EVERSOURCE

Project Approval Form

Project Title: Canton [redacted] – Normal Overload Project	Project Number: CD01885
Date Prepared: 09/12/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** OVERLOADS-SPECIFIC PROJECTS
Project Initiator: [redacted]	**Project Type:** Specific
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** Yes
Project Manager: [redacted]	**Emergency Related Request?** No
Project Sponsor: [redacted]	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Required in service date: 11-30-23	
Total Capital Request: $2,236.2K	**Authorization Type:** Full Funding

1. Executive Summary

This Project was created to [redacted]

The partial funding estimate of this project was $2.5M. After detail design, wetland surveys, and bids, this project estimate came in at $2,2M, 11% under the initial estimate.

LOCATION:
Division: Western
AWC: Torrington
Town: Canton

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2023	2024	2025	Total
Internal Labor and Construction Equipment	119.6	0.0	0.0	119.6
Outside Services	580.7	0.0	0.0	580.7
Materials	490.5	0.0	0.0	490.5
Removals	87.4	0.0	0.0	87.4
Risk and Contingency	203.3	0.0	0.0	203.3
Other	0.0	0.0	0.0	0.0
Subtotal	**1,481.5**	**0.0**	**0.0**	**1,481.5**

Indirect Capital Costs	Year 1	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	754.7	0.0	0.0	754.7
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal	**754.7**	**0.0**	**0.0**	**754.7**
Total Capital Costs (Gross)	**2,236.2**	**0.0**	**0.0**	**2,236.2**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**2,236.2**	**0.0**	**0.0**	**2,236.2**

Explain unique payment provisions, if applicable:

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

[redacted]

[redacted]

b. Project Need

[redacted]

c. Project Scope

[redacted]

[redacted]

Major Material:

800' – 750 MCM AL. 25kV Aerial Cable
800' – 1/0 ACSR
100' – 556 AAC T.W.
1 – 50/1 Steel Poles
5 – 45/1 Steel Poles
1 – 900 Amp. Vert. Disc. Switch
5 – 8' x 14'Manholes
4 – 6" Steel Conduits @ 90 degree
650' – 1000 MCM CU EPR JKT 25 kV UG Cable
450' – Duct-bank w/2X3 Horizontal Array
520' – 6' PVC Conduit (Concrete Encased)
22 – 50/1 CCA Poles
3,120' – 556 AAC Tree Wire
2,900' - 750 MCM 25 kV AL Aerial Cable
2 – 900Amp. 25kV GOAB Disconnect Switch
1 – 900 Amp. Vert. Disc. Switches

4. Alternatives Considered

Project Option Comparison

[redacted]

[redacted]

[redacted] The cost of this preferred option when combined with Segments 2 and 3 is $2.69M and a cost per minute saved at $12.84.

Project Option Comparison

	Option
[redacted]	

[redacted]

Total Cost	$2.69M	$1.75M	$5.62M
Capital	$2.24M	$1.7M	$5.45M
O&M	$0.07M	$0.05M	$0.17M
Cost / MVA added	$0.486/MVA	$0.462/MVA	$2.044/MVA
Cost / CM Saved	$12.84/CM	$15.78/CM	$17.31/CM
Cost / CI Saved	$2,819.68/CI	$2,660.66/CI	$4,218.44/CI
Preferred option	X		

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	12-15-22
100% Detailed Engineering Completion	5-1-23
Fully Funded	9-14-23
Construction Start	6-1-23
In Service Date	11-1-23

6. Regulatory Decisions

7. Codes and Standards

8. Risk and Contingencies

Contingencies:

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.

Customer Permission / Siting Council / Municipal Approvals	2023	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2023	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2023	med	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2023	med	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.
Technological risks involving integration of new technology	2023	Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands / Environmentally sensitive area	2023	Low	Use of mats and specialty equipment, only work during certain times of the year.

9. References

References
1. CD01828 Canton 5R2 Contingency Overload

2. CD02003 Canton [redacted] ROW Contingency Overload
3. CD02004 Canton [redacted] Contingency Overload

10. Attachments (One Line Diagrams, Images, etc.)

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. Geographic Map	*YES*
C. System and Station One-Lines	*YES*
E. Other	*YES*
F.	

A. Cost Estimate: Option1 Reconductor (Approved)

Work Classification

Category: Line
Type: BLG1
Type Desc: OVERLOADS-SPECIFIC PROJECTS
Work Type:

Ownership / Management

AWC: Torrington
Statewide: No
Owner: [redacted]
Manager: [redacted]

Project Information

Status: Prelim Design Approved
SPS #:
AIS Score:
Associated Projects:
Assignment ID:
Patrol Find ID:

Budget Summary - Preferred Option

Revised Underground Configuration

2023

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	[redacted] - Albany Tnpk. - P# 116 - 6682 w/ 55	Prelim	0	24%	$1,424,131	$1,424,131
3	[redacted] Feeder Swap in Canton ROW Revisi	Prelim	0	24%	$1,262,601	$1,262,601
				2023 Total:	$2,686,733	$2,686,733
				Total Project:	$2,686,733	$2,686,733

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	Revised Underground Configuration	2,3	$2,686,733	$0	100%	$24.35	$12.84	☑
O2	First Alternative - Overhead Cpnfiguration	1,2	$1,753,337	$0	100%	$29.99	$15.78	☐
O3	Second Alternative - Manhole/Ductbank Extension	2,4	$5,617,903	$0	100%	$42.80	$17.31	☐

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Project Approval Form

Segment CD01885-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$1,148,493
Contingency Amount:	$275,638
Estimate:	$1,424,131
Reimbursement:	$0
Net Amount:	**$1,424,131**
Description:	ENG Estimate - Albany Tpke. w/556 T.W. @ P# 116 -6682

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$14,038.40
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18		$137,495.00
OH WIRE OH - Ampact Connectors - 3ph (6 Ampacts)	16-OH22		$8,652.00
OH WIRE OH - Remove circuit wire (3 phase)	16-OH37A		$9,984.00
XF OH - OH XF - 1ph	16-OH45		$8,438.40
XF OH - OH XF's - bank of 3-1ph	16-OH46		$5,019.20
TREE OH - Trimming for Taller Pole	16-OH64		$11,000.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian) 3 - Jct Poles	16-OH14A		$35,071.20
SECTIONALIZE OH - Cutouts or Arresters - 1ph	16-OH19		$8,227.20

Asset & Investment Management System 12/11/2022 Page 12 of 22

Design Alternative CD01885-03

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$1,018,227
Contingency Amount:	$244,374
Estimate:	$1,262,601
Reimbursement:	$0
Net Amount:	**$1,262,601**

Description: ENG Estimate for 5R1/5R2
Feeder Swap - Manhole
Duct bank Revision

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$7,019.20
SECTIONALIZE OH - Cutouts or Arresters - 3ph	16-OH20	$4,630.40
OH WIRE OH - Ampact Connectors - 3ph (6 Ampacts)	16-OH22	$5,768.00
TREE OH - Tree Trimming	16-OH61	$15,000.00
POLE DB/UG - Riser - 3ph 1 Riser @ [redacted] 1 Riser @ [redacted]	16-UG146	$21,588.80
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph 1-900 Amp. Vert Disc. Sw. @ [redacted] Ckt.	16-OH43	$10,283.20
CONDUIT DB - Conduit Installation 2 @ 6" - 50' PVC Conduit Switchgear to 5R2 Manhole, 2 @ 6" - 50' 5 [redacted] 6" - 120' - Manhole to 5R6 Riser. 2 @ 6' - 40' Manhole to [redacted] iser	16-UG152	$12,320.00
OTHER OTHER 5 - 45/1 Steel Pole Adder @$2500/ea, 1 - 50/1 Steel Pole Adder @$	16-ALL14	$15,500.00
POLE	16-OH14	$28,056.00

[redacted]

Asset & Investment Management System 12/11/2022 Page 16 of 22

Project Approval Form

Design Alternative CD01885-03

OH - POLE - 3ph (CL&P custodian) 5 - 45/1 Steel Poles @ P# 8702 - 8707,, 1 - 50/1 [redacted] Steel Riser Po ENCLOSURE	16-UG139	$314,932.00
UG - MANHOLE - Precast 5 - 8' x 14' Manholes		
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil 556 AAC T.W. @ 5R2 Breaker - P# 8702	16-OH27	$7,760.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu 620' - 1000 MCM AL 25 kV EPR Cable for New [redacted] 475'- 10 5R6 Circuit	16-UG114B	$62,400.00
OH WIRE OH - Neutral 700' @ P# 8702 - 8707, 80' @ [redacted] Riser	16-OH31	$5,120.00
OH WIRE OH-Install Aerial Cable-existing poles (any gauge) 750 MCM AL 25 kV Aerial Cable for Nev [redacted] @ P# 8072 - 8 le= 50'	16-OH36	$73,600.00
OTHER OTHER Contractor Adder @ 25%	16-ALL14	$240,955.00
OTHER OTHER Cost for Crane @ $2500/day, 1 - Manhole set/day	16-ALL14	$12,500.00
OTHER OTHER Cost for Environmental Study/Permit	16-ALL14	$30,000.00
OTHER OTHER Cost for Fault Indicators $250/ea	16-ALL14	$1,500.00
OTHER OTHER Cost for Site Development for Manholes	16-ALL14	$20,000.00
OTHER OTHER Driveway Repair	16-ALL14	$20,000.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved Ductbank 2x 3 Flat Array in Asphalt	16-UG137	$37,536.00
CONDUIT UG-Ductline-up to 12 duct-Non- Traveled/Non-Paved	16-UG138	$62,304.00

Project Approval Form

Design Alternative			CD01885-03
Ductbank 2x 3 Flat Array in Dirt			
OH WIRE OH - Remove circuit wire (1 phase) Rmv existing 350 MCM Aerial Cable	16-OH37	[redacted]	$1,080.00
OH WIRE OH - Remove circuit wire (3 phase) Rmv, existing 336 AAC for [redacted] @ P# 8702 - 8705, P#	16-OH37A		$4,160.00
POLETOP OH - Replace wood xarm with composite xarm - 3ph Shift existing 336 AAC for [redacted] @ P# 8707	16-OH17A		$4,214.40

Option 2: Overhead configuration (Segment 1 +Segment 2)

Segment CD01885-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$265,489
Contingency Amount:	$63,717
Estimate:	$329,206
Reimbursement:	$0
Net Amount:	**$329,206**

Description: ENG Estimate for 5R1/5R2 Feeder Swap

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$14,038.40
SECTIONALIZE OH - Cutouts or Arresters - 3ph	16-OH20	$6,945.60
OH WIRE OH - Ampact Connectors - 3ph (6 Ampacts)	16-OH22	$5,768.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian) 1 @ P# 8705, 1- New Pole Set	16-OH14A	$23,380.80
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph 1-900 Amp. Vert Disc. Sw.	16-OH43	$10,283.20
POLE OH - POLE - 3ph (CL&P custodian) 5 - 50/1 Poles @ P# 8702 - 8704, P# 8703 - 8706	16-OH14	$18,704.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil 556 AAC T.W. @ 5R2 Breaker - P# 8705	16-OH27	$38,800.00
OH WIRE OH-Install Aerial Cable-existing poles (any gauge) 750 MCM AL 25 kV Aerial Cable for New [redacted]	16-OH36	$46,000.00
OTHER OTHER Contractor Adder @ 30%	16-ALL14	$71,984.00

Asset & Investment Management System 12/11/2022 Page 8 of 22

Segment CD01885-02

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$1,148,493
Contingency Amount:	$275,638
Estimate:	$1,424,131
Reimbursement:	$0
Net Amount:	**$1,424,131**
Description:	ENG Estimate - Albany Tpke. w/556 T.W. @ P# 116 -6682

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$14,038.40
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18		$137,495.00
OH WIRE OH - Ampact Connectors - 3ph (6 Ampacts)	16-OH22		$8,652.00
OH WIRE OH - Remove circuit wire (3 phase)	16-OH37A		$9,984.00
XF OH - OH XF - 1ph	16-OH45		$8,438.40
XF OH - OH XF's - bank of 3-1ph	16-OH46		$5,019.20
TREE OH - Trimming for Taller Pole	16-OH64		$11,000.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian) 3 - Jct Poles	16-OH14A		$35,071.20
SECTIONALIZE OH - Cutouts or Arresters - 1ph	16-OH19		$8,227.20

Asset & Investment Management System 12/11/2022 Page 12 of 22

Option 3: Full MH duct bank to Cherry Brook Rd. (segment 2 + segment 4)

Segment CD01885-02

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$1,148,493
Contingency Amount:	$275,638
Estimate:	$1,424,131
Reimbursement:	$0
Net Amount:	**$1,424,131**

Description: ENG Estimate - Albany Tpke. w/556 T.W. @ P# 116 -6682

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$14,038.40
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18	$137,495.00
OH WIRE OH - Ampact Connectors - 3ph (6 Ampacts)	16-OH22	$8,652.00
OH WIRE OH - Remove circuit wire (3 phase)	16-OH37A	$9,984.00
XF OH - OH XF - 1ph	16-OH45	$8,438.40
XF OH - OH XF's - bank of 3-1ph	16-OH46	$5,019.20
TREE OH - Trimming for Taller Pole	16-OH64	$11,000.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian) 3 - Jct Poles	16-OH14A	$35,071.20
SECTIONALIZE OH - Cutouts or Arresters - 1ph	16-OH19	$8,227.20

Asset & Investment Management System 12/11/2022 Page 12 of 22

Design Alternative CD01885-04

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$3,276,384
Contingency Amount:	$917,388
Estimate:	$4,193,772
Reimbursement:	$0
Net Amount:	**$4,193,772**

Description: ENG EStimate - Manhole/Ductbank Extension

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$14,038.40
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18	$403,558.00
OH WIRE OH - Ampact Connectors - 3ph (6 Ampacts)	16-OH22	$11,536.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian) 2 - New 55/1 Junction Poles [redacted]	16-OH14A	$23,380.80
ENCLOSURE UG - MANHOLE - Precast 3+5= 8 - 8' x 14' Manholes	16-UG139	$503,891.20
POLE OH - POLE - 3ph (CL&P custodian) [redacted]	16-OH14	$9,352.00
POLE DB/UG - Riser - 3ph 5R2 - MH#2, MH# 7 - [redacted] MH#7 [redacted] MH# 8 [redacted]	16-UG146	$43,177.60
CONDUIT DB - Conduit Installation [redacted]	16-UG152	$36,288.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu	16-UG114B	$696,960.00

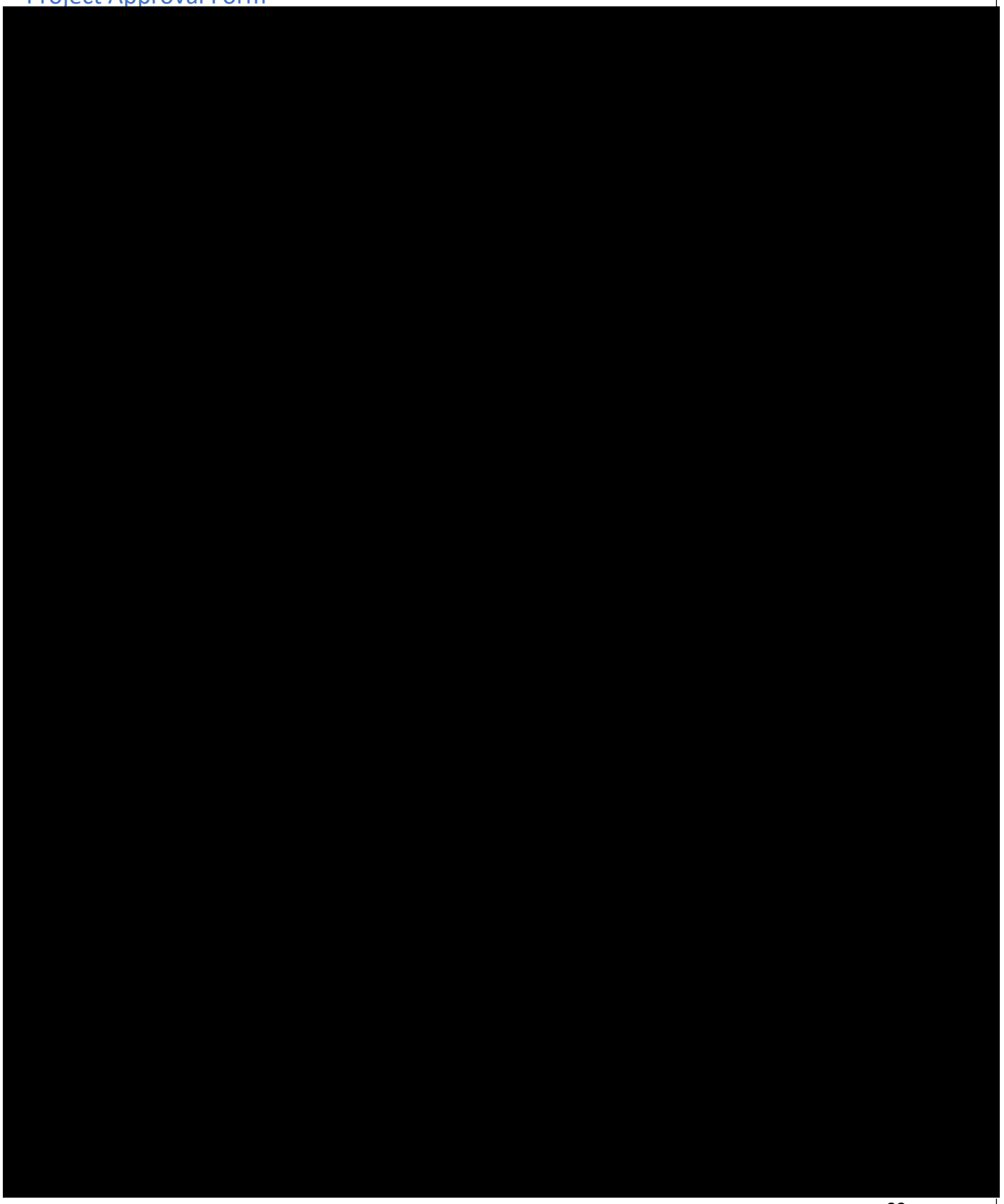
[redacted]

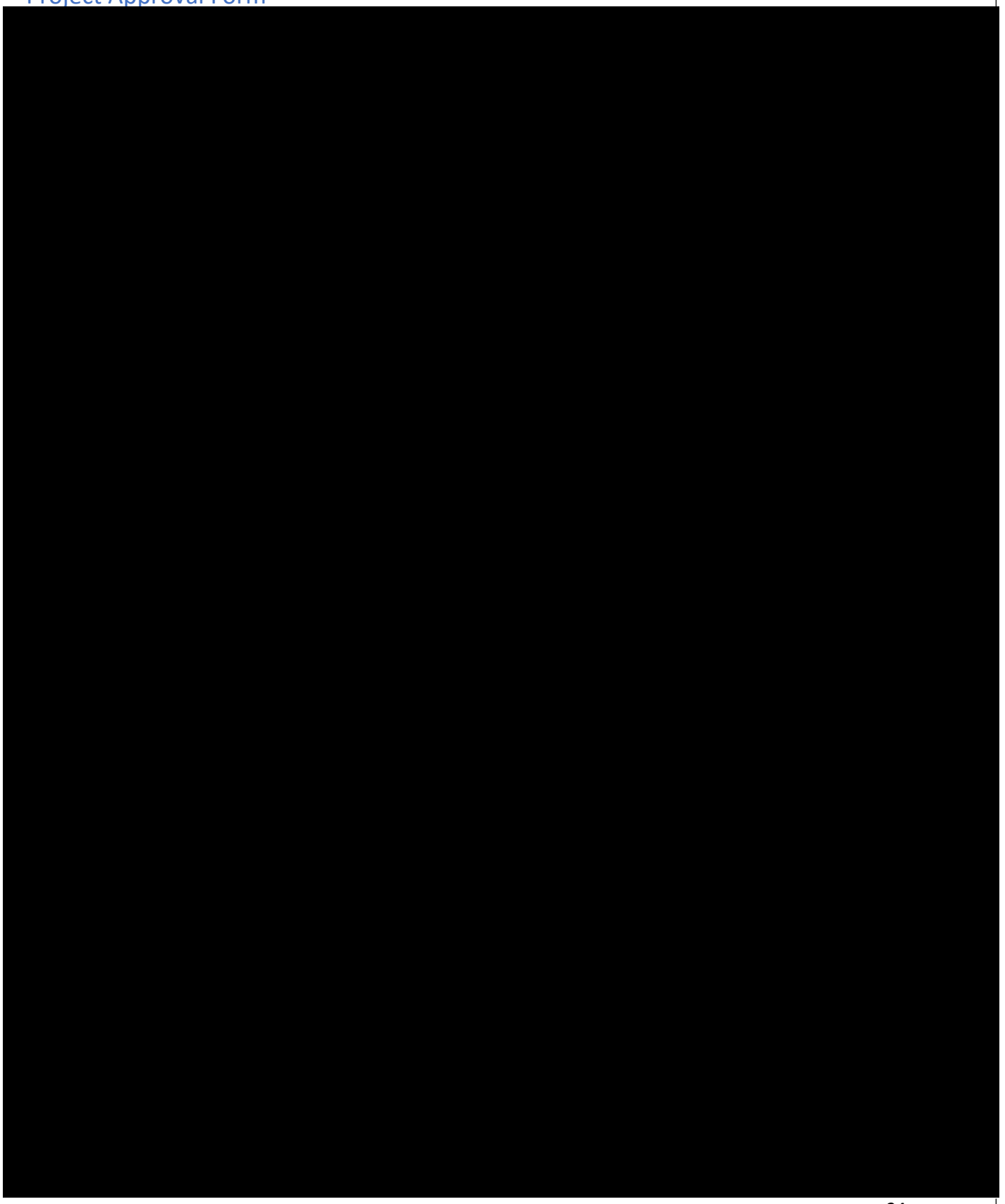
Asset & Investment Management System 12/11/2022 Page 20 of 22

Design Alternative		[redacted]	CD01885-04
850' x 3= 2625'+75+50+50"+100=2825', 1150"3+125+ 265+45+250-			
CONDUIT UG-Ductline-up to 12 duct-Non- Traveled/Non-Paved 850+950'= 1,800'	16-UG138		$339,840.00
OTHER OTHER Contractor Adder @ 25%	16-ALL14		$794,275.00
OTHER OTHER Cost for Access Road & Driveway and Road Repair	16-ALL14		$30,000.00
OTHER OTHER Cost for Ledge Removal @ 5%	16-ALL14		$149,300.00
OTHER OTHER Cost for Mowing	16-ALL14		$1,000.00
OTHER OTHER Crane @ Manhole Instl. $250/hr/10 hr.day	16-ALL14		$10,000.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved Ductbank across Albany Turnpike	16-UG137		$62,560.00
OTHER OTHER Enviromental Study/Permit	16-ALL14		$30,000.00
SECTIONALIZE OH - GOAB Switch Inst GOAB Disc. Sw @ [redacted] Risers	16-OH44		$41,132.80
OTHER OTHER Matting in ROW	16-ALL14		$41,400.00
OTHER OTHER Overhead Fault Indicators @ $250/each	16-ALL14		$1,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil P# 8707 - MH# 2= 200'	16-OH27		$15,520.00
OH WIRE OH - Remove circuit wire (3 phase)	16-OH37A		$12,560.00

Project Approval Form

Design Alternative			CP01885-04
Rmv. [redacted] = 1425' +2500'= 5,345'			
OH WIRE OH - Remove circuit wire (1 phase) Rmv. [redacted]	16-OH37	[redacted]	$340.80
POLE OH - Install/Replace Anchor and Guy Transmission Structure	16-OH14B		$5,273.60





Operations Project Authorization Form

Project Title: Cantor [redacted] – Normal Overload Project – Manhole/Duct bank Configuration	**Project Number: CD01885**
Date Prepared: 12/15/2022	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** OVERLOADS-SPECIFIC PROJECTS
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 12/31/2023	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $2511.1K	**Authorization Type:** Partial Funding

Executive Summary:

This project was created to address [redacted]

[redacted]

The total cost of this revised project is $2,686,733 as compared to the original project cost of $1,753,337 or an increase of $933,396 in capital expenditure. The revised cost per minute saved is at $12.84 as compared to the original cost per minute saved of $15.78 which equates to a reduction in the cost per minute saved of $2.94. This project has a revised in-service date of 12/31/2023 do the additional timing that will be required for a wetland's investigation.

Project Costs Summary:

Note: Dollar values are in thousands

Capital Costs	Year 2023	Year 2024	Year 2025+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	77.8			77.8
Outside Services	677.4			677.4
Materials	255.3			255.3
Removals	526.4			526.4
Risk and Contingency	7.0			7.0
Other	0			0
Subtotal – Direct Costs	**1,543.9**			**1,543.9**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	958.7			958.7
Capitalized interest or AFUDC, if any	8.5			8.5
Subtotal – Indirect Costs	**967.2**			**967.2**
Total Gross Capital Costs	**2,511.1**			**2,511.1**
Customer Contribution	**0**			**0**
Total Net Capital Project Costs	**2,511.1**			**2,511.1**

Technical Justification:

Project Need:

[redacted]

[redacted]

Project Scope:

[redacted]

[redacted]

The cost of this proposal for Segment 2 is $1.424

Major Material:

.

800’ – 750 MCM AL. 25kV Aerial Cable	650’ – 1000 MCM CU EPR JKT 25 kV UG Cable
800’ – 1/0 ACSR	450’ – Duct-bank w/2X3 Horizontal Array
100’ – 556 AAC T.W.	520’ – 6’ PVC Conduit (Concrete Encased)
1 – 50/1 Steel Poles	22 – 50/1 CCA Poles
5 – 45/1 Steel Poles	3,120’ – 556 AAC Tree Wire
1 – 900 Amp. Vert. Disc. Switch	2,900’ - 750 MCM 25 kV AL Aerial Cable
5 – 8’ x 14’Manholes	2 – 900Amp. 25kV GOAB Disconnect Switch
4 – 6” Steel Conduits @ 90 degree	1 – 900 Amp. Vert. Disc. Switches

Background:

[redacted]

[redacted]

Alternatives Considered:

Alternatives were considered (please describe below)

[redacted]

[redacted]

The cost of this preferred option when combined with Segments 2 and 3 is $2.69M and a cost per minute saved at $12.84.

Project Option Comparison

	Option
[redacted]	

Cost	$2.69M	$1.75M	$5.62M
Cost / MVA added	$0.486/MVA	$0.462/MVA	$2.044/MVA
Cost / CM Saved	$12.84/CM	$15.78/CM	$17.31/CM
Cost / CI Saved	$2,819.68/CI	$2,660.66/CI	$4,218.44/CI
Preferred option	X		

Regulatory Approvals:

Are Regulatory body approvals needed for the project?

Yes

Regulatory approvals will be necessary since we will be installing a Manhole Duct-bank configuration within a wetlands area. This project will also require a state highway permit for pole replacements and Department of Transportation permits to adjust traffic flow along Albany Turnpike during construction.

Project Schedule:

Milestone/Phase Name	Estimated Date
100% Engineering Completion	December 2022
Environmental Permits	May 2023
Overhead Construction	March 2023
Civil Construction Start	May 2023
Cable Construction Start	August 2023
In Service Date	December 2023

Risks and Risk Mitigation Plans:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Customer Permission / Siting Council / Municipal approvals	2023	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2023	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2023	High	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	Medium	If storm activity delays work, we may be forced to use external resources.

System abnormal configuration	2023	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.
Technological risks involving integration of new technology	2023	Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands / Environmentally sensitive area	2023	Medium	Use of mats and specialty equipment, only work during certain times of the year.

References:

Project CD01885 - Canton [redacted] - Origin

Canton [redacted] Project Matrix.pptx

Appendices:

Project CD01885 - Canton [redacted] - Norma

Project CD01885 - Canton [redacted] - Normal

Project CD01885 - Canton [redacted] - Norma

Project CD01885 Canton [redacted] - Norma

CD01885 - Canton [redacted] - Normal Overl

Project CD01885 - Canton [redacted] - Norma