

Segment #30 – Old Landing Road



TECHNICAL MEMORANDUM

TO: Sarah Coakley, Regional Planner, Regional Systems Planning
DATE: 02/15/2019 – Revised 5/6/19
FROM: Bill Dougherty, JMT
PROJECT: Henlopen TID; Segment 30: Old Landing Road (S 274)
JMT JOB NO.: 16-0643-002
RE: Concept Assumptions and Summary
CC: Marc Cote, Mir Wahed, Brad Herb

Site Visit Date: 11/09/2017
Concurrence Meeting Date: 01/23/2018

Existing Conditions

Old Landing Road (S 274), a 0.64-mile a major collector with Investment Strategy Level 2, located east within the TID boundary. The state posted speed limit is 40mph with a design speed of 45mph used for the conceptual design. Old Landing Road intersects Warrington Road/Strawberry Way on the southern intersection and approaches SR1 (Coastal Highway) on the northern intersection. Old Landing Road has AADT of 15,659 (2015).

Old Landing Road Site Conditions

- OPC Index (66.7) Level 2
- 32' wide asphalt paving
- Striped roadway
- Open drainage
- Posted speed limit of 40mph (45mph design speed used for conceptual design)
- No Agricultural Preservations adjacent to the roadway.
- Six (6) existing subdivisions on roadway.
- Existing sidewalk on north side from Warrington Road to halfway between Caspian Way and Sea Chase Drive.
- Deceleration lane exists at Caspian Way, Sea Chase Drive and Copper Drive S.
- Left turn lane exists at Copper Drive S.

Design Elements

- The roadway curvature is adequate according to AASHTO's A Policy on the Geometric Design of Highways and Streets (Green Book).

Utility Conflicts

- An electric service line runs along the segment on the east side for the portion of the roadway from Airport Road to SR 1.

Lighting:

- There is currently no lighting along the length of Old Landing Road.

Signalization:

- Currently there no is signalization for this roadway.

Multi-modal Analysis:

- Existing sidewalk on west side from Warrington Road to halfway between Caspian Way and Sea Chase Drive. Sidewalk follows along Sea Chase Subdivision and dead ends at both ends.

Potential for Future Development:

- The southern component of the west side of Old Landing Road is fully developed from Warrington Road to the future Airport Road.
- The southern component of the east side of Old Landing Road is fully developed from Warrington Road to SR 1.

Recommendations:

- Widen existing 32' roadway (2-11' foot lanes and 5' shoulders) to 44' roadway (2-11' lanes, 5' bike lanes and 12' median turn lanes) on center from Warrington Road to Airport Road, sta. 3004+54 to sta. 3024+27.
- Widen the roadway to the west from Airport Road to Mall Boulevard from existing variable width of 32' to 72' to proposed 64' to 83' wide roadway from sta. 3024+27 to sta. 3038+00 providing a second westbound through lane from SR 1 that converts into a right lane at Airport Road.
- Construct sidewalk along the both sides of the roadway and tie-in to existing sidewalk on intersecting streets.
- The attached concept proposes the realignment of the utility poles as needed to be outside of the prescribed clear zone.
- Old Landing Road has an OPC Index of 66.7, it is recommended that Old Landing Road undergoes a full reconstruction.
- An extension of Airport Road will be a part of the Airport Road and Old Landing Road intersection.



- Installation of signals at Old Landing Road and Airport Road Entrance intersection and the Old Landing Road and Rehoboth Mall Entrance intersection.
- Lighting needed at Old Landing Road and Rehoboth Mall Entrance intersection and at Old Landing Road and Airport Road intersection.
- Warrington Road concepts will include 2 options for Warrington/Old Landing Road intersection (roundabout, signal).

Project Costs:

- The total cost of the project is estimated at \$6,503,570.

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

1. NAME OF PROJECT Henlopen TID - Segment 30: Old Landing Road Sussex
Subdivision or Road Name County

2. LIMITS

Street Name or Road Number	From	To	Length
<u>Old Landing Road (S 274)</u>	<u>Warrington Road</u>	<u>SR 1</u>	<u>0.64 mi</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

3. ESTIMATE REQUESTED BY: DelDOT Planning for (check one) Project initiation _____
Name Estimate only Section or Legis. Dist.

4. DESCRIPTION OF IMPROVEMENT:

Reconstruction of existing 32' wide asphalt roadway to 44' wide roadway from Warrington Rd to Airport Rd with 5' concrete sidewalks on both sides.

Reconstruction of existing variable 32' to 72' wide tar & chip roadway to 83' wide roadway from Airport Road to SR 1 with median island for turn lanes and 5' wide concrete sidewalk on both sides.

4. PROJECT IN C.I.P. Yes No If "Yes", indicate year F.Y. _____

5. TYPICAL SECTION

Existing (east of Airport Rd): 2-11' lanes, 2-5' shoulders
 Proposed (east of Airport Rd): 2-11' lanes, 2-5' shoulders, 12' center turn lane
 Existing (west of Airport Rd): 11' lane, 5' shoulder (WB), median (0' to 18') 1-11' lane, 5' shoulder (EB)
 Proposed (west of Airport Rd): 2-11' lanes, 5' shoulders (WB), 18' center turn lane median, 1-11' lane, 5' shoulder (EB)
 See concept plans for more information.

6. STATE MAINTAINED CITY MAINTAINED PRIVATE OTHER (specify) _____

7. COST ESTIMATE:	from C.I.P. estimate form	Estimate prepared by:	Date:
a. Location and Environmental Studies (Part I to be included only for class "I" and "III" projects)	<u>\$81,400</u>	Part I <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
b. Preliminary Engineering	<u>\$178,200</u>	Part II <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
c. Real Estate	<u>\$1,267,200</u>	Part III <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
d. Construction *	<u>\$4,976,770</u>	Part IV <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
e. TOTAL ESTIMATED PROJECT COST	<u>\$6,503,570</u>		

* Includes Utilities, Traffic, and C.E.

APPROVED

Valid thru _____ Date Assistant Director, M&O/Transportation Solutions/Planning _____ Date

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

(Current Dollars)

Part I of V

Contract No. T201769002

Project Title: Henlopen TID. - Segment 30 Old Landing Road

PART I - LOCATION & ENVIRONMENTAL STUDIES (N/A)

(Part I to be included only for class "I" & "III" projects)

A. ENGINEERING	<u>\$29,473</u>	E. HISTORIC	<u>\$14,736</u>
(Includes NEPA)			
B. ARCHAEOLOGY	<u>\$14,736</u>	1. Phase 1 (study)	<u>\$14,736</u>
1. Phase I (study)	<u>\$14,736</u>	2. Phase 2 (study)	<u> </u>
2. Phase 2 (study)	<u> </u>	3. Mitigation (by loc./env.)	<u> </u>
3. Phase 3 (mitigation)	<u> </u>	4. Mitigation (by design)	<u>yes <input type="checkbox"/> no <input type="checkbox"/></u>
C. WETLANDS	<u>\$14,736</u>	F. NOISE	<u>\$0</u>
1. Delineation (study)	<u>\$14,736</u>	1. Studies	<u> </u>
2. Permit preparation	<u>\$0</u>	2. Mitigation (by design)	<u>yes <input type="checkbox"/> no <input type="checkbox"/></u>
3. Mitigation (design)	<u> </u>	G. OTHER	<u>\$0</u>
D. HAZARDOUS MATERIAL	<u>\$0</u>	1. <u> </u>	<u> </u>
1. Phase 1 (study)	<u> </u>	2. <u> </u>	<u> </u>
2. Phase 2 (study)	<u> </u>		
3. Phase 3 (remediation)	<u> </u>		

TOTAL COSTS FOR PART I (A thru G) ROUNDED \$74,000

CONTINGENCY COSTS 10% \$7,400
 (normally 5% for large projects and 10% for small projects - to be approved by section head) (% used)

TOTAL LOCATION AND ENVIRONMENTAL STUDIES COSTS \$81,400
 (also total for Construction Project Estimate form line 7a)

Estimator: Bill Dougherty, JMT

Date: 08/07/19

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

(Current Dollars)

Part II of V

Contract No. T201769002

Project Title: Henlopen TID. - Segment 30 Old Landing Road

PART II - PRELIMINARY ENGINEERING

A. SURVEYS	<u>\$29,473</u>
1. Inhouse	<u>\$0</u>
2. Consultant	<u>\$29,473</u>
B. DESIGN ENGINEERING	<u>\$132,259</u>
1. Design	<u>\$29,473</u>
a. Inhouse	<u>\$0</u>
b. Consultant	<u>\$29,473</u>
2. Traffic	<u>\$29,473</u>
a. Inhouse	<u>\$0</u>
b. Consultant	<u>\$29,473</u>
3. Real Estate Plan Preparation	<u>\$29,473</u>
a. Inhouse	<u>\$0</u>
b. Consultant	<u>\$29,473</u>
4. Utilities	<u>\$36,841</u>
a. Inhouse	<u>\$14,736</u>
b. Consultant	<u>\$14,736</u>
c. Test Holes	<u>\$7,368</u>
d. Utility Company	<u>\$0</u>
5. Materials & Research	<u>\$5,000</u>
6. Borings	<u>\$2,000</u>
7. Pile Load Tests	<u>\$0</u>

8. Subdivision	<u>\$0</u>
a. Inhouse	<u>\$0</u>
b. Consultant	<u>\$0</u>
c. Railroad P.E.	<u>\$0</u>

9. Other (specify)	<u>\$0</u>
a. _____	<u> </u>
b. _____	<u> </u>

C. ENVIRON. ASSESSMENT \$0
 (use for class "II" projects only)

1. Wetlands	<u> </u>
2. Hazardous Materials	<u>N/A</u>
3. Noise	<u>N/A</u>
4. Historic	<u>N/A</u>
5. Archaeology	<u>N/A</u>
6. Other	<u> </u>
a. _____	<u> </u>
b. _____	<u> </u>

Loc/Environ
 Estimator: _____ Date: _____

D. CONTRACT ADMINISTRATION

Cont/Admin
 Estimator: _____ Date: _____

TOTAL COSTS FOR PART II (A thru D) ROUNDED \$162,000

CONTINGENCY COSTS 10% \$16,200
 (normally 5% for large projects and 10% for small projects - to be approved by section head) (% used)

TOTAL PRELIMINARY ENGINEERING \$178,200
 (also total for Construction Project Estimate form line 7b)

Estimator: Bill Dougherty, JMT

Date: 08/07/19

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

(Current Dollars)

Part III of V

Contract No. T201769002

Project Title: Henlopen TID. - Segment 30 Old Landing Road

PART III - REAL ESTATE

A. REAL PROPERTY	<u>\$1,046,560</u>	C. ASBESTOS PROGRAM	<u>\$0</u>
1. Total acquisitions	<u>\$0</u>	1. Testing	<u> </u>
2. Partial acquisitions	<u>\$864,572</u>	2. Abatement	<u> </u>
3. Permanent easements	<u>\$31,988</u>	D. DEMOLITION	<u> </u>
4. Temporary easements	<u> </u>	E. APPRAISAL FEES	<u>\$26,000</u>
5. Wetland mitigation	<u> </u>	F. STAFF	<u>\$65,000</u>
Other (specify)		G. SETTLEMENT	<u>\$14,300</u>
SWM (Locations to be		H. REAL ESTATE ENG.	<u>\$0</u>
determined in design)	<u>\$150,000</u>	1. Consultant survey	<u> </u>
6. <u> </u>	<u> </u>	2. As acquired plans	<u> </u>
7. <u> </u>	<u> </u>	I. CONDEMNATION	<u> </u>
B. RELOCATION	<u>\$0</u>	J. OTHER (specify)	<u>\$0</u>
1. Residential	<u> </u>	1. <u> </u>	<u> </u>
2. Business	<u> </u>	2. <u> </u>	<u> </u>
Other (specify)	<u> </u>		
3. <u> </u>	<u> </u>		
4. <u> </u>	<u> </u>		

TOTAL COSTS FOR PART III (A thru J) ROUNDED \$1,152,000

CONTINGENCY COSTS 10% \$115,200
 (normally 5% for large projects and 10% for small projects - to be approved by section head) (% used)

TOTAL REAL ESTATE COSTS \$1,267,200
 (also total for Construction Project Estimate form line 7c)

Estimator: Bill Dougherty, JMT

Date: 08/07/19

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

(Current Dollars)

Part IV-A of V

Contract No. T201769002

Project Title Henlopen TID. - Segment 30 Old Landing Road

PART IV -CONSTRUCTION

A. ROADWAY/APPROACH CONSTRUCTION	<u>\$2,631,888</u>	B. STRUCTURE CONSTRUCTION	<u>\$0</u>
1. Grading		1. New Bridge	
a. Excavation (includes SWM pond)	<u>\$273,498</u>	a. Type	
b. Borrow	<u>\$32,729</u>	b. Size	
2. Drainage	<u>\$117,891</u>	c. \$/s.f.	
3. Pavement		2. Old Structure Rem.	
a. Surface	<u>\$624,278</u>	a. Type	
b. Base	<u>\$577,522</u>	b. Size	
c. Subbase	<u>\$298,412</u>	c. \$/c.y.	
4. Erosion/Sed. Cont.	<u>\$73,682</u>	3. Retaining Wall	
5. Miscellaneous		a. Type	
a. Curb/Gutter	<u>\$206,272</u>	b. Size	
b. Sidewalk	<u>\$332,324</u>	c. \$/c.y.	
c. Guardrail	<u>\$0</u>	4. Box Culvert	
d. C.P.M. Schedule	<u>\$1,600</u>	a. Type	
e. Clear/Grubb	<u>\$73,682</u>	b. Size	
f. Field Office	<u>\$20,000</u>	c. \$/s.f.	
Other (specify)		C. LANDSCAPING	<u>\$107,551</u>
g. <u>Shared Use Path</u>	<u>\$0</u>	1. Beautification	<u>\$78,078</u>
h. _____		2. Noise Mitigation	<u>\$0</u>
i. _____		3. Visual Mitigation	<u>\$0</u>
j. _____		4. Tree Mitigation	<u>\$29,473</u>
k. _____		D. MAINTENANCE OF TRAFFIC	<u>\$ 103,154.41</u>
l. _____			
m. _____			

(refer to Capital Improvement Project form, Part IV - Continued)

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

(Current Dollars)

Part IV-B of V

Contract No. T201769002

Project Title Henlopen TID. - Segment 30 Old Landing Road

PART IV -CONSTRUCTION (CONTINUED)

E. PROJECT TRAFFIC ITEMS	<u>\$104,676</u>
1. Signing Structures	
a. Overhead Bridges	\$ -
b. Cantilever Supports	\$ -
2. Roadway Lighting	\$ 75,000.00
3. Pavement Markings	\$ 29,676.00
Other (specify)	
4. _____	

F. WETLAND MITIGATION \$0

G. UTILITY RELOC. IN CONTRACT \$0

1. Water	\$ -
2. Sanitary Sewer	\$ -
Other (specify)	
3. _____	

H. SUBTOTAL (A thru G) ROUNDED \$2,948,000

I. MISC. ITEMS \$442,200

(15% of H for large projects and 20% for small)
(At SF submission use 10% and 5%)

15%
(% used)

J. CONTRACTOR'S CONST. ENG. \$147,400

(normally 5% of H) 5%
(% used)

K. INITIAL EXPENSE \$147,400

(normally 5% of H) 5%
(% used)

L. CONSTRUCTION CONTINGENCY \$294,800

(normally 10% of H) 10%
(% used)

M. TOTAL CONSTRUCTION COSTS (H thru L) \$3,979,800

(Enter on PNR funding line 5)

N. CONSTRUCTION ENGINEERING (normally 15% of construction costs) 15%
(% used) \$596,970

(Enter on PNR funding line 4)

O. TOTAL CONSTRUCTION COSTS (Construction Costs + Construction Engineering) \$4,576,770

(use this total + Q + P for Construction Project Estimate from line 7d)

P. REIMBURSABLE UTILITY RELOCATIONS BY OTHERS	<u>\$0</u>
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(Enter on PNR funding line 7)

1. Water	
2. Sanitary Sewer	
3. Electric	
4. Telephone	
5. Gas	
6. CATV	
Other (specify)	
7. _____	
8. _____	

Utilities
Estimator: _____ Date: _____

Q. TRAFFIC SECTION ITEMS	<u>\$400,000</u>
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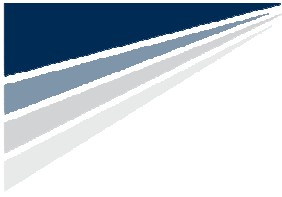
(Enter on PNR funding line 6)

1. Signing	
2. Signals	<u>\$400,000</u>
3. Detour Signing	
4. DelTrac	
Other (specify)	
5. _____	

Traffic
Estimator: _____ Date: _____

Estimator: Bill Dougherty, JMT

Date: 8/7/2019

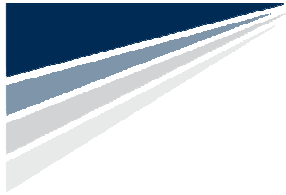


Appendix A
Backup Calculations for
Part I-Location and Environmental Studies
Part II - Preliminary Engineering



DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 30: OLD LANDING ROAD

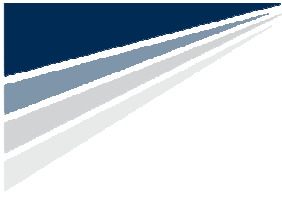
PART 1 LOCATION AND ENVIRONMENTAL STUDIES		
	Estimated % of Construction Cost (Appendix C, Item H)	
A. Engineering(Includes NEPA)	1.0%	\$ 29,473
B. Archeology		
1. Phase 1 (study)	0.5%	\$ 14,736
2. Phase 2 (study)	0.0%	\$ -
3. Phase 3 (mitigation)	0.0%	\$ -
C. Wetlands		
1. Delineation (study)	0.5%	\$ 14,736
2. Permit Preparation	0.5%	\$ -
3. Mitigation (design)	0.0%	\$ -
D. Hazardous Material		
1. Phase 1 (study)	0.0%	\$ -
2. Phase 2 (study)	0.0%	\$ -
3. Phase 3 (remediation)	0.0%	\$ -
E. Historic		
1. Phase 1 (study)	0.5%	\$ 14,736
2. Phase 2 (study)	0.0%	\$ -
3. Mitigation (by loc./env.)	0.0%	\$ -
3. Mitigation (by design)	0.0%	\$ -
F. Noise		
1. Studies	0.0%	\$ -
2. Mitigation (by design)	0.0%	\$ -
G. Other		
1. Studies	0.0%	\$ -
2. Mitigation (by design)	0.0%	\$ -



DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 30: OLD LANDING ROAD

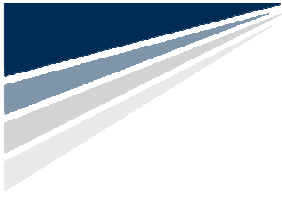
PART 2 - Preliminary Engineering		
	Estimated % of Construction Cost (Appendix C, Item H)	
A. Surveys		
1. Inhouse	0.0%	\$ -
2. Consultant	1.0%	\$ 29,473
B. Design Engineering		
1. Design		
a. Inhouse	0.0%	\$ -
b. Consultant	10.0%	\$ 294,727
2. Traffic		
a. Inhouse	0.0%	\$ -
b. Consultant	1.0%	\$ 29,473
3. Real Estate Plan Preparation		
a. Inhouse	0.0%	\$ -
b. Consultant	1.0%	\$ 29,473
4. Utilities		
a. Inhouse	0.5%	\$ 14,736
b. Consultant	0.5%	\$ 14,736
c. Test Holes	0.25%	\$ 7,368
d. Utility Company	0.0%	\$ -
5. Materials and Research	Flat Cost	\$ 2,000
6. Borings	Flat Cost	\$ 5,000
7. Pile Test Loads	0.0%	\$ -
8. Subdivision		
a. Inhouse	0.0%	\$ -
b. Consultant	0.0%	\$ -
c. Railroad P.E.	0.0%	\$ -
9. Other		
a.	0.0%	\$ -
b.	0.0%	\$ -
C. Environ. Assessment (Use for Class II Projects only)		
1. Wetlands	0.0%	\$ -
2. Hazardous Materials	0.0%	\$ -
3. Noise	0.0%	\$ -
4. Historic	0.0%	\$ -
5. Archaeology	0.0%	\$ -
6. Other		
a.	0.0%	\$ -
b.	0.0%	\$ -

Typically 2,000
Originally advis
to \$5,000 per P



Appendix B

Backup Calculations for Part III-Real Estate



Appendix C

Backup Calculations for Part IV - Construction



DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 30: OLD LANDING ROAD

General Roadway Data					
General Data		Roadway Box		Asphalt Unit Wt. (lb./CF)	
Length of Road Segment (LF)	3346	Type C Depth (in)	2	Type C	151.3
Existing Roadway Width (LF)	32	Type B Depth (in)	4	Type B	153.5
Proposed Roadway Width (LF)	44	BCBC Depth (in)	6	BCBC	151.5
Widening Width (LF)	12	GABC Depth (in)	8	Project Duration (Assume 12 Mo/Mile)	
Overlay Area (SF)	0				
Widening/Reconstruction Area (SF)	198104	SUP Pavement Box		Duration (Month)	
Length of 10' Wide SUP (LF)	0	Type C Depth (in)	2		
Area of 10' SUP (SF)	0	GABC Depth (in) (Typ 4")	8		
Length of 5' Wide Sidewalk (LF)	6042.25	SW Pavement Box			
Area of 5' Wide Sidewalk (SF)	30211.25	Concrete Depth (in) (Typ 4")	4		
Length of Curb/Gutter	6033	GABC Depth (in) (Typ 4")	4		
Area of Triangular Concrete Islands	749				
Length of Ditch Runs (LF)	1903				
Trapezoidal Ditch Cross-Sectional Area (including 6" Depth of topsoil) (SF)	11				

CELLS IN BLUE SHADE ARE AUTOMATED.
EDITING IS NOT REQUIRED.

Cost Derivation						
			%	QTY	Conceptual Unit Cost	Conceptual Cost
A.1.a: Grading						
202000	Excavation and Embankment					
	Roadway Box Excavation	CY	NA	12229	\$ 19.75	\$ 241,522.75
	SUP Excavation	CY	NA	0	\$ 19.75	\$ -
	Sidewalk Excavation	CY	NA	150	\$ 19.75	\$ 2,962.50
	Ditch Excavation	CY	NA	776	\$ 19.75	\$ 15,326.00
	SWM Excavation (Say 5% of Excavation QTY)	CY	NA	693	\$ 19.75	\$ 13,686.75
					Total:	\$ 273,498.00
A.1.b: Borrow						
	General Borrow (15%) of Excavation and Embankment (202000) QTY	CY	NA	2078	\$ 15.75	\$ 32,728.50
A.2: Drainage						
	General Drainage of project cost	LS	4%	1	\$117,890.76	\$ 117,890.76
A.3.a: Pavement Surface						
401006	Superpave Type C, PG 70-22	Ton	NA	2498	\$ 82.50	\$ 206,085.00
401015	Superpave Type B, PG 70-22	Ton	NA	5069	\$ 82.50	\$ 418,192.50
					Total:	\$ 624,277.50
A.3.b: Pavement Base						
401021	Superpave Type BCBC, PG 64-22	Ton	NA	7504	\$ 75.00	\$ 562,800.00
762000	Sawcutting, Bituminous Concrete	LF	NA	6692	\$ 2.20	\$ 14,722.40
					Total:	\$ 577,522.40
A.3.c: Pavement Subbase						
301001	Graded Aggregate Base Course, Type B	CY	NA	4892	\$ 61.00	\$ 298,412.00



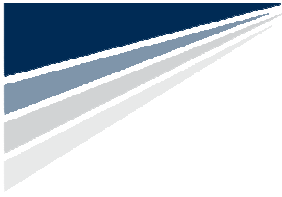
DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 30: OLD LANDING ROAD

A.4: Erosion/Sediment Control						
	General E&S (2.5%) of Overall Project Cost	LS	2.5%	1	\$ 73,681.72	\$ 73,681.72
A.5.a: Miscellaneous Curb/Gutter						
701016	I.P.C.C. Curb and Gutter, Type 1-4	LF	NA	6033	\$ 25.50	\$ 153,841.50
702000	Triangular Channelizing Islands	SF	NA	749	\$ 70.00	\$ 52,430.00
Total:						\$ 206,271.50
A.5.b: Miscellaneous Sidewalk						
705001	PCC Sidewalk, 4" (Item includes GABC)	SF	NA	30211.25	\$ 11.00	\$ 332,323.75
Total:						\$ 332,323.75
A.5.c: Guardrail						
720021	Galvanized Steel Beam Guardrail, Type 1-31	LF	NA	0	\$ -	\$ -
721000	Guardrail End Treatment, Type 1-31, Test Level 2	EACH	NA	0	\$ -	\$ -
Total:						\$ -
A.5.d: CPM Schedule						
763509	CPM Schedule Updates and/or Revised Updates	EAMO	NA	8	\$ 200.00	\$ 1,600.00
A.5.e: Clearing/Grubbing						
201000	Clearing And Grubbing (2.5%) of project cost	LS	2.5%	1	\$ 73,681.72	\$ 73,681.72
A.5.f: Field Office						
		EAMO	NA	8	\$ 2,500.00	\$ 20,000.00
A.5.g: Shared Use Path						
401006	Superpave Type C, PG 70-22	Ton	NA	0	\$ 82.50	\$ -
301001	Graded Aggregate Base Course, Type B	CY	NA	0	\$ 61.00	\$ -
Total:						\$ -
B.1: Structure Construction: New Bridge						
		LS	NA	0	\$ -	\$ -
B.2: Structure Construction: Old Structure Removal						
		LS	NA	0	\$ -	\$ -
B.3: Structure Construction: Retaining Wall						
		LS	NA	0	\$ -	\$ -
B.4: Structure Construction: Box Culvert						
		LS	NA	0	\$ -	\$ -
C.1: Landscaping Beautification						
908014	Permanent Grass Seeding, Dry Ground	SY	NA	11154	\$ 1.00	\$ 11,154.00
908004	Topsoil, 6" Depth	SY	NA	11154	\$ 6.00	\$ 66,924.00
Total:						\$ 78,078.00
C.2: Noise Mitigation						
			0%	1	\$ -	\$ -
C.3: Visual Mitigation						
			0%	1	\$ -	\$ -
C.4: Tree Mitigation (1%) of project cost						
			1%	1	\$ 29,472.69	\$ 29,472.69
D: Maintenance of Traffic						
801000	Maintenance of Traffic (2.5%) of project cost	LS	2.5%	1	\$ 73,681.72	\$ 73,681.72
	Detour Route (1%) of project cost	LS	1%	1	\$ 29,472.69	\$ 29,472.69
Total:						\$ 103,154.41



DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 30: OLD LANDING ROAD

E.1.a: Signing Structures: Overhead Bridges		LS			\$ -	\$ -
E.1.b: Signing Structures: Cantilever Supports		LS			\$ -	\$ -
E.2: Roadway Lighting						
Intersection Lighting		LS		2	\$ 25,000.00	\$ 75,000.00
E.3: Pavement Markings						
817013	Permanent Pavement Striping, Epoxy Resin Paint, White/Yellow, 5"	LF		20076	\$ 1.00	\$ 20,076.00
	Striping Symbols (Assume 20SF Per Symbol, \$8 per SF)	Each		60	\$ 160.00	\$ 9,600.00
Total:						\$ 29,676.00
F: Wetland Mitigation		LS			\$ -	\$ -
G: Utility Relocation in Contract		LS			\$ -	\$ -
G.1: Water		LS			\$ -	\$ -
G.2: Sanitary Sewer		LS			\$ -	\$ -
H: Subtotal						\$ 2,947,268.96

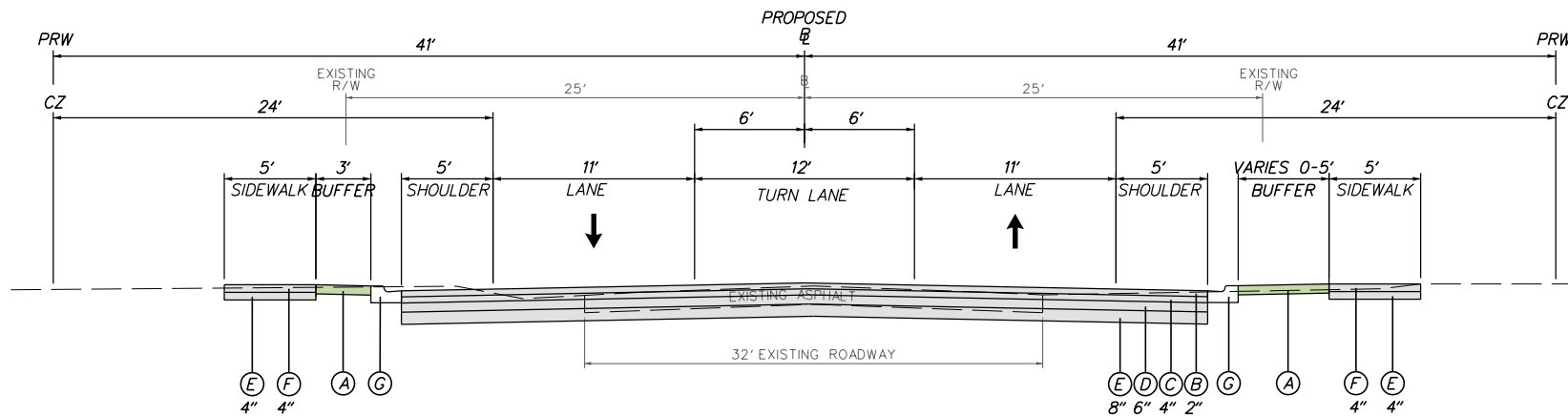


Appendix D Concept Plans

NOTES: SEE SHEET #3 FOR ADDITIONAL TYPICAL SECTIONS

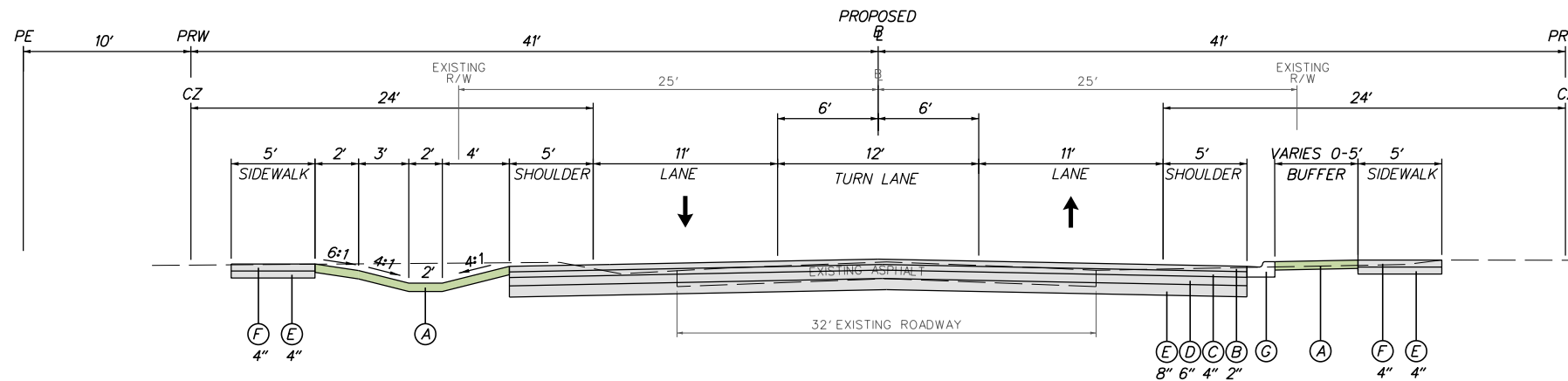
LEGEND

- PROPOSED PERMANENT EASEMENT - - - - - PE
- PROPOSED RIGHT-OF-WAY — — — — — R/W
- PROPOSED RIGHT-OF-WAY/CLEAR ZONE — — — — — CZ/PRW
- EXISTING RIGHT-OF-WAY - - - - -
- PROPERTY LINE — — — — —
- REQUIRED CLEAR ZONE — — — — — CZ
- PROPOSED UTILITY POLE ●
- EXISTING UTILITY POLE ⊕
- PROPOSED FENCE — ○ — ○ — ○ — ○ — ○ —
- PROPOSED LINEAR BMP — × — × — × — × —
- PROPOSED PIPE — — — — —
- PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒
- PROPOSED ROAD ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒
- PROPOSED MULTI-USE PATH ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒
- PROPOSED SIDEWALK ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒ ▒
- TEMPORARY CONSTRUCTION EASEMENT - - - - - TCE
- PROPOSED CURB AND GUTTER — — — — —
- EXISTING CURB AND GUTTER — — — — —



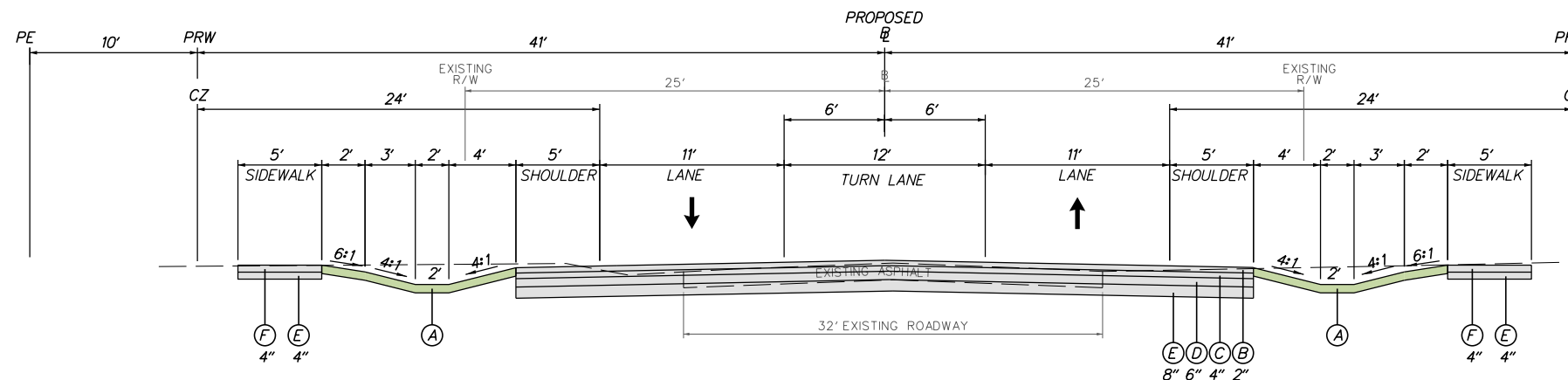
PROPOSED WIDENING (ON CENTER BASELINE)

STATION 3018+00 TO 3024+27



PROPOSED WIDENING (ON CENTER BASELINE)

STATION 3007+50 TO 3018+00



PROPOSED WIDENING (ON CENTER BASELINE)

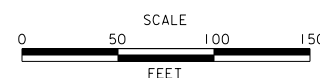
STATION 3004+54 TO 3007+50

- (A) TOPSOIL, 6" DEPTH
PERMANENT GRASS SEEDING, DRY GROUND
- (B) BITUMINOUS CONCRETE, SUPERPAVE TYPE C
- (C) BITUMINOUS CONCRETE, SUPERPAVE TYPE B
- (D) BITUMINOUS CONCRETE, SUPERPAVE BITUMINOUS
CONCRETE BASE COURSE
- (E) GRADED AGGREGATE BASE COURSE, TYPE B
- (F) PCC SIDEWALK
- (G) CURB OR CURB AND GUTTER

PLOTTED BY: LBERZINA DATE: 2/15/2019 FILE LOCATION: Q:\2016\160643_002_HENLOPEN_TID_CADD\30-OLD LANDING ROAD\CF.DGN [SHEET: CP01]



ADDENDUMS / REVISIONS

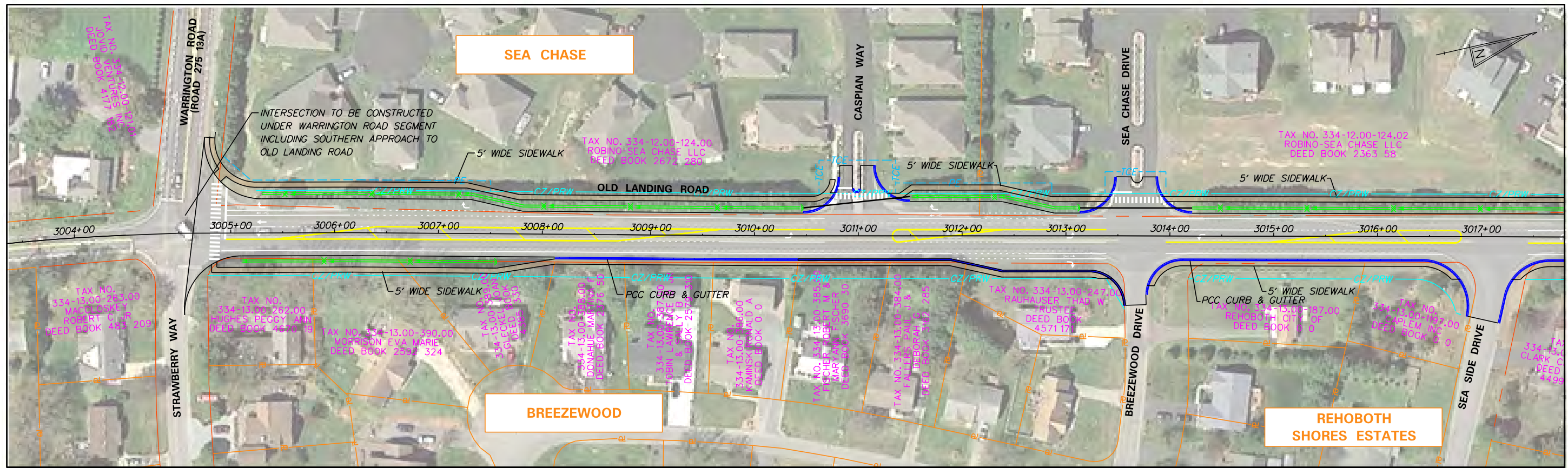
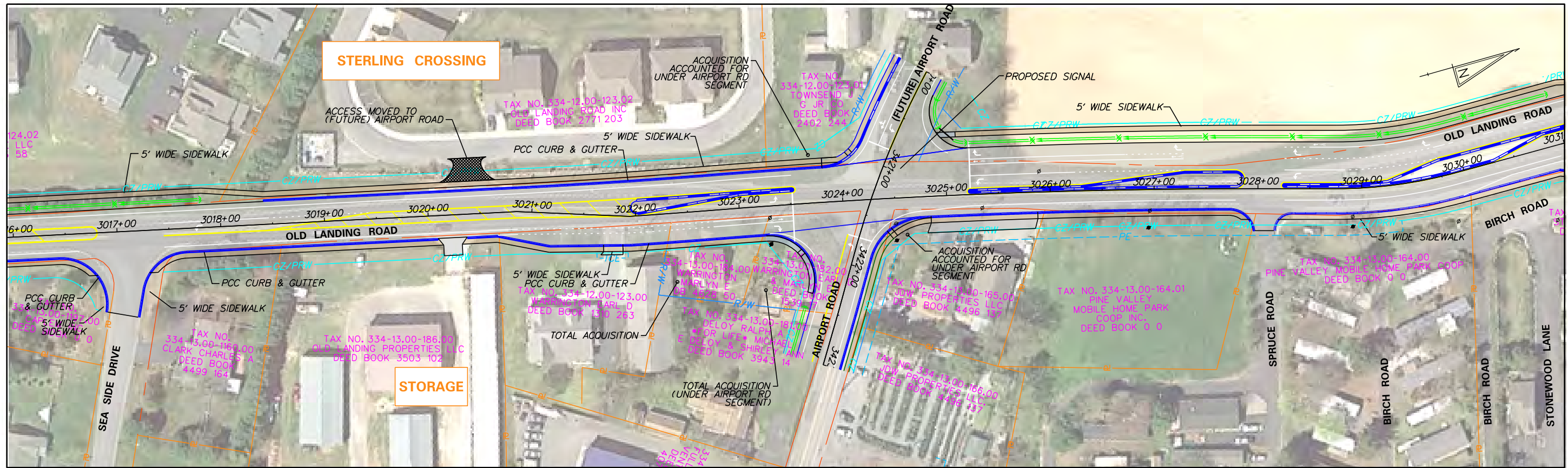


**HENLOPEN TID
OLD LANDING ROAD
(SEGMENT 30)**

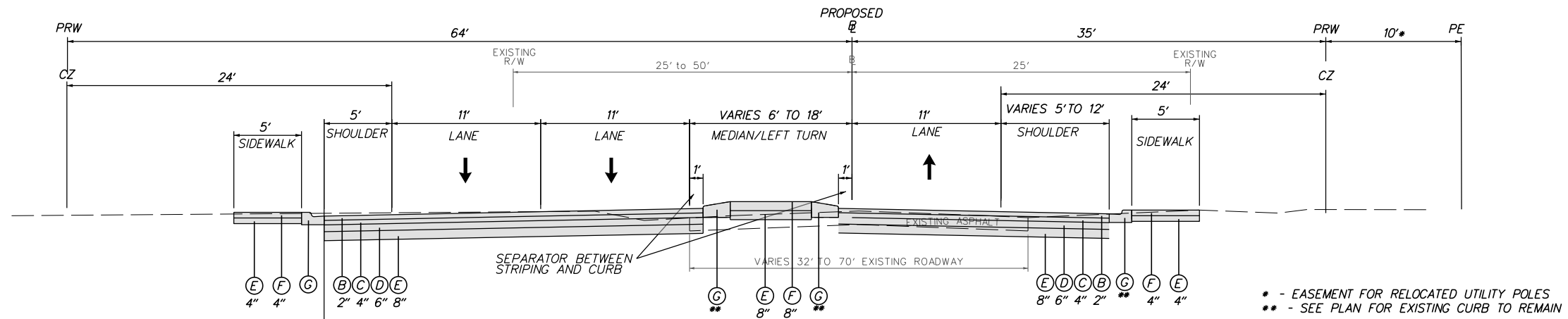
CONTRACT	BRIDGE NO.	N/A
T201769002	DESIGNED BY:	WJD
COUNTY	CHECKED BY:	BPH
NEW CASTLE		

CONCEPT PLAN

SHEET NO.	1
TOTAL SHTS.	3

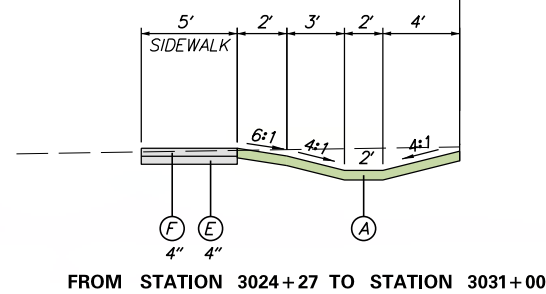


PLOTTED BY: LBERZINA DATE: 2/15/2019
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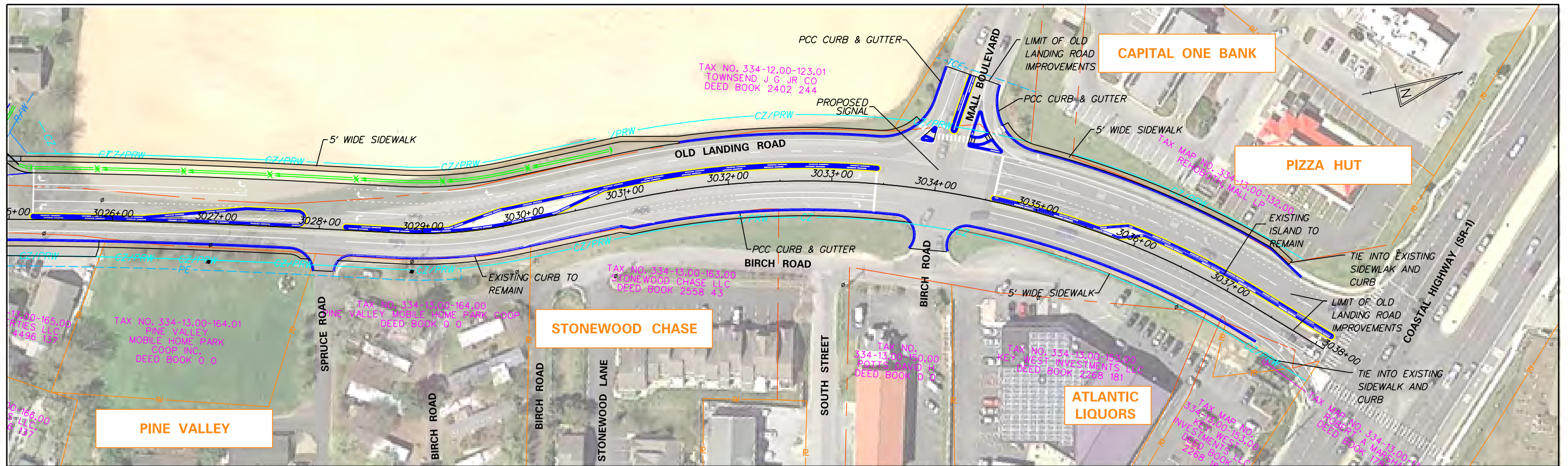


PROPOSED WIDENING (LEFT OF BASELINE)

STATION 3024+27 TO 3038+00

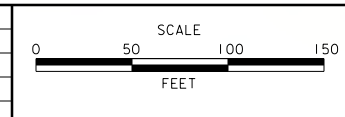


- (A) TOPSOIL, 6" DEPTH PERMANENT GRASS SEEDING, DRY GROUND
- (B) BITUMINOUS CONCRETE, SUPERPAVE TYPE C
- (C) BITUMINOUS CONCRETE, SUPERPAVE TYPE B
- (D) BITUMINOUS CONCRETE, SUPERPAVE BITUMINOUS CONCRETE BASE COURSE
- (E) GRADED AGGREGATE BASE COURSE, TYPE B
- (F) PCC SIDEWALK
- (G) CURB OR CURB AND GUTTER



PLOTTED BY: LBERZINA DATE: 2/15/2019 FILE LOCATION: Q:\2016\160643_002_HENLOPEN_TID_CADD\30-OLD LANDING ROAD.CFDGN [SHEET: CP01]

ADDENDUMS / REVISIONS	



CONTRACT	BRIDGE NO.	NA
T201769002	DESIGNED BY: WJD	
COUNTY	CHECKED BY: BPH	
NEW CASTLE		