EVERSOURCE

Supplement Authorization Form

Project Title: [redacted] Carmel Hill – Subst. Feeder Additions	**Project Number: CD01902**
Date Prepared: 10/10/2025	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** OVERLOADS-SPECIFIC PROJECTS
Initiating Organization: Distribution	**Project Type:** Specific
Project DDE: [redacted]	**Capital Investment part of 5-year 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)
Current Authorized Amount: $511.2K	**Approved In-Service Date:** 12/31/2025
Supplement Request: $844.8K	**Estimated In-Service Date: N/A**
Total Capital Request: $1,356.0K	**Authorization Type: Supplement Request**
	Reason: Cost Overage

1. Project Background

This project is currently authorized for $511.2K. A supplemental authorization amount of $844.8K is being requested for this project. The total capital funding request is $1,356.0K or 265% of the original full funding request.

This project is to support the new switchgear and transformer installation at the [redacted]

The current amount spent is $623K. The majority of the civil work is complete and the UG cable portion of the work has not been started yet. The requested amount is to cover the UG cable and to cover the current overages.

2. Supplement Justification Overview

There are no changes in scope for this project, but additional work was required due to field conditions found when work began. Additional costs were incurred because a precast MH was installed instead of a poured in place MH due to limited space on site. When digging for the precast MH and crossing the street to run conduit, unexpected ledge was hit requiring additional work. MH 4 & 5 were paved over and the grade needed to be raised. Lastly additional inspections and work were required as substation work was not mapped and completed to specifications.

3. Supplement Justification Detail

The reasons for the project authorization supplement of $844.8K are described below.

- Charter Oak bid on doing a poured in place manhole due to the guard rails and the stipulations of the state with the guardrails. It was decided there isn't enough room, and it was decided to do a precast with Two openings on top the new standard 14 x 6 x 7 with two holes on top (Stock code #56649) FWO 81524879 not a 14 x 8.
- Needed to dig to expose both sides of the precast therefore needed more bends and conduit and the new conduit is 6" the old is 5"so I needed 5" conduit.
- Only capture 6 of the conduits not 8
- 9/17/25 Charter oak did work at MH 4 & 5. The MHs were paved over and the grade needed to be raised. The existing MH covers were reused. Needed access to verify conduit layout and [redacted] duct configuration.
- Charter oak hit ledge in the hole they were digging with the precast and had to jack hammer
- Significant amounts of concrete was required to break down duct bank adjacent to energize feeder [redacted]
- Charter oak hit ledge again when crossing the street to run the conduit, had to bring in a hammer for the excavator.
- Additional MH inspections were required inside the substation as nothing was mapped.
- Substation work was not complete
    - Feeder tie cables between the A and B buses are needed.
    - Nomenclature in the new switchgear needed to be updated.

Additional materials ordered, by material numbers.

- 514048 = Full reel of 25kv 1000cu (WO# 14967755 = 600') (WO# 21849851 = 200')
- 517547 = Nema Pads = QUANTITY = 12 (WO#21849851)
- 516965 = Splice = Quantity = 3 (WO# 14967755)
- 620172 = Cover Solid 38in Round, Blast pressure lever = 1
- 515999 = Conduit 5" 240 pieces
- 510434 = 22 degree pends = 12
- 510454 = 5-degree bends
- 620174 = Manhole round 36" clear opening with 6 in riser
  Total Amount: $68,554.73

4. Supplement Cost Summary (Project Total)

Line-item Category	To Date Spend 2024 + 2025	Prior Authorized 2024 + 2025	Variance (Supplemental Request) 2025	New Total Request (Add Prior Authorized and Variance) 2025
Internal Labor and Construction Equipment	4.6	20.9	163.9	184.8
Outside Services	183.6	130.2	51.9	182.1
Materials	101.3	94.0	6.5	100.5
Removals	18.2	18.3	15.0	33.3
Risk and Contingency	0.0	32.3	30.7	62.9
Other	0.0	0.0	0.0	0.0
SUBTOTAL DIRECTS W/ RISKS	**307.7**	**295.7**	**268.0**	**563.6**
Indirect / Overhead (including benefits)	301.7	214.4	568.7	783.1
AFUDC	9.3	1.1	8.2	9.3
Subtotal – Indirect Costs	**311.0**	**215.5**	**576.8**	**792.3**
TOTAL CAPITAL REQUEST	**618.7**	**511.2**	**844.8**	**1,356.0**
Reimbursables/Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
PROJECT TOTAL (LESS REIMBURSABLES)	**618.7**	**511.2**	**844.8**	**1,356.0**

New Total Request by Year (if applicable)

Note: If multi-year project, include actuals for current and years past, and then show forecasted spend for upcoming years.

Line item Category	Year 2024 Actual	Year 2025 Actual	Year 2025 Estimate	Total
Internal Labor and Construction Equipment	12.6	101.8	70.3	184.8
Outside Services	12.5	100.3	69.3	182.1
Materials	6.9	55.4	38.3	100.5
Removals	2.0	16.1	15.1	33.3
Risk and Contingency	0.0	0.0	62.9	62.9
Other	0.0	0.0	0.0	0.0
SUBTOTAL DIRECTS W/ RISKS	**34.0**	**273.7**	**255.9**	**563.6**
Indirect / Overhead (including benefits)	39.5	262.3	481.3	783.1
AFUDC	2.0	7.3	0.0	9.3
Subtotal – Indirect Costs	**41.5**	**269.5**	**481.3**	**792.3**
TOTAL CAPITAL REQUEST	**75.5**	**543.2**	**737.3**	**1,356.0**
Reimbursables/Customer Contribution	0.0	0.0	0.0	0.0
PROJECT TOTAL (LESS REIMBURSABLES)	**75.5**	**543.2**	**737.3**	**1,356.0**

5. Lessons Learned

Lessons learned from this project include:

- Better handoff between substation construction group and the distribution project manager.

EVERSOURCE

Supplement Authorization Form

Full Funding PAF

Project Title: [redacted] Carmel Hill – Subst. Feeder Additions	**Project Number: CD01902**
Date Prepared: 10/14/2024	**Company:** Eversource CT
Organization: Electric System Operations	**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: 12/31/2025	
Total Capital Request: $511.2K	**Authorization Type:** Full Funding

1. Executive Summary

Full funding is being requested for this project at a cost of $511.2K which is 127.2% of the partial funding capital estimate of $401.9K. This project was partially approved on 1/27/2022. There is no scope change on the project. The variance between the full funding and partial funding estimate is due to additional cable being required to complete this project, from about 480' in the partial to 740' used in the field. When this project's partial funding estimate was approved, the substation and as-built drawings were not finalized, which to field conditions that resulted in additional cable and conduit required. The additional length of cable also led to increased labor & indirect costs associated with this project.

The original project was presented as follows:

[redacted]

[redacted]

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2023 Actual	2024 Actual	2025 Estimate	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	0.2	2.2	18.5	20.9
Outside Services	1.4	13.8	115.1	130.2
Materials	1.0	10.0	83.1	94.0
Removals	0.2	1.7	16.4	18.3
Risk and Contingency	0.0	0.0	32.2	32.2
Other	0.0	0.0	0.0	0.0
Subtotal – Direct Costs	**2.7**	**27.7**	**265.3**	**295.7**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	1.9	34.1	178.4	214.4
Capitalized interest or AFUDC, if any	0.0	1.1	0.0	1.1
Subtotal – Indirect Costs	**1.9**	**35.2**	**178.4**	**215.6**
Total Gross Capital Costs	**4.6**	**63.0**	**443.7**	**511.2**
Customer Contribution				
Total Net Capital Project Costs	**4.6**	**63.0**	**443.7**	**511.2**

Explain unique payment provisions, if applicable:

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

This project is to support the new switchgear and transformer installation at the Carmel Hill substation. This transformer and switchgear shall be parallel to the existing.

Today all feeders emanate from a single transformer and bus.

b. Project Need

Adding the duct banks and new cabling for the four additional feeders will set up this substation for additional circuits to accommodate additional load.

Additionally, moving the [redacted] positions respectfully will allow this circuit to be powered using this substation's new largest transformer.

c. Project Scope

The scope of this project includes installing ducting and manhole outside of the substation fence with underground cabling through conduit both inside and outside of the substation. Cabling starts at two of the new feeders and is run to the existing [redacted]

4. Alternatives Considered

An alternative to this design is to replace all duct banks and existing manhole B in the back of the substation. This is design option #2 in the situation that the existing rear duct banks and manhole B are deemed to be out of code compliance.

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Preliminary Approval	January 2022
Detailed Design	July 2024
Settings Requested	July 2022
Construction Start Date	January 2025
Construction End Date	December 2025

6. Regulatory Decisions

N/A

7. Codes and Standards

N/A

8. Risk and Contingencies

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2025	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	2025	Medium	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2025	Medium	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.	2025	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.

9. References

N/A

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

Attachment	Included in Submittal?
A. Load Sheet	*YES*
B. Project Needs Statement	*YES*
C. One Lines	*YES*
D. Partial Funding PAF Form	*YES*



Attachment B: Project Needs Statement

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902
[redacted]armel Hill - Substation Additions

Work Classification

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

Ownership / Management

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

Project Information

Status: Draft
SPS #:
AIS Score:
Associated Projects:
Assignment ID:
Patrol Find ID:

Budget Summary - Preferred Option

Use Existing Rear Duct Banks

2023

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
4	Use Existing Manholes w/ New Switchgear	Draft	0	24%	$331,849	$331,849
3	[redacted]	Draft	0	24%	$42,407	$42,407
2	[redacted]	Draft	0	24%	$36,349	$36,349
				2023 Total:	$410,604	$410,604
				Total Project:	$410,604	$410,604

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted] Carmel Hill - Substation Additions

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	Use Existing Rear Duct Banks	2,3,4	$410,604	$0	100%	$0.00	$0.00	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	All New Manholes from new Switchgear	$655,304			$0.00	$0.00
2	[redacted]	$36,349			$0.00	$0.00
3		$42,407			$0.00	$0.00
4	Use Existing Manholes w/ New Switchgear	$331,849			$0.00	$0.00

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted]Carmel Hill - Substation Additions

Background / Scope

Issue:

Project Description:

Other Considerations:

Revision / ACT Comments:

If we don't do this project, what will happen?

Environmental

Water Pollution: No Change Soil Contamination: No Change Natural Habitats: No Change

Alternatives considered based on Environmental Impact or Description of Aspects Oil Spill Risks Considered? ☐

Safety Concerns With This Project? ☐

Explain:

External Stakeholders

Customer Impact / Involvement

Cust. Impacted:	Approx. Pole Count (NU):
Crit. Cust. Impacted:	Approx. Pole Count (Other):
Adjoining Property Owner Consent Required: ☐	Town Hearing Required: ☐
Other Utility Pole Custodian Area: ☐	Easement Required: ☐
State Highway Permit Required: ☐	

Relocation / New Service

New Srvc. Contact:	Requestor Type:
Customer Type:	State Highway Project #:
Request Number:	Route #:

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted] Carmel Hill - Substation Additions

Design Alternative CD01902-01

General Information

Segment: 1 - All New Manholes from new Switchgear Status: Draft

Segment Type: S/S - SWITCHGEAR Town: WOODBURY Budget Year: 2023

Work Type: Other Trimming Required: ☐ In Service Date: 12/31/2023

Description: The scope of materials contained in this project segment begin at the cable terminations in the switchgear cubicles and end at the splice components in the MH designated in the road (2x new feeders) & back behind the substation respectively (2x new feeders).

Design Alternative #1 includes the costs for all manholes ot be replaced.

[redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted] Carmel Hill - Substation Additions

Design Alternative CD01902-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$528,471
Contingency Amount:	$126,833
Estimate:	$655,304
Reimbursement:	$0
Net Amount:	**$655,304**

Description:

Item Description	CU	Amount
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved 6" conduit to new MH behind SS	16-UG137	$40,664.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved 6" conduit to new MH in Rd.	16-UG137	$109,480.00
ENCLOSURE UG - MANHOLE - Precast 8' by 14' manholes	16-UG139	$188,959.20
OTHER OTHER Add the 30% contractors fee	16-ALL14	$143,288.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu UG span to MH behind SS	16-UG114B	$33,600.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu UG span to MH in Rd.	16-UG114B	$12,480.00

[redacted]

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902
[redacted]Carmel Hill - Substation Additions

Design Alternative CD01902-02

General Information

Segment: 2 - [redacted]Carmel Hill - Move[redacted] Status: Draft

Segment Type: S/S - SWITCHGEAR Town: WOODBURY Budget Year: 2023

Work Type: Other Trimming Required: ☐ In Service Date: 12/31/2023

Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted] Carmel Hill - Substation Additions

Design Alternative CD01902-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$29,314
Contingency Amount:	$7,035
Estimate:	$36,349
Reimbursement:	$0
Net Amount:	**$36,349**

Description:

Item Description	CU	[redacted]	Amount
SECTIONALIZE	16-OH39A		$29,313.60
OH - Recloser Control - setting changes only Change 11S14 labels in (2x) SR, (1x) MR, & (3x) TR Reclosers			

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902
[redacted] Carmel Hill - Substation Additions

Design Alternative CD01902-03

General Information

Segment: 3 - [redacted]armel Hill - Move[redacted] Status: Draft

Segment Type: S/S - SWITCHGEAR Town: WOODBURY Budget Year: 2023

Work Type: Other Trimming Required: ☐ In Service Date: 12/31/2023

Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted]Carmel Hill - Substation Additions

Design Alternative CD01902-03

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$34,199
Contingency Amount:	$8,208
Estimate:	$42,407
Reimbursement:	$0
Net Amount:	**$42,407**

Description:

Item Description	CU	[redacted]	Amount
SECTIONALIZE	16-OH39A		$34,199.20
OH - Recloser Control - setting changes only Change 11S13 labels in (3x) SR, (1x) RR, & (3x) TR Reclosers			

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted] Carmel Hill - Substation Additions

Design Alternative CD01902-04

General Information

Segment: 4 - Use Existing Manholes w/ New Switchgear Status: Draft

Segment Type: S/S - SWITCHGEAR Town: WOODBURY Budget Year: 2023

Work Type: Other Trimming Required: ☐ In Service Date: 12/31/2023

Description [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01902

[redacted] Carmel Hill - Substation Additions

Design Alternative CD01902-04

Estimate

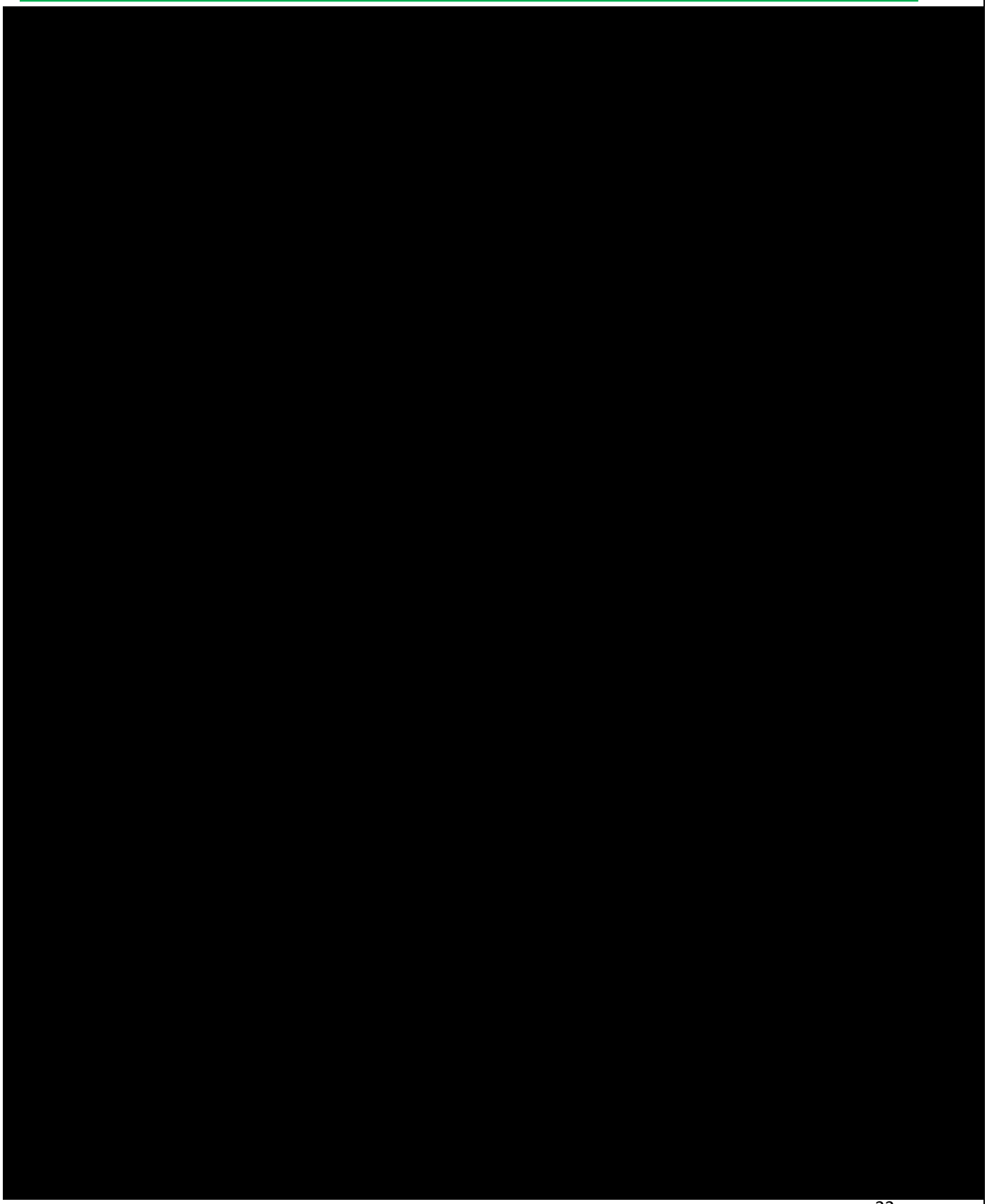
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$267,620
Contingency Amount:	$64,229
Estimate:	$331,849
Reimbursement:	$0
Net Amount:	**$331,849**

Description:

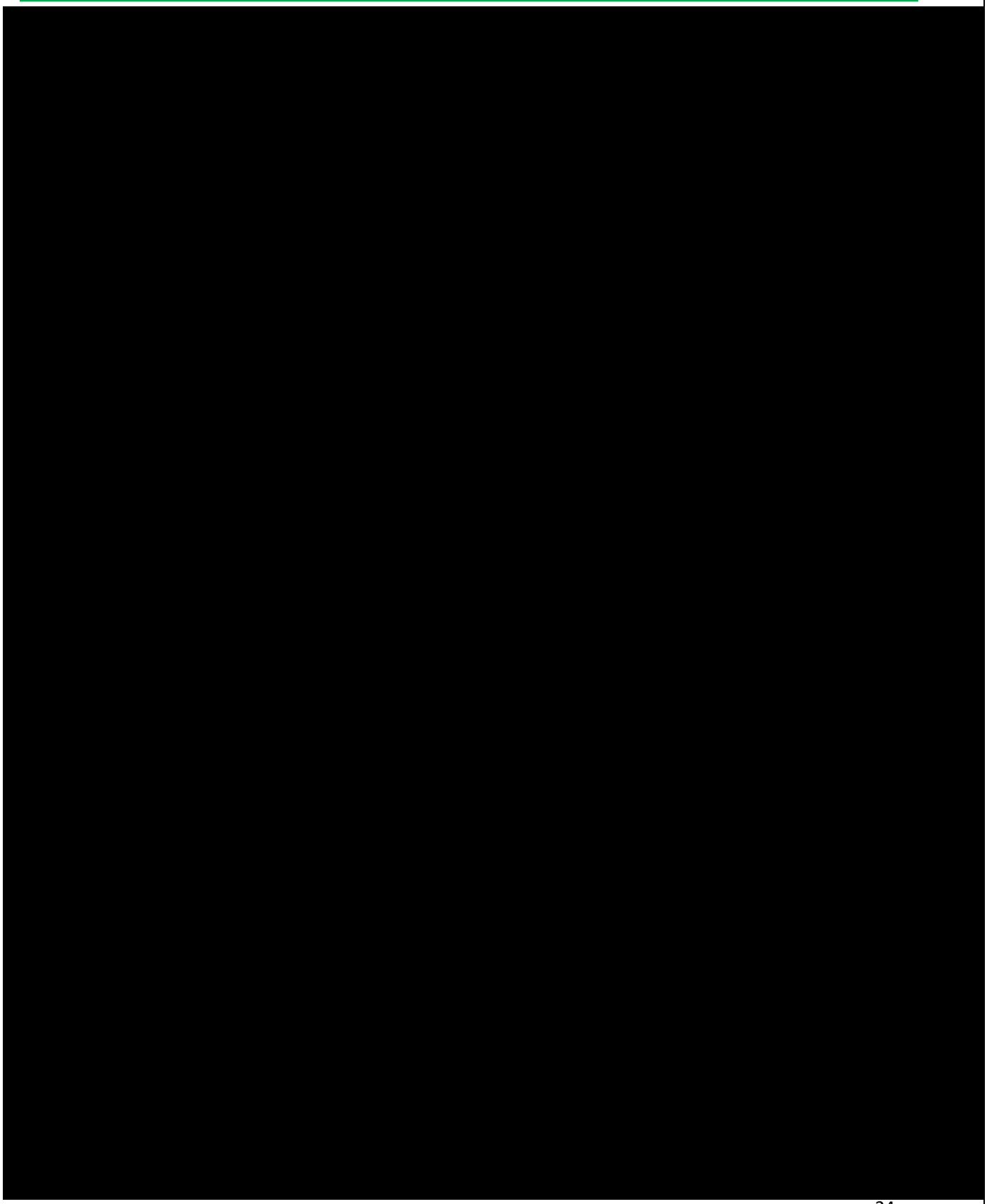
Item Description	CU	[redacted]	Amount
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved 6" conduit to new MH in Rd.	16-UG137		$31,280.00
OTHER OTHER Add 30% contractor fee	16-ALL14		$60,363.00
ENCLOSURE UG - MANHOLE - Pour in place Pour in place around existing concrete duct banks	16-UG140		$107,976.80
TRAFFIC OH/DB/UG - Traffic Control - Police Officer State Road civil work.	16-ALL18		$20,000.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu UG span to MH in Rd.	16-UG114B		$48,000.00

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes



[redacted]



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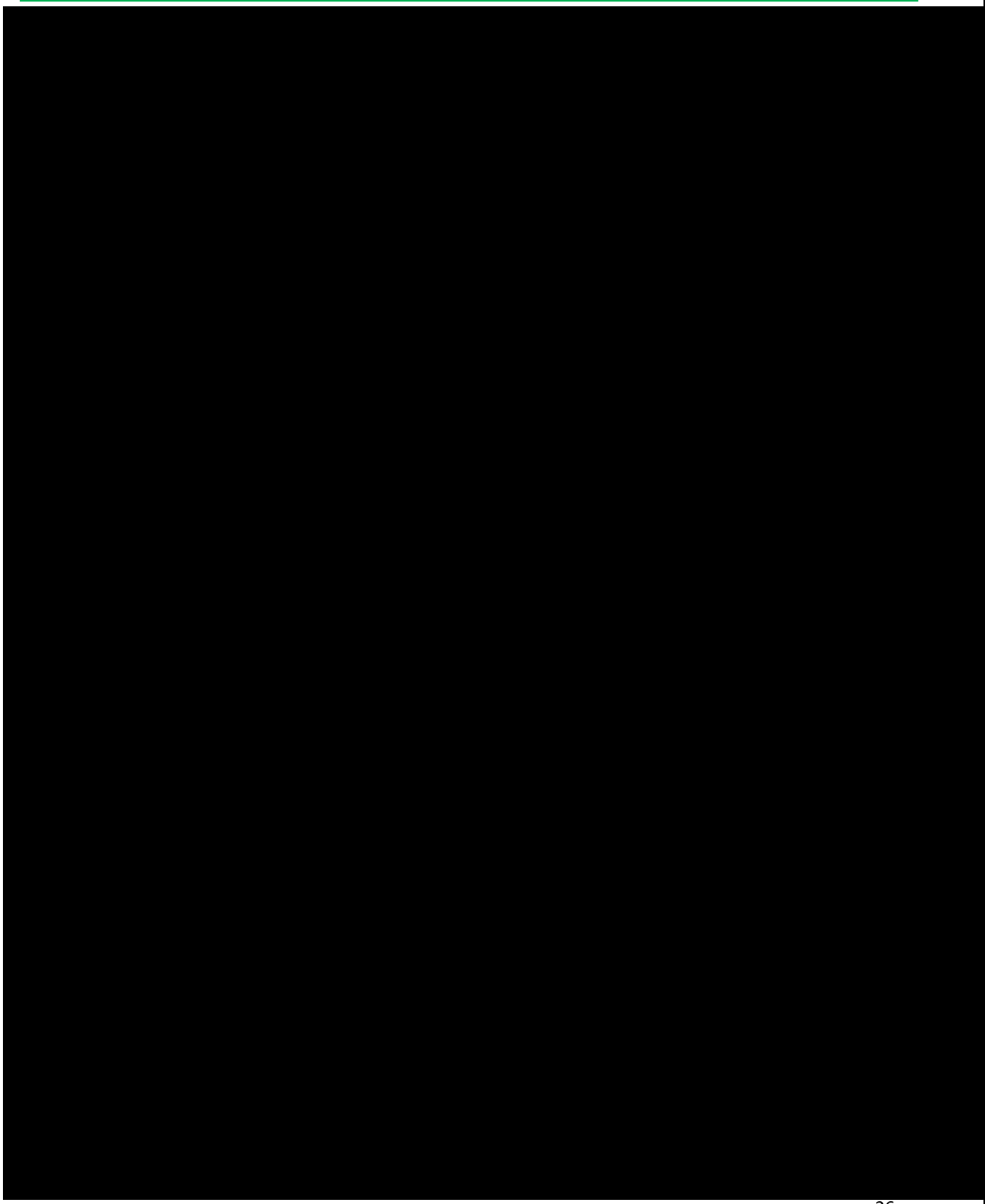

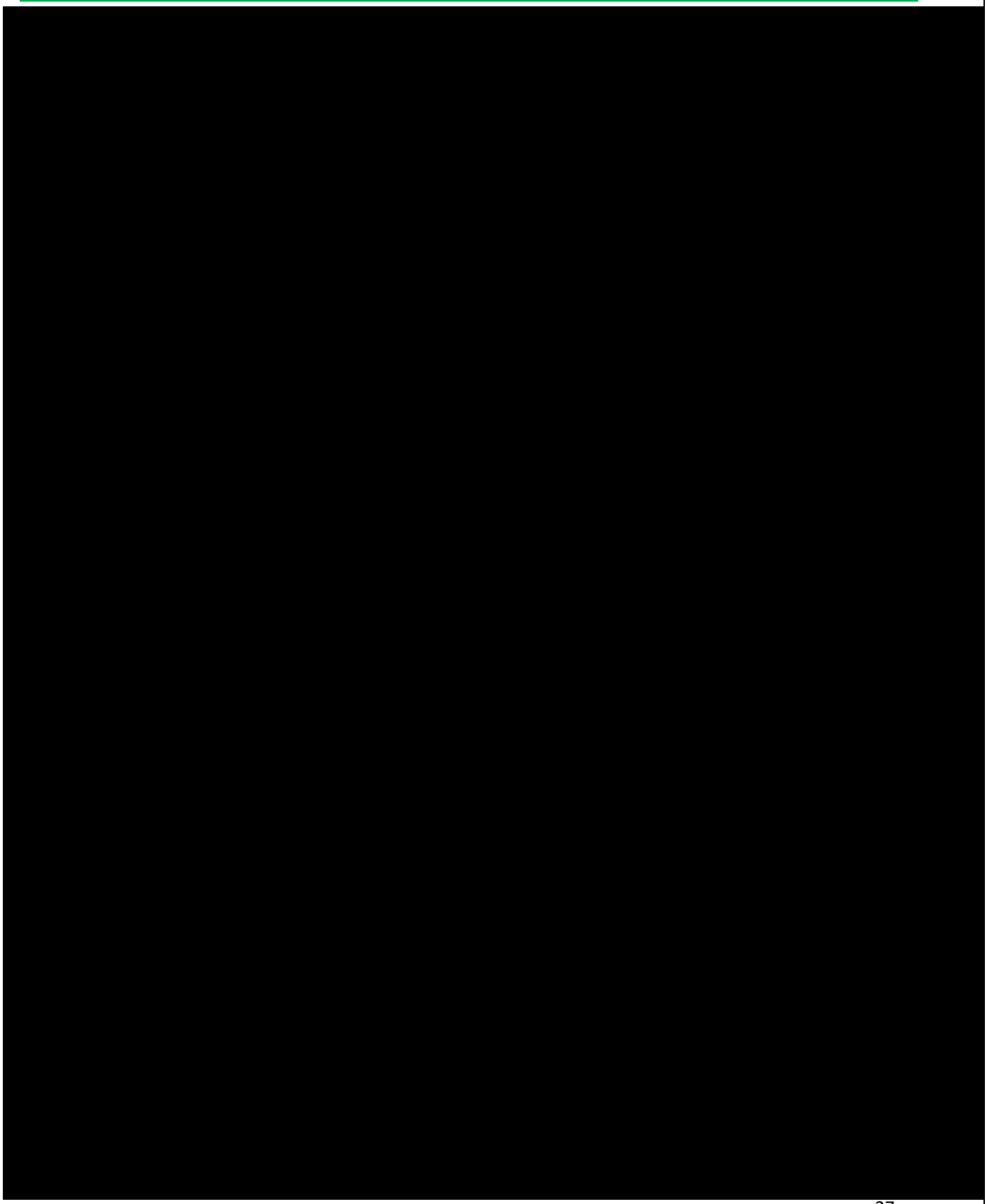

Attachment D: Partial Funding PAF Form

Operations Project Authorization Form

Project Title: [redacted]Carmel Hill – Subst. Feeder Additions	**Project Number: CD01902**
Date Prepared: 09/17/2021	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category: Line**
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 12/31/2024	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? No	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF X Distribution
Total Gross Capital Request: $401,884.42	**Authorization Type:** Partial Funding

Executive Summary

There are four additional feeders being added to the [redacted]. This project includes the distribution department responsibilities for underground ducting, UG cabling, and manhole from the substation feeders/duct banks/manholes to the existing circuits along with conduit for two spare circuits. Inspections have been done on the existing duct banks in the rear of the substation leading to manhole B and they are up to code and size to remain in use.

This project will run new underground 1000 Cu cabling in one of the two new substation duct banks from two of the feeders going north. The new cabling will continue through the existing duct banks behind the substation transmission infrastructure to the existing manhole B to feed the existing [redacted]

Project Costs Summary

Capital Costs	Year 2022	Year 2023	Year 2024+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	$15	$0	$0	$15
Outside Services	$143	$0	$0	$143
Materials	$44	$0	$0	$44
Removals	$23	$0	$0	$23
Risk and Contingency	$20	$0	$0	$20
Other	$0	$0	$0	$0
Subtotal	**$245**	**$0**	**$0**	**$245**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	$149	$0	$0	$149
Capitalized interest or AFUDC, if any	$8	$0	$0	$8
Subtotal	**$157**	**$0**	**$0**	**$157**
Total Customer Contribution				
Total Capital Project Costs	**$402**	**$0**	**$0**	**$402**

Technical Justification:

Project Need Statement

Adding the duct banks and new cabling for the four additional feeders will set up this substation for additional circuits to accommodate additional load.

Additionally, moving the [redacted]

Project Objectives

[redacted]

Project Scope

The scope of this project includes installing ducting and manhole outside of the substation fence with underground cabling through conduit both inside and outside of the substation. Cabling starts at two of the new feeders and is run to the existing circuit [redacted]

Background

This project is to support the new switchgear and transformer installation at the Carmel Hill substation. This transformer and switchgear shall be parallel to the existing.

Today all feeders emanate from a single transformer and bus.

Alternatives Considered:

An alternative to this design is to replace all duct banks and existing manhole B in the back of the substation. This is design option #2 in the situation that the existing rear duct banks and manhole B are deemed to be out of code compliance.

Regulatory Approvals:

Are Regulatory body approvals needed for the project?

No

Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	January 2022
Detailed Design	July 2022
Settings Requested	July 2022
Construction Start Date	Ongoing
Construction End Date	January 2024

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2022	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	2022	Medium	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2022	Medium	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.	2022	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.