

CAPITAL TRANSPORTATION PROJECT COST ESTIMATE

1. NAME OF PROJECT Henlopen TID-Segment 34: Airport Road (Alternative B) Sussex
County
Subdivision or Road Name

2. LIMITS

Street Name or Road Number	From	To	Length
<u>Airport Road (Alternative B)</u>	<u>Beebe Medical Ctr</u>	<u>Old Landing Rd</u>	<u>0.35 Mi</u>

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

4. DESCRIPTION OF IMPROVEMENT:

NOTE: THIS ESTIMATE IS ONLY FOR THE NEW ALIGNMENT PORTION OF THE PROJECT. THE RECONSTRUCTION OF THE EXISTING PORTION OF AIRPORT ROAD IS ESTIMATED IN A SEPARATE ESTIMATE.

Construction of a new asphalt roadway (11' lane width, 5' shoulders) between the existing Beebe Medical Center stub road to Old Landing Road.

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

5. TYPICAL SECTION

Existing: NA

Proposed: 2-11' lanes, 2-5' paved shoulders, 5' sidewalk on the south side of the roadway.

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>\$67,100</u>	Part I <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
b. Preliminary Engineering	<u>\$330,000</u>	Part II <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
c. Real Estate	<u>\$2,827,000</u>	Part III <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
d. Construction *	<u>\$3,153,128</u>	Part IV <u>Bill Dougherty, JMT</u>	<u>08/07/19</u>
e. TOTAL ESTIMATED PROJECT COST	<u>\$6,377,228</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 34: Airport Road (Alternative E

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

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

A. ENGINEERING	<u>\$ 20,302.54</u>	E. HISTORIC	<u>\$10,151</u>
(Includes NEPA)			
B. ARCHAEOLOGY	<u>\$10,151</u>	1. Phase 1 (study)	<u>\$10,151.27</u>
1. Phase I (study)	<u>\$ 10,151.27</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>\$20,303</u>	F. NOISE	<u>\$0</u>
1. Delineation (study)	<u>\$ 10,151.27</u>	1. Studies	<u>\$ -</u>
2. Permit preparation	<u>\$ 10,151.27</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>
1. Phase 1 (study)	<u>\$ -</u>	2. _____	<u>\$ -</u>
2. Phase 2 (study)	<u>\$ -</u>		
3. Phase 3 (remediation)	<u>\$ -</u>		

TOTAL COSTS FOR PART I (A thru G) ROUNDED \$61,000

CONTINGENCY COSTS 10% \$6,100
 (normally 5% for large projects and 10% for small projects - to be approved by section head) (% used)

TOTAL LOCATION AND ENVIRONMENTAL STUDIES COSTS \$67,100
 (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 34: Airport Road (Alternative B.)

PART II - PRELIMINARY ENGINEERING

A. SURVEYS		<u>\$20,303</u>	
1. Inhouse	\$	-	
2. Consultant	\$	<u>20,302.54</u>	
B. DESIGN ENGINEERING		<u>\$279,009</u>	
1. Design		<u>\$203,026</u>	
a. Inhouse	\$	-	
b. Consultant	\$	<u>203,026.00</u>	
2. Traffic		<u>\$20,303</u>	
a. Inhouse	\$	-	
b. Consultant	\$	<u>20,302.54</u>	
3. Real Estate Plan Preparation		<u>\$20,303</u>	
a. Inhouse	\$	-	
b. Consultant	\$	<u>20,302.54</u>	
4. Utilities		<u>\$25,378</u>	
a. Inhouse	\$	<u>10,151.27</u>	
b. Consultant	\$	<u>10,151.27</u>	
c. Test Holes	\$	<u>5,075.64</u>	
d. Utility Company	\$	-	
5. Materials & Research	\$	<u>5,000.00</u>	
6. Borings	\$	<u>5,000.00</u>	
7. Pile Load Tests	\$	-	

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

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

C. ENVIRON. ASSESSMENT \$0

(use for class "II" projects only)

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

Loc/Environ
Estimator: _____ Date: _____

D. CONTRACT ADMINISTRATION

Cont/Admin
Estimator: _____ Date: _____

TOTAL COSTS FOR PART II (A thru D) ROUNDED \$300,000

CONTINGENCY COSTS \$30,000
 (normally 5% for large projects and 10% for small projects - to be approved by section head) 10%
(% used)

TOTAL PRELIMINARY ENGINEERING \$330,000
 (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 IV-A of V

Contract No. T201769002

Project Title Henlopen TID. - Segment 34: Airport Road (Alternative B.)

PART IV -CONSTRUCTION

**A. ROADWAY/APPROACH
CONSTRUCTION**

	<u>\$1,855,328</u>
1. Grading	
a. Excavation (includes SWM pond)	<u>\$218,672</u>
b. Borrow	<u>\$25,027</u>
2. Drainage	<u>\$81,210</u>
3. Pavement	
a. Surface	<u>\$449,213</u>
b. Base	<u>\$407,270</u>
c. Subbase	<u>\$214,720</u>
4. Erosion/Sed. Cont.	<u>\$50,756</u>
5. Miscellaneous	
a. Curb/Gutter	<u>\$136,019</u>
b. Sidewalk	<u>\$202,785</u>
c. Guardrail	<u>\$0</u>
d. C.P.M. Schedule	<u>\$1,400</u>
e. Clear/Grubb	<u>\$50,756</u>
f. Field Office	<u>\$17,500</u>
Other (specify)	
g. <u>Multi Use Path</u>	<u>\$0</u>
h. _____	_____
i. _____	_____
j. _____	_____
k. _____	_____
l. _____	_____
m. _____	_____

**B. STRUCTURE
CONSTRUCTION**

	<u>\$0</u>
1. New Bridge	_____
a. Type	_____
b. Size	_____
c. \$/s.f.	_____
2. Old Structure Rem.	_____
a. Type	_____
b. Size	_____
c. \$/c.y.	_____
3. Retaining Wall	_____
a. Type	_____
b. Size	_____
c. \$/c.y.	_____
4. Box Culvert	_____
a. Type	_____
b. Size	_____
c. \$/s.f.	_____

C. LANDSCAPING

	<u>\$87,132</u>
1. Beautification	<u>\$66,829</u>
2. Noise Mitigation	<u>\$0</u>
3. Visual Mitigation	<u>\$0</u>
4. Tree Mitigation	<u>\$20,303</u>

D. MAINTENANCE OF TRAFFIC \$ 71,058.90

(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 34: Airport Road (Alternative B.)

PART IV -CONSTRUCTION (CONTINUED)

E. PROJECT TRAFFIC ITEMS	<u>\$16,736</u>
1. Signing Structures	
a. Overhead Bridges	\$ -
b. Cantilever Supports	\$ -
2. Roadway Lighting	\$ -
3. Pavement Markings	\$ 16,736.00
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 \$2,031,000

I. MISC. ITEMS \$304,650

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

15%
(% used)

J. CONTRACTOR'S CONST. ENG. \$101,550

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

K. INITIAL EXPENSE \$101,550

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

L. CONSTRUCTION CONTINGENCY \$203,100

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

M. TOTAL CONSTRUCTION COSTS (H thru L) \$2,741,850

(Enter on PNR funding line 5)

N. CONSTRUCTION ENGINEERING (normally 15% of construction costs) 15% \$411,278

(Enter on PNR funding line 4) (% used)

O. TOTAL CONSTRUCTION COSTS (Construction Costs + Construction Engineering) \$3,153,128

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

P. REIMBURSABLE UTILITY RELOCATIONS BY OTHERS \$0

(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 \$0

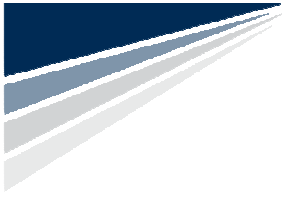
(Enter on PNR funding line 6)

1. Signing	
2. Signals	
3. Detour Signing	
4. DelTrac	
Other (specify)	
5. _____	

Traffic
Estimator: _____ Date: _____

Estimator: Bill Dougherty, JMT

Date: 8/7/2019

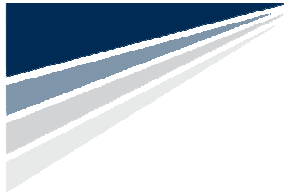


Appendix A
Backup Calculations for
Part I-Location and Environmental Studies
Part II - Preliminary Engineering



DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 34: AIRPORT ROAD (ALTERNATIVE B)

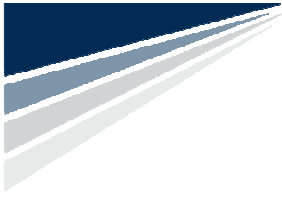
PART 1 LOCATION AND ENVIRONMENTAL STUDIES		
	Estimated % of Construction Cost (Appendix C, Item H)	
A. Engineering (Includes NEPA)	1.0%	\$ 20,303
B. Archeology		
1. Phase 1 (study)	0.5%	\$ 10,151
2. Phase 2 (study)	0.0%	\$ -
3. Phase 3 (mitigation)	0.0%	\$ -
C. Wetlands		
1. Delineation (study)	0.5%	\$ 10,151
2. Permit Preparation	0.5%	\$ 10,151
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%	\$ 10,151
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 34: AIRPORT ROAD (ALTERNATIVE B)

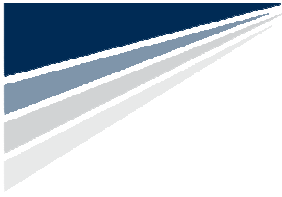
PART 2 - Preliminary Engineering		
	Estimated % of Construction Cost (Appendix C, Item H)	
A. Surveys		
1. Inhouse	0.0%	\$ -
2. Consultant	1.0%	\$ 20,303
B. Design Engineering		
1. Design		
a. Inhouse	0.0%	\$ -
b. Consultant	10.0%	\$ 203,026
2. Traffic		
a. Inhouse	0.0%	\$ -
b. Consultant	1.0%	\$ 20,303
3. Real Estate Plan Preparation		
a. Inhouse	0.0%	\$ -
b. Consultant	1.0%	\$ 20,303
4. Utilities		
a. Inhouse	0.5%	\$ 10,151
b. Consultant	0.5%	\$ 10,151
c. Test Holes	0.25%	\$ 5,076
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 advised as "Typically 2,000", increased to \$5,000 per PD South comment of "seems low")



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 34: AIRPORT ROAD (ALTERNATIVE B)

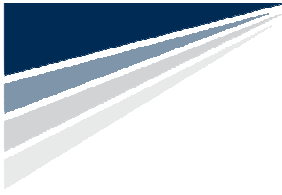
General Roadway Data						
General Data		Roadway Box			Asphalt Unit Wt. (lb./CF)	
Length of Road Segment (LF)	2864	Type C Depth (in)	2		Type C	151.3
Existing Roadway Width (LF)	0	Type B Depth (in)	4		Type B	153.5
Proposed Roadway Width (LF)	46	BCBC Depth (in)	6		BCBC	151.5
Widening Width (LF)	46	GABC Depth (in)	8	Project Duration (Assume 12 Mo/Mile) Duration (Month) 7		
Overlay Area (SF)	0					
Widening/Reconstruction Area (SF)	142545	SUP Pavement Box				
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)	3687	SW Pavement Box				
Area of 5' Wide Sidewalk (SF)	18435	Concrete Depth (in) (Typ 4")	4			
Length of Curb/Gutter	3687	GABC Depth (in) (Typ 4")	4			
Area of Triangular Concrete Islands	600					
Length of Ditch Runs (LF)	2864					
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	8800	\$ 19.75	\$ 173,800.00	
	SUP Excavation	CY	NA	0	\$ 19.75	\$ -	
	Sidewalk Excavation	CY	NA	92	\$ 19.75	\$ 1,817.00	
	Ditch Excavation	CY	NA	1167	\$ 19.75	\$ 23,048.25	
	Roadway Removal	CY	NA	483	\$ 19.75	\$ 9,539.25	
	SWM Excavation (Say 5% of Excavation QTY)	CY	NA	530	\$ 19.75	\$ 10,467.50	
Total:						\$ 218,672.00	
A.1.b: Borrow							
	General Borrow (15%) of Excavation and Embankment (202000) QTY	CY	NA	1589	\$ 15.75	\$ 25,026.75	
A.2: Drainage							
	General Drainage of project cost	LS	4%	1	\$ 81,210.17	\$ 81,210.17	
A.3.a: Pavement Surface							
401006	Superpave Type C, PG 70-22	Ton	NA	1798	\$ 82.50	\$ 148,335.00	
401015	Superpave Type B, PG 70-22	Ton	NA	3647	\$ 82.50	\$ 300,877.50	
Total:						\$ 449,212.50	
A.3.b: Pavement Base							
401021	Superpave Type BCBC, PG 64-22	Ton	NA	5399	\$ 75.00	\$ 404,925.00	
762000	Sawcutting, Bituminous Concrete	LF	NA	1066	\$ 2.20	\$ 2,345.20	
Total:						\$ 407,270.20	
A.3.c: Pavement Subbase							
301001	Graded Aggregate Base Course, Type B	CY	NA	3520	\$ 61.00	\$ 214,720.00	
A.4: Erosion/Sediment Control							
	General E&S (2.5%) of Overall Project Cost	LS	2.5%	1	\$ 50,756.36	\$ 50,756.36	

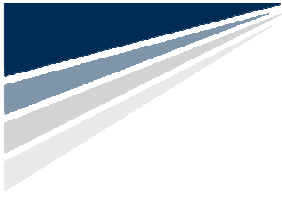
DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 34: AIRPORT ROAD (ALTERNATIVE B)

A.5.a: Miscellaneous Curb/Gutter						
701016	I.P.C.C. Curb and Gutter, Type 1-4	LF	NA	3687	\$ 25.50	\$ 94,018.50
702000	Triangular Channelizing Island	SF	NA	600	\$ 70.00	\$ 42,000.00
					Total:	\$ 136,018.50
A.5.b: Miscellaneous Sidewalk						
705001	PCC Sidewalk, 4" (Item includes GABC)	SF	NA	18435	\$ 11.00	\$ 202,785.00
					Total:	\$ 202,785.00
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	7	\$ 200.00	\$ 1,400.00
A.5.e: Clearing/Grubbing						
201000	Clearing And Grubbing (2.5%) of project cost	LS	2.5%	1	\$ 50,756.36	\$ 50,756.36
A.5.f: Field Office						
		EAMO	NA	7	\$ 2,500.00	\$ 17,500.00
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, D	SY	NA	9547	\$ 1.00	\$ 9,547.00
908004	Topsoil, 6" Depth	SY	NA	9547	\$ 6.00	\$ 57,282.00
					Total:	\$ 66,829.00
C.2: Noise Mitigation						
			0%	1	\$ -	\$ -
C.3: Visual Mitigation						
			0%	1	\$ -	\$ -
C.4: Tree Mitigation (1%) of project cost						
			1%	1	\$ 20,302.54	\$ 20,302.54
D: Maintenance of Traffic						
801000	Maintenance of Traffic (2.5%) of project cost	LS	2.5%	1	\$ 50,756.36	\$ 50,756.36
	Detour Route (1%) of project cost	LS	1%	1	\$ 20,302.54	\$ 20,302.54
					Total:	\$ 71,058.90
E.1.a: Signing Structures: Overhead Bridges						
		LS			\$ -	\$ -
E.1.b: Signing Structures: Cantilever Supports						
		LS			\$ -	\$ -
E.2: Roadway Lighting						
Intersection Lighting		LS	NA	0	\$ -	\$ -



DELDOT PROJECT: T201769002 - HENLOPEN TID CTP COST DEVELOPMENT
SECTION 34: AIRPORT ROAD (ALTERNATIVE B)

E.3: Pavement Markings						
817013	Permanent Pavement Striping, Epoxy Resin Paint, White/Yellow, 5"	LF		11456	\$ 1.00	\$ 11,456.00
	Striping Symbols (Assume 20SF Per Symbol, \$8 per SF)	Each		33	\$ 160.00	\$ 5,280.00
Total:						\$ 16,736.00
F: Wetland Mitigation		LS			\$ -	\$ -
G: Utility Relocation in Contract		LS			\$ -	\$ -
G.1: Water		LS			\$ -	\$ -
G.2: Sanitary Sewer		LS			\$ -	\$ -
H: Subtotal						\$ 2,030,254.28



Appendix D Concept Plans