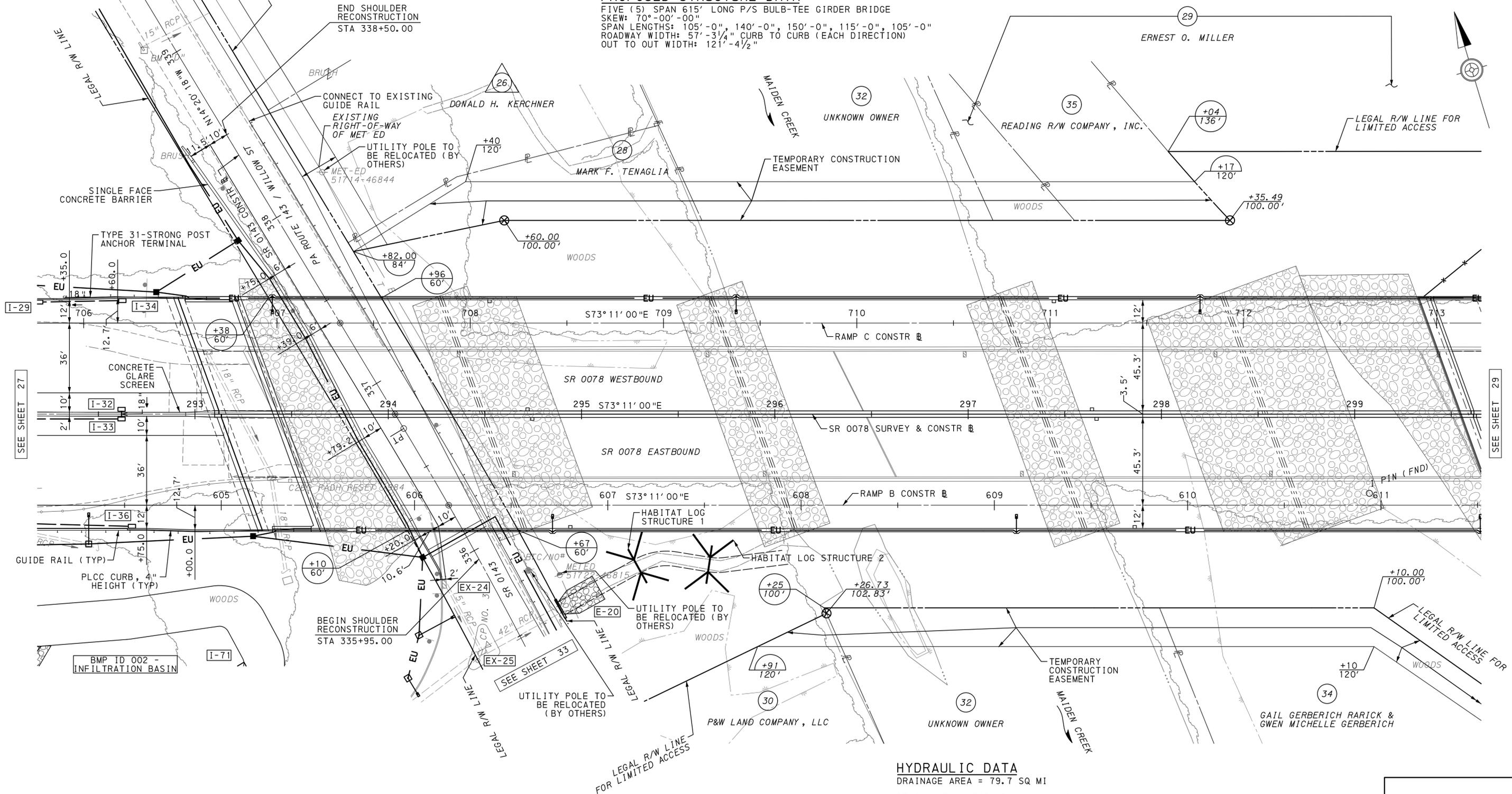
EXISTING STRUCTURE DATA

SEVEN (7) SPAN 659' LONG STEEL BEAM BRIDGE
WITH TWO-THREE SPAN CONTINUOUS UNITS AND ONE SIMPLE SPAN
SKEW: 63°-26'-06"
SPAN LENGTHS: 96'-0", 110'-0", 96'-0", 96'-0", 110'-0", 96'-0", VARIES
ROADWAY WIDTH: 30'-1 1/2" CURB TO CURB (EACH DIRECTION)
OUT TO OUT WIDTH: 69'-6"

PROPOSED STRUCTURE DATA

FIVE (5) SPAN 615' LONG P/S BULB-TEE GIRDER BRIDGE
SKEW: 70°-00'-00"
SPAN LENGTHS: 105'-0", 140'-0", 150'-0", 115'-0", 105'-0"
ROADWAY WIDTH: 57'-3 1/4" CURB TO CURB (EACH DIRECTION)
OUT TO OUT WIDTH: 121'-4 1/2"

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	28 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



LEGEND

☐ — PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE

SR 0143 CURVE DATA
 PI STA 332+72.93
 $\Delta = 24^\circ 22' 00''$ LT
 T = 412.39'
 L = 812.32'
 R = 1910.08'
 E = 44.01'
 PC STA 328+60.54
 PT STA 336+72.85
 SUPERELEVATE MATCH
 EXISTING



HYDRAULIC DATA

DRAINAGE AREA = 79.7 SQ MI
 DESIGN STORM FREQUENCY = 50 YEARS
 DISCHARGE = 11,434 CFS
 ELEV₅₀ = 368.32'
 VEL₅₀ = 5.6 FPS
 PENNDOT 100 YEAR FLOOD FREQUENCY
 DISCHARGE = 13,994 CFS
 ELEV₁₀₀ = 369.67'
 VEL₁₀₀ = 6.0 FPS
 FEMA 100-YEAR FLOOD FREQUENCY
 DISCHARGE = 10,110 CFS
 ELEV₁₀₀ = 368.82'
 VEL₁₀₀ = 4.7 FPS

FOR PROFILE, SEE SHEET NO. 38, 46, 51
 SURVEY BOOK NO. 25029 & 25030

60% DESIGN
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 CONSTRUCTION

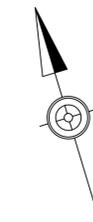
EXISTING STRUCTURE DATA

SEVEN (7) SPAN 659' LONG STEEL BEAM BRIDGE
 WITH TWO-THREE SPAN CONTINUOUS UNITS AND ONE SIMPLE SPAN
 SKEW: 63°-26'-06"
 SPAN LENGTHS: 96'-0", 110'-0", 96'-0", 96'-0", 110'-0", 96'-0", VARIES
 ROADWAY WIDTH: 30'-11 1/2" CURB TO CURB (EACH DIRECTION)
 OUT TO OUT WIDTH: 69'-6"

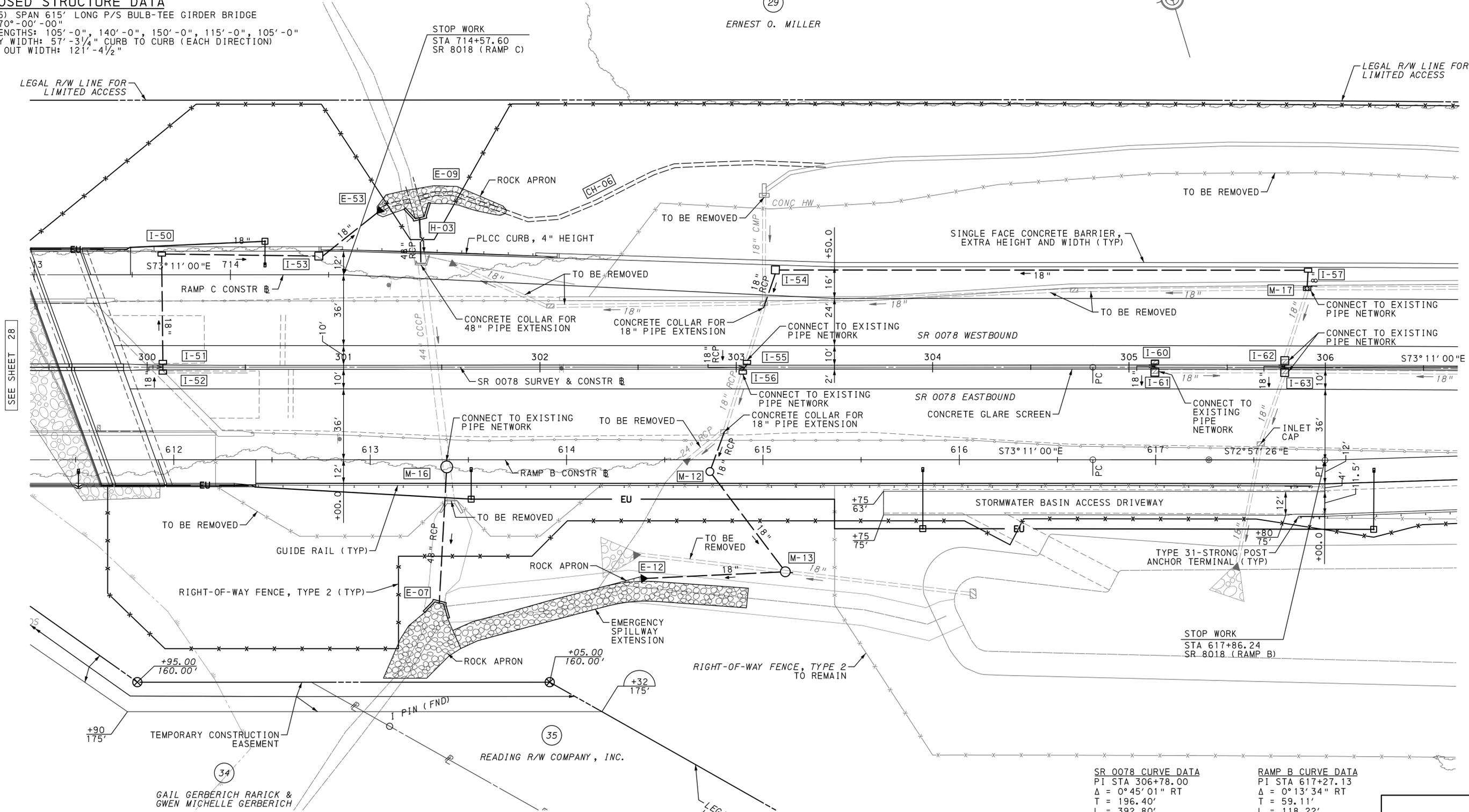
PROPOSED STRUCTURE DATA

FIVE (5) SPAN 615' LONG P/S BULB-TEE GIRDER BRIDGE
 SKEW: 70°-00'-00"
 SPAN LENGTHS: 105'-0", 140'-0", 150'-0", 115'-0", 105'-0"
 ROADWAY WIDTH: 57'-3 1/4" CURB TO CURB (EACH DIRECTION)
 OUT TO OUT WIDTH: 121'-4 1/2"

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	29 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



12\06\2021 PLOTTED: OPERATOR: FILE NAME: Y:\Lehigh\60100s\60188_02\Eng_Docs\Construction\Plans\lan_07.dgn (Default)



SEE SHEET 28

SEE SHEET 30

29
ERNEST O. MILLER

STOP WORK
 STA 714+57.60
 SR 8018 (RAMP C)

STOP WORK
 STA 617+86.24
 SR 8018 (RAMP B)

SR 0078 CURVE DATA PI STA 306+78.00 $\Delta = 0^\circ 45' 01''$ RT T = 196.40' L = 392.80' R = 30000.00' E = 0.64' PC STA 304+81.60 PT STA 308+74.39 SUPERELEVATE NORMAL CROWN	RAMP B CURVE DATA PI STA 617+27.13 $\Delta = 0^\circ 13' 34''$ RT T = 59.11' L = 118.22' R = 29953.00' E = 0.06' PC STA 616+68.02 PT STA 617+86.24 SUPERELEVATE NORMAL CROWN
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LEGEND
 PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE



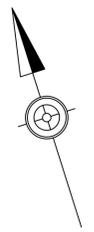
FOR PROFILE, SEE SHEET NO. 39, 47, 52
 SURVEY BOOK NO. 25029 & 25030

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	30 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

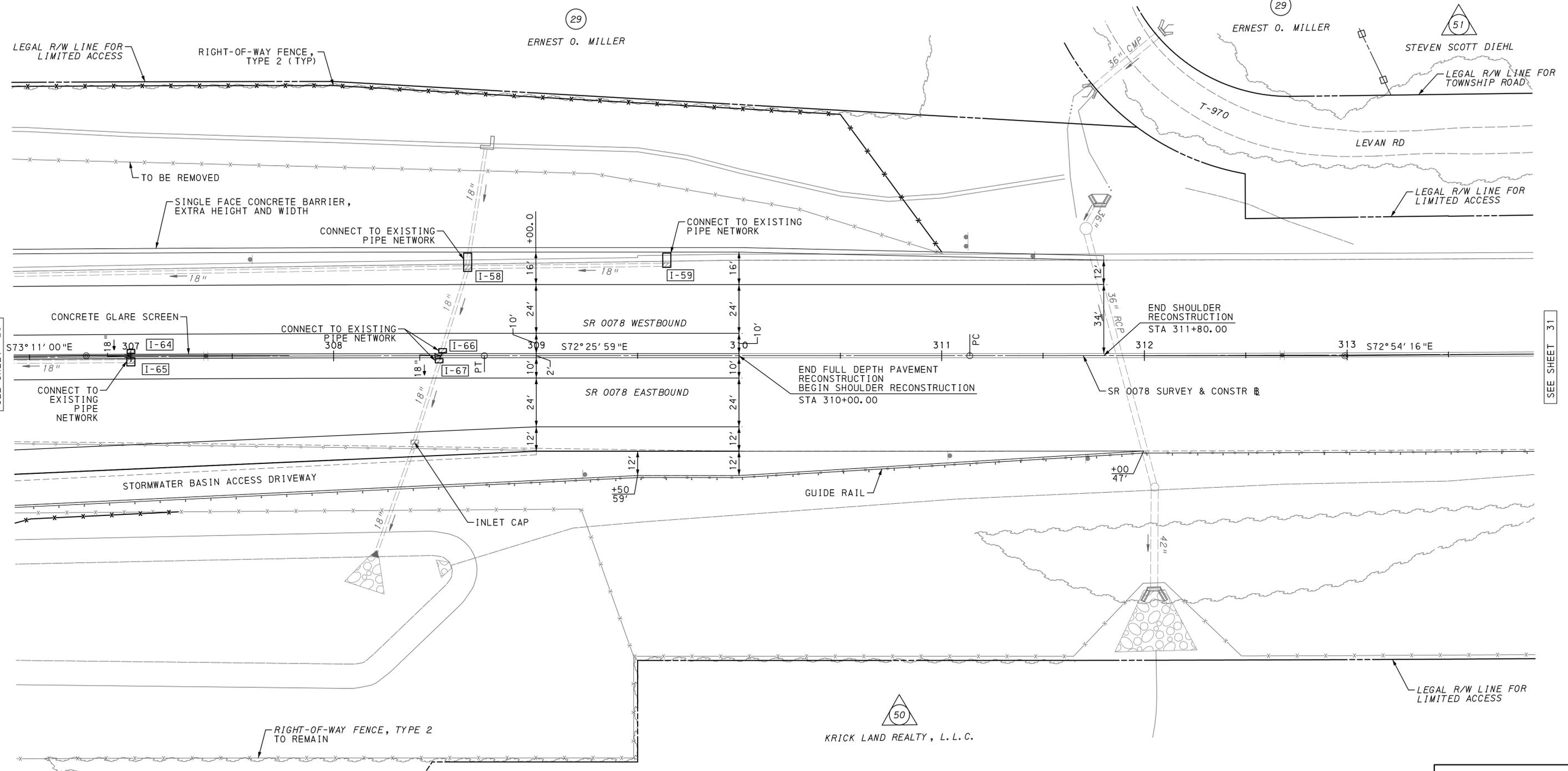
SR 0078 CURVE DATA
 PI STA 306+78.00
 $\Delta = 0^{\circ}45'01''$ RT
 T = 196.40'
 L = 392.80'
 R = 30000.00'
 E = 0.64'
 PC STA 304+81.60
 PT STA 308+74.39
 SUPERELEVATE NORMAL CROWN

SR 0078 CURVE DATA
 PI STA 312+98.92
 $\Delta = 0^{\circ}28'17''$ LT
 T = 185.06'
 L = 370.12'
 R = 45000.00'
 E = 0.38'
 PC STA 311+13.86
 PT STA 314+83.99
 SUPERELEVATE MATCH EXISTING



12\06\2021 PLOTTED:

OPERATOR: Y:\Leh\gh\60100s\60188-02\Eng_Docs\Construction\Plans\lan_08.dgn (Default)
 FILE NAME: Y:\Leh\gh\60100s\60188-02\Eng_Docs\Construction\Plans\lan_08.dgn (Default)



LEGEND

PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE

LEGAL R/W LINE FOR LIMITED ACCESS



FOR PROFILE, SEE SHEET NO. 40
 SURVEY BOOK NO. 25029 & 25030

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12\06\2021
PLOTTED:

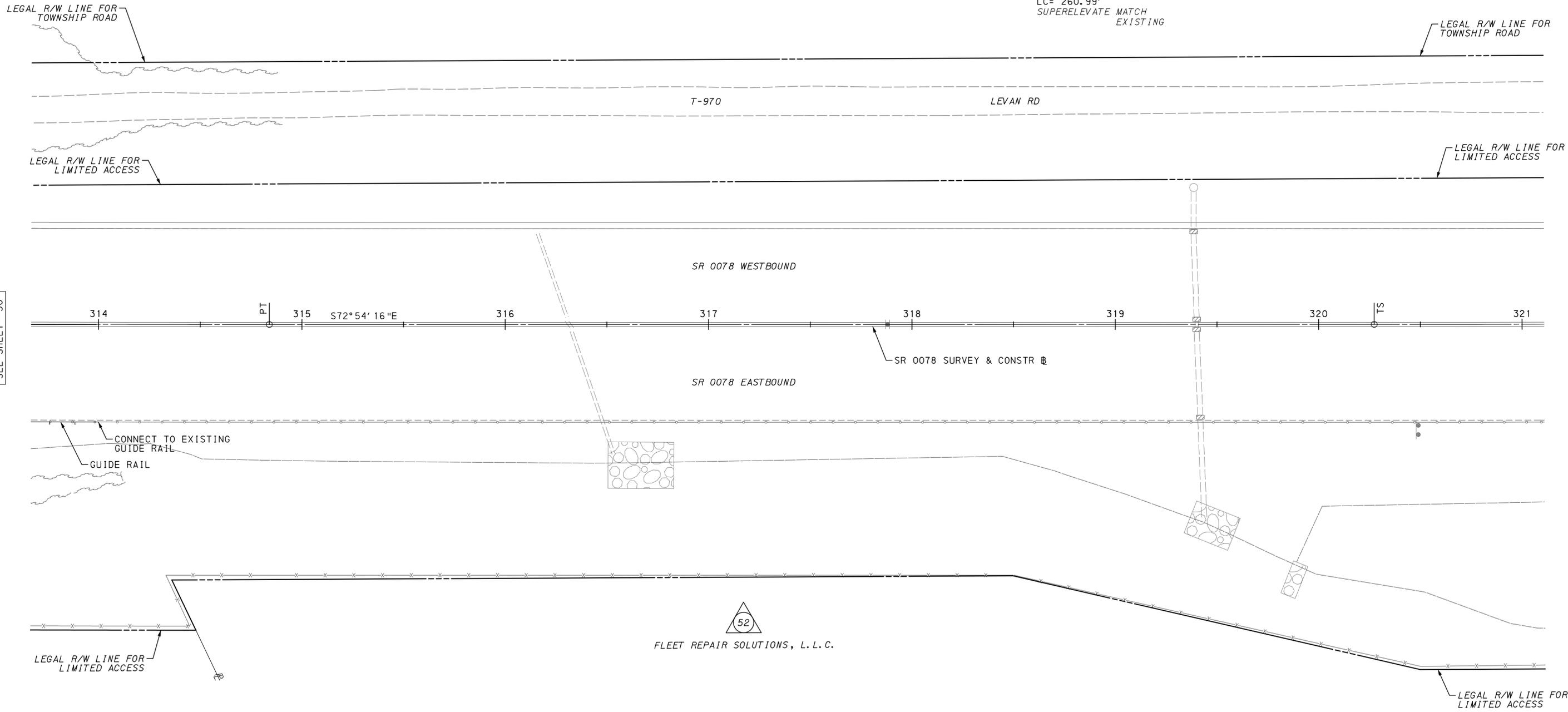
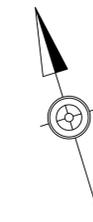
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SR 0078 CURVE DATA
PI STA 312+98.92
 $\Delta = 0^\circ 28' 17''$ LT
T = 185.06'
L = 370.12'
R = 45000.00'
E = 0.38'
PC STA 311+13.86
PT STA 314+83.99
SUPERELEVATE MATCH
EXISTING

51
STEVEN SCOTT DIEHL

SR 0078 CURVE DATA
PI STA 331+48.72
 $\Delta = 32^\circ 11' 28''$ LT
 $\Delta c = 10^\circ 18' 46''$ LT
Rc = 3953.99'
Lc = 711.69'
Ds = $1^\circ 53' 28''$ LT
Ls = 261.00'
Ts = 1195.71'
Es = 141.67'
K = 130.50'
P = 0.72'
Xc = 260.97'
Yc = 2.87'
LT = 174.01'
ST = 87.01'
LC = 260.99'
SUPERELEVATE MATCH
EXISTING

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	31 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

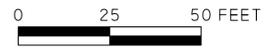


SEE SHEET 30

SEE SHEET 32

52
FLEET REPAIR SOLUTIONS, L. L. C.

LEGEND
[Symbol] PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE



60% DESIGN
NOT FOR
CONSTRUCTION

SURVEY BOOK NO. 25029 & 25030

12\06\2021
PLOTTED:

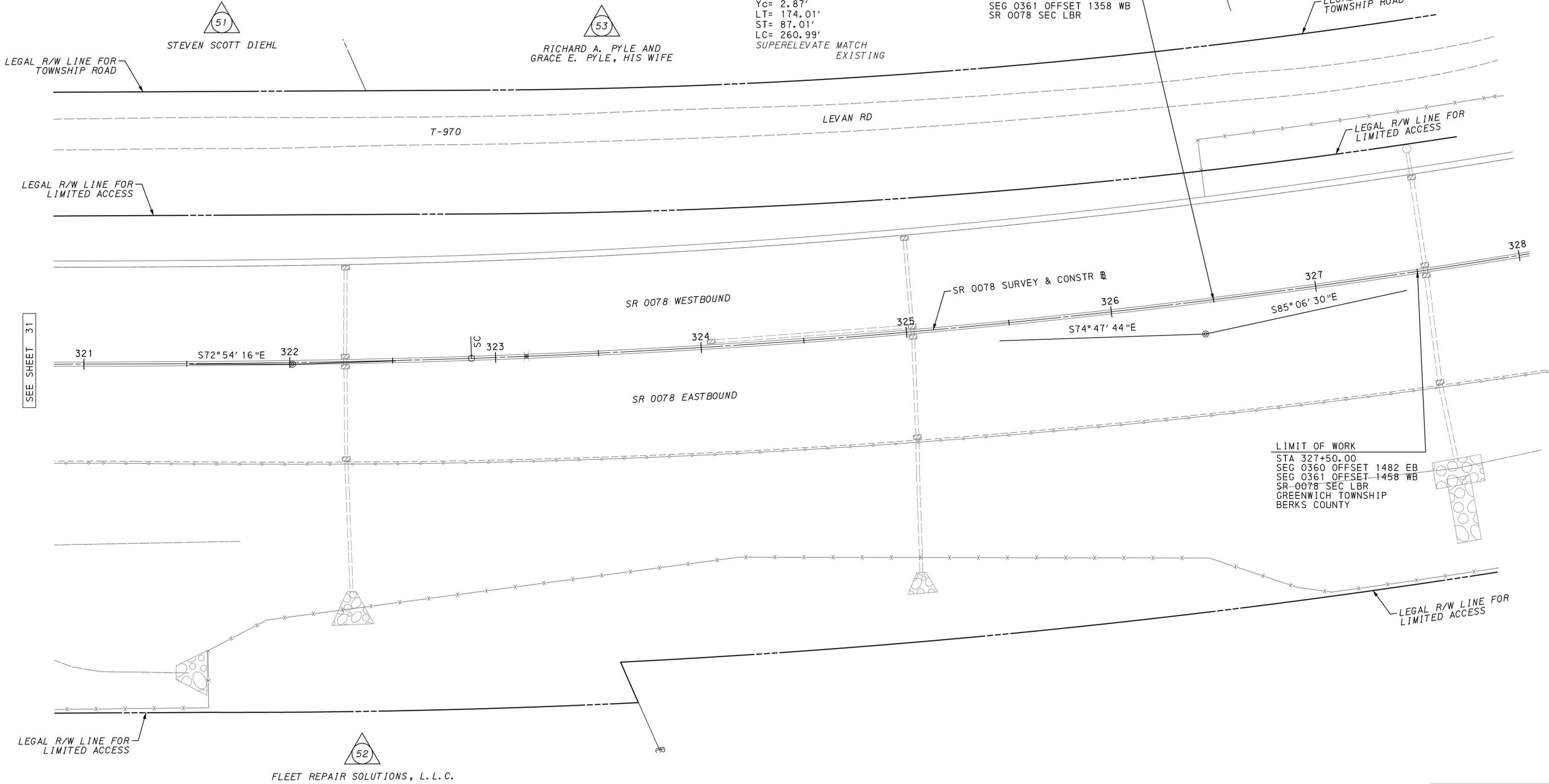
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	32 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

SR 0078 CURVE DATA
 PI STA 331+48.72
 $\Delta = 32^{\circ}11'28''$ LT
 $\Delta c = 10^{\circ}18'46''$ LT
 $Rc = 3953.99'$
 $Lc = 711.69'$
 $Ds = 1^{\circ}53'28''$ LT
 $Ls = 261.00'$
 $Ts = 1195.71'$
 $Es = 141.67'$
 $K = 130.50'$
 $P = 0.72'$
 $Xc = 260.97'$
 $Yc = 2.87'$
 $LT = 174.01'$
 $ST = 87.01'$
 $LC = 260.99'$
 SUPERELEVATE MATCH
 EXISTING



STOP WORK
 STA 326+50.00
 SEG 0360 OFFSET 1382 EB
 SEG 0361 OFFSET 1358 WB
 SR 0078 SEC LBR



LIMIT OF WORK
 STA 327+50.00
 SEG 0360 OFFSET 1482 EB
 SEG 0361 OFFSET 1458 WB
 SR 0078 SEC LBR
 GREENWICH TOWNSHIP
 BERKS COUNTY

LEGEND

☐— PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE



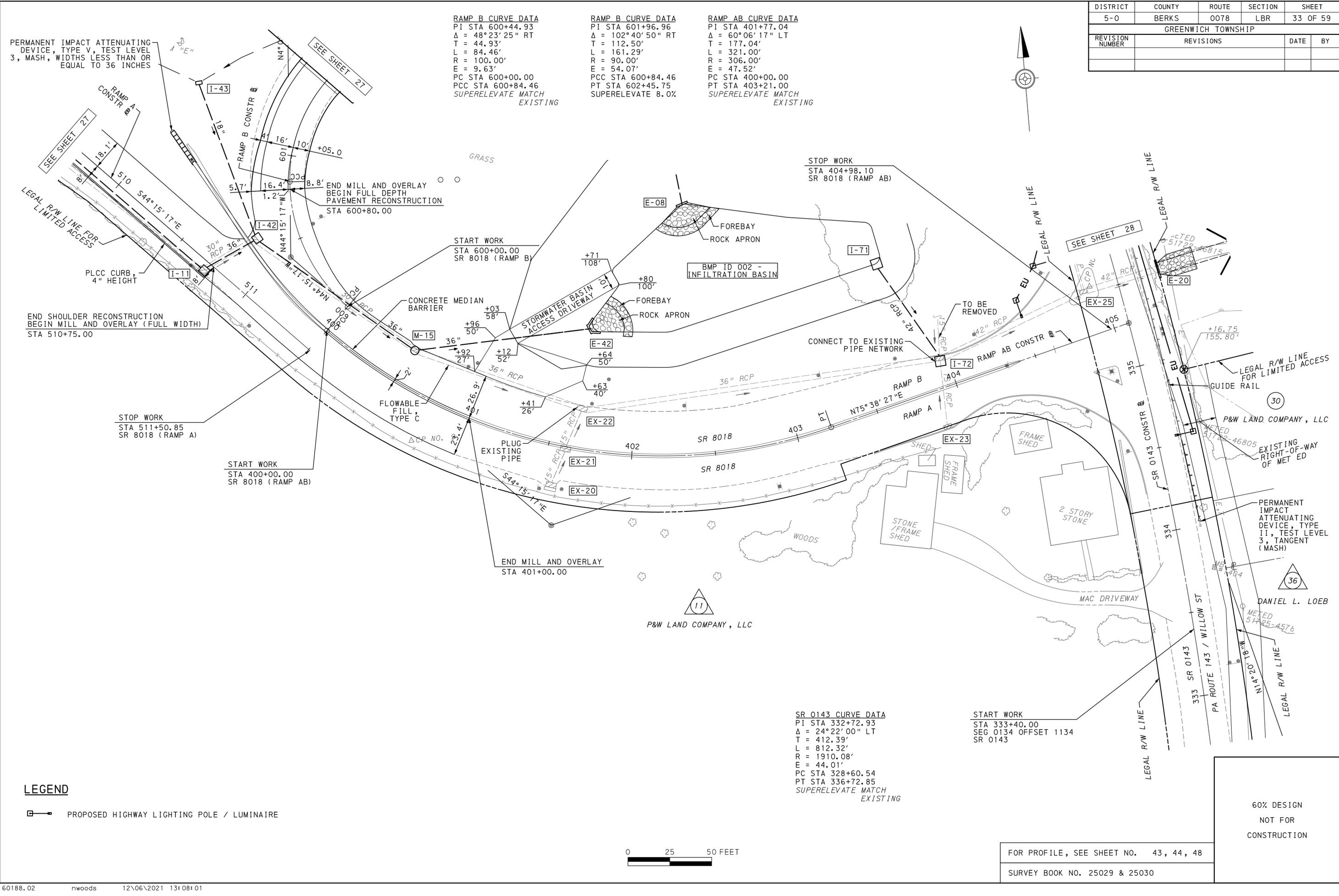
60% DESIGN
NOT FOR
CONSTRUCTION

SURVEY BOOK NO. 25029 & 25030

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	33 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:

OPERATOR: Y:\Leh\gh\60100s\60188_02\Eng_Docs\Construction\Plans\lan_11.dgn (Default)



RAMP B CURVE DATA
 PI STA 600+44.93
 $\Delta = 48^\circ 23' 25''$ RT
 T = 44.93'
 L = 84.46'
 R = 100.00'
 E = 9.63'
 PC STA 600+00.00
 PCC STA 600+84.46
 SUPERELEVATE MATCH EXISTING

RAMP B CURVE DATA
 PI STA 601+96.96
 $\Delta = 102^\circ 40' 50''$ RT
 T = 112.50'
 L = 161.29'
 R = 90.00'
 E = 54.07'
 PCC STA 600+84.46
 PT STA 602+45.75
 SUPERELEVATE 8.0%

RAMP AB CURVE DATA
 PI STA 401+77.04
 $\Delta = 60^\circ 06' 17''$ LT
 T = 177.04'
 L = 321.00'
 R = 306.00'
 E = 47.52'
 PC STA 400+00.00
 PT STA 403+21.00
 SUPERELEVATE MATCH EXISTING



PERMANENT IMPACT ATTENUATING DEVICE, TYPE V, TEST LEVEL 3, MASH, WIDTHS LESS THAN OR EQUAL TO 36 INCHES

END SHOULDER RECONSTRUCTION BEGIN MILL AND OVERLAY (FULL WIDTH) STA 510+75.00

STOP WORK STA 511+50.85 SR 8018 (RAMP A)

START WORK STA 400+00.00 SR 8018 (RAMP AB)

START WORK STA 600+00.00 SR 8018 (RAMP B)

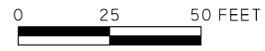
STOP WORK STA 404+98.10 SR 8018 (RAMP AB)

END MILL AND OVERLAY STA 401+00.00

START WORK STA 333+40.00 SEG 0134 OFFSET 1134 SR 0143

SR 0143 CURVE DATA
 PI STA 332+72.93
 $\Delta = 24^\circ 22' 00''$ LT
 T = 412.39'
 L = 812.32'
 R = 1910.08'
 E = 44.01'
 PC STA 328+60.54
 PT STA 336+72.85
 SUPERELEVATE MATCH EXISTING

LEGEND
 PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE



FOR PROFILE, SEE SHEET NO. 43, 44, 48
 SURVEY BOOK NO. 25029 & 25030

60% DESIGN NOT FOR CONSTRUCTION

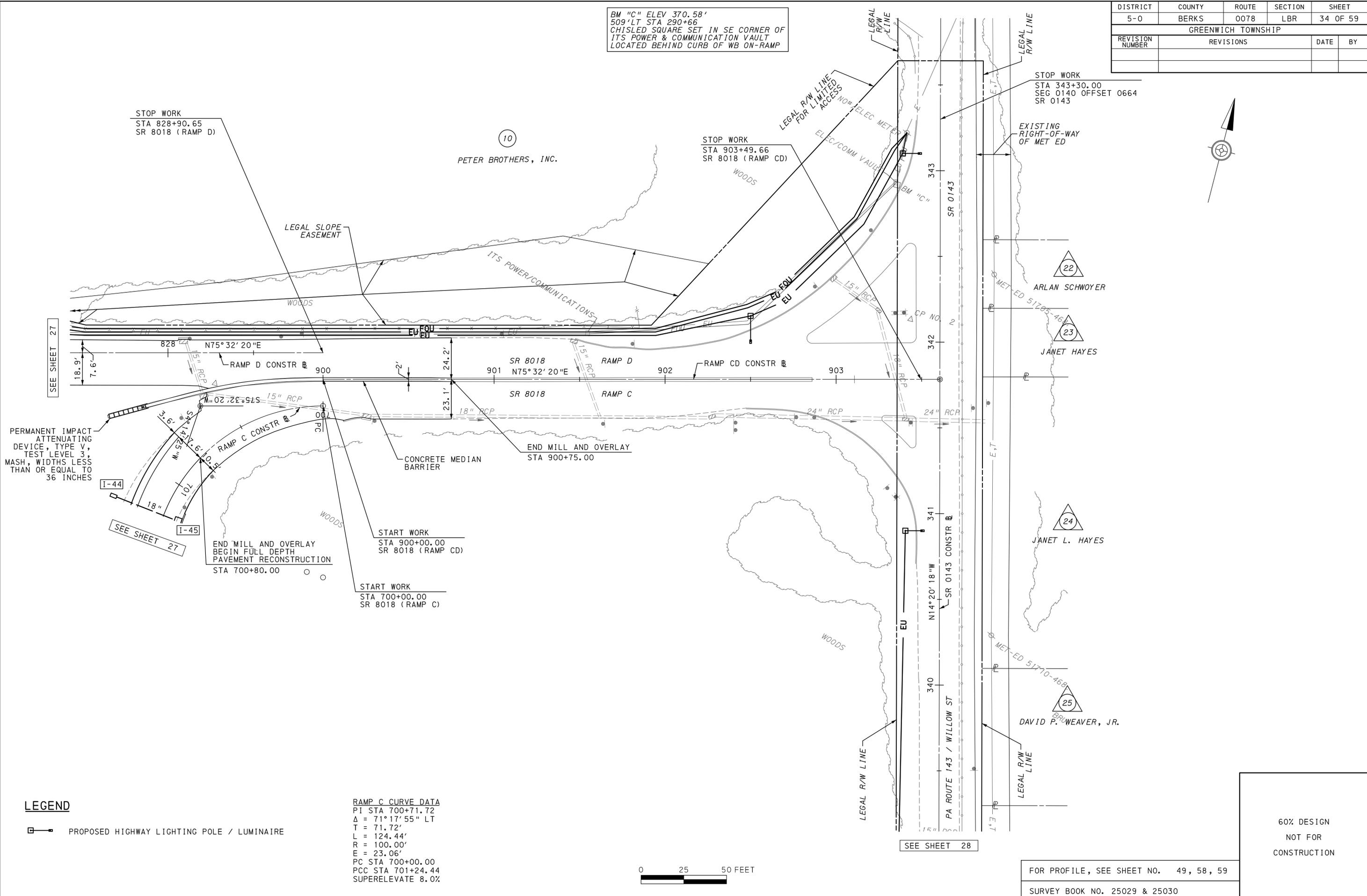
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	34 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

BM "C" ELEV 370.58'
 509' LT STA 290+66
 CHISLED SQUARE SET IN SE CORNER OF
 ITS POWER & COMMUNICATION VAULT
 LOCATED BEHIND CURB OF WB ON-RAMP



12\06\2021
 PLOTTED:

OPERATOR:
 FILE NAME: Y:\Lehigh\60100s\60188-02\Eng_Docs\Construction\Plans\Plan-12.dgn (Default)



LEGEND

☐— PROPOSED HIGHWAY LIGHTING POLE / LUMINAIRE

RAMP C CURVE DATA
 PI STA 700+71.72
 $\Delta = 71^\circ 17' 55''$ LT
 T = 71.72'
 L = 124.44'
 R = 100.00'
 E = 23.06'
 PC STA 700+00.00
 PCC STA 701+24.44
 SUPERELEVATE 8.0%



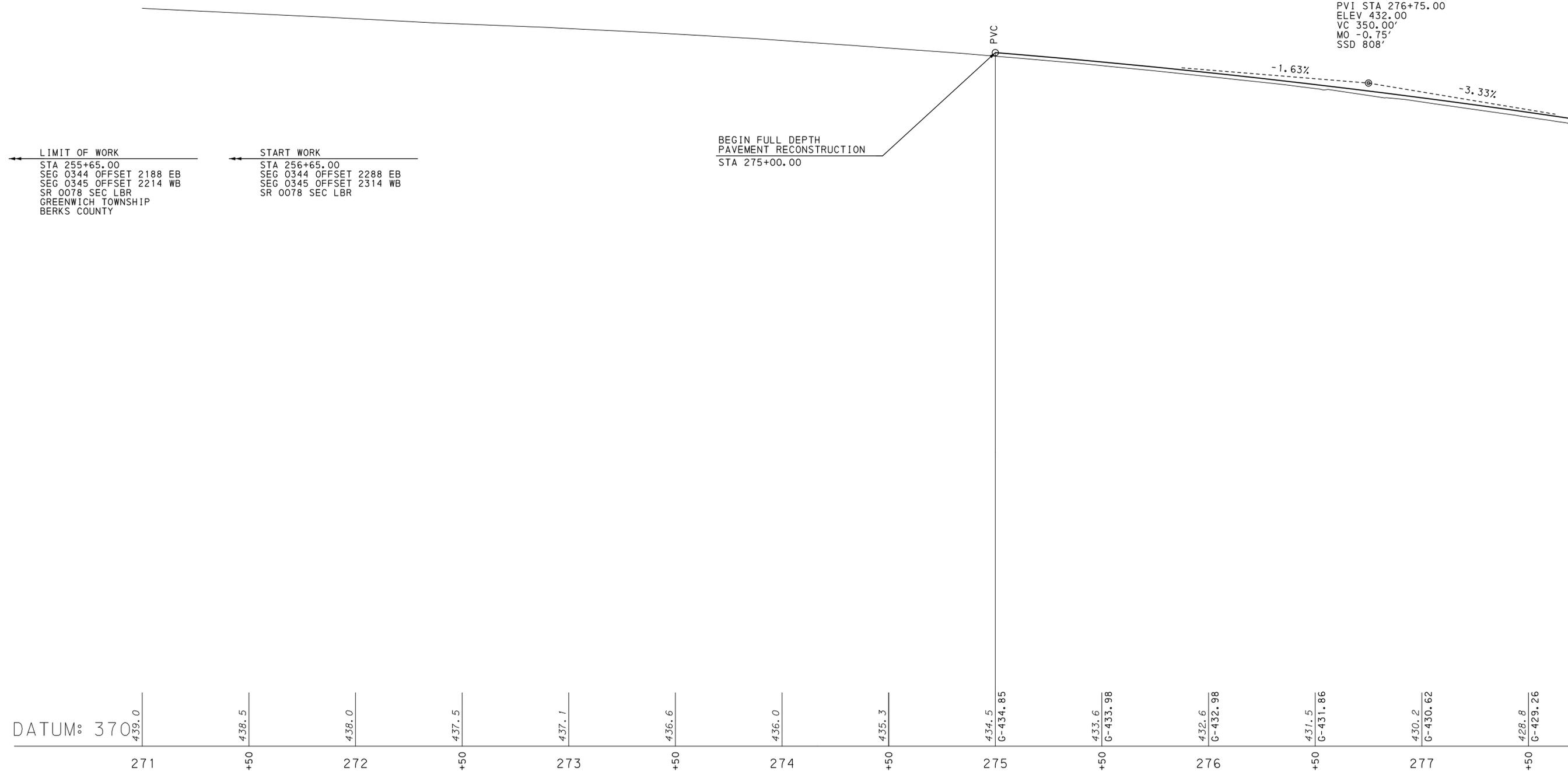
60% DESIGN
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 CONSTRUCTION

FOR PROFILE, SEE SHEET NO. 49, 58, 59

SURVEY BOOK NO. 25029 & 25030

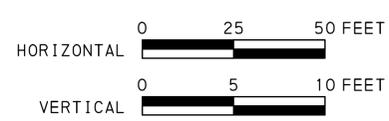
DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	35 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY

PVI STA 276+75.00
 ELEV 432.00'
 VC 350.00'
 MO -0.75'
 SSD 808'



SEE SHEET 36

SR 0078



60% DESIGN
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 CONSTRUCTION

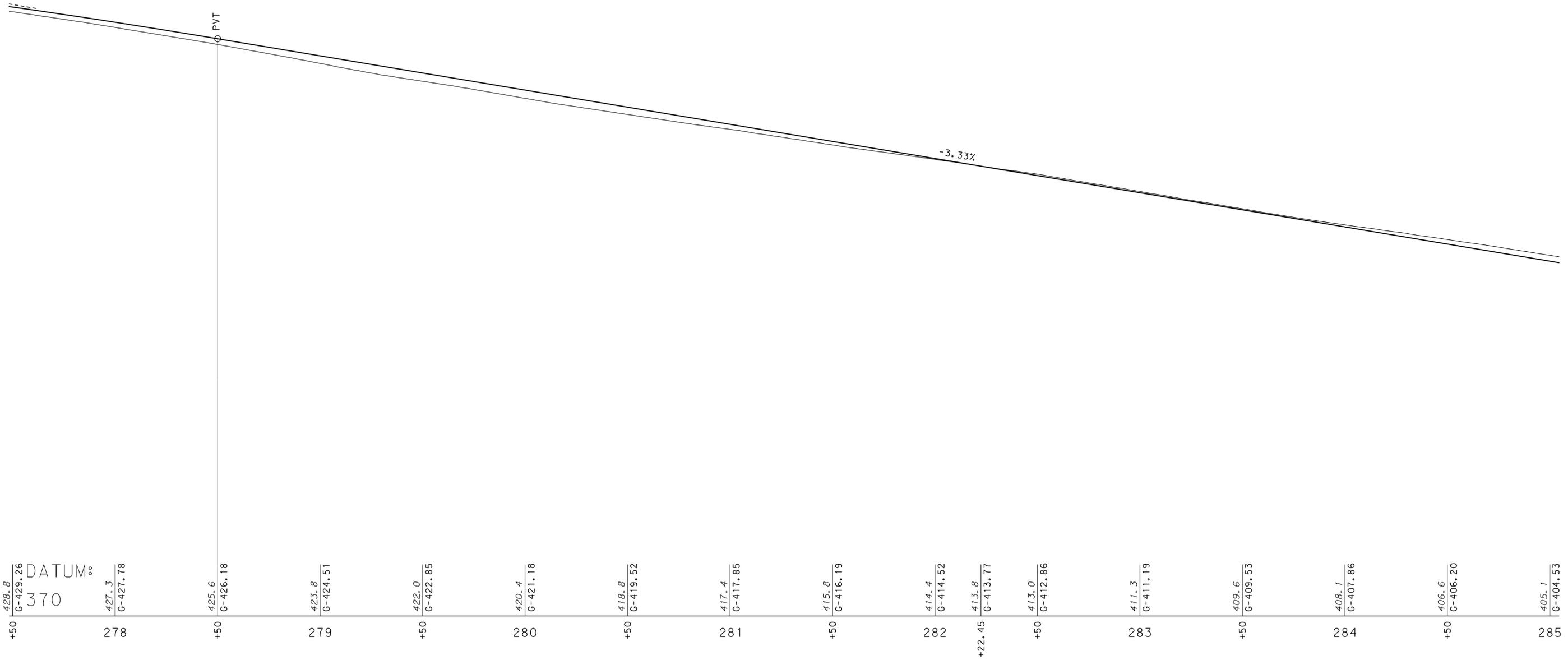
FOR PLAN, SEE SHEET NO. 25

12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188.02\Eng_Docs\Construction\Plans\Profile_01.dgn (Default)

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	36 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

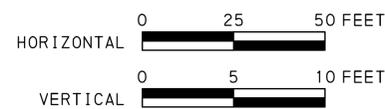
PVI STA 276+75.00
 ELEV 432.00
 VC 350.00'
 MO -0.75'
 SSD 808'



SEE SHEET 35

SEE SHEET 37

SR 0078



60% DESIGN
 NOT FOR
 CONSTRUCTION

FOR PLAN, SEE SHEET NO. 26

DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	37 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY

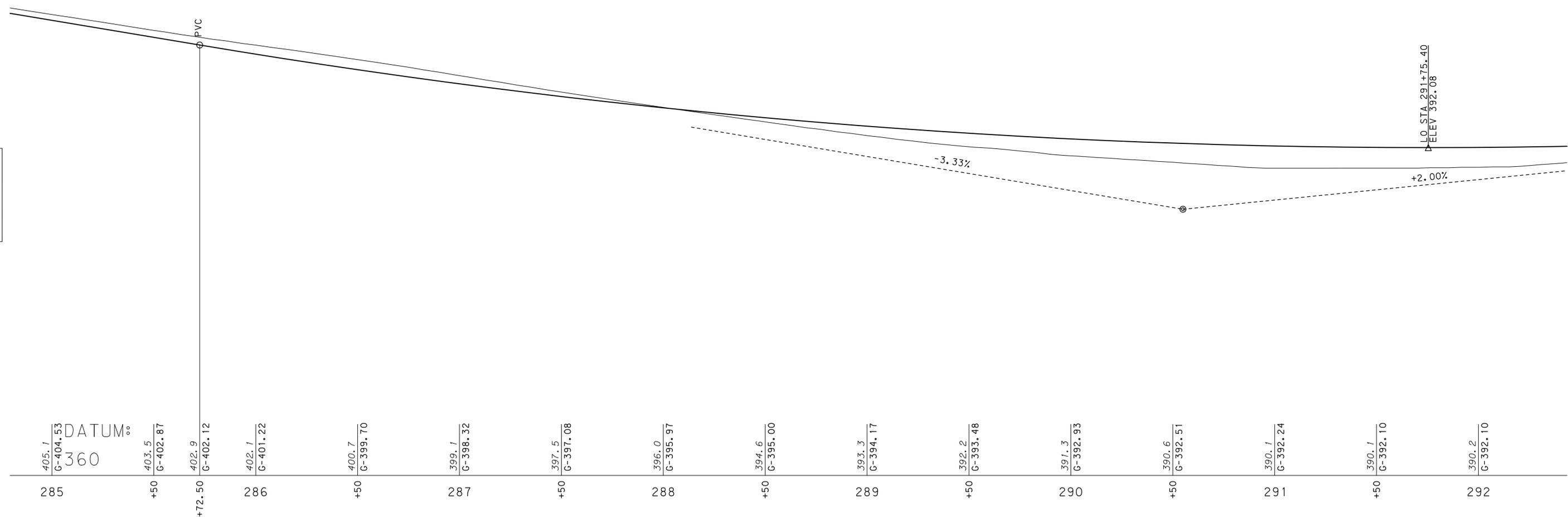
12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188.02\Eng_Docs\Construction\Plans\Profile_03.dgn (Default)

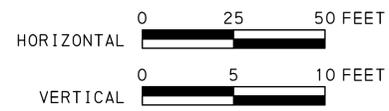
SEE SHEET 36

SEE SHEET 38

PVI STA 290+55.00
 ELEV 386.05
 VC 965.00'
 MO 6.43'
 HLSD 732'



SR 0078



60% DESIGN
 NOT FOR
 CONSTRUCTION

FOR PLAN, SEE SHEET NO. 27

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	38 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021

OPERATOR: Y:\Lehigh\60100s\60188.02\Eng_Docs\Construction\Plans\Profile.dgn (Default)

PVI STA 290+55.00
 ELEV 386.05
 VC 965.00'
 MO 6.43'
 HLSD 732'

AERIAL UTILITY
 TO BE
 TEMPORARILY
 RELOCATED

ELEV 414.00

+2.00%

PVT

ELEV 385.50

SR 0143

MAIDEN CREEK

17'-0" MIN EXISTING
 16'-11" MIN PROVIDED
 16'-6" MIN REQUIRED

SEE SHEET 37

SEE SHEET 39

DATUM	390.7	391.0	392.7	368.4	363.8	362.1	361.1	355.2	353.6	353.7	360.4	361.1	362.6	369.1	379.4
330	G-392.23	G-392.51	G-392.92	G-393.47	G-394.16	G-394.99	G-395.70	G-396.95	G-397.95	G-398.95	G-399.95	G-400.95	G-401.95	G-402.95	G-403.95
+50	293	+50	294	+50	295	+50	296	+50	297	+50	298	+50	299	+50	

POC STA 294+03.51 SR 0078 =
 POT STA 336+81.51 SR 0143

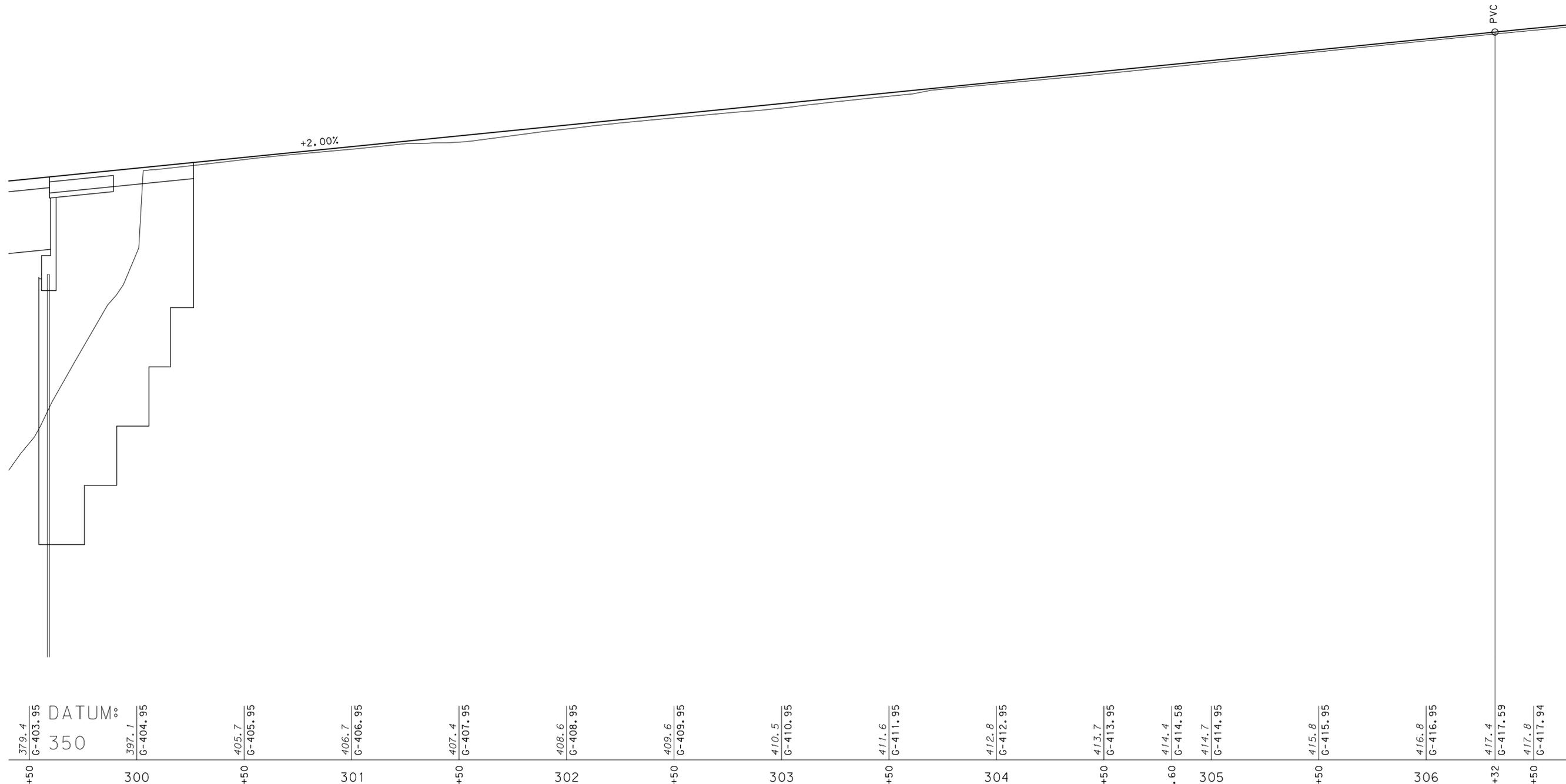
SR 0078



60% DESIGN
 NOT FOR
 CONSTRUCTION

FOR PLAN, SEE SHEET NO. 28

DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	39 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY



SEE SHEET 38

SEE SHEET 40

12\06\2021 PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188.02\Eng_Docs\Construction\Plans\Profile_05.dgn (Default)

DATUM:
350

SR 0078



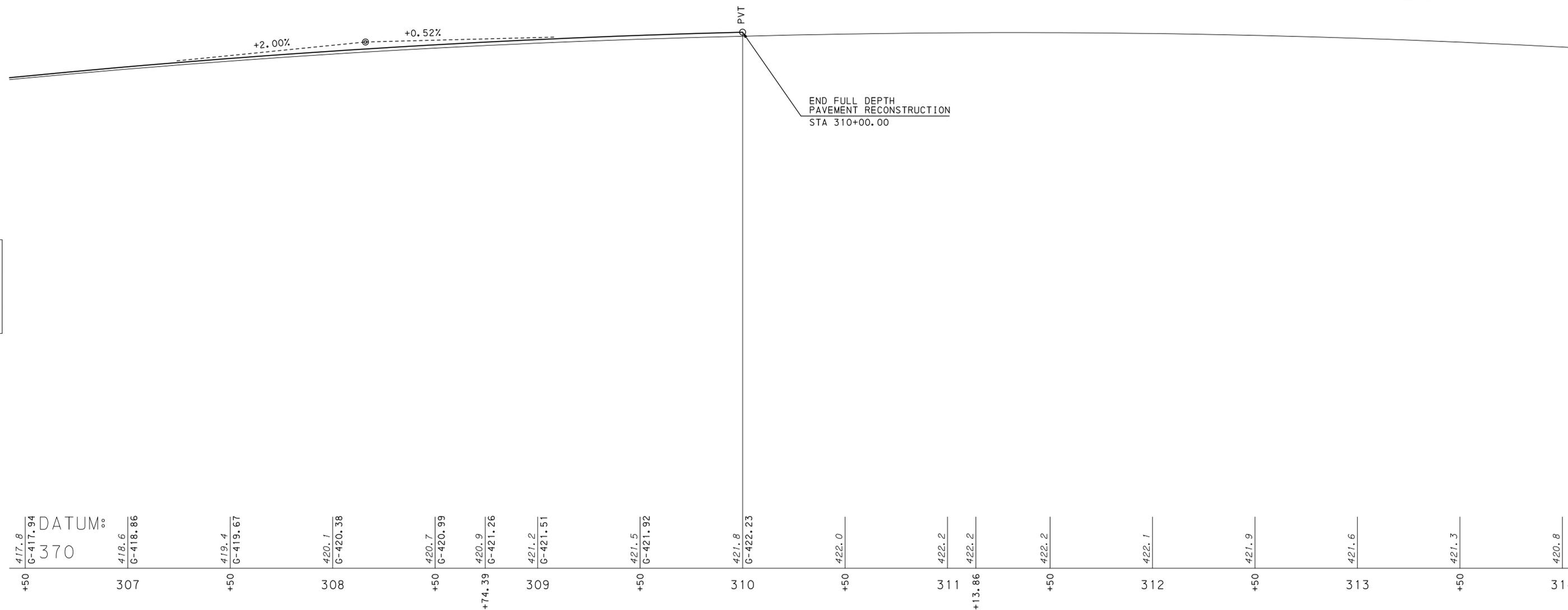
60% DESIGN
NOT FOR
CONSTRUCTION

FOR PLAN, SEE SHEET NO. 29

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	40 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

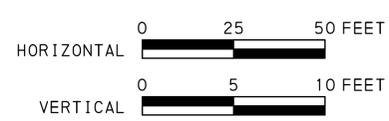
PVI STA 308+16.00
 ELEV 421.27
 VC 368.00'
 MO -0.68'
 SSD 913'

STOP WORK → LIMIT OF WORK →
 STA 326+50.00 STA 327+50.00
 SEG 0360 OFFSET 1382 EB SEG 0360 OFFSET 1482 EB
 SEG 0361 OFFSET 1358 WB SEG 0361 OFFSET 1458 WB
 SR 0078 SEC LBR SR 0078 SEC LBR
 GREENWICH TOWNSHIP
 BERKS COUNTY



SEE SHEET 39

SR 0078



60% DESIGN
 NOT FOR
 CONSTRUCTION

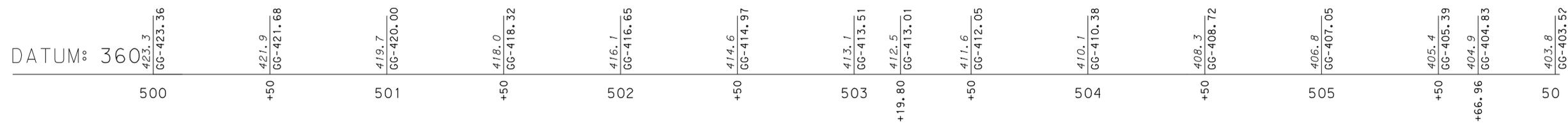
FOR PLAN, SEE SHEET NO. 30

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	41 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

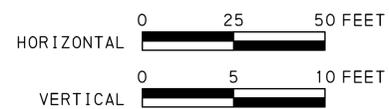
START WORK
 STA 500+00.00
 SR 8018 (RAMP A)

GRAPHIC GRADE



SEE SHEET 42

RAMP A



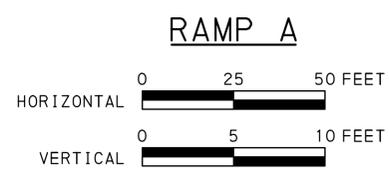
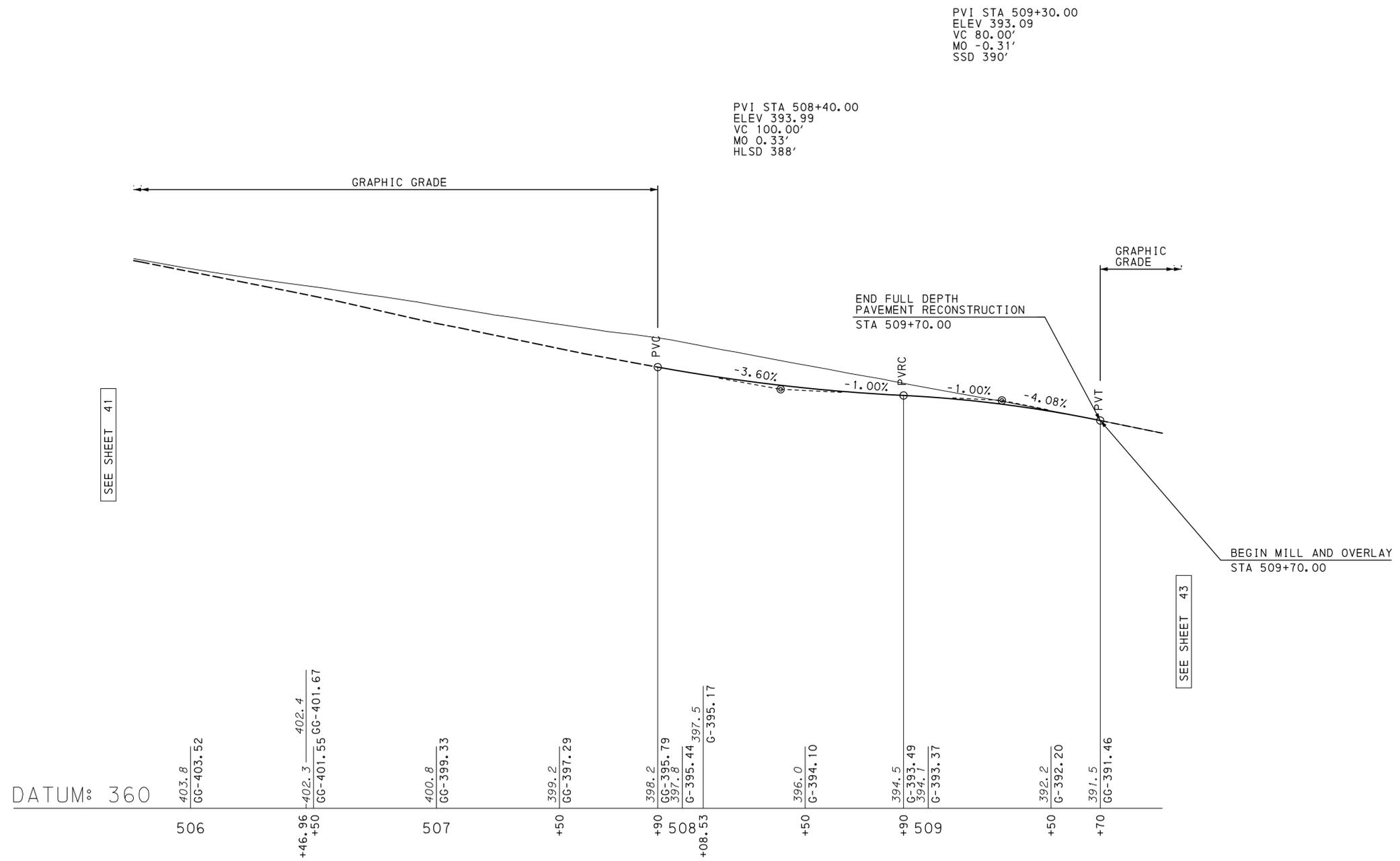
60% DESIGN
 NOT FOR
 CONSTRUCTION

FOR PLAN, SEE SHEET NO. 26

12\06\2021 PLOTTED:

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	42 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



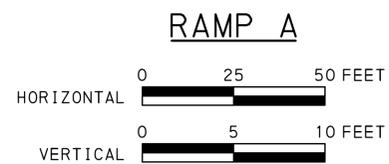
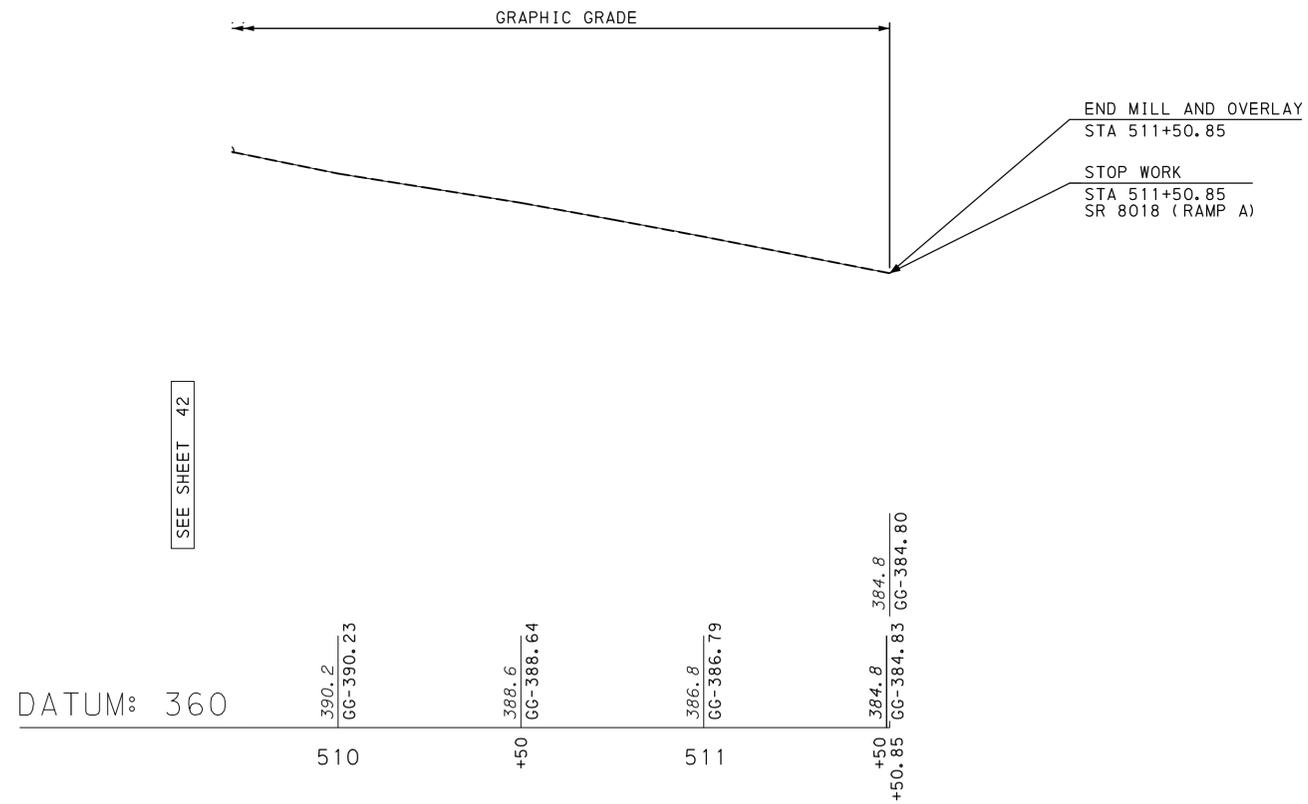
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NOT FOR
CONSTRUCTION

FOR PLAN, SEE SHEET NO. 27

12\06\2021 PLOTTED:

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	43 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



FOR PLAN, SEE SHEET NO. 33

60% DESIGN
NOT FOR
CONSTRUCTION

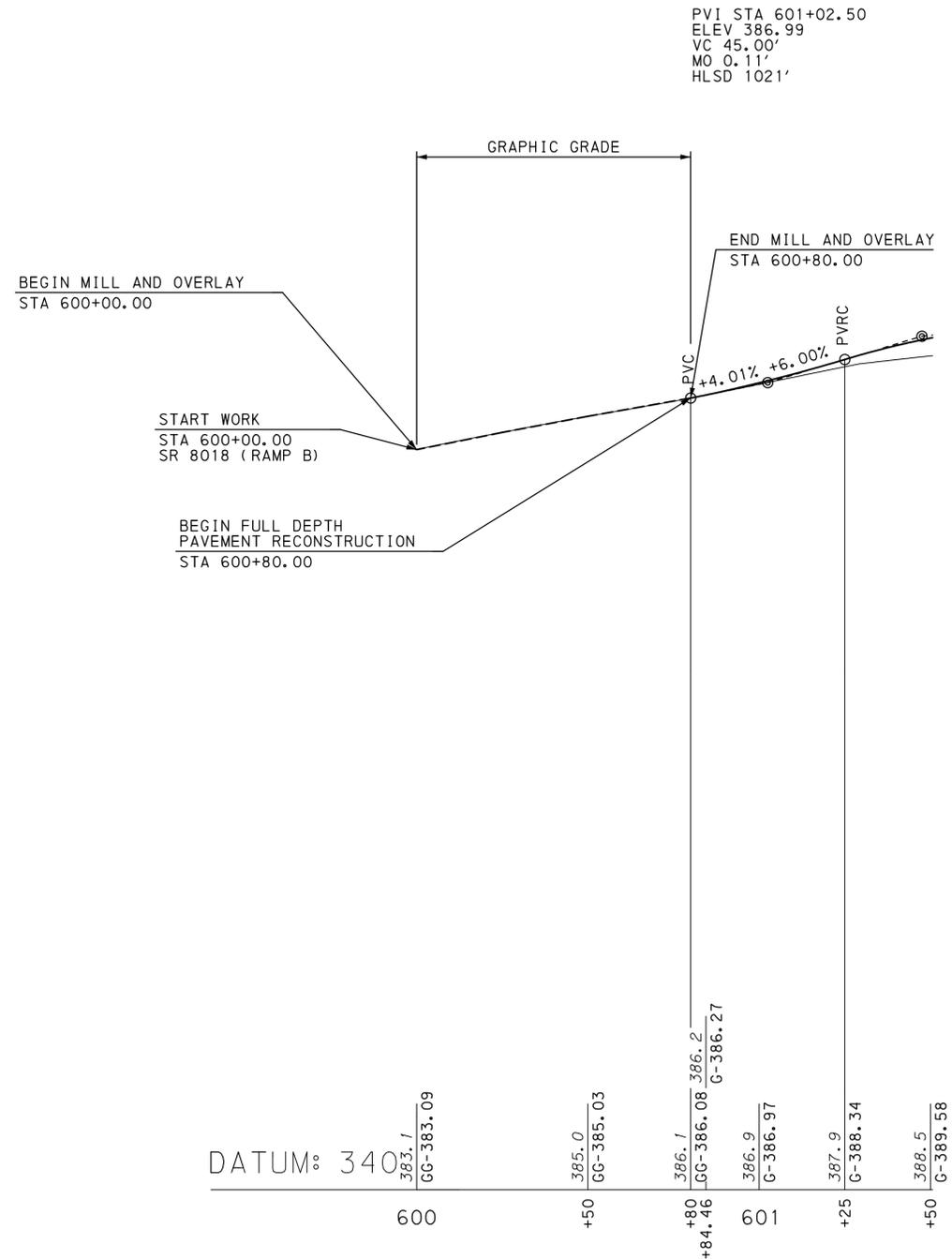
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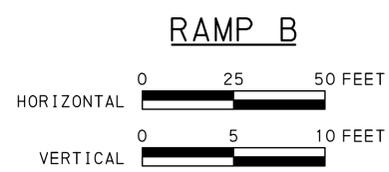
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	44 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:

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DATUM: 340



FOR PLAN, SEE SHEET NO. 33

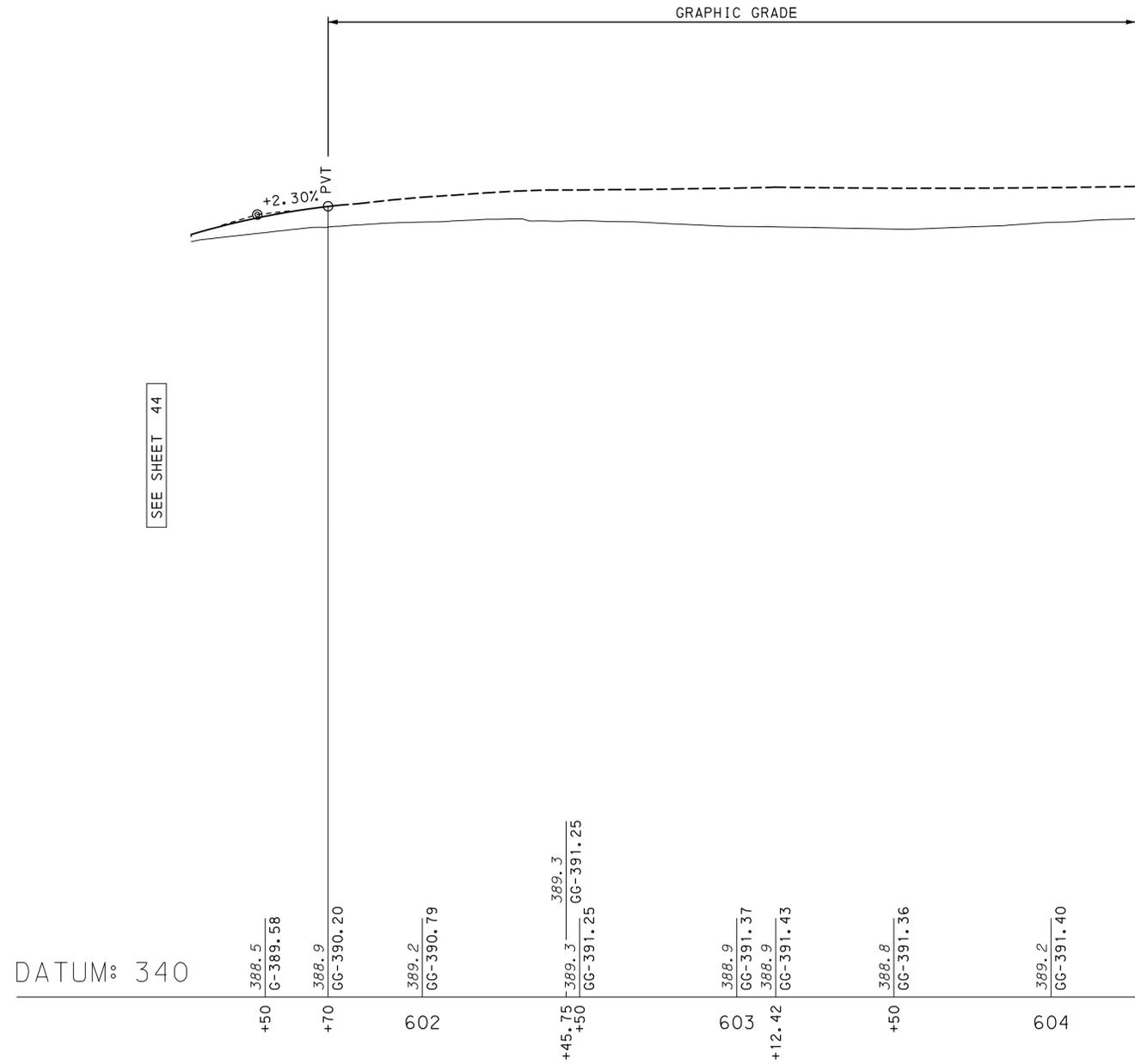
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CONSTRUCTION

12\06\2021

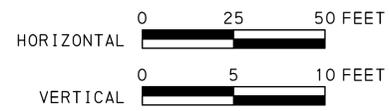
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5-0	BERKS	0078	LBR	45 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

PVI STA 601+47.50
 ELEV 389.69
 VC 45.00'
 MO -0.21'
 SSD 314'



RAMP B



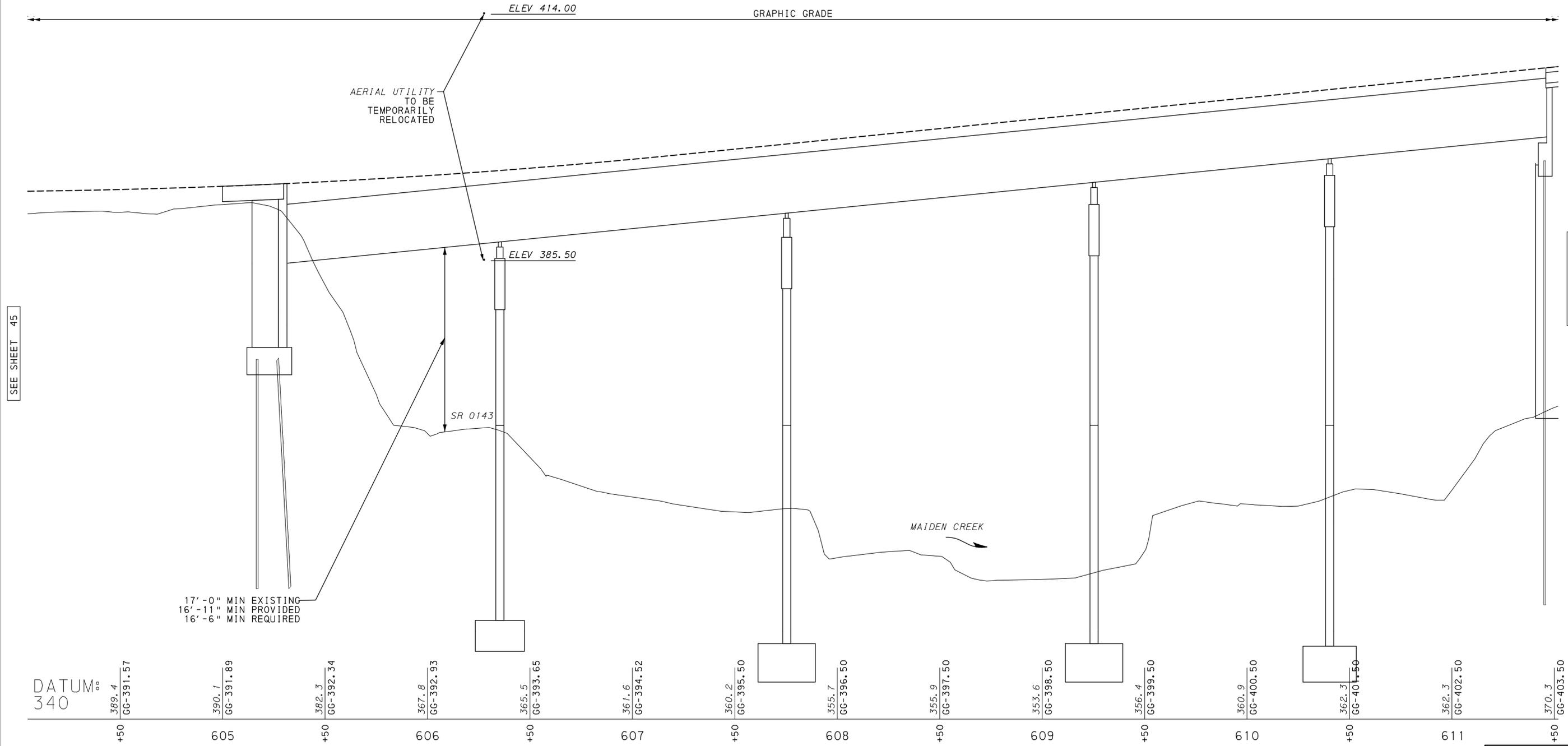
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 NOT FOR
 CONSTRUCTION

FOR PLAN, SEE SHEET NO. 27

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5-0	BERKS	0078	LBR	46 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY

12\06\2021

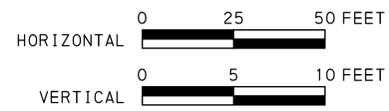
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SEE SHEET 45

SEE SHEET 47

RAMP B



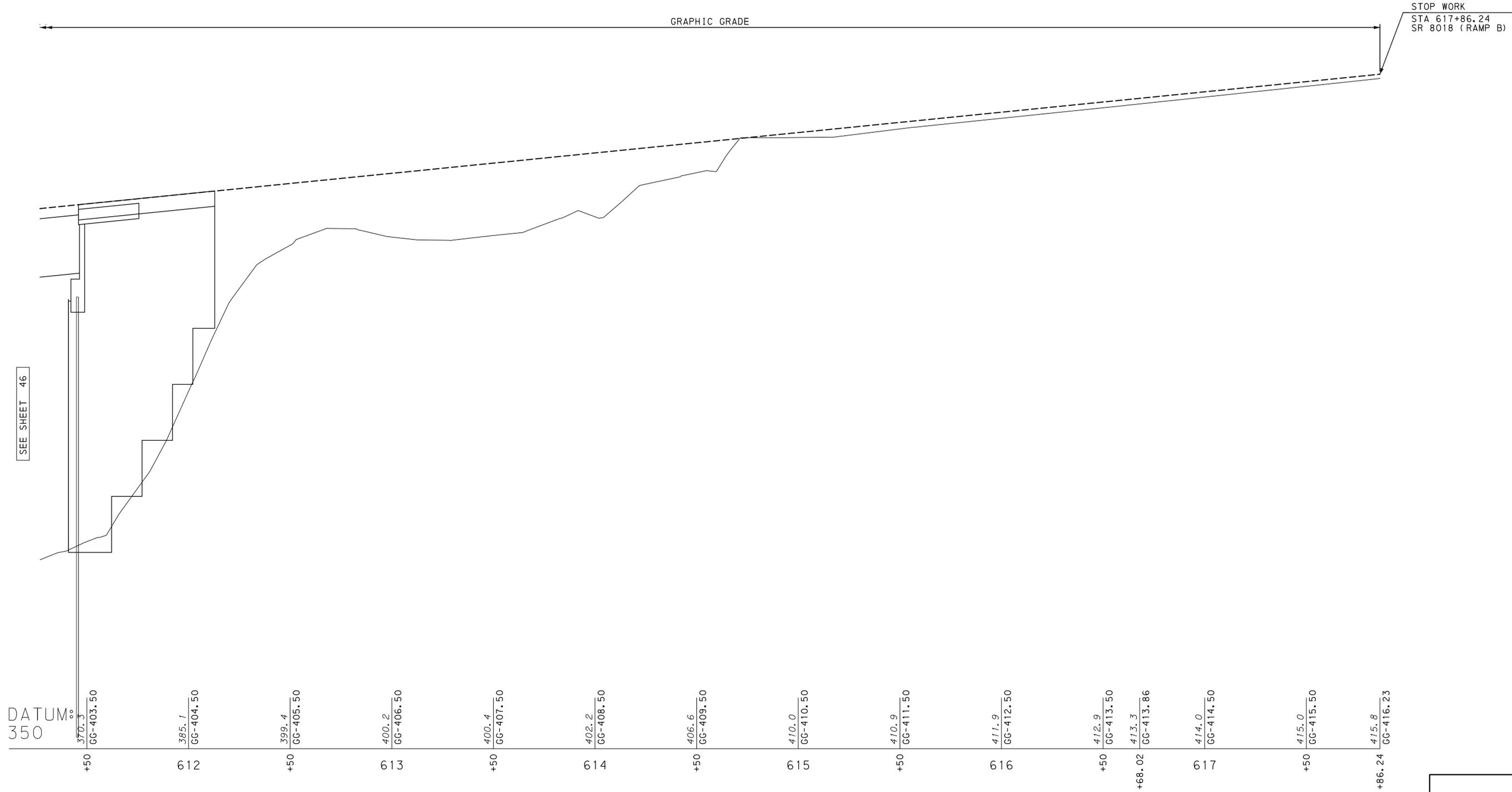
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NOT FOR
CONSTRUCTION

FOR PLAN, SEE SHEET NO. 28

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5-0	BERKS	0078	LBR	47 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

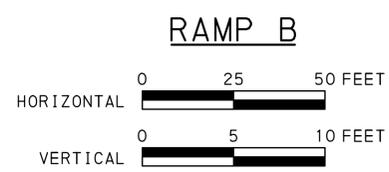
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DATUM
350

SEE SHEET 46



FOR PLAN, SEE SHEET NO. 29

60% DESIGN
NOT FOR
CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	48 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:

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STA 400+00.00

GRAPHIC GRADE

START WORK
STA 400+00.00
SR 8018 (RAMP AB)

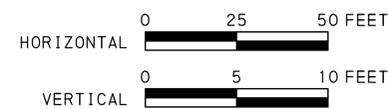
END MILL AND OVERLAY
STA 401+00.00

STOP WORK
STA 404+98.10
SR 8018 (RAMP AB)

DATUM: 340



RAMP AB

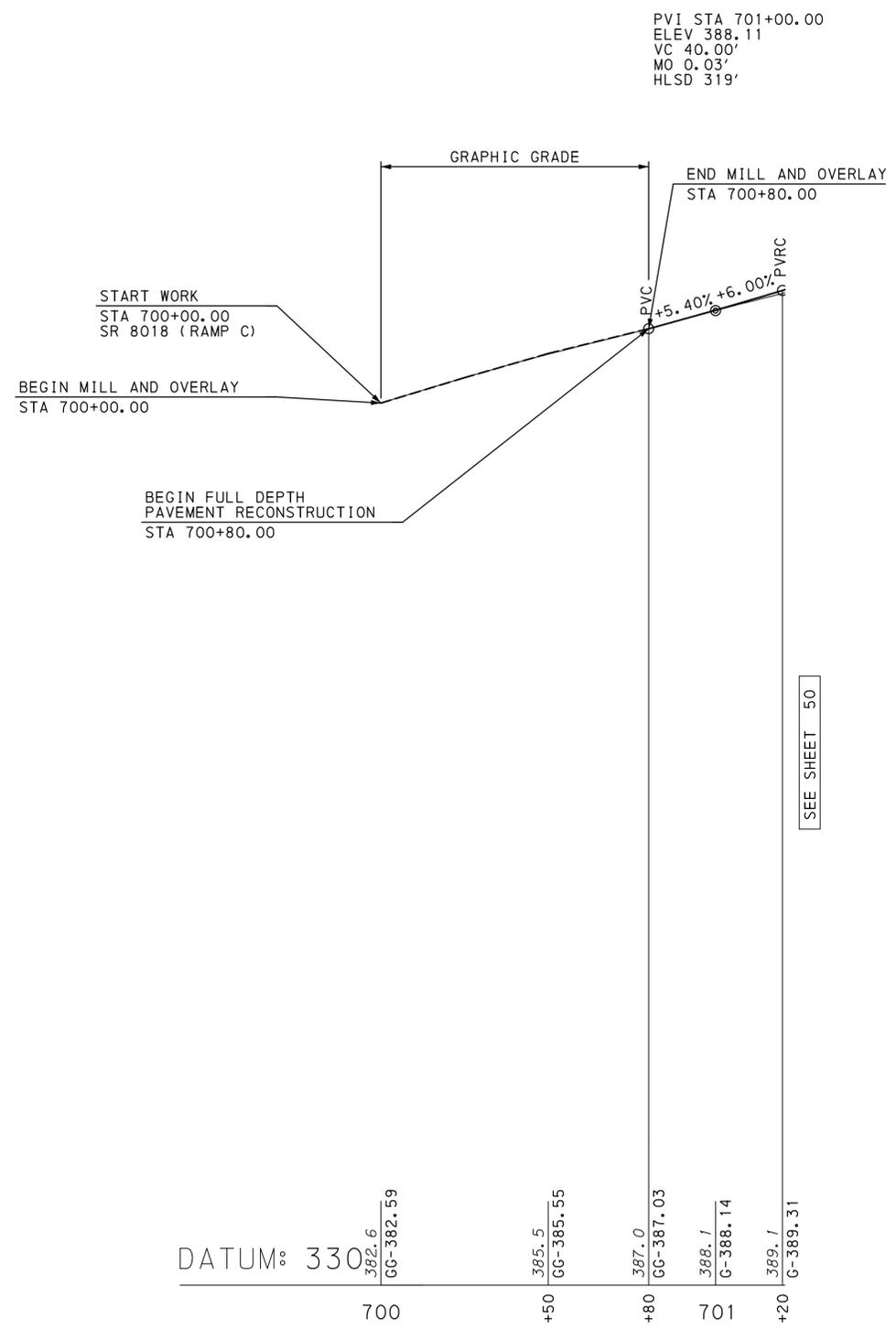


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NOT FOR
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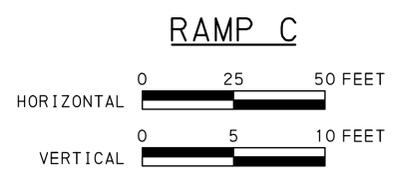
FOR PLAN, SEE SHEET NO.

33

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	49 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



DATUM: 330	382.6 GG-382.59	385.5 GG-385.55	387.0 GG-387.03	388.1 G-388.14	389.31 G-389.31
700	+50	+80	701	+20	



FOR PLAN, SEE SHEET NO. 34

60% DESIGN
NOT FOR
CONSTRUCTION

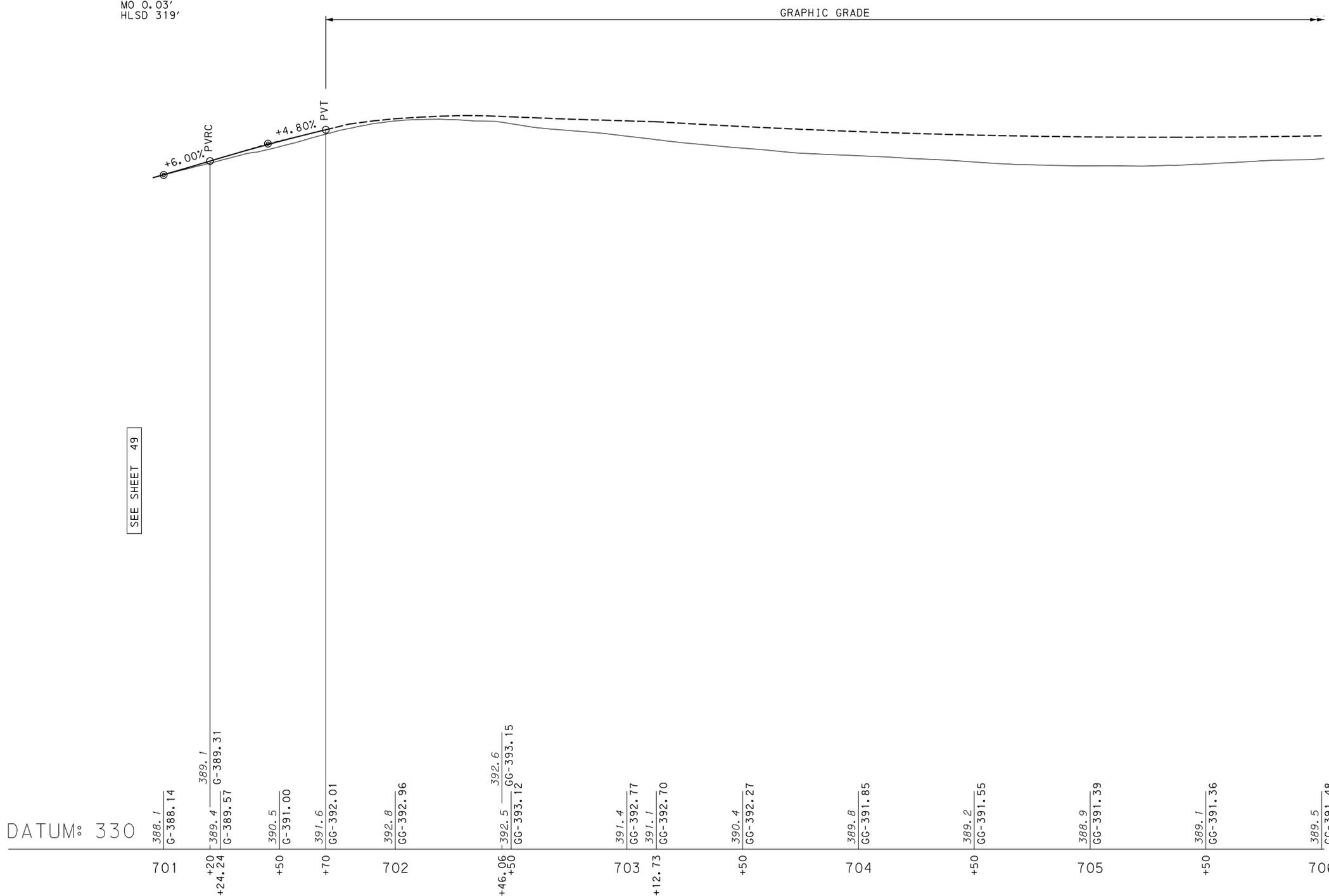
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	50 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

PVI STA 701+00.00
 ELEV 388.11
 VC 40.00'
 MO 0.03'
 HLSD 319'

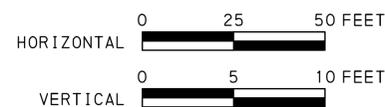
PVI STA 701+45.00
 ELEV 390.81
 VC 50.00'
 MO -0.08'
 SSD 924'



SEE SHEET 49

SEE SHEET 51

RAMP C



60% DESIGN
 NOT FOR
 CONSTRUCTION

FOR PLAN, SEE SHEET NO. 27

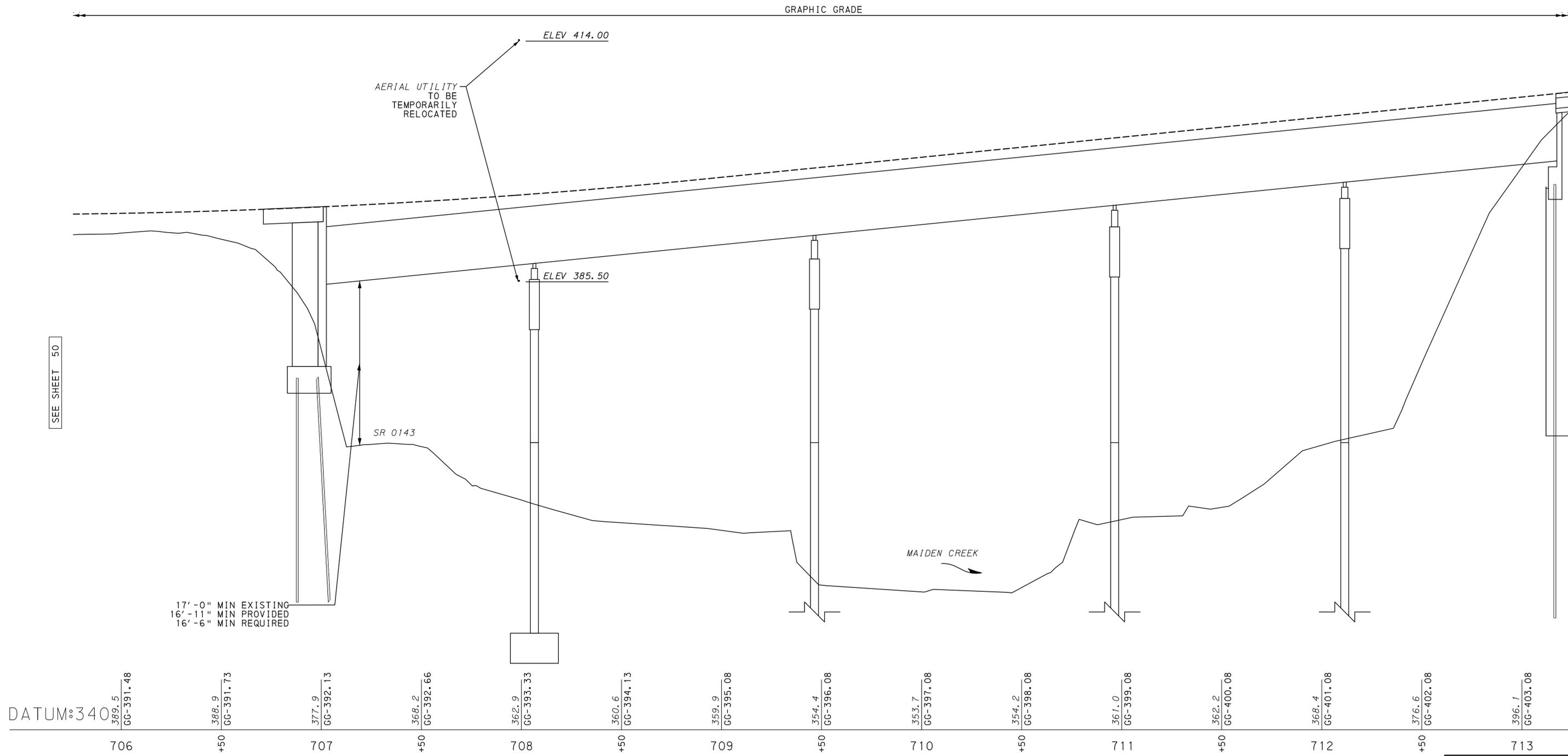
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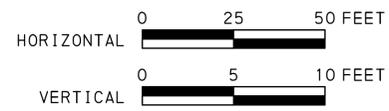
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5-0	BERKS	0078	LBR	51 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021

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RAMP C



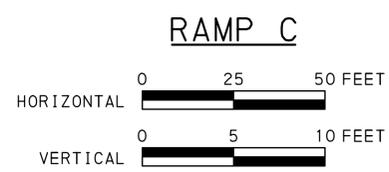
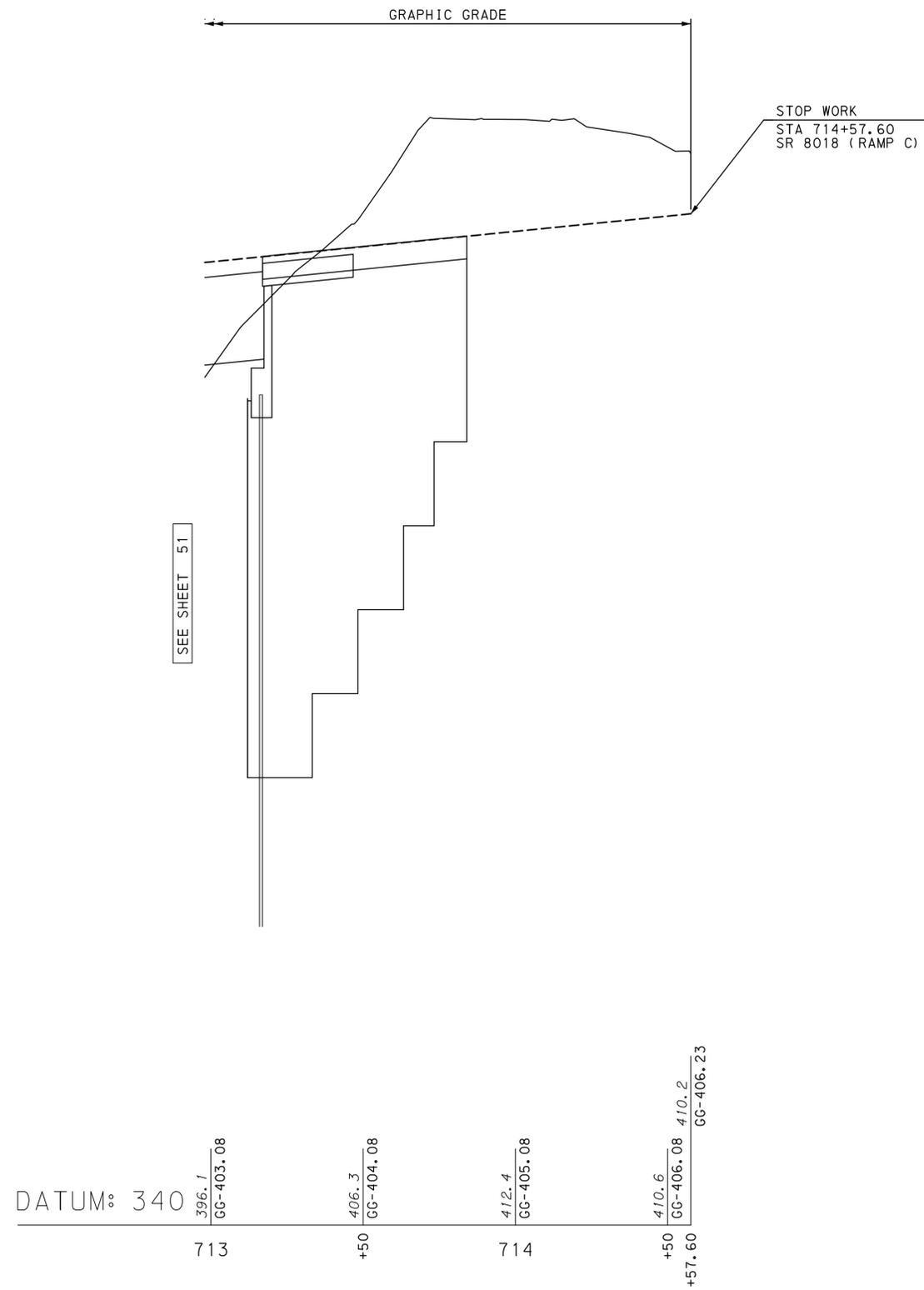
60% DESIGN
NOT FOR
CONSTRUCTION

FOR PLAN, SEE SHEET NO. 28

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5-0	BERKS	0078	LBR	52 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:

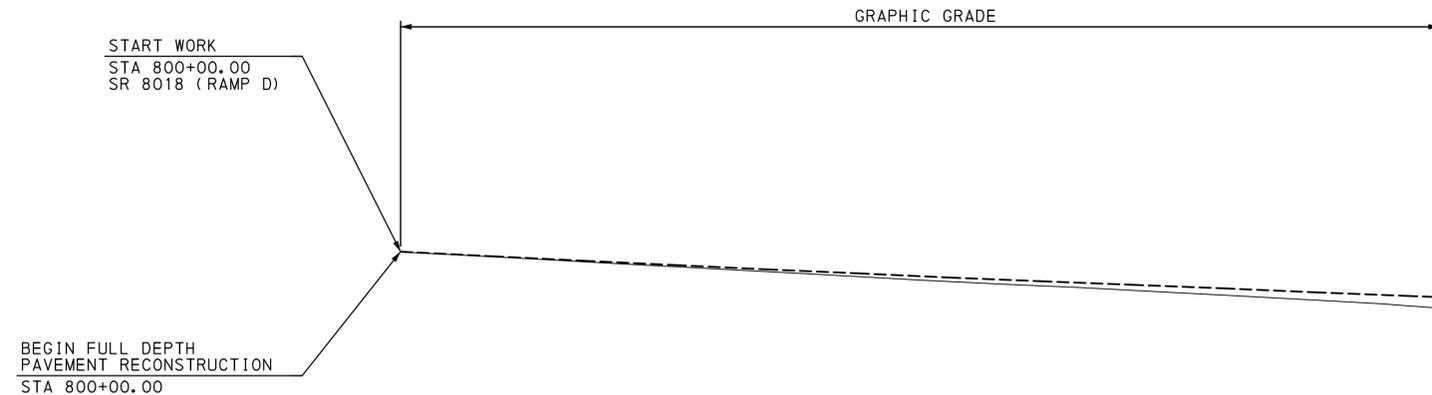
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FOR PLAN, SEE SHEET NO. 29

60% DESIGN
NOT FOR
CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	53 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

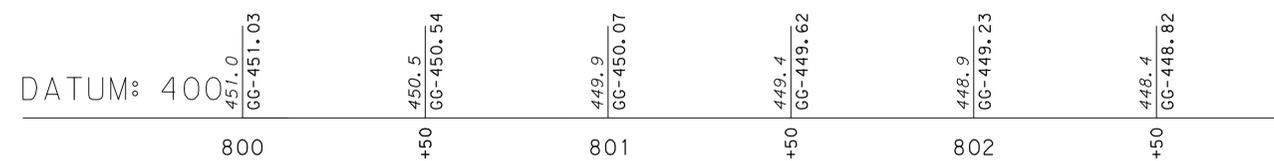


BEGIN FULL DEPTH
PAVEMENT RECONSTRUCTION
STA 800+00.00

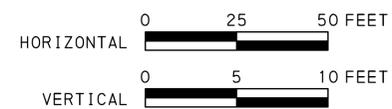
START WORK
STA 800+00.00
SR 8018 (RAMP D)

GRAPHIC GRADE

SEE SHEET 54



RAMP D



60% DESIGN
NOT FOR
CONSTRUCTION

FOR PLAN, SEE SHEET NO. 23

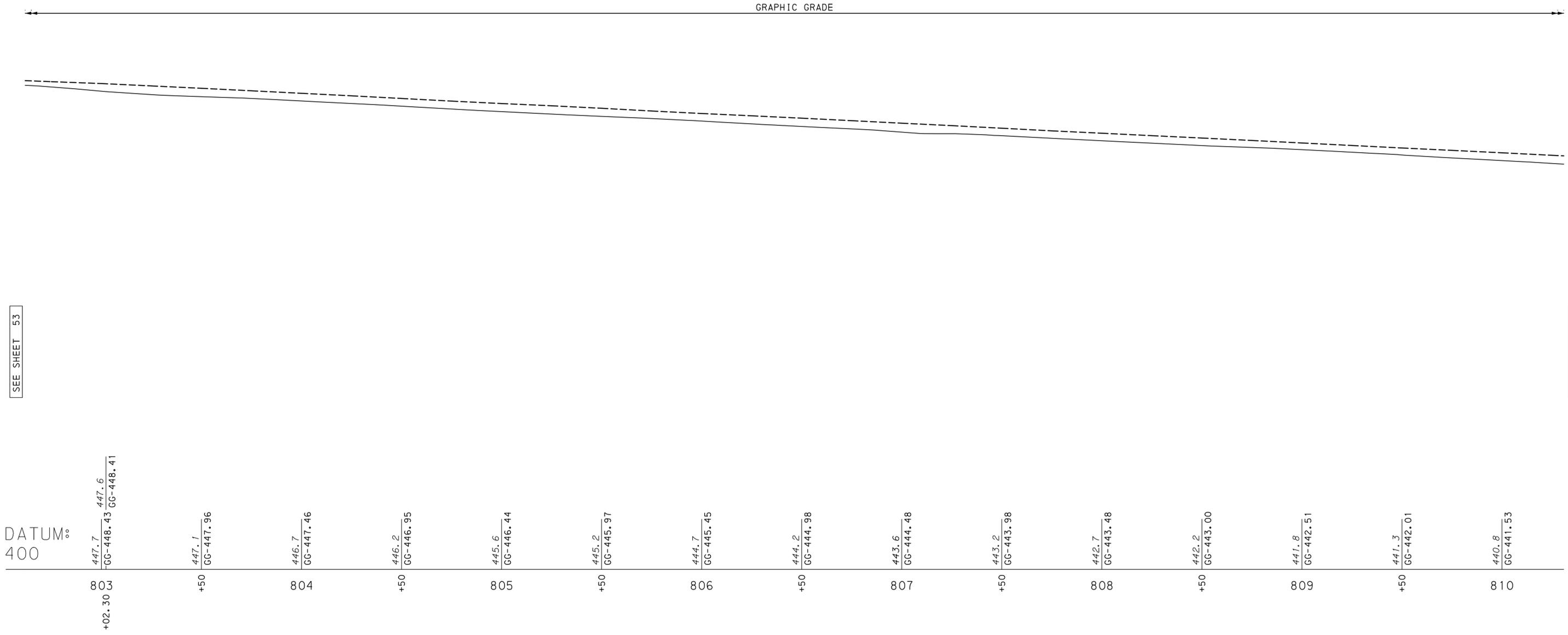
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12\06\2021
PLOTTED:

OPERATOR: Y:\Lehigh\60100s\60188.02\Eng_Docs\Construction\Plans\Profile_20.dgn (Default)

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	54 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

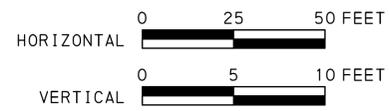


SEE SHEET 53

SEE SHEET 55

DATUM
400

RAMP D



FOR PLAN, SEE SHEET NO. 24

60% DESIGN
NOT FOR
CONSTRUCTION

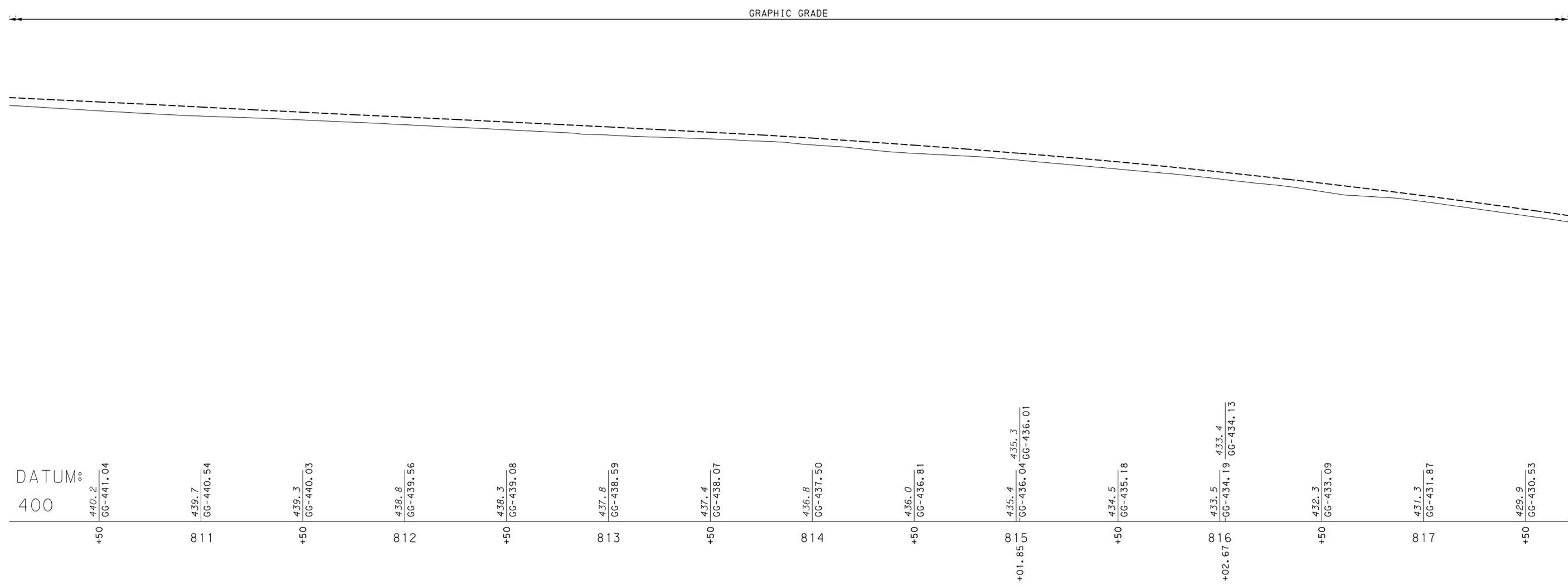
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	55 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

12\06\2021 PLOTTED:

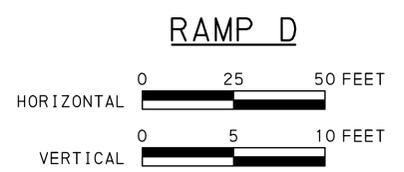
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SEE SHEET 54

SEE SHEET 56



DATUM
400



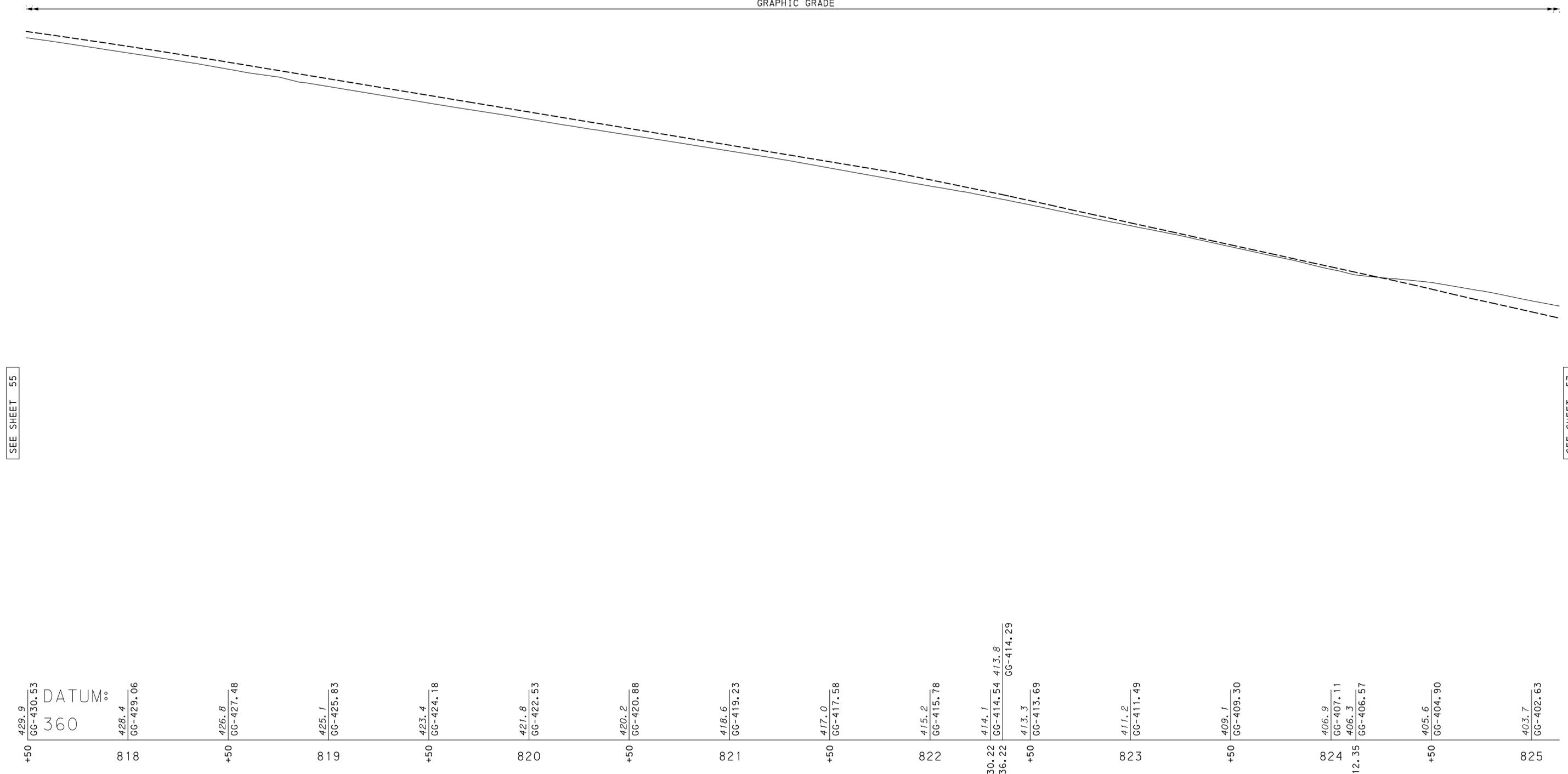
FOR PLAN, SEE SHEET NO. 25

60% DESIGN
NOT FOR
CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET	
5-0	BERKS	0078	LBR	56 OF 59	
GREENWICH TOWNSHIP					
REVISION NUMBER	REVISIONS			DATE	BY

12\06\2021 PLOTTED:

GRAPHIC GRADE

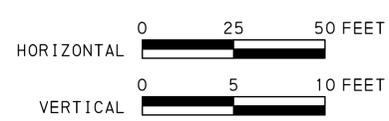


SEE SHEET 55

SEE SHEET 57

DATUM:
360

RAMP D

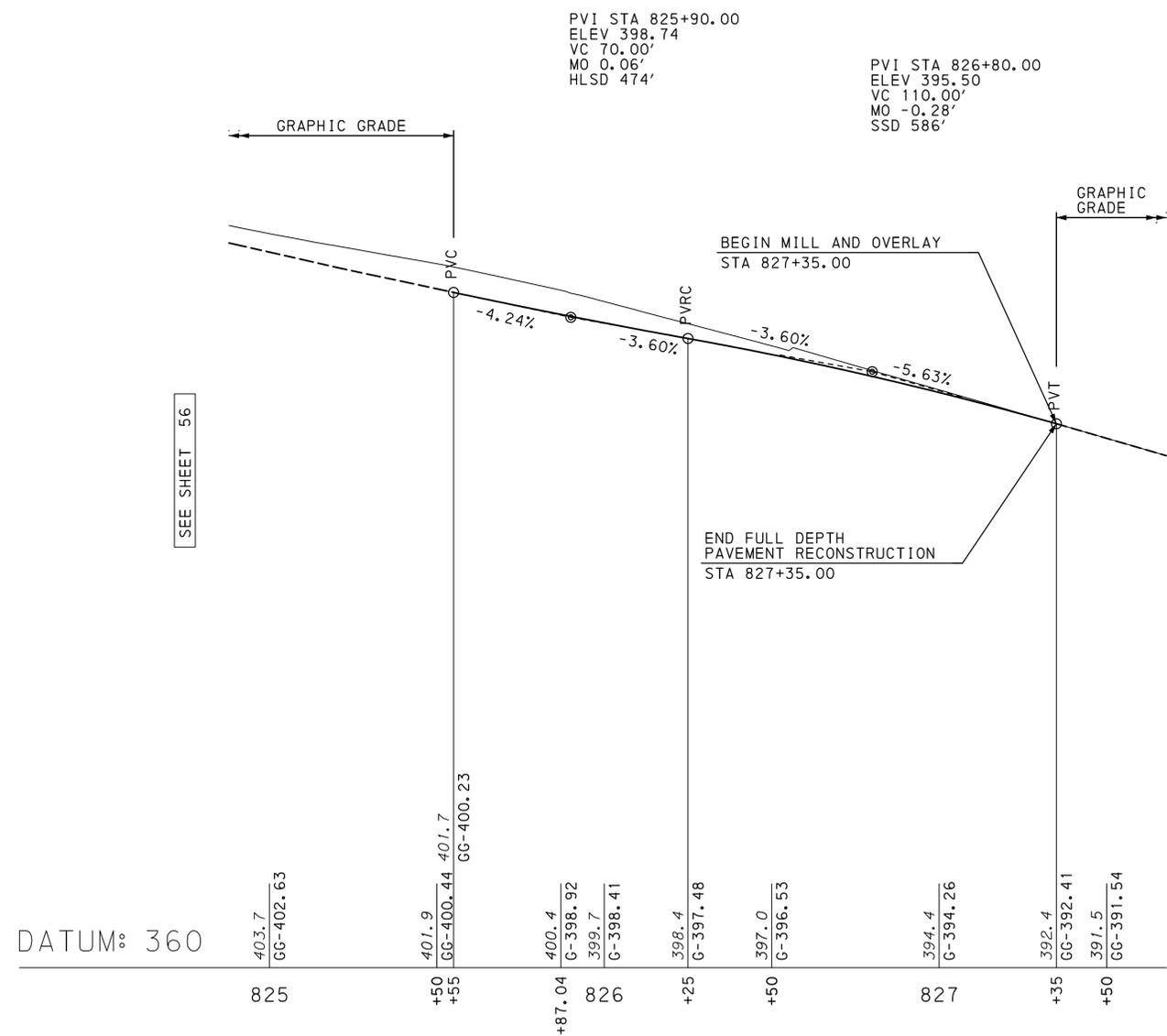


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FOR PLAN, SEE SHEET NO. 26

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	57 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



DATUM: 360

SEE SHEET 56

SEE SHEET 58

RAMP D



60% DESIGN
NOT FOR
CONSTRUCTION

FOR PLAN, SEE SHEET NO. 27

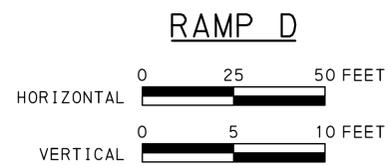
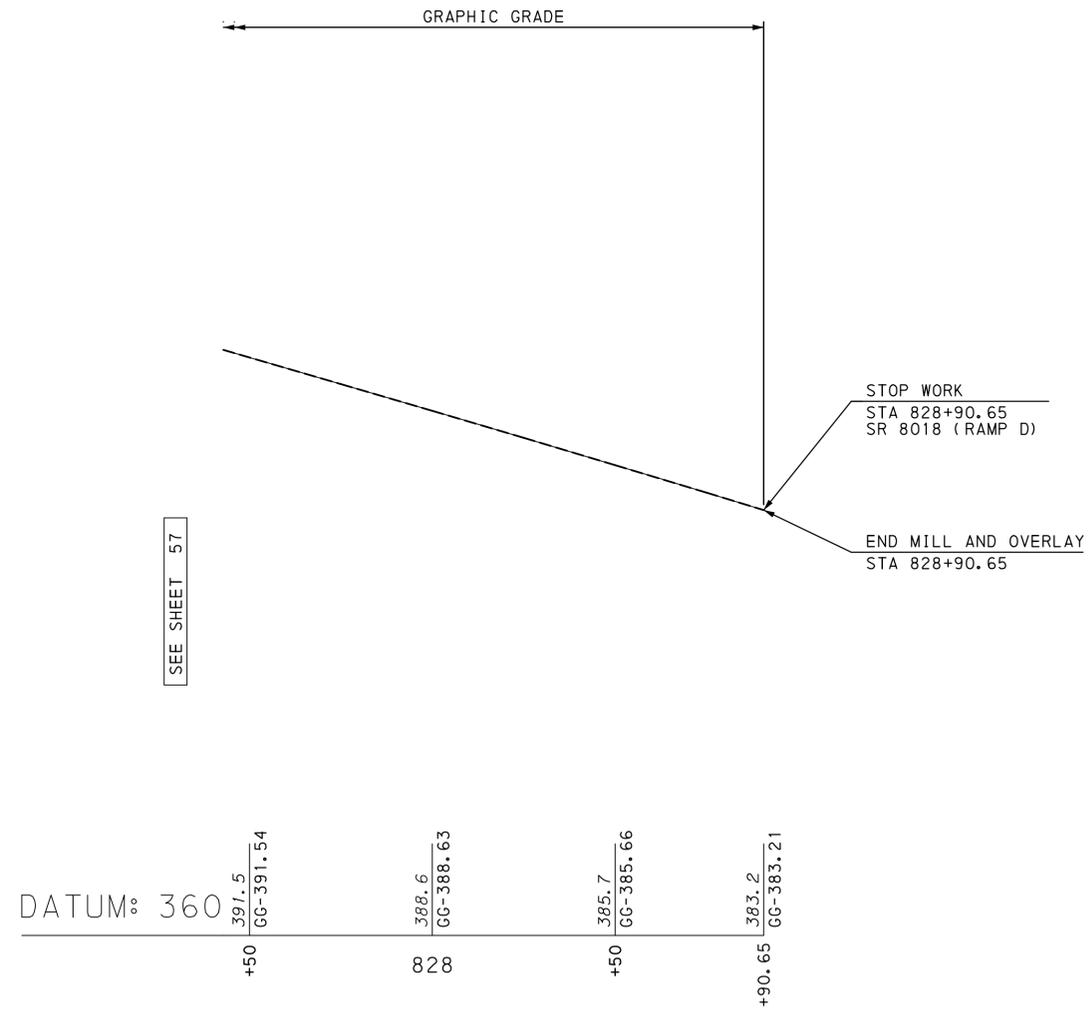
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OPERATOR: Y:\Lehigh\60100s\60188.02\Eng_Docs\Construction\Plans\Profile.dgn (Default)

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OPERATOR: Y:\Lehigh\60100s\60188.02\Eng_Docs\Construction\Plans\Profile_24.dgn (Default)

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	58 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	

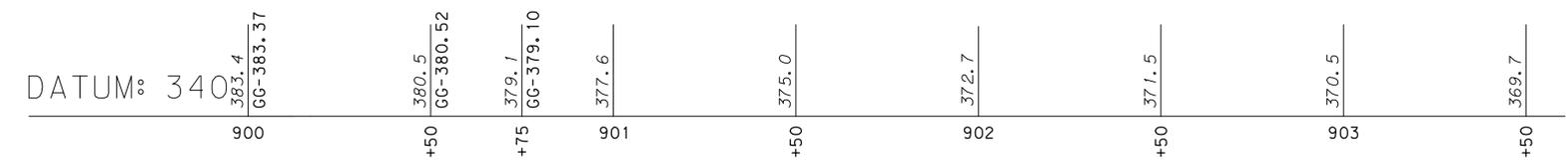
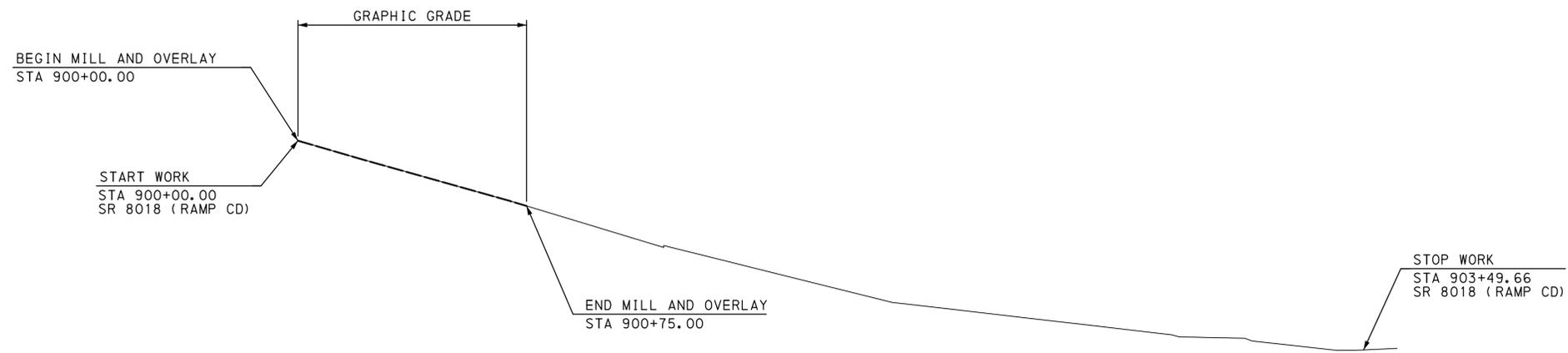


FOR PLAN, SEE SHEET NO.

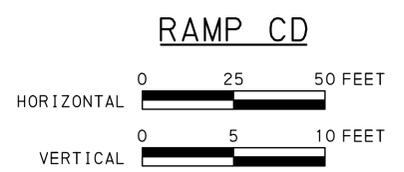
34

60% DESIGN
NOT FOR
CONSTRUCTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	BERKS	0078	LBR	59 OF 59
GREENWICH TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



DATUM: 340



FOR PLAN, SEE SHEET NO. 34

60% DESIGN
NOT FOR
CONSTRUCTION

12\06\2021
PLOTTED:

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Appendix C
Agency Coordination

Waterway Permit Pre-Application Meeting Minutes & Jurisdictional Determination

Date:	April 22, 2019	Time:	10:00 am – 11:30 am
Location:	Project Site, Lenhartsville, PA	Scribe:	Rachel Tereska
Subject:	SR 0078 (Interstate 78) Waterway Permit Pre-Application Meeting		

Attendees	Representing	Email
Michael Larzelere	PADEP SCRO	mlarzelere@pa.gov
Kathleen Kolos	PADEP SCRO	kkolos@pa.gov
Randy Piersol	USACE Philadelphia District	Randy.T.Piersol@usace.army.mil
John Bohman	PennDOT District 5-0	jbohman@pa.gov
Giuliana Angione	PennDOT District 5-0	gangione@pa.gov
Kerry Cox	PennDOT District 5-0	kecox@pa.gov
Jonathan Vasilik	PennDOT District 5-0	jvasilik@pa.gov
Levi Veppert	PennDOT District 5-0	lveppert@pa.gov
Braulio Sanchez Presinal	PennDOT District 5-0	bsanchezpr@pa.gov
Eric Bruggeman	Skelly and Loy	ebruggeman@skellyloy.com
Andrew Nevin	Skelly and Loy	anevin@skellyloy.com
Brian Brawand	Benesch	bbrawand@benesch.com
Rachel Tereska	NTM Engineering	RTereska@ntmeng.com

The purpose of the meeting was to discuss the waterway permit requirements for the SR 0078 Lenhartsville project. The following is a summary of the project information presented by the design team, as well as the comments from the reviewing agencies that took place during the meeting at the site. A follow-up conference call on May 14, 2019 and a follow-up field view on July 18, 2019 are also summarized. A copy of the *Field Checklist for Preliminary Design Permit Coordination* has been included and should be considered part of the minutes.

Project Information Presented by the Design Team

After introductions, Brian Brawand (Benesch) provided the following overview of the project. The purpose of this project is to replace the structure carrying SR 0078 over SR 0143 and Maiden Creek. Additionally, the roadway approaches to the structure will be widened to provide a consistent typical section along the SR 0078 corridor. The proposed structure will be widened to accommodate acceleration and deceleration lanes for the interchange loop ramps (Ramps B & C) and to provide full inside and outside shoulders. Reconstruction of approximately 1800 feet of the western approach roadway and approximately 1000 feet of the eastern approach roadway is required to accommodate widening of the roadway and the addition of acceleration and deceleration lanes.

The existing structure is a seven (7) span 667' long steel beam bridge with an approximately 70' out-to-out width. The existing structure typical section provides for two (2) 12'-0" through lanes in each direction, 6'- 5½" outside shoulders and 6" inside shoulders.

The proposed bridge is a five (5) span 615' long prestressed concrete beam bridge with an approximately 122' out-to-out width. The proposed typical section provides for two (2) 12'-0" through lanes in each direction, auxiliary lanes and full inside and outside shoulders. The five span configuration removes an existing substructure unit from the middle of Maiden Creek and the center span of the bridge now straddles Maiden Creek.

Eric Bruggeman (Skelly & Loy) discussed the environmental aspects of the project:

- The primary resource is Maiden Creek, which is a perennial waterway and trout stocked.
- The PNDI indicated red-belly turtles in the project area; PFBC will require avoidance measures during construction. Bog turtles were cleared in March of 2018.
- Wetlands are presents and both temporary and permanent impacts are anticipated. Permanent impacts are a result of fill and placement of new piers; temporary impacts are due to construction measures.
- The National Register of Historic Places lists Lenhart Farm, which will not be affected by the proposed project. The Grims Mill Farmstead eligibility has not been determined, but Skelly and Loy recommended that the farm is not eligible.
- An ATON is required for recreation; there are no current access points in the project area.
- A Categorical Exclusion (CE) is anticipated.

Rachel Tereska (NTM) discussed the following H&H and permit items:

- The 50-year event is the PennDOT design event for an Interstate Highway.
- The 50-year event is the DEP event due to the suburban setting.
- The site is located in a detailed FEMA study area without a regulated floodway.
- The drainage area of Maiden Creek at the site is approximately 79.7 square miles.
- FEMA only published the 100-year flow, which was used as the regulatory event. USGS WRIR was used for the design events, since it is conservative and consistent with the Act 167 flows.
- In existing conditions, the hydraulic model indicates that the 100-year event does not reach the low chord elevation and it does not overtop the approach roadway.
- In proposed conditions, the 100-year event does not reach the proposed low chord elevation and it does not overtop the proposed roadway. There are no upstream flood elevation increases, but there are minor 100-year increases downstream of the bridge. These increases do not impact any buildings in the floodplain and are due to the proposed fill associated with the widening.
- The existing piers will be replaced with narrower 3' piers and will be aligned with the flow direction.
- During construction, a temporary diversion will be used to remove the existing channel pier and cofferdams for the piers adjacent to the channel. The temporary hydraulic model will be used to evaluate increases to the 2-year event. The need for temporary flood easements will be evaluated in final design due to the building in the upstream floodplain.
- There are other perennial UNTs in the project area and their drainage areas are as follows:
 - Channel 2 (temporary access only): 28 acres
 - Channel 3 (no impacts): 18 acres
 - Channel 4 (pipe extension on upstream/downstream ends): 48 acres
 - Channel 6 (pipe extension on upstream end): 30 acres
 - Channel 7 (no impacts): 2 acres
- A Standard Joint Permit Application (JPA) is anticipated. The permit application will include a stormwater consistency letter due to the Act 167 area but will not include a floodplain consistency letter.
- The total area of disturbance includes more than 1 acre outside of the floodplain; therefore, an NPDES is required. A separate NPDES Pre-App Meeting will be scheduled with the county.

Andrew Nevin (Skelly & Loy) discussed the wetland delineation for the purpose of the Jurisdictional Determination.

- A total of seven wetlands, seven channels, and one stormwater management feature were delineated in the project area.
- The Chapter 93 water quality standards for Maiden Creek, Furnace Creek and the Unnamed Tributaries are for Trout Stocked Fishery (TSF) and Migratory Fish (MF). Maiden Creek is trout stocked, but is not naturally reproducing and is not a class A trout stream.
- A Phase II Bog Turtle assessment was completed with clearance provided by USFWS in March of 2018.
- Project attendees from DEP and the ACOE (Philadelphia District) reviewed the project area's wetland and watercourse limits as delineated by Skelly and Loy.
- DEP questioned the limits of SWM1 which were later revised during the July 18 meeting, as listed below.

Comments from the Reviewing Agencies

Mike Larzelere (DEP) indicated the following:

- A major amendment will be required to the I-78, Section 12M NPDES permit. The construction for Section 12M is underway now and will last for 3 years.
- The existing piers should be removed at least 2 feet below the streambed.
- A waiver may apply to the stream enclosures that convey channels with drainage areas of less than 100 acres.
- Since Maiden Creek does not have a FEMA floodway, show the floodway limit as 50' from the top of bank.

Kathleen Kolos (DEP) indicated the following:

- Considering the in-stream restriction periods, work will be allowed in the channel between June 16-October 31. To perform work in the channel outside of this period, coordinate with the PFBC.
- The Environmental Assessment (EA) should consider cumulative impacts for Section 12M and the Lenhartsville bridge replacement project.
- Wetlands can be noted with temporary impacts if preventative measures (e.g., timber matting, geotextile under stone access, etc.) are used during construction.
- She will check with Central Office to determine if the impacts to Wetland A should be noted as temporary or permanent.
- The stormwater channel (SWM1) needs further evaluation to determine if it is a channel under Chapter 105.

Randy Piersol (USACE) indicated the following:

- SWM1 should be delineated as an ephemeral channel.
- The proposed specifications should require survey of the streambed before and after the causeway to show the original condition is restored.
- Randy will confirm the permitting level for the USACE.

Follow-up conference call to discuss outstanding items

On May 14, 2019 at 1 PM, a conference call was held between the design team and the reviewing agencies to discuss the follow-up items from the Lenhartsville Pre-Application Meeting. Participants on the call included: Kathleen Kolos and Michael Larzelere (DEP); Randy Piersol (USACE); John Bohman and Kerry Kox (PennDOT); Brian Brawand (Benesch); Eric Bruggeman, Megan Dennis, and Andrew Nevin (Skelly & Loy); Rachel Tereska and Francisco Aguirre (NTM). The following Items were discussed:

- Mike Larzelere confirmed that the NPDES can be submitted as a major amendment to the Interstate 78-12M project but treated like a General NPDES. A specific pre-application meeting for the NPDES will need to be scheduled in the future to discuss the NPDES requirements.
- The Unnamed Tributary labeled "SWM1" was discussed. Kathleen Kolos indicated that at the confluence with Channel 4, SWM1 could be considered a channel; however, the upstream steeper reach of SWM1 may not be considered a resource. The jurisdictional limits will need to be defined on a future field visit and shown in the impact map.
- Mike Larzelere indicated that the waterway permit for the UNTs can fall under the waived activity if justification is provided, otherwise a permit will be needed with an H&H analysis. The environmental impacts due to the proposed enclosure and the value on the tributaries will need to be considered. If the activities are waived for DEP, list the impact length and width as "Waiver 2" activity in the Aquatic Resource Impact Map. Kathleen Kolos indicated that after an initial review of the proposed permit application, DEP can ask for some waived resources to be included in the permit application. Mike Larzelere and Kathleen Kolos will review to determine which resources must be included in the permit. A subsequent field visit will help to determine the features that will need to be included in the permit application.
- The proposed work on Channel 2 may be considered under the waived activity. The proposed work for Channel 2 will only include temporary impacts due to construction. Pipes will be used to convey flow through the channel and the proposed channel will be restored after construction. A brief H&H will be required to make sure the temporary pipes are sized correctly.
- Rachel Tereska clarified the approach for Maiden Creek. The area under the bridge will be considered as a permanent impact for DEP. For the ACOE permit, only the proposed fill and proposed piers within OHW will be considered as an impact.
- The Channel 6 impacts were discussed. The proposed permanent impacts on Channel 6 are upstream due to the proposed culvert extension. All wetland impacts near Channel 6 are due to temporary conditions but the proposed LOD can be revised to avoid wetland impacts near Channel 6.
- Randy Piersol indicated that if the tributaries are classified ephemeral, the proposed impact can be waived. The length of impacts for all resources should be included in the Individual 404 permit.
- Kathleen Kolos indicated that the approximate boundaries of individual wetland types (PEM/PFO) under the bridge should be defined on the map to help with evaluation of impacts. Wetland impacts under the structure should be considered as permanent impacts but not a wetland loss due to the high underclearance of the proposed bridge. Kathleen Kolos requested that live stakes be planted on the wetland areas after construction.
- Rachel Tereska asked if the project could fall under the PASPGP-5 requirements. Randy Piersol indicated that the project would require a Nationwide Permit 23. The permit will require its own review and approval from the ACOE.
- Multiple impacts to the same resource due to the adjacent I-78-12M project should be included in the Environmental Assessment in the permit application. The permit application should acknowledge the adjacent I-78, Section 12M project and the current bridge replacement project as a whole.
- A follow-up field meeting was scheduled to look at SWM1, Channel 4, and Channel 6. Boundaries between wetland types will also be evaluated.

Follow-up field view

On July 18, 2019 at 12 PM, a meeting was held at the project site to discuss the remaining follow-up items from the Lenhartsville Pre-Application Meeting. Participants included: Kathleen Kolos and Michael Larzelere (DEP);

Randy Piersol (USACE); John Bohman (PennDOT); Brian Brawand (Benesch); Eric Bruggeman, Megan Dennis, and Andrew Nevin (Skelly & Loy); and Rachel Tereska (NTM). The following decisions were made:

- SWM1 – Groundwater influence was identified on SWM1 from the confluence with Channel 4 upstream to a discreet point and the revised jurisdictional extent was delineated with DEP. The wetland/watercourse report will be revised to reflect the limits where SWM1 should be treated as a regulated extension of Channel 4.
- Channel 4 – The existing pipe on Channel 4 will be extended in the upstream and downstream directions. Although the drainage area is 48 acres (under the 100-acre Waiver 2 threshold), it is perennial and of higher value. PADEP is requesting that the pipe extension be included in the permit (not waived) and that the design plans correct the waterfall condition at the outfall and depress the inlet with minimal rock protection to avoid a headcut condition. The EA should include a minimal discussion about Channel 4. The H&H should include a pipe capacity analysis but a full backwater analysis with floodplain mapping is not required.
- Channel 6 – The existing pipe on Channel 6 will have a minimal extension on the upstream side only. The drainage area of Channel 6 at I-78 is 38 acres and the extension will be waived. The upstream extension should be depressed 6 inches, and it will not require the level of plans in the permit application as Channel 4. The EA should discuss that the pipe extension will not impact the hydrology for the downstream wetland. The impact map should add the channel limits on the upstream side of I-78 and the impact length and width can be included in the impact table as “Waiver 2.”
- Channel 2 - The drainage area to Channel 2 is 28 acres and the channel will have temporary impacts due to construction activities. It is anticipated to pipe Channel 2 and restore it to existing conditions after construction; therefore, the H&H should evaluate existing and temporary conditions.
- Wetland classification – S&L will revise the wetland/watercourse report to reflect the functional classification limits within impacted wetlands.
- The SR 0078, Section 12M impacts will need reflected in the cumulative impact analysis of the EA. **DEP will provide District 5-0 with a copy of the approved permit for the SR 0078 Section 12M project.**
- Permanent wetland impacts will occur to Wetlands A and B due to expected maintenance activities. However, it is not expected that compensatory mitigation will be required for these impacts.
- Live stake plantings and a restoration plan should be incorporated into the permit for the impacted wetland areas.
- Stormwater basins should not impact the wetlands, nor effect the hydrology or physical nature of the wetlands.

This is the writer’s interpretation of the above meetings. If there are any revisions or issues that need to be discussed, please inform the author within five days of receiving the minutes.

Rachel L. Tereska, PE
NTM Engineering, Inc.

Appendix D
Threatened and Endangered
Species

1. PROJECT INFORMATION

Project Name: **I-78 Lenhartsville Interchange**

Date of Review: **3/31/2021 11:59:58 AM**

Project Category: **Transportation, Roads, Widening, adding lanes with disturbance beyond existing shoulders ONLY**

Project Area: **26.82 acres**

County(s): **Berks**

Township/Municipality(s): **GREENWICH TOWNSHIP**

ZIP Code:

Quadrangle Name(s): **HAMBURG**

Watersheds HUC 8: **Schuylkill**

Watersheds HUC 12: **Upper Maiden Creek**

Decimal Degrees: **40.576996, -75.890047**

Degrees Minutes Seconds: **40° 34' 37.1860" N, 75° 53' 24.1674" W**

2. SEARCH RESULTS

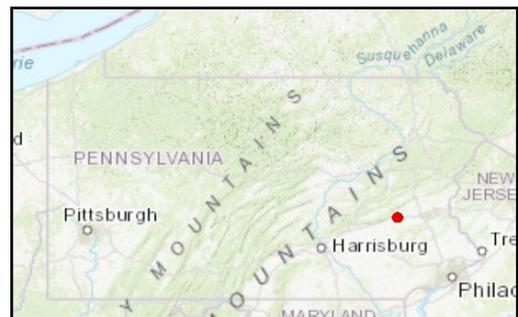
Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	Potential Impact	MORE INFORMATION REQUIRED, See Agency Response

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

I-78 Lenhartsville Interchange

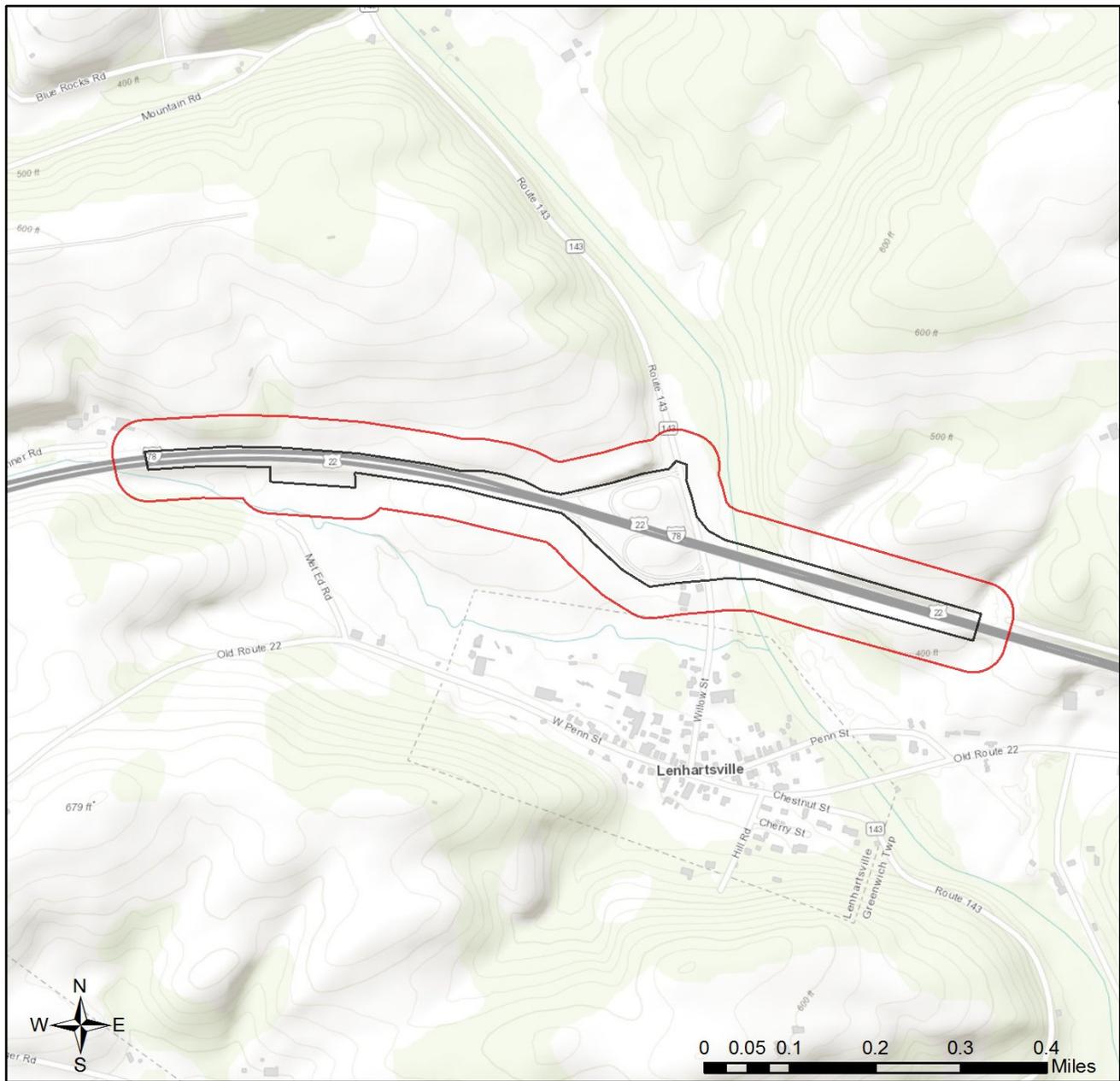


-  Project Boundary
-  Buffered Project Boundary



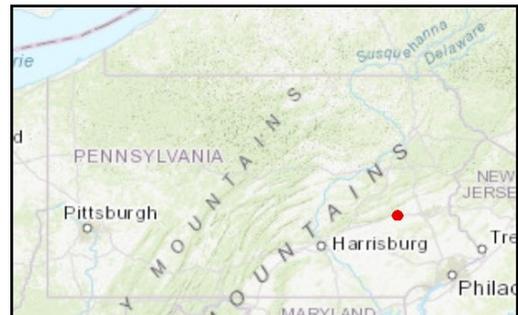
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

I-78 Lenhartsville Interchange



- Project Boundary
- Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intemap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.

Your answer is: Someone qualified to identify and delineate wetlands has investigated the site, and determined that wetlands ARE located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)

Q2: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q3: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats?

Your answer is: Yes

Q4: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service

RESPONSE:

Information Request: Conduct a Bog Turtle Habitat (Phase 1) Survey in accordance with USFWS Guidelines for Bog Turtle Surveys (April 2020). Evaluate all wetlands within 300 feet of the project area, which includes all areas that will be impacted by earth disturbance or project features (e.g., roads, structures, utility lines, lawns, detention basins, staging areas, etc.). IF THE PHASE 1 SURVEY IS DONE BY A QUALIFIED BOG TURTLE SURVEYOR (see <https://www.fws.gov/northeast/pafo/endangered/surveys.html>): 1) Send positive results to USFWS for concurrence, along with a project description documenting how impacts will be avoided. OR, conduct a Phase 2 survey and send Phase 1 and 2 results to USFWS for concurrence. 2) Send a courtesy copy of negative results to USFWS (label as "Negative Phase 1 Survey Results by Qualified Bog Turtle Surveyor: USFWS Courtesy Copy"). USFWS approval of negative results is not necessary when a qualified surveyor does the survey in full accordance with USFWS guidelines. IF THE PHASE 1 SURVEY IS NOT DONE BY A QUALIFIED SURVEYOR: Send ALL Phase 1 results to USFWS for concurrence, and if potential habitat is found, also send a project description documenting how impacts will be avoided. As a qualified bog turtle surveyor, I _____ (name) certify that I conducted a Phase 1 survey of all wetlands in and within 300 feet of the project area on _____ (date) and determined that bog turtle habitat is absent.

_____ (Signature)

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION). For projects showing "Potential Impacts" with USFWS, please send project information to that agency by email IR1_ESPenn@fws.gov (preferred) or regular mail.

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.



5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

PA Fish and Boat Commission

Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

U.S. Fish and Wildlife Service

Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Game Commission

Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Elizabeth Grietzer
Company/Business Name: Skelly and Loy, Inc., A terracon Company
Address: 449 Eisenhower Blvd
City, State, Zip: Harrisburg, PA 17111
Phone: (717) 232-0593 Fax: (717) 232-1799
Email: egrietzer@skellyloy.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Elizabeth Grietzer
applicant/project proponent signature

09/17/2021

date



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Watershed Analysis Section
595 E Rolling Ridge Dr.
Bellefonte, PA 16823

April 1, 2021

IN REPLY REFER TO
SIR# 48853

Skelly and Loy, Inc.
Eric Bruggeman
449 Eisenhower Boulevard
Suite 300
Harrisburg, Pennsylvania 17111

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 627475
I-78 Lenhartsville Interchange
BERKS County: Greenwich Township

Dear Eric Bruggeman:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search “potential conflict” or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Eastern Redbelly Turtle (*Pseudemys rubriventris*, Threatened)

Based on our review and the proximity of the project to known element occurrences of the species of concern listed above, potential habitat could be present within the proposed disturbance area. Therefore, we have concerns that redbelly turtles could be using the project area for overwintering (brumation), foraging, and nesting. In lieu of conducting a formal habitat assessment and nesting survey we recommend that the following avoidance measures be incorporated into the project design plans and shown on the approved E&S plan:

Any dewatering or disturbance to the Maiden Creek during the brumation period could cause harm or even death to turtles that are in a dormant state and unable to move away. Therefore, no construction activities should be conducted in the water during the overwintering period. All in-stream construction activities should take place between May 1 and October 31 to turtles to avoid the project area while they are active. If causeways or

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www.fish.state.pa.us

To protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.

coffer dams are required for construction, they can be removed during this period if the project schedule requires.

A Super Silt Fence barrier should be placed around the perimeter of the proposed area of disturbance to prevent turtles from accessing active work zones. This fence should be installed during the inactive period of the redbelly turtle (November 1-April 30) so that turtles do not get trapped in the work zone.

Prior to the start of construction, potential basking habitat features (e.g. downed trees, rock piles, debris piles) should be removed from the construction area during the turtle's active period (May 1-October 31). Removal of the basking sites prior to construction should serve to discourage turtles from using the project area for foraging or hibernating and allow them time to find alternative habitats. Basking features should be replaced where feasible once the project has been completed.

If any turtles are found within the work area, please photo document the animals and move them to a safe location outside the work area and notify this office immediately.

Provided that the above measures are implemented, and standard best management practices are followed, I do not anticipate that the proposed activity will have any significant adverse impacts to the eastern redbelly turtle.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Joshua Wisor at 814-359-5135 and refer to the SIR # 48853. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,



Joshua Wisor, Fisheries Biologist
Watershed Analysis Section

HAS/JMW/dn

U.S. FISH AND WILDLIFE SERVICE
110 Radnor Road, Suite 101, State College, PA 16801

This responds to your inquiry about a PNDI Internet Database search that resulted in a potential conflict with a federally listed, proposed or candidate species.

PROJECT LOCATION INFORMATION

County: Berks
Township: GREENWICH

MISC INFORMATION

Date received by FWS: April 9, 2021
ACTIVE ARCHIVE

USFWS COMMENTS

EMAILED MAILED

Email: ebruggeman@skellyloy.com

To: Eric Bruggeman

Affiliation: Skelly and Loy

SPECIFIC PROJECT: SR 0078 (I-78) Section LBR Lenhartsville Interchange Improvement

FISH AND WILDLIFE SERVICE COMMENT(S):

X NOT LIKELY TO ADVERSELY AFFECT

The federally listed bog turtle occurs or may occur in or near the project area. However, based on our review of the information provided, including the project description and location (It appears there have been no changes in the project or on-site biological information; therefore, the agency's comments, as detailed in our letters of November 5, 2018, and April 16, 2019, remain unchanged).

no adverse effects to this species are likely to occur. If there is any change in the location, scale, scope, layout or design of the project, further consultation or coordination with the Service will be necessary.

The above determination is valid for two years from the date of this letter. In addition, this response relates only to federally listed, proposed, and candidate species under our jurisdiction, based on an office review of the proposed project's location and anticipated impacts. No field inspection of the project area has been conducted by this office. Consequently, comments on this form are not to be construed as addressing other Service concerns under the Fish and Wildlife Coordination Act or other authorities. Please reference the above PNDI # and USFWS Project # in any future correspondence regarding this project.

This review was conducted by the biologist listed below. He/she can be contacted at 814-206-(Extension).

- Melinda Turner (x7449) Nicole Ranalli (x7455) Jennifer Kagel (x7451)
Richard Novak (x7477) Alison Whitlock (x7461) Pamela Shellenberger (x7459)

ROBERT ANDERSON Digitally signed by ROBERT ANDERSON Date: 2021.04.20 11:53:17 -04'00'

SIGNATURE:

Supervisor, Pennsylvania Field Office

Appendix E
List of Preparers

Name	Organization	EA Role	Education	Years
Camille Otto Director of Planning, Environment, and Finance	FHWA PA Division	FHWA Approver	B.S. Biology	25
Jon Crum Senior Environmental Specialist	FHWA PA Division	FHWA Reviewer	B.S. Biology M.S. Environmental Science and Management	17
Scott Vottero, PE Acting Assistant District Executive for Design	PennDOT District 5-0	Engineering Reviewer	B.S. Civil Engineering	26
Jerry Neal District Environmental Supervisor	PennDOT District 5-0	Environmental Reviewer	B.A. Biology	32
Kerry Cox, PE Senior Project Manager	PennDOT District 5-0	Project Manager	B.S Civil Engineering Technology	8
Drew Ames Environmental Planning Manager	PennDOT Central Office	Environmental Reviewer	B.H Communications M.S. Community and Regional Planning	26
Kenda Gardner Deputy Chief Counsel	PennDOT Office of Chief Counsel	Legal Review	B.S. Chemistry J.D.	28
Neal Brofee Environmental Counsel	PennDOT Office of Chief Counsel	Legal Review	B.A. Mathematics J.D.	24
Kristina Thompson Architectural Historian	PennDOT Central Office	Above-Ground Cultural Resources	B.S. Historic Preservation; M.A. Anthropology	28
Steven McDougal Archeologist	PennDOT Central Office	Archaeology	M.A. Anthropology	29
Nina Ertel, PE Project Development Engineer	PennDOT Central Office	Engineering Reviewer	B.S. Civil Engineering M.S. Civil Engineering	11
Diane Nulton Environmental Project Manager	HDR	EA Project Manager	B.S. Biology/Ecology	35
Kathleen Krommes, ENV SP Environmental Project Manager	HDR	EA Technical Writer/Editor	B.S. Chemical Engineering	35
Katherine Markowitz Environmental Scientist	HDR	EA Technical Writer/Editor	B.S. Marine and Environmental Biology and Policy	8
John McPherson, AICP Environmental Services Director	HDR	EA, Cumulative Impacts	B.A. Math/Economics; M.U.P.	30
Jenn Walsh, PE Traffic & Planning Section Manager	HDR	Traffic Diversion Analysis	B.S. Civil Engineering; M.S. Civil Engineering	28
Ken O'Brien, PE Senior Project Manager	HDR	Traffic Diversion Analysis	B.S. Civil Engineering;	27
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Tina Adair Technical Editor	HDR	Technical Editor	B.S. Communications	35
Frank Brillhante GIS Manager	HDR	GIS Analysis	B.S. Engineering; M.S Environmental Engineering	28
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Brian Brawand, PE, CBSI Senior Project Manager	Benesch	Project Manager	B.S. Civil Engineering M.Eng. Civil Engineering	25
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Logan Zugay Project Scientist	Skelly and Loy, Inc. A Terracon Company	Environmental Analysis – Threatened and Endangered Species	B.S. Wildlife Biology	11
Lisa Benack Senior Scientist	Skelly and Loy, Inc. A Terracon Company	Environmental Analysis – Cultural Resources	B.A. Anthropology	34
Megan Dennis Project Scientist	Skelly and Loy, Inc. A Terracon Company	Environmental Impact Analysis	B.S. Biology and Chemistry	10
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Terri Slack National Discipline Lead, Trans. Revenue Systems & Operations	CDM Smith	Traffic Forecasting	BA Economics; BA Political Science M.B.A Management	33
Tarannum Rima Travel Demand Modeler	CDM Smith	Traffic Forecasting	B.S. Civil Engineering M.S Transportation Engineering M.S. Computer Systems Engineering	16
Nathaniel Weinstock Air Quality and Acoustical Group Leader, Sr. Air Quality and Acoustical Scientist	Navarro & Wright	Diversion Route Noise Analysis	B.S. Public Service	22
Robert C. Kolmansberger Director of Environmental Services, Sr. Air Quality & Acoustical Scientist	Navarro & Wright	Diversion Route Noise Analysis, QA/QC	B.A. Geography & Environmental Planning	30

Appendix F

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