EVERSOURCE

Project Approval Form

Project Title: [redacted]	**Project Number: CD02067**
Date Prepared: 08/17/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** Lines - Sectionalizing
Project Initiator: [redacted]	**Project Type:** Program Release
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** No
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: 6/31/2023	
Total Capital Request: $130.6k	**Authorization Type:** Full Funding

1. Executive Summary

[redacted] The total cost for the suggested work is $74k.

This project was detail designed September 2022 and was built and in service June 2023. The project cost came to $130,560 which was 177% of the initial capital expenditure amount of $73,577. The $ over-expenditure is attributed to the following:

- + $59,081 **Materials**
  The ACT anticipated cost equates to $85,981. This is $59,081 less than the initial project cost estimate of $26.900. The difference in cost within this segment is due to the addition of 1 recloser which was not planned for in the initial AIMS estimate. The project initially called for a settings change on the [redacted] recloser but, due to the existing recloser having hydraulic controls, a

settings change was not able to be performed. Line crews instead chose to replace the recloser with a new electronic recloser, justifying the material variance.

Cost Breakdown:

$73,577

+ $59,081

$132,658

Project Location:

Division: Western
District: Torrington
Town: Norfolk

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2023	Total
Direct Capital Costs		
Internal Labor and Construction Equipment	11.5	11.5
Outside Services	1.9	1.9
Materials	86.0	86.0
Removals	3.0	3.0
Risk and Contingency	0.0	0.0
Other	0.0	0.0
Subtotal – Direct Costs	102.4	102.4
Indirect Capital Costs	2023	Total
Indirect/Overheads (including benefits)	26.6	26.6
Capitalized interest or AFUDC, if any	1.6	1.6
Subtotal – Indirect Costs	28.2	28.2
Total Gross Capital Costs	130.6	130.6
Customer Contribution	0.0	0.0

Total Net Capital Project Costs	130.6	130.6

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

The Smart Switch Program is a continuation of an initiative that was approved as part of the System Resiliency PURA Docket 12-07-06RE01 which is a multiyear program to improve circuit reliability by adding automatic sectionalizing devices on overhead distribution circuits. The Smart Switch Program focuses on breaking up customer zones and lowering the average number of customers impacted by a backbone interruption.

Projects must be created to reduce the number of customers impacted in that zone to 500 or less.

When creating projects for the highest ranked zones, also reduce the number of customers impacted to 500 or less for any other backbone zone on the same circuit if it is ranked in the top 100 devices

b. Project Need

[redacted]

[redacted]

c. Project Scope

[redacted]

[redacted]

Major Material:

- 1 3-PH SCADA Recloser w/ Midpoint Settings
- 1 Smart Switch Control Settings

4. Alternatives Considered

Project Option Comparison

	Option	
[redacted]		
Estimate Type:	Partial	Full
Capital Cost	$80.5k	$130.6k
Expense Cost	$3.5k	$33.4k
Cost	$84k	$164k
Cost / CM Saved	$0.27	$0.52
Cost / CMI Saved	$1,716	$3,347
Preferred option		X

5. Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	8/15/2022
Detailed Design	9/1/2022
Settings Requested	12/31/2022
Construction Start	1/1/2023
Construction End	12/31/2023

6. Risk and Contingencies

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	High/Medium/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	High/Medium/Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2023	High/Medium/Low	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	High/Medium/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/Medium/Low	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	High/Medium/Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2023	High/Medium/Low	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	High/Medium/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	High/Medium/Low	Use of mats and specialty equipment, only work during certain times of the year.

7. References

References
1. [redacted] Significant Event: [redacted] - Significant Incident Event 4-14-22

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

Attachment	Included in Submittal?
A. Need Statement:	*YES*
B. Project Oneline:	*YES*
C. Geographic Map:	*YES*
D. Load Sheet:	*YES*

A. Need Statement

AIMS estimate:

Budget Summary - Preferred Option — Install MR and Viper Switch - 2 Devices

2023

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	Install MR & Smart Switch Settings	Draft	0	24%	$75,509	$75,509
				2023 Total:	**$75,509**	**$75,509**
				Total Project:	**$75,509**	**$75,509**

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	Install Viper Switch - 1 Device	1	$65,099	$0	100%	$131.26	$0.21	☐
O2	Install MR and Viper Switch - 2 Devices	2	$75,509	$0	100%	$152.25	$0.24	☑

Design Alternative — CD02067-01

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$52,499
Contingency Amount:	$12,600
Estimate:	$65,099
Reimbursement:	$0
Net Amount:	**$65,099**

Description:

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$3,509.60
SECTIONALIZE OH - Recloser - 3ph Install New Viper Switch on P# 135.	16-OH38		$47,989.60
TRAFFIC OH/DB/UG - Traffic Control - Police Officer Police officer, $1000/Day, 1 Day	16-ALL18		$1,000.00

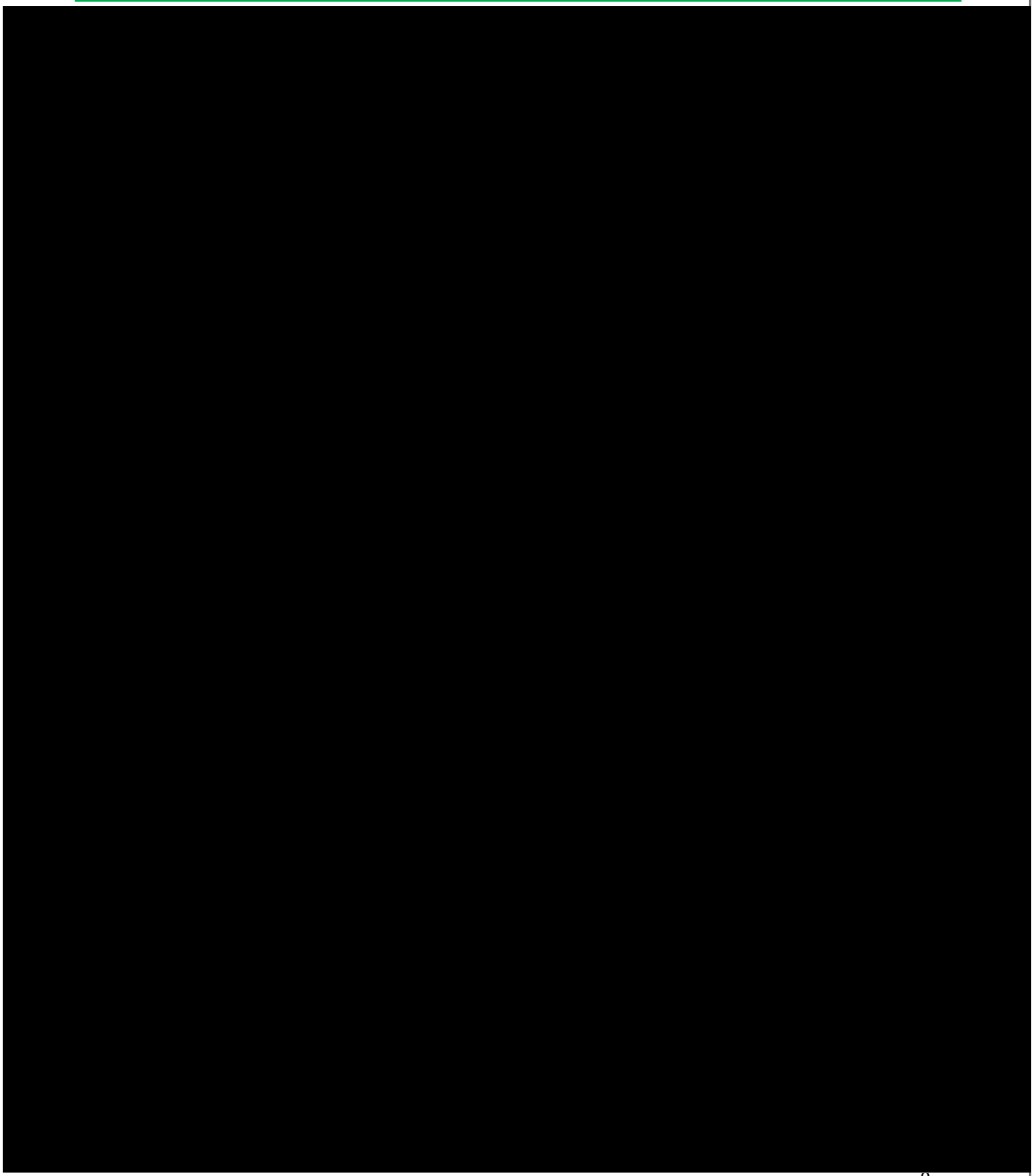
Design Alternative CD02067-02

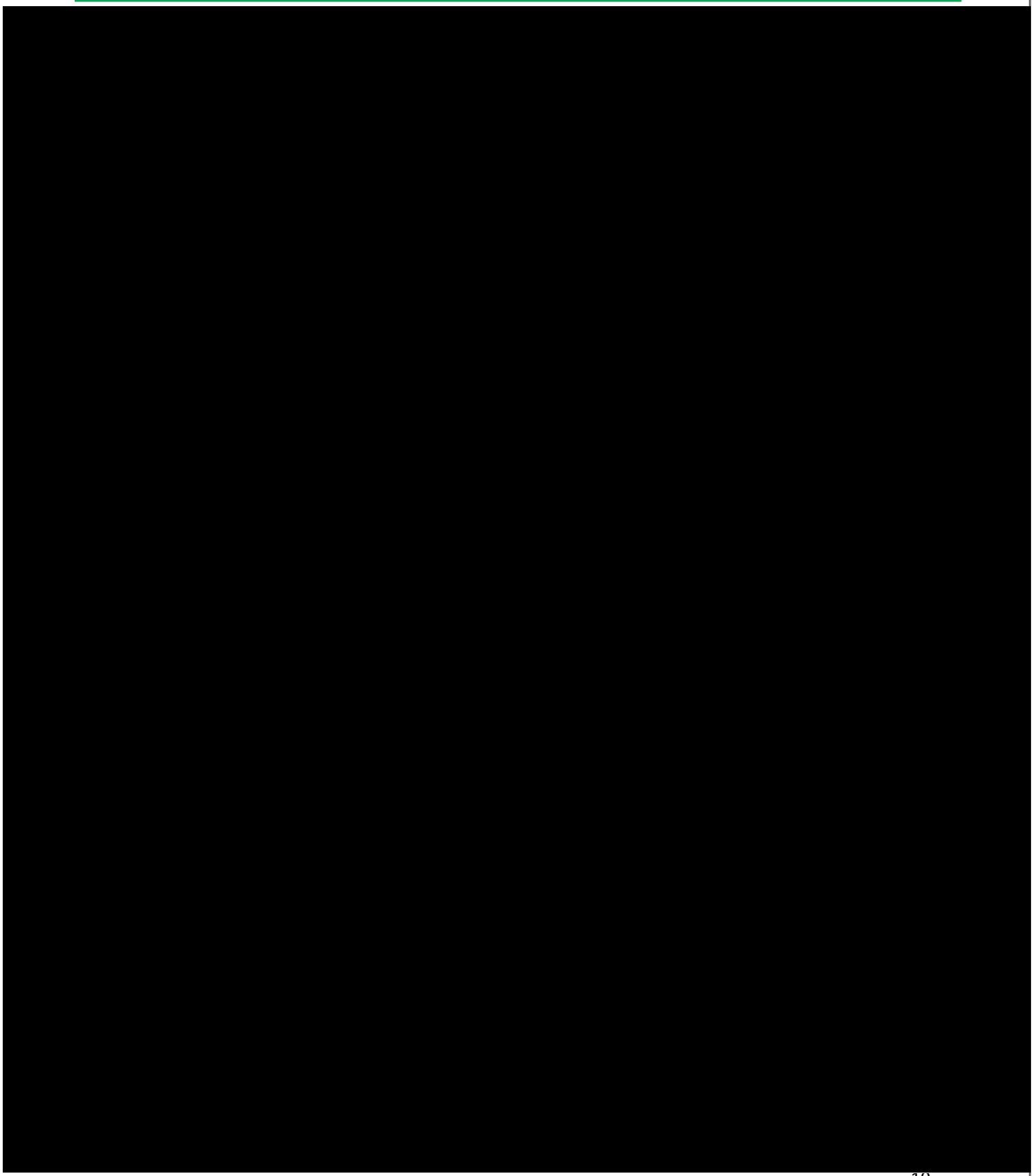
Estimate

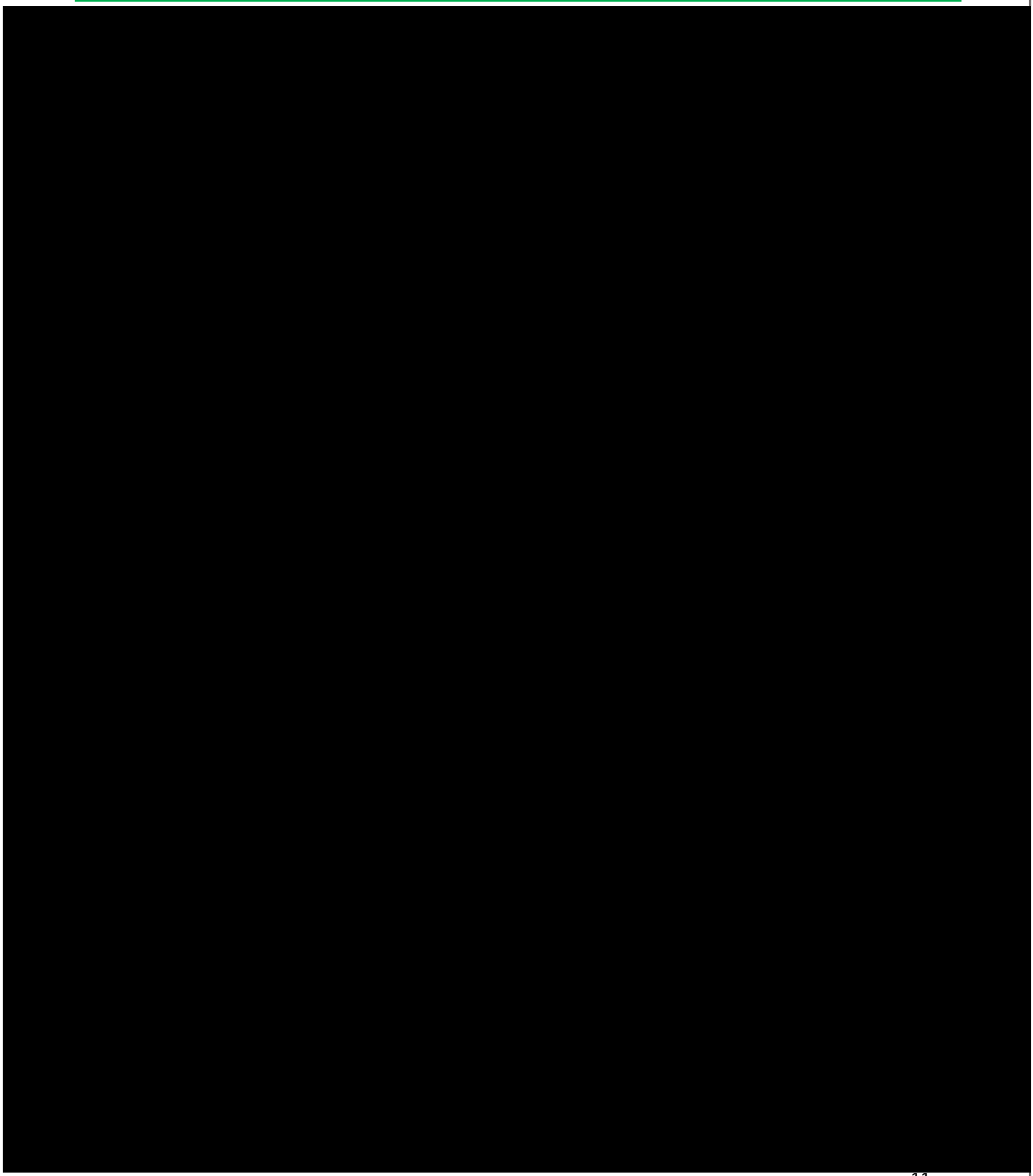
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$60,894
Contingency Amount:	$14,615
Estimate:	$75,509
Reimbursement:	$0
Net Amount:	**$75,509**
Description:	

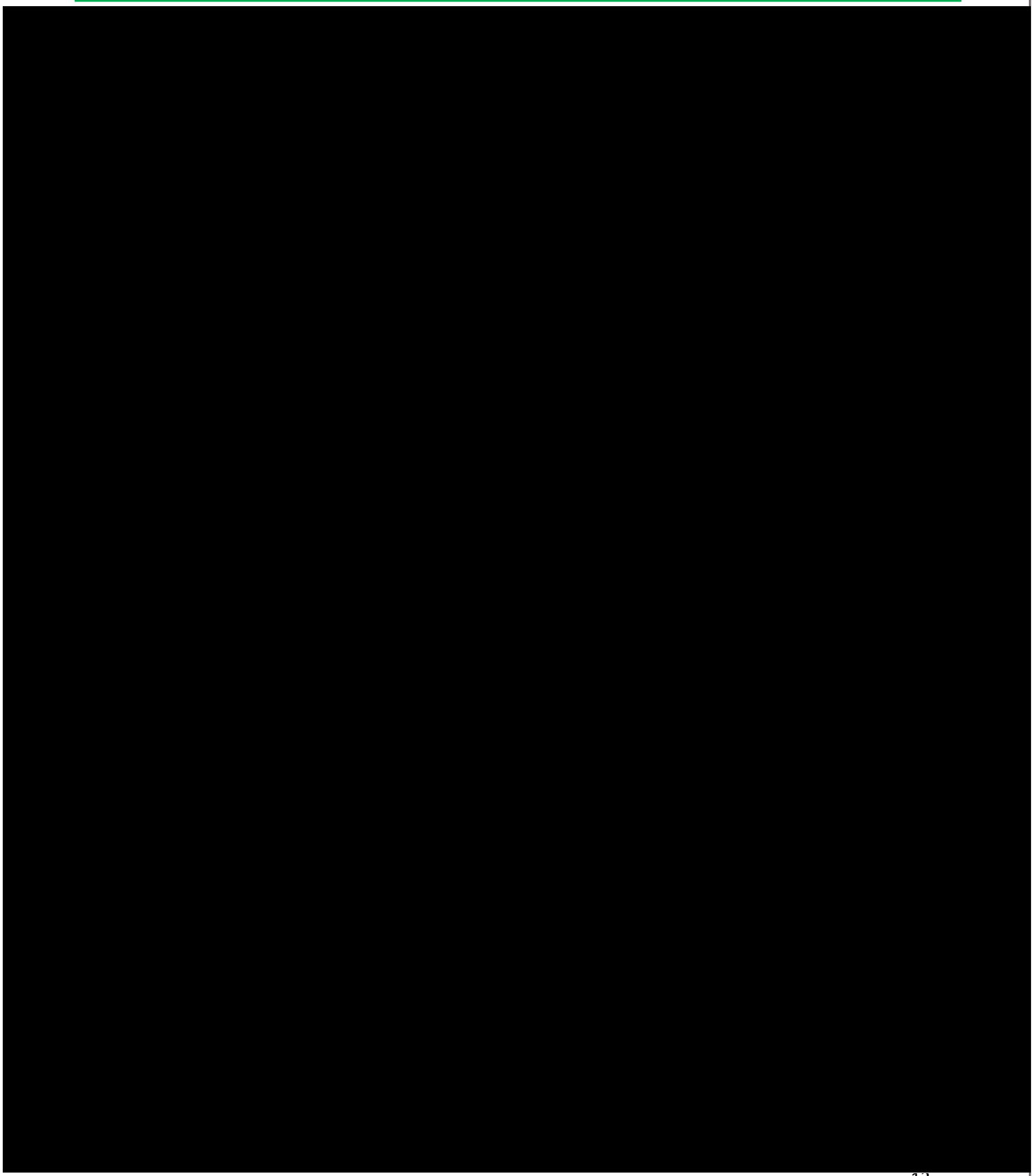
Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$7,019.20
SECTIONALIZE OH - Recloser - 3ph Install Midpoint Recloser at P# 135	16-OH38		$47,989.60
SECTIONALIZE OH - Recloser Control - setting changes only Install smart switch settings in [redacted]	16-OH39A		$4,885.60
TRAFFIC OH/DB/UG - Traffic Control - Police Officer Police officer, $1000/Day, 1 Day	16-ALL18		$1,000.00

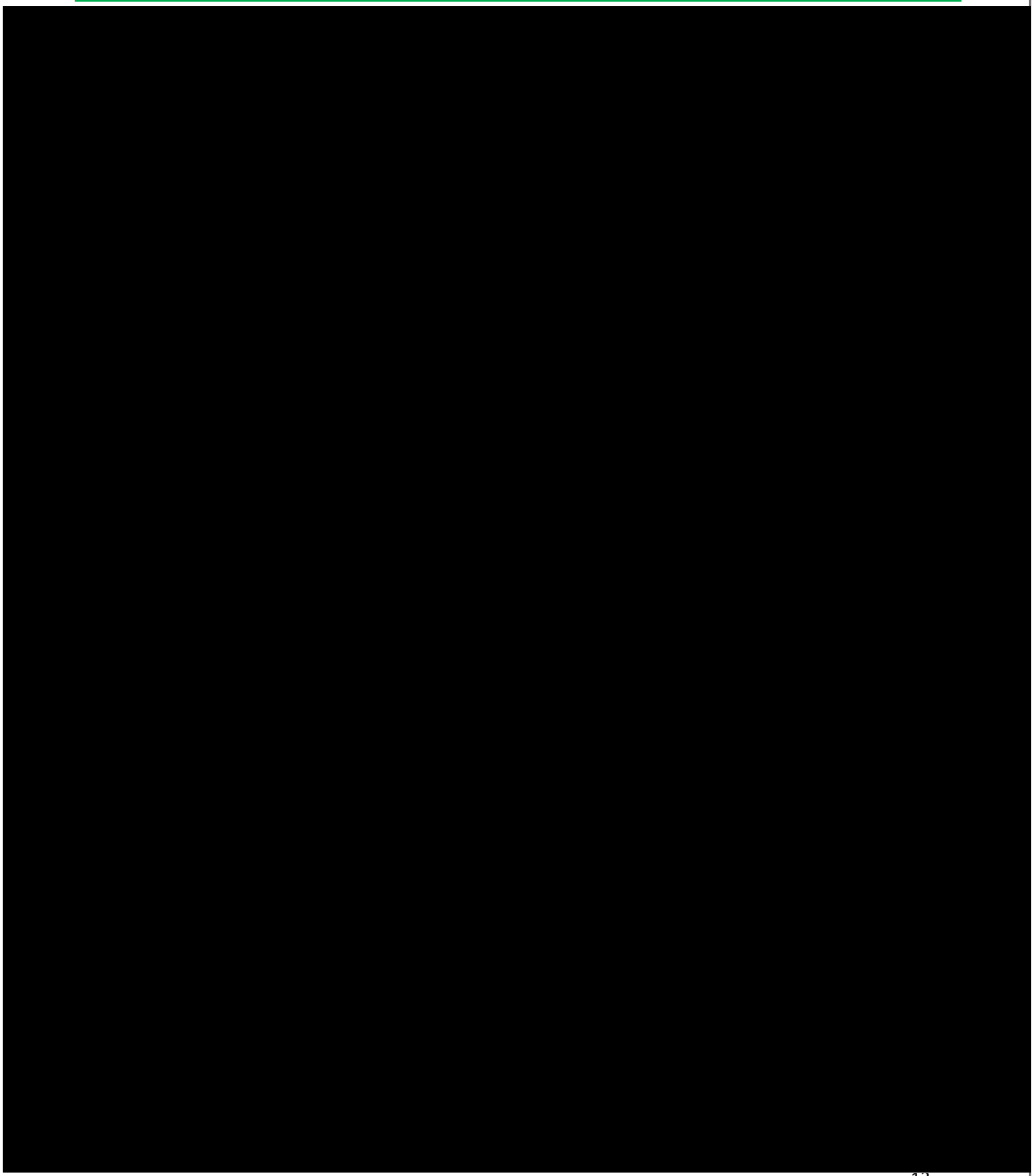
B. One Lines:











Operations Project Authorization Form

Project Title: [redacted]	**Project Number: CD02067**
Date Prepared: 07/27/2022	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** SMART SWITCHES PROGRAM
Project Manager: [redacted]	**Project Type:** Program
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 12/31/23	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $73,594	**Authorization Type:** Initial Funding

Executive Summary

[redacted]

[redacted] The total cost for the suggested work is $74k.

Project Costs Summary

Note: Dollar values are in thousands

Capital Costs	2023	2024	2025	Total
Internal Labor and Construction Equipment	$8.376	$0.000	$0.000	$8.376
Outside Services	$8.134	$0.000	$0.000	$8.134
Materials	$18.644	$0.000	$0.000	$18.644
Removals	$1.366	$0.000	$0.000	$1.366
Risk and Contingency	$4.313	$0.000	$0.000	$4.313
Other	$0.000	$0.000	$0.000	$0.000
Subtotal	$40.832	$0.000	$0.000	$40.832
Indirect Capital Costs	**2023**	**2024**	**2025**	**Total**
Indirects/Overheads (including benefits)	$31.904	$0.000	$0.000	$31.904
Capitalized interest or AFUDC, if any	$0.857	$0.000	$0.000	$0.857
Subtotal	$32.761	$0.000	$0.000	$32.761
Total Capital Costs (Gross)	**$73.594**	**$0.000**	**$0.000**	**$73.594**

Technical Justification:

Project Need, Objective and Justification:

[redacted]

Indicated below is a list of applicable outages over the last four years:

[redacted]

Project Scope:

[redacted]

Major Material:

- 1 3-PH SCADA Recloser w/ Midpoint Settings
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Background:

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Business Process and / or Technical Improvements:

Projects within the Smart Switch Program will increase the number of SCADA controlled devices on the system. This upgrade allows for better system visibility, faster restoration, outage isolation and reconfiguration of the system during planned and unplanned switching events. Customer zones are reduced to under 500, where possible (ref. DSEM 02.301)

Alternatives Considered:

Were alternative solutions considered/applicable? Include any cost/benefit analysis.

Alternatives were considered (please describe below)

Option 1:

[redacted]

[redacted]

Project Option Comparison

	Option	
[redacted]		
Cost	$64k	$74k
Cost / CM Saved	$0.21/CM	$0.24/CM
Preferred option		X

Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	8/15/2022
Detailed Design	9/1/2022
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Risks and Risk Mitigation Plans

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References:

Top Event:

[redacted] - Significant Incident Event 4-14-22