EVERSOURCE

Supplement Authorization Form

Project Title: [redacted] Legislative Office Building Switchgear Replacement	**Project Number: CD02259**
Date Prepared: 06/19/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UG CABLE & EQUIPMNT REPLACEMNT
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)
Current Authorized Amount: $413.5K	**Approved In-Service Date:** 12/31/2024
Supplement Request: $91K	**Estimated In-Service Date:** 12/31/2024
Total Capital Request: $504K	**Authorization Type:** Supplement Request
	Reason: Cost Overage

1. Project Background

Supplemental funding is being requested for this project. The total capital request is $504K which is $91K (22%) more than the current authorized amount of $413.5K.

CD02259 was established to [redacted]

2. Supplement Justification Overview

This project's variance of $91K is primarily due to increased material costs and a minor increase in outsides services. There was no scope change. This project is complete.

3. Supplement Justification Overview

CD02259 was created to [redacted]. The actual switch gear cost more than it was estimated in the full funding estimate. This led to most of the increased material costs and 83% of the total material costs for

the project. Material costs went from $110K to $220K, partially offset by labor coming in $14K lower on this project.

Outside services saw a minor increase as well due to the manhole cleaning costing more than expected. There was also a generator used during the cutover for the customer due to the legislature being in session and them not being able to lose power during this time. The generator was not accounted for in the full funding estimate.

4. Supplement Cost Summary (Project Total)

Capital Costs	To Date Spend	Prior Authorized	Supplement Request	**Total** (Add Prior and Supplement Request)
Internal Labor & Equipment	79.6	56.4	23.2	79.6
Outside Services	15.5	5.7	9.8	15.5
Materials	204.7	109.4	95.3	204.7
Removals	24.8	44.6	-19.8	24.8
Risk and Contingency	0.0	28.9	-28.9	0.0
Other	1.3	0.0	1.3	1.3
SUBTOTAL Direct Cost	**325.8**	**245.0**	**80.8**	**325.8**
Indirects / Overheads	176.8	168.5	8.3	176.8
AFUDC	1.7	0.0	1.7	1.7
SUBTOTAL Indirect Cost	**178.6**	**168.5**	**10.1**	**178.6**
TOTAL Capital Request	**504.4**	**413.5**	**90.9**	**504.4**
Less Total Customer Contribution	0.0	0.0	0.0	0.0
TOTAL Project Cost	**504.4**	**413.5**	**90.9**	**504.4**

5. 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.

Capital Costs	2024	ITD SPEND
Internal Labor & Equipment	79.6	79.6
Outside Services	15.5	15.5
Materials	204.7	204.7
Removals	24.8	24.8
Risk and Contingency	0.0	0.0
Other	1.3	1.3
SUBTOTAL Direct Cost	**325.8**	**325.8**
Indirects / Overheads	176.8	176.8
AFUDC	1.7	1.7
SUBTOTAL Indirect Cost	**178.6**	**178.6**
TOTAL Capital Request	**504.4**	**504.4**
Less Total Customer Contribution		0.0
TOTAL Project Cost	**504.4**	**504.4**

6. Lessons Learned

Project Title: [redacted] Legislative Office Building Switchgear Replacement	Project Number: CD02259
Date Prepared: 02/21/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UG CABLE & EQUIPMNT REPLACEMNT
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: 12/31/2024	
Total Capital Request: $413.5K	**Authorization Type:** Full Funding

7. Executive Summary

Full funding is being requested for this project at a cost of **$413.5K** which is 143% of the partial funding capital estimate of $288.3K. There is no scope change on the project. The variance between the full funding and partial funding estimate is due to the underestimated labor and material charges. The legacy estimating units used to produce the partial funding estimate are about 30% lower than the estimates used today, which were updated to reflect increased labor & material costs.

The Original Project was presented as follows:

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- Project Location
  - Division: Central
  - District: Hartford AWC
  - City: Hartford

8. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2024	Total
Internal Labor and Construction Equipment	56.4	56.4
Outside Services	5.7	5.7
Materials	109.4	109.4
Removals	44.6	44.6
Risk and Contingency	28.9	28.9
Other	0.0	0.0
Subtotal	**245.0**	**245.0**

Indirect Capital Costs	2024	Total
Indirects/Overheads (including benefits)	168.5	168.5
Capitalized interest or AFUDC, if any	0.0	0.0
Subtotal	**168.5**	**168.5**
Total Capital Costs (Gross)	**413.5**	**413.5**
Less Total Customer Contribution	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**413.5**	**413.5**

- For this project, a marked increase in direct costs led to the differential between the ACT and ENG estimates. In this category, the ACT estimate totaled to $245K, while the ENG estimate was reported at $174.4K, for a difference of **$70.6K** or 40.4% increase.
- Materials were the main driver for the increased spending. For this category:
    - ACT estimate totaled to $109.4K, while the ENG estimate was reported at $46.9K for a difference of **$62.5K** or 133% increase.
    - The material cost is driven by the switchgear units, which is about $60k per unit.

9. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

- [redacted]

b. Project Need

- [redacted]

c. Project Scope

- [redacted]
- Major Material
  - Two S&C PME-5 Switchgear (603876)
  - Two concrete pad tops (604545)
  - Two concrete pad bottoms (604531)
- Please see sketch attached for additional details.

10. Alternatives Considered

Project Option Comparison

[redacted]		
Authorization Type	Full	Partial
Capital Cost	$414K	$98K
Expense Cost	$0K	$3K
Total Cost	$414K	$101K
Preferred option	X	

Option 1 was chosen to [redacted]

11. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	Sep 2023
100% Detailed Engineering Completion	Jan 2024
Fully Funded	Feb 2024
Construction Start	Dec 2024
In Service Date	12/31/2024

12. Regulatory Decisions

N/A

13. Codes and Standards

N/A

14. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2024	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	2024	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2024	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.	2024	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2024	High	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.

Storm delays	2024	High	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2024	Low	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.

15. References

References
1. IEEE STD 493-2007

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. Geographic Map	*YES*
C. Existing Switchgear photos	*YES*

Attachment A: Cost Estimate

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02259 [redacted]

Work Classification

Category: Line
Type: REL1
Type Desc: UG CABLE & EQUIPMNT REPLACEMNT
Work Type:

Ownership / Management

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

Project Information

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

Budget Summary - Preferred Option

Replace [redacted]

2024

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	[redacted]	Draft	0	24%	$297,319	$297,319
				2024 Total:	$297,319	$297,319
				Total Project:	$297,319	$297,319

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$239,774
Contingency Amount:	$57,546
Estimate:	$297,319
Reimbursement:	$0
Net Amount:	**$297,319**
Description:	[redacted]

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING Network	23-ALL15		$36,526.88
SWITCHGEAR DB/UG - Switchgear up to 25kV - Auto Type 5 (pair)	23-UG125		$182,104.00
ENCLOSURE DB/UG - Transformer Pad/Handhole	23-UG143		$16,142.88
OTHER OTHER Estimate for Switchgear removal	16-ALL14		$5,000.00

Supplement Authorization Form

Design Alternative

CD02259-02

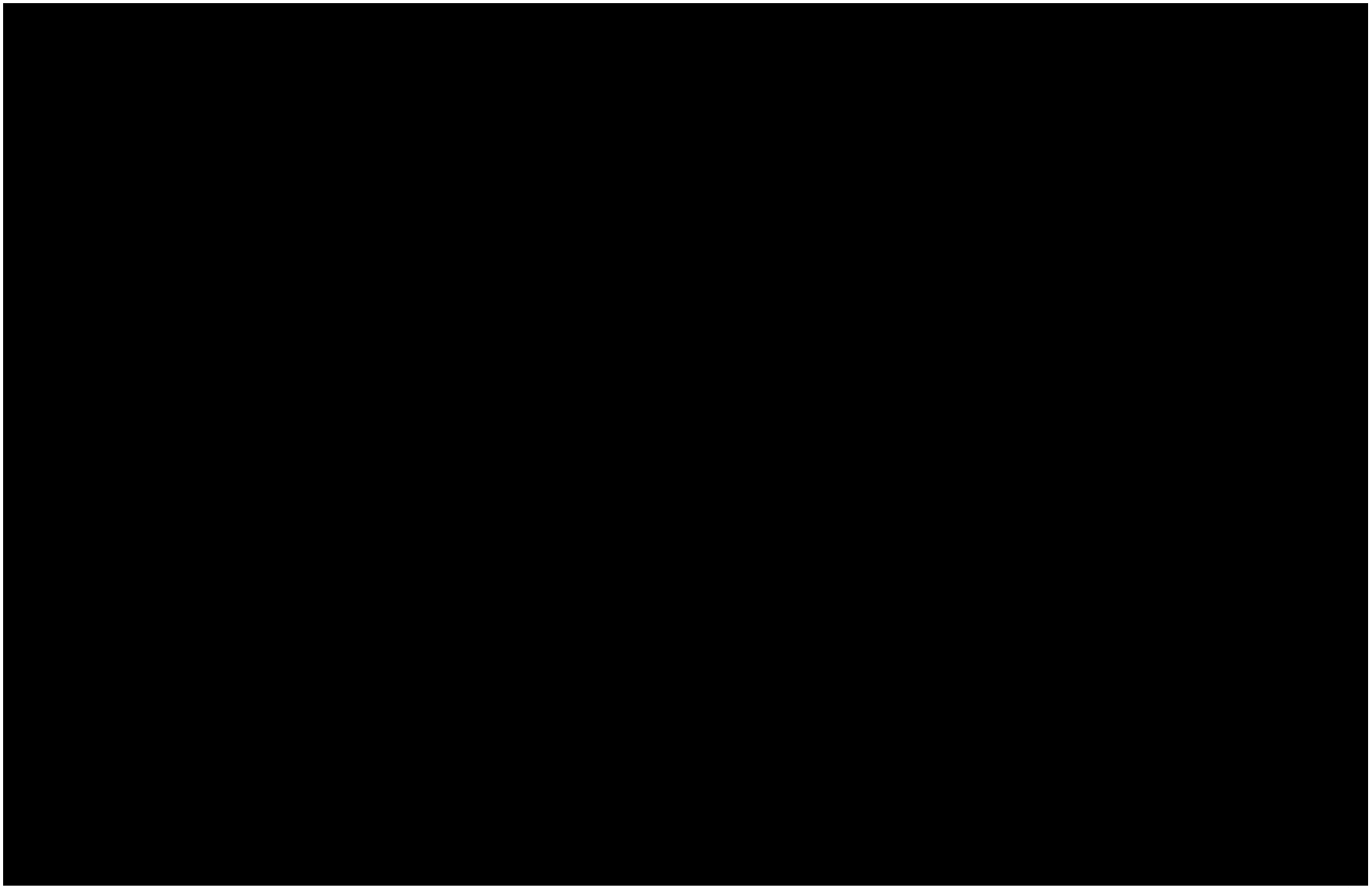
Estimate

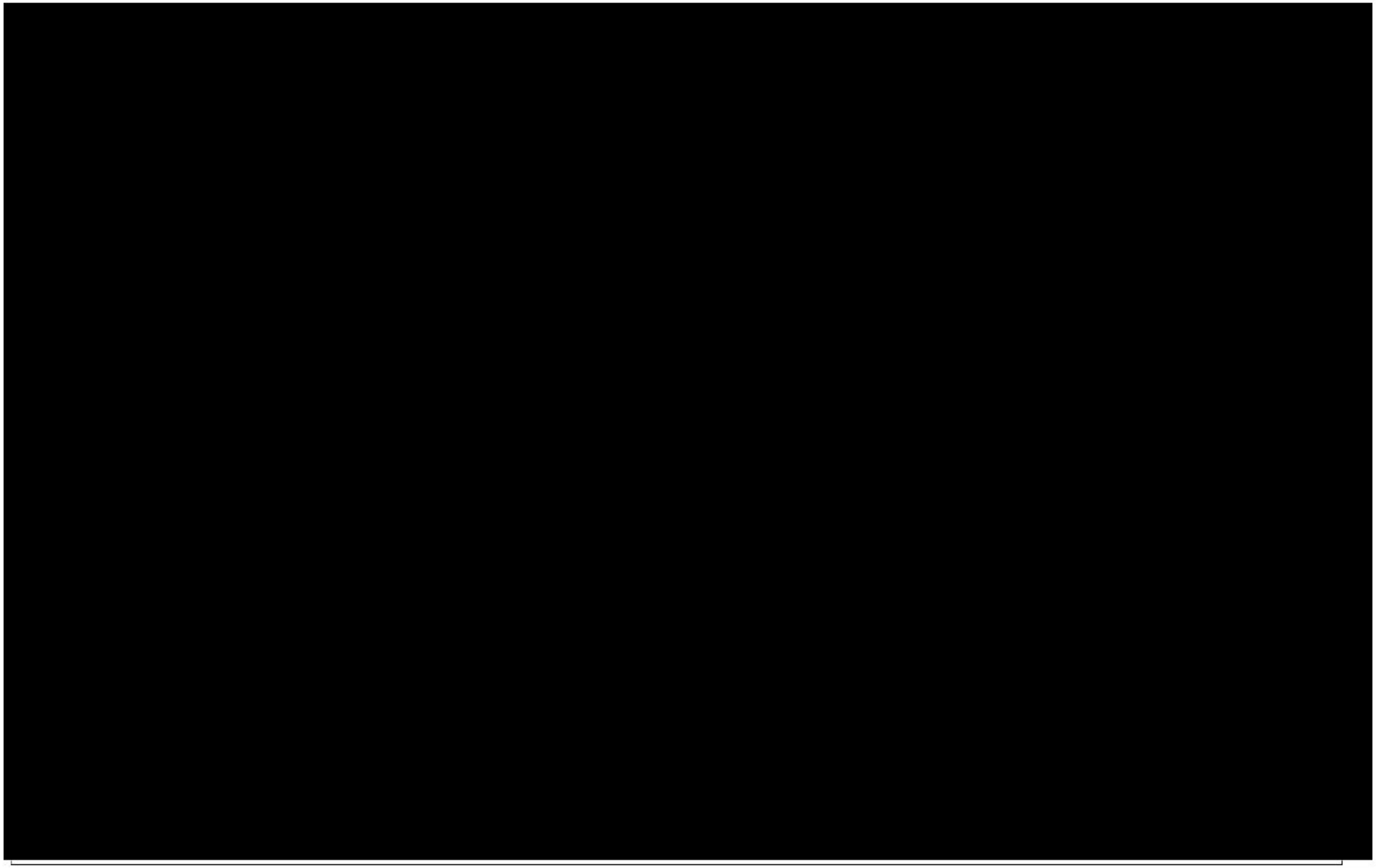
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$81,527
Contingency Amount:	$19,566
Estimate:	$101,093
Reimbursement:	$0
Net Amount:	**$101,093**

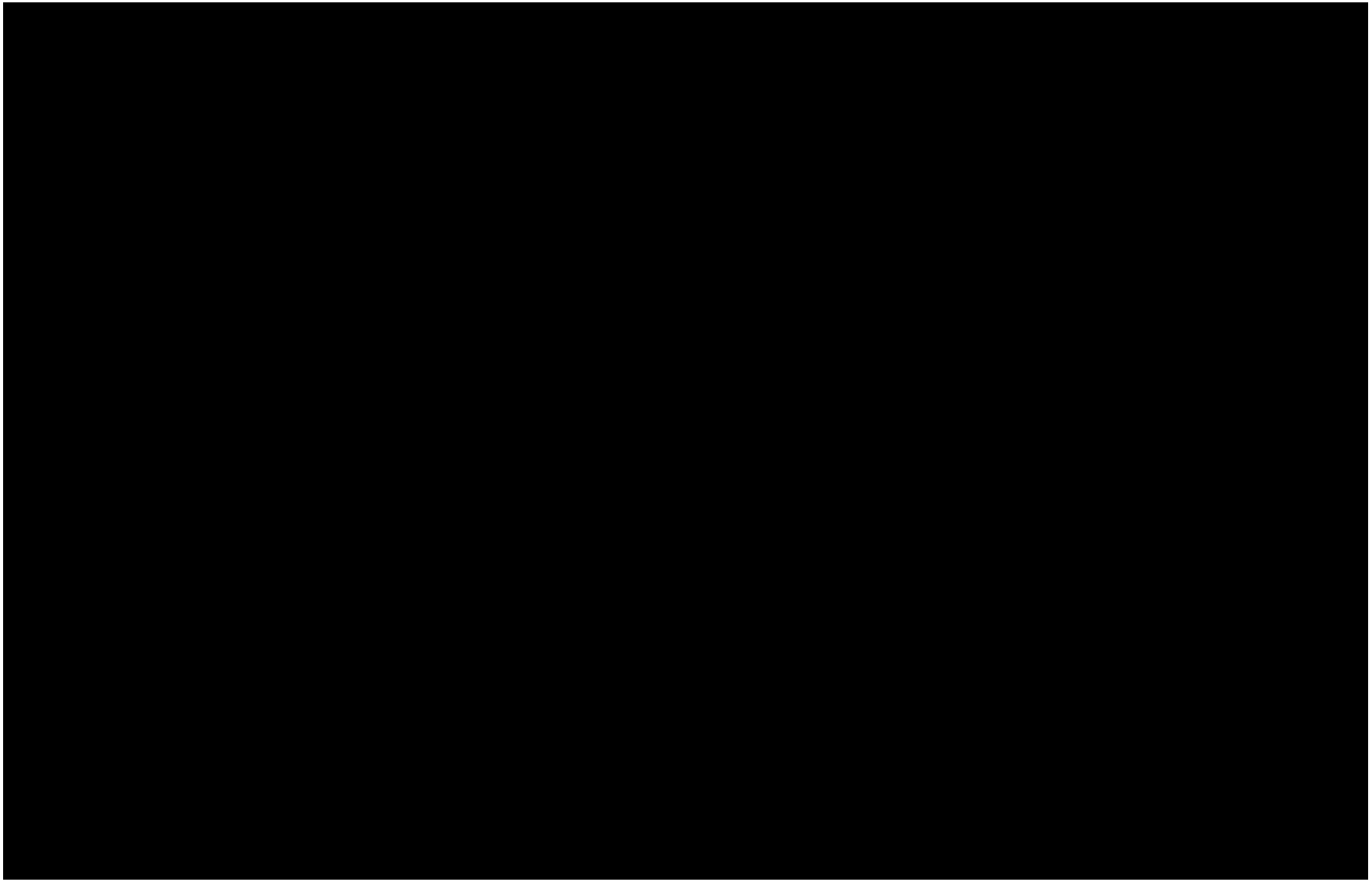
Description: Refurbish [redacted]

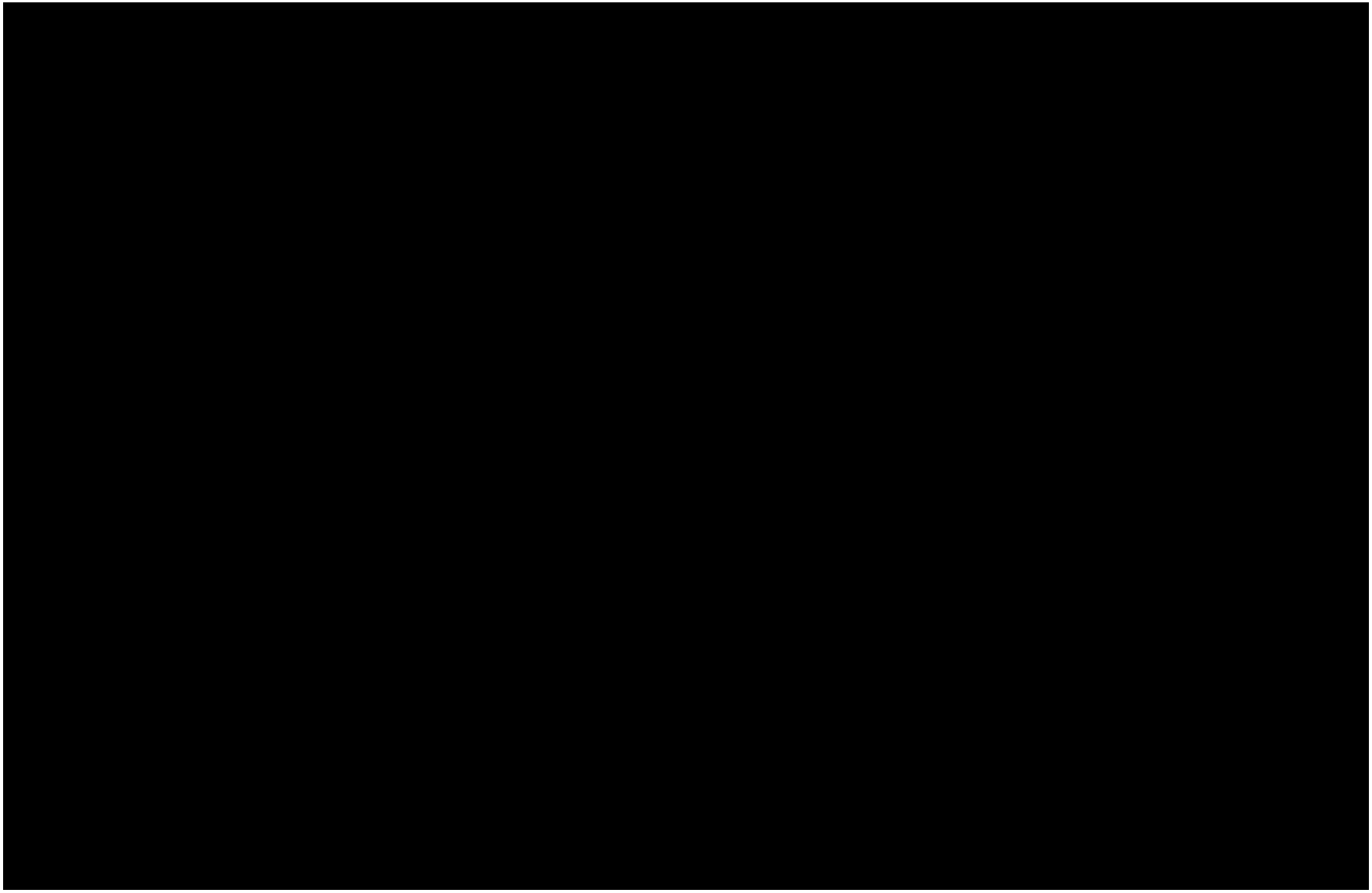
Item Description	CU		Amount
SWITCHING OH/DB/UG - SWITCHING Network	23-ALL15	[redacted]	$36,526.88
OTHER OTHER Micro AT, based recent Maximo actual	16-ALL14		$25,000.00
OTHER OTHER Substation Ops estimate for new Barrier Boards	23-ALL14		$10,000.00
OTHER OTHER Switchgear dividers, based on Ops Estimate	16-ALL14		$10,000.00

Attachment B: Sketch and Geographic Maps











EVERSOURCE

Supplement Authorization Form



Project Title: [redacted] **Legislative Office Building Switchgear Replacement**	**Project Number: CD02259**
Date Prepared: 05/19/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UG CABLE & EQUIPMNT REPLACEMNT
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: 12/31/2024	
Total Capital Request: $288.3K	**Authorization Type: Partial Funding**

17. Executive Summary

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- Project Location
  - Division: Central
  - District: Hartford AWC
  - City: Hartford

18. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Year 2024	Total
Direct Capital Costs		
Internal Labor and Construction Equipment	14.9	14.9
Outside Services	70.7	70.7
Materials	67.1	67.1
Removals	48.5	48.5
Other	1.3	1.3
Risk and Contingency	0.0	0.0
Subtotal – Direct Costs	**202.4**	**202.4**
Indirect Capital Costs		
Indirect/Overheads (including benefits)	76.9	76.9
Capitalized interest or AFUDC, if any	8.9	8.9
Subtotal – Indirect Costs	**85.8**	**85.8**
Total Gross Capital Costs	**288.3**	**288.3**
Customer Contribution	**0.0**	**0.0**
Total Net Capital Project Costs	**288.3**	**288.3**

19. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

- [redacted]

b. Project Need

- [redacted]

c. Project Scope

- [redacted]

- Major Material
  - Two S&C PME-5 Switchgear (603876)
  - Two concrete pad tops (604545)
  - Two concrete pad bottoms (604531)

20. Alternatives Considered

Project Option Comparison

	Option [redacted]	
Authorization Type	Partial	Partial
Capital Cost	$288.3K	$98K
Expense Cost	$9K	$3K
Total Cost	$297.3K	$101K
Preferred option	X	

Option 1 was chosen to [redacted]

21. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	Sep 2023
100% Detailed Engineering Completion	Jan 2024
Fully Funded	Feb 2024
Construction Start	Dec 2024

Milestone/Phase Name	Estimated Date
In Service Date	12/31/2024

22. Regulatory Decisions

23. Codes and Standards

24. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2024	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
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25. References

References
1. IEEE STD 493-2007

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES / NO / N/A*
B. Geographic Map	*YES / NO / N/A*
C. Existing Switchgear photos	*YES / NO / N/A*

Attachment A. Cost estimate

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02259 [redacted]

Work Classification

Category: Line
Type: REL1
Type Desc: UG CABLE & EQUIPMNT REPLACEMNT
Work Type:

Ownership / Management

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

Project Information

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

Budget Summary - Preferred Option

Replace [redacted]

2024

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	[redacted]	Draft	0	24%	$297,319	$297,319
				2024 Total:	$297,319	$297,319
				Total Project:	$297,319	$297,319

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Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$239,774
Contingency Amount:	$57,546
Estimate:	$297,319
Reimbursement:	$0
Net Amount:	**$297,319**

Description: Replace [redacted] Switchgear with PME

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING Network	23-ALL15	$36,526.88
SWITCHGEAR DB/UG - Switchgear up to 25kV - Auto Type 5 (pair)	23-UG125	$182,104.00
ENCLOSURE DB/UG - Transformer Pad/Handhole	23-UG143	$16,142.88
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Supplement Authorization Form

Design Alternative CD02259-02

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OTHER OTHER Substation Ops estimate for new Barrier Boards	23-ALL14		$10,000.00
OTHER OTHER Switchgear dividers, based on Ops Estimate	16-ALL14		$10,000.00

Attachment B. Geographic Map

