EVERSOURCE

# Supplement Authorization Form

| | |
|---|---|
| **Project Title:** [redacted] | **Project Number: CD02172** |
| **Date Prepared:** 07/24/2025 | **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:** $3,377.1K | **Approved In-Service Date:** 6/1/2024 |
| **Supplement Request:** $1,028K | **Estimated In-Service Date:** 12/31/2025 |
| **Total Capital Request:** $4,405.1K | **Authorization Type:** Supplement Request |
| | **Reason: :** Cost Overage |

## 1. Project Background

[redacted]

- September 28, 2023, the project Partial Funding was approved for $3,241K.
- February 1, 2024, the project Full Funding was approved for $3,377K.
- This supplement is for an additional S1,028K for a total of $4,405.1K.

## 2. Supplement Justification Overview

**The four major justifications are the addition of three reclosers, material inflation, labor, and contractor costs.**

# 3. Supplement Justification Detail

One change in scope was not shown in the Partial and Full PAFs that occurred in August of 2023 was installation of one open-wire primary and aerial cable verses installing two three over three OH primary construction, which management approved in August of 2023. The reason was "The cost to build [redacted] The estimated costs were a wash so the total estimated costs were not changed.

The other change in scopes were adding the three recloser listed below $166,971.8.

- [redacted]
  - [redacted]
- [redacted]
  - [redacted]
  - [redacted]
- [redacted]
  - [redacted]

Material inflation resulted in a 44% increase for a cost of $310,166.83 above design estimate. (I did add $100,000 for inflation in original ACT request)

Labor costs were $350,763.37 above design estimate.

An additional $239,072.41 for contractor costs.

The additional contractor and labor costs were a result of the following:

- Very large amount of McVac charges for pole excavation due to mis-marked gas lines and proximity of other buried utilities (not budgeted).
- No travel time in Maximo estimates and most of the travel was 2024 pole sets, which was completed by Eastern Projects. These crews were from Danielson and Madison work centers. Significant unbudgeted travel time costs for the 2024 work.

# 4. Supplement Cost Summary (Project Total)

| Line-item Category | To Date Spend Year(s) | Prior Authorized Year(s) | Variance (Supplemental Request) Year(s) | New Total Request (Add Prior Authorized and Variance) Year(s) |
|---|---|---|---|---|
| Internal Labor and Construction Equipment | 439.4 | 195.2 | 375.0 | 570.2 |
| Outside Services | 381.7 | 929.3 | -538.5 | 390.8 |
| Materials | 843.2 | 614.4 | 289.6 | 904.0 |
| Removals | 106.1 | 123.8 | -5.1 | 118.7 |
| Risk and Contingency | 0.0 | 235.6 | -235.6 | 0.0 |
| Other | 27.1 | 0.0 | 27.1 | 27.1 |
| **SUBTOTAL DIRECTS W/ RISKS** | **1,797.5** | **2,098.4** | **-87.7** | **2,010.7** |
| Indirect / Overhead (including benefits) | 1,902.3 | 1,278.7 | 1,017.7 | 2,296.4 |
| AFUDC | 98.0 | 0.0 | 98.0 | 98.0 |
| **Subtotal – Indirect Costs** | **2,000.3** | **1,278.7** | **1,115.7** | **2,394.4** |
| **TOTAL CAPITAL REQUEST** | **3,797.7** | **3,377.1** | **1,028.0** | **4,405.1** |
| Reimbursables/Customer Contribution | $ | $ | $ | $ |
| **PROJECT TOTAL (LESS REIMBURSABLES)** | **3,797.7** | **3,377.1** | **1,028.0** | **4,405.1** |

# 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 2023 | Year 2024 | Year 2025 | Total |
|---|---|---|---|---|
| Internal Labor and Construction Equipment | 0.0 | 142.3 | 427.8 | 570.2 |
| Outside Services | 0.6 | 133.0 | 257.2 | 390.8 |
| Materials | 0.0 | 667.3 | 236.8 | 904.0 |
| Removals | 0.0 | 59.8 | 58.8 | 118.7 |
| Risk and Contingency | 0.0 | 0.0 | 0.0 | 0.0 |
| Other | 0.0 | 11.0 | 16.0 | 27.1 |
| **SUBTOTAL DIRECTS W/ RISKS** | **0.7** | **1,013.4** | **996.6** | **2,010.7** |
| Indirect / Overhead (including benefits) | 0.4 | 638.2 | 1,657.8 | 2,296.4 |
| AFUDC | 0.0 | 31.0 | 67.0 | 98.0 |
| **Subtotal – Indirect Costs** | **0.5** | **669.1** | **1,724.8** | **2,394.4** |
| **TOTAL CAPITAL REQUEST** | **1.2** | **1,682.6** | **2,721.4** | **4,405.1** |
| Reimbursables/Customer Contribution | | | | |
| **PROJECT TOTAL (LESS REIMBURSABLES)** | **1.2** | **1,682.6** | **2,721.4** | **4,405.1** |

## a. Updated Project Scope in Bold

[redacted]

[redacted]

**Major Material:**

- **1,225** feet of 1,000 kcmil Cu EPR cable.
- **6,640** 750 kcmil Al aerial cable.
- **7,800** feet of 556 kcmil tree wire.
- **1,410** feet of 500 kcmil EPR cable.
- **Five** reclosers.

# 5. Lessons Learned

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Supplement Authorization Form

| | |
|---|---|
| **Project Title:** [redacted] | **Project Number: CD02172** |
| **Date Prepared:** 12/15/2023 | **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:** 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:** 6/1/2024 | |
| **Total Capital Request:** $3,377.1K | **Authorization Type:** Full Funding |

# 1. Executive Summary

[redacted]

[redacted]

Full Funding

On September 28, 2023, the project's Partial Funding was approved for $3,242K. The Full Funding amount is $3,377.1K. The difference is $135.1K, which is 4% over the Partial Funding approved amount.

[redacted]

An additional $100K was added to account for increased material costs.

## 2. Project Cost Summary

Note: Dollar values are in thousands.

| Capital Costs | 2024 | Year 2 | Year 3+ | Total |
|---|---|---|---|---|
| Internal Labor and Construction Equipment | 195.2 | 0.0 | 0.0 | 195.2 |
| Outside Services | 929.3 | 0.0 | 0.0 | 929.3 |
| Materials | 614.4 | 0.0 | 0.0 | 614.4 |
| Removals | 123.8 | 0.0 | 0.0 | 123.8 |
| Risk and Contingency | 235.6 | 0.0 | 0.0 | 235.6 |
| Other | 0.0 | 0.0 | 0.0 | 0.0 |
| **Subtotal** | **2,098.4** | **0.0** | **0.0** | **2,098.4** |

| Indirect Capital Costs | 2024 | Year 2 | Year 3+ | Total |
|---|---|---|---|---|
| Indirect/Overheads (including benefits) | 1,278.7 | 0.0 | 0.0 | 1,278.7 |
| Capitalized interest or AFUDC, if any | 0.0 | 0.0 | 0.0 | 0.0 |
| **Subtotal** | **1,278.7** | **0.0** | **0.0** | **1,278.7** |
| | | | | |
| **Total Capital Costs (Gross)** | **3,377.1** | **0.0** | **0.0** | **3,377.1** |
| | | | | |
| Less Total Customer Contribution | **0.0** | **0.0** | **0.0** | **0.0** |
| | | | | |
| **Project Costs (Net of Reimbursement)** | **3,377.1** | **0.0** | **0.0** | **3,377.1** |

Explain unique payment provisions, if applicable:

# 3. Technical Justification

## Background, Project Need/Justification, and Project Scope

### a. Background

[redacted]

[redacted]

## b. Project Need

[redacted]



Refer to Distribution Capital Project Approval Process
JA-AM-2001-B, Rev.3
Refer to Distribution Capital Project Supplement Process
JA-AM-2001-C, Rev.0

[redacted]

## c. Project Scope

[redacted]

[redacted]

**Major Material:**

- 950 feet of 1,000 kcmil Cu EPR cable.
- 2,650 750 kcmil Al aerial cable.
- 21,000 feet of 556 kcmil tree wire.
- 1,616 feet of 500 kcmil EPR cable.
- Two reclosers.

# 4. Alternatives Considered

[redacted]

[redacted]

| Authorization Type | Partial | Partial | Partial | Full |
|---|---|---|---|---|
| Capital Cost | $0.88M | $0.41M | $0.76M | $3.38M |
| Expense Cost | $0.02M | $0.02 | $0.03 | $0.12M |
| Total Cost | $0.90M | $0.43M | $0.79M | $3.5M |
| Cost / MVA added | $/MVA | $/MVA | $/MVA | $0.66M/MVA |
| Preferred option | | | | X |

**Preferred Option.**

[redacted]

**Option One ($0.9M.)**

This option [redacted]

**Option Two ($0.43M.)**

This option [redacted]

**Option Three ($0.79M.)**

This option [redacted]

## 5. Project Schedule

Add any additional milestones that are pertinent to the project.

| Milestone/Phase Name | Estimated Date |
|---|---|
| Partial Approval | 4/6/2023 |

| Milestone/Phase Name | Estimated Date |
|---|---|
| 100% Detailed Engineering Completion | 10/1/2023 |
| Fully Funded | 12/15/2023 |
| Construction Start | 1/1/2024 |
| In Service Date | 6/1/2024 |

## 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. | 2024 | 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 | 2024 | Medium | 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 | Medium | Pre-order long lead time material; minimize the use of non-standard and non-stocked material. |
| Storm delays | 2024 | Medium | If storm activity delays work, we may be forced to use external resources. |
| System abnormal configuration | 2024 | 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 | 2024 | Medium | 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 | 2024 | Medium | Use of mats and specialty equipment, only work during certain times of the year. |

## 9. References

| References |
|---|
| 1. |
| 2. |

| |
|---|
| 3. |
| 4. |
| 5. |

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

| Attachment | Included in Submittal? |
|---|---|
| A. Cost Estimate | *YES* |
| B. P6 Schedule | *NO* |
| C. Geographic Map | *YES* |
| D. System and Station One-Lines | *YES* |
| E. Load Sheets. | *YES* |
| F. Partial PAF | *YES* |

## A. Cost Estimate.

**Budget Summary - Preferred Option** Extend 1C03 with aerial cable

**2024**

| ID | Title | Status | Rev # | Contingency | Expenditure Amount | Net Estimate |
|---|---|---|---|---|---|---|
| 7 | New UG Structures at Middle St and ROW Circuits | Prelim | 0 | 24% | $621,051 | $621,051 |
| 8 | Install aerial cable on Middle Street | Prelim | 0 | 24% | $2,721,902 | $2,721,902 |
| | | | | **2024 Total:** | **$3,342,952** | **$3,342,952** |
| | | | | **Total Project:** | **$3,342,952** | **$3,342,952** |

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# Supplement Authorization Form

Segment

CD02172-07

## General Information

Segment: 7 - UG Middle St and ROW Circuits
Status: Prelim Design Approved
Segment Type: LOAD/CAPACITY
Town: FARMINGTON
Budget Year: 2024
Work Type: BB-Reconductoring
Trimming Required: ☐
In Service Date: 12/31/2024
Description: [redacted]

## Itemized Work List

Major Minor

| ID | |
|---|---|
| 1 | [redacted] |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |

## Estimate

Preliminary Estimate Summary

| | |
|---|---|
| Revision Number: | 0 |
| Contingency: | 24.00% |
| SubTotal: | $500,847 |
| Contingency Amount: | $120,203 |
| Estimate: | $621,051 |
| Reimbursement: | $0 |
| Net Amount: | **$621,051** |

Description:

| Item Description | CU | | Amount |
|---|---|---|---|
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 23-ALL18 | [redacted] | $65,000.00 |
| OH WIRE<br>OH - Remove circuit wire (3 phase) | 23-OH37A | | $1,456.00 |
| SECTIONALIZE<br>OH-Vertical Disconnect Switches-600/900 amp 3-1ph | 23-OH43 | | $80,208.96 |
| UG CABLE<br>DB/UG - 750/1000 - 3-1/C (3ph) Cu | 23-UG114B | | $116,064.00 |
| CONDUIT<br>UG-Ductline-up to 12 duct - Traveled Way / Paved | 23-UG137 | | $20,332.00 |
| CONDUIT<br>UG-Ductline-up to 12 duct-Non- Traveled/Non-Paved | 23-UG138 | | $85,904.00 |
| ENCLOSURE<br>UG - MANHOLE - Precast | 23-UG139 | | $81,882.32 |
| ACT<br>ACT Estimate for Contractor Crews<br>Excavating Contractor Add. Cost | 23-ALL12 | | $50,000.00 |

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# Supplement Authorization Form

Design Alternative

CD02172-08

## General Information

| | | | | | |
|---|---|---|---|---|---|
| Segment: | 8 - Install aerial cable on Middle St | | | Status: | Prelim Design Submitted |
| Segment Type: | LOAD/CAPACITY | Town: | FARMINGTON | Budget Year: | 2024 |
| Work Type: | Other | Trimming Required: | ☐ | In Service Date: | 12/31/2024 |
| Description: | Same as Alternate 6 accept install aerial cable on Middle St. | | | | |

## Itemized Work List

| ID | Major Grid | Minor Grid | Description of Work to be Performed |
|---|---|---|---|
| 1 | H06-2 | L4 | Install 2,300 feet on Middle Street |

## Estimate

Preliminary Estimate Summary

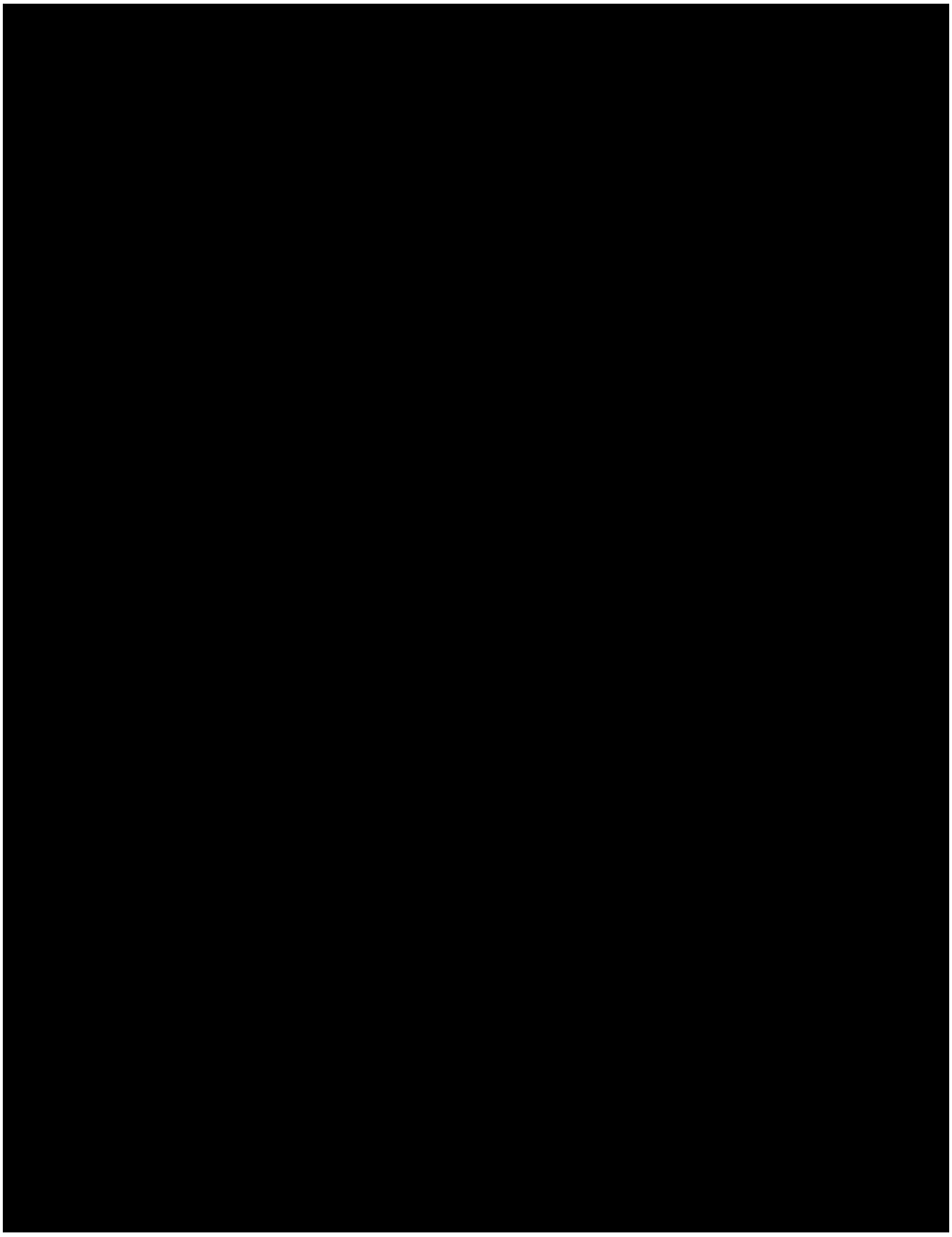
| | |
|---|---|
| Revision Number: | 0 |
| Contingency: | 24.00% |
| SubTotal: | $2,195,082 |
| Contingency Amount: | $526,820 |
| Estimate: | $2,721,902 |
| Reimbursement: | $0 |
| Net Amount: | **$2,721,902** |
| Description: | |

| Item Description | CU | Amount |
|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 23-ALL17 | $9,124.96 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 23-ALL18 | $227,078.00 |
| ACT<br>ACT Estimate for Contractor Crews<br>30% adder for contractor labor. | 23-ALL12 | $454,155.00 |
| OH WIRE<br>OH-Install Aerial Cable-existing poles (any gauge)<br>A. [redacted] | 23-OH36 | $275,080.00 |
| OH WIRE<br>OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil<br>A. [redacted] | 23-OH27 | $181,584.00 |
| OH WIRE<br>OH - Line Extension w/Aerial Cable - (any gauge)<br>A1. [redacted] | 23-OH35 | $65,520.00 |
| POLE<br>OH - POLE - 3ph (Eversource custodian)<br>A1. [redacted] | 23-OH14 | $85,103.20 |
| CONDUIT<br>UG-Ductline-up to 12 duct - Traveled Way / Paved<br>B1. [redacted] Between MH #55 and 8963 | 23-UG137 | $28,464.80 |
| CONDUIT<br>UG-Ductline-up to 12 duct - Traveled Way / Paved<br>B1. [redacted] Install two six-inch conduits between MH# 56 and new riser | 23-UG137 | $16,265.60 |
| POLE<br>DB/UG - Riser - 3ph<br>B2. [redacted] | 23-UG146 | $28,065.44 |
| SECTIONALIZE<br>OH-Vertical Disconnect Switches-600/900 amp 3-1ph<br>B2 [redacted] New Riser pole. | 23-OH43 | $13,368.16 |
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Between MH #56 and #55 | 23-UG114 | $48,678.24 |
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Between MH #56 and #55 | 23-UG114 | $48,678.24 |

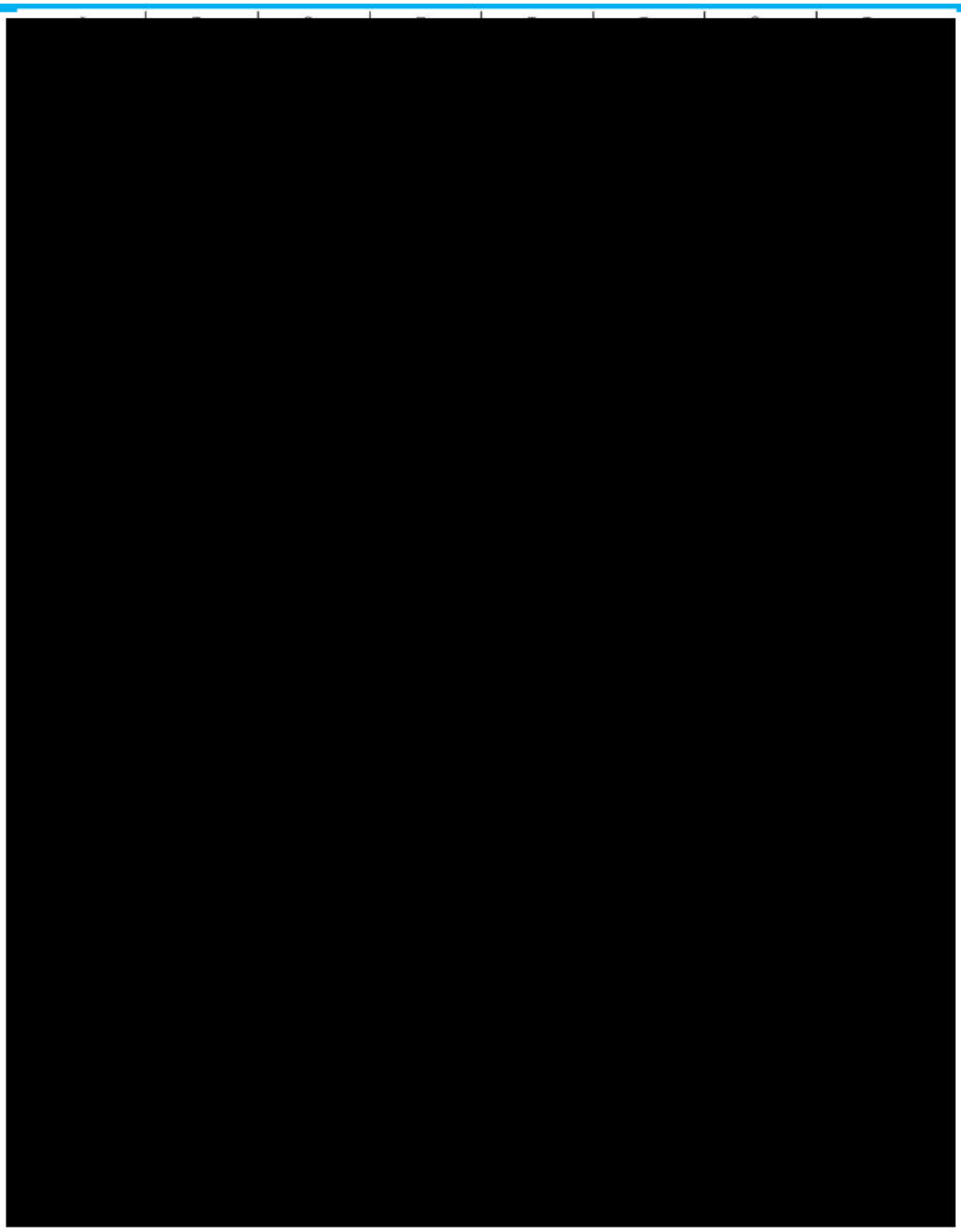
## Supplement Authorization Form

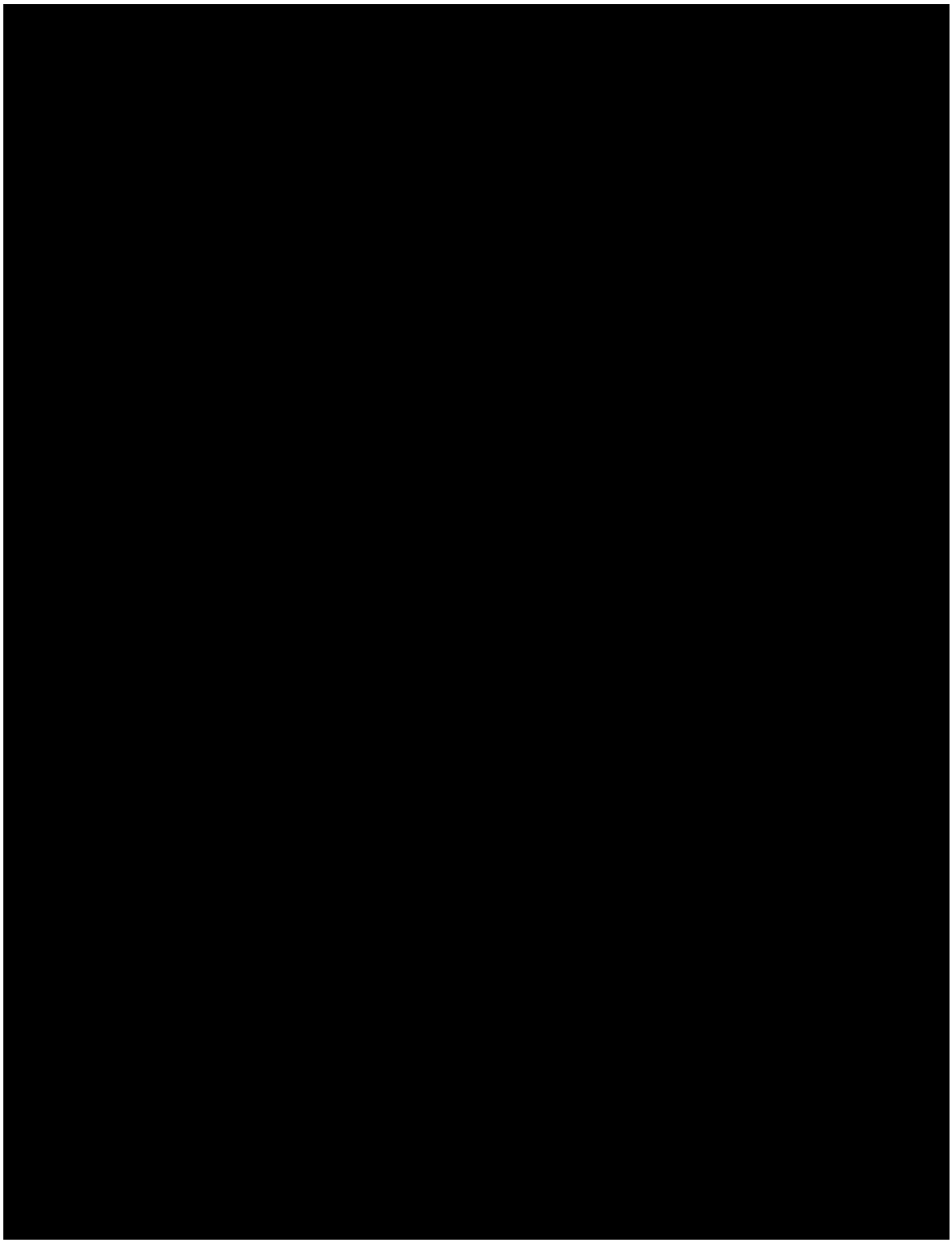
| | | | |
|---|---|---|---|
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Double 500 kcmil Cu EPR between MH #55 and pole # 8963 | 23-UG114 | [redacted] | $29,858.40 |
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Double 500 kcmil Cu EPR between MH #56 and new riser pol | 23-UG114 | | $19,000.80 |
| SECTIONALIZE<br>OH-Vertical Disconnect Switches-600/900 amp 3-1ph<br>B7. [redacted] | 23-OH43 | | $13,368.16 |
| EQUIPMENT<br>OH - Remove Capacitor, any kVAR<br>C1. [redacted] | 23-OH54 | | $2,340.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>C2. [redacted] with Cooper Nova | 23-OH38 | | $62,386.48 |
| OH WIRE<br>OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil<br>D1. [redacted] | 23-OH27 | | $62,288.00 |
| OH WIRE<br>OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil<br>D2. [redacted] | 23-OH27 | | $62,288.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>E. [redacted] | 23-OH38 | | $62,386.48 |

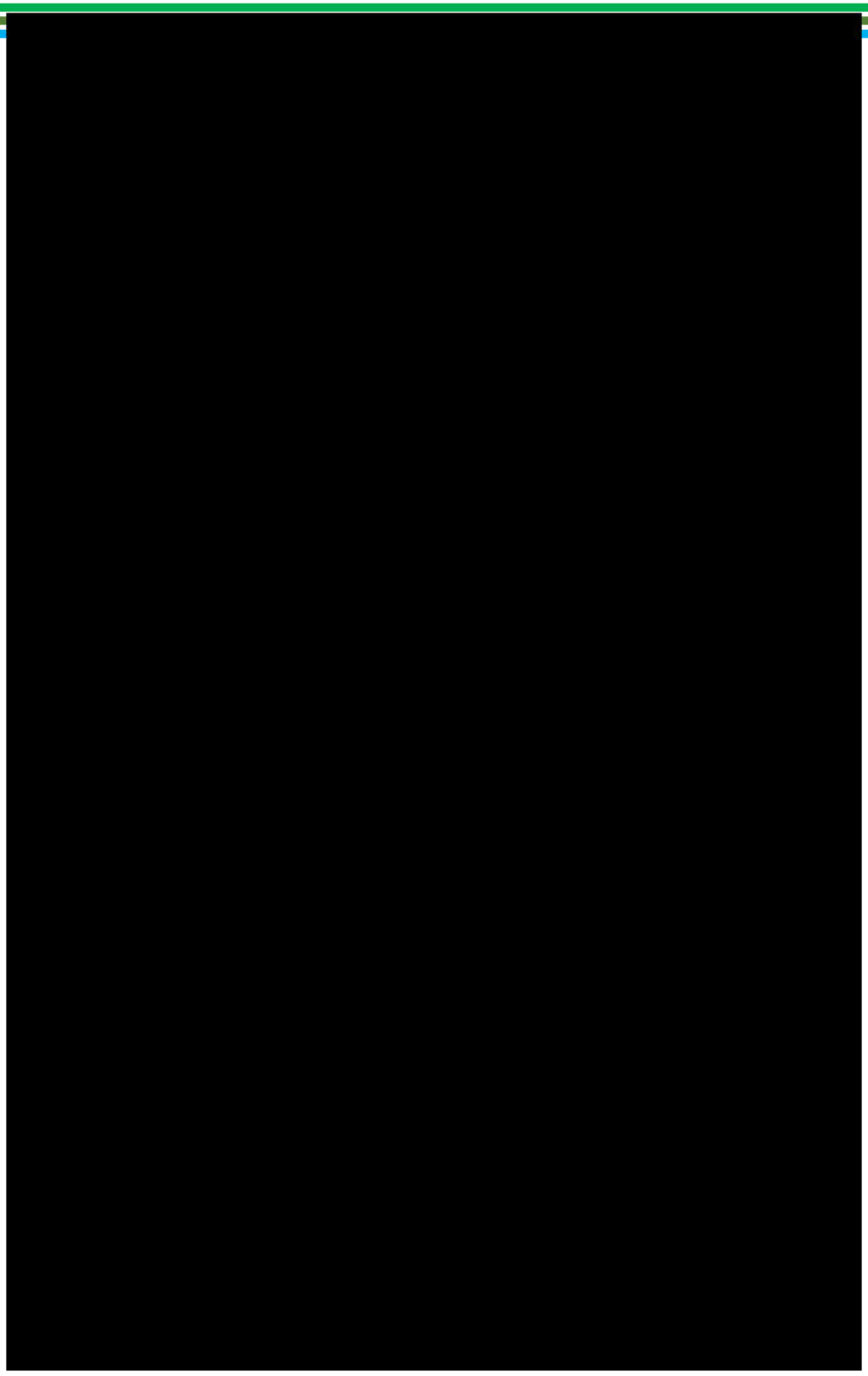
## C. Geographic Map.

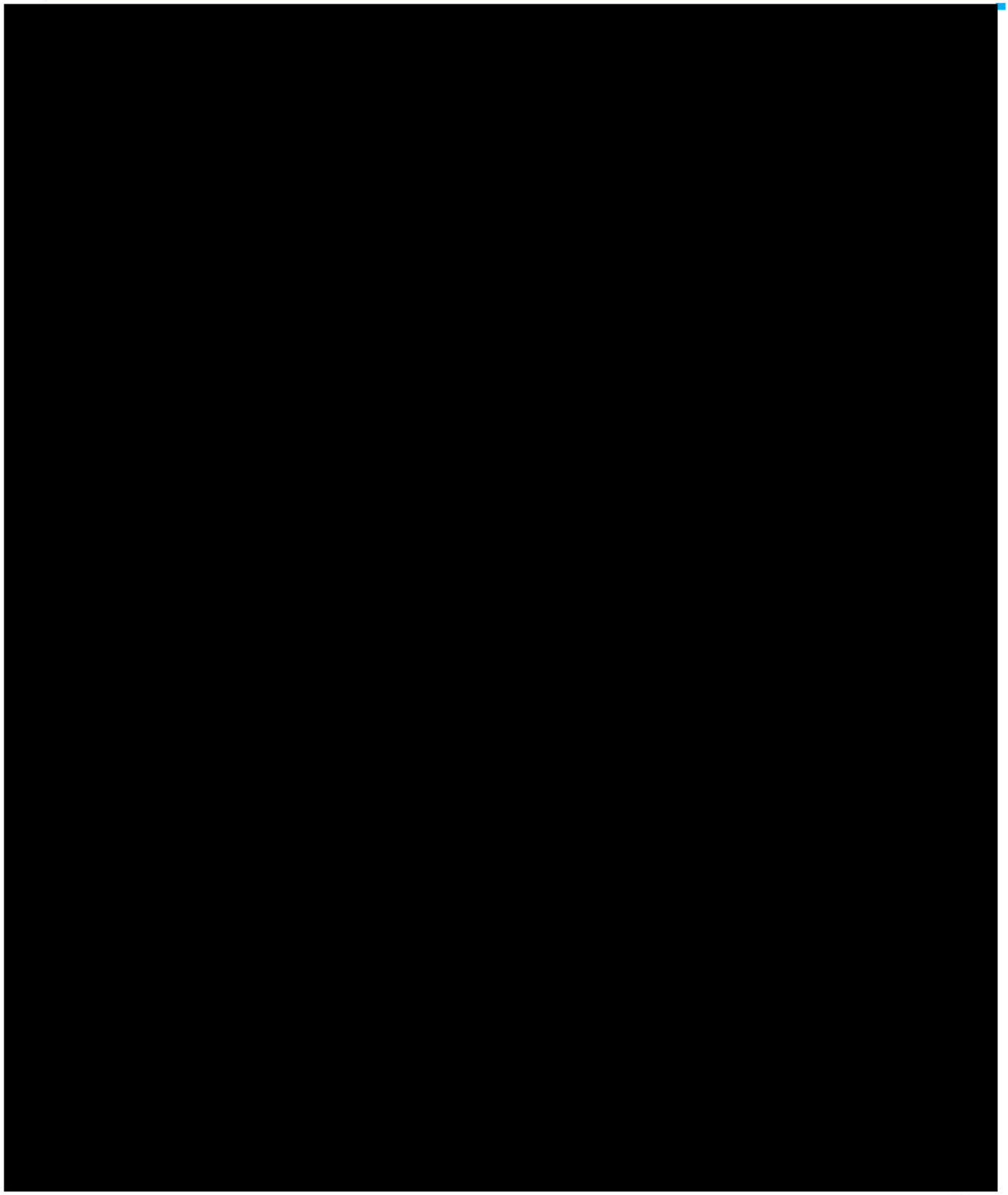


## D. System and Station One-Lines.

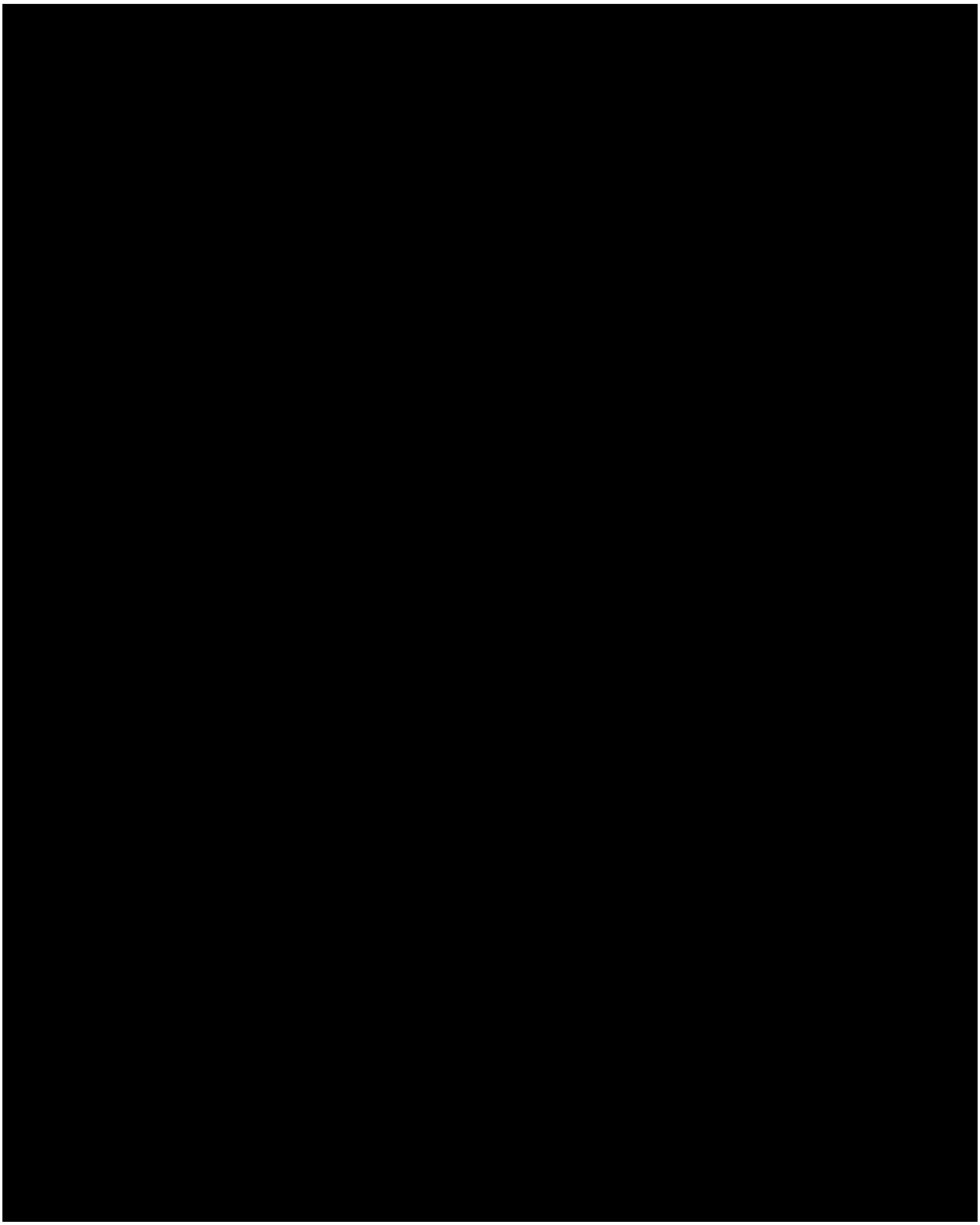








**After Load Sheets.**



## F. Partial PAF.

| | |
|---|---|
| **Project Title:** [redacted] | **Project Number: CD02172** |
| **Date Prepared:** 04/05/2023 | **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:** 06/01/2024 | |
| **Total Capital Request:** $3,241.8K | **Authorization Type:** Partial Funding |

# 11. Executive Summary

[redacted]

## 12. Project Cost Summary

Note: Dollar values are in thousands.

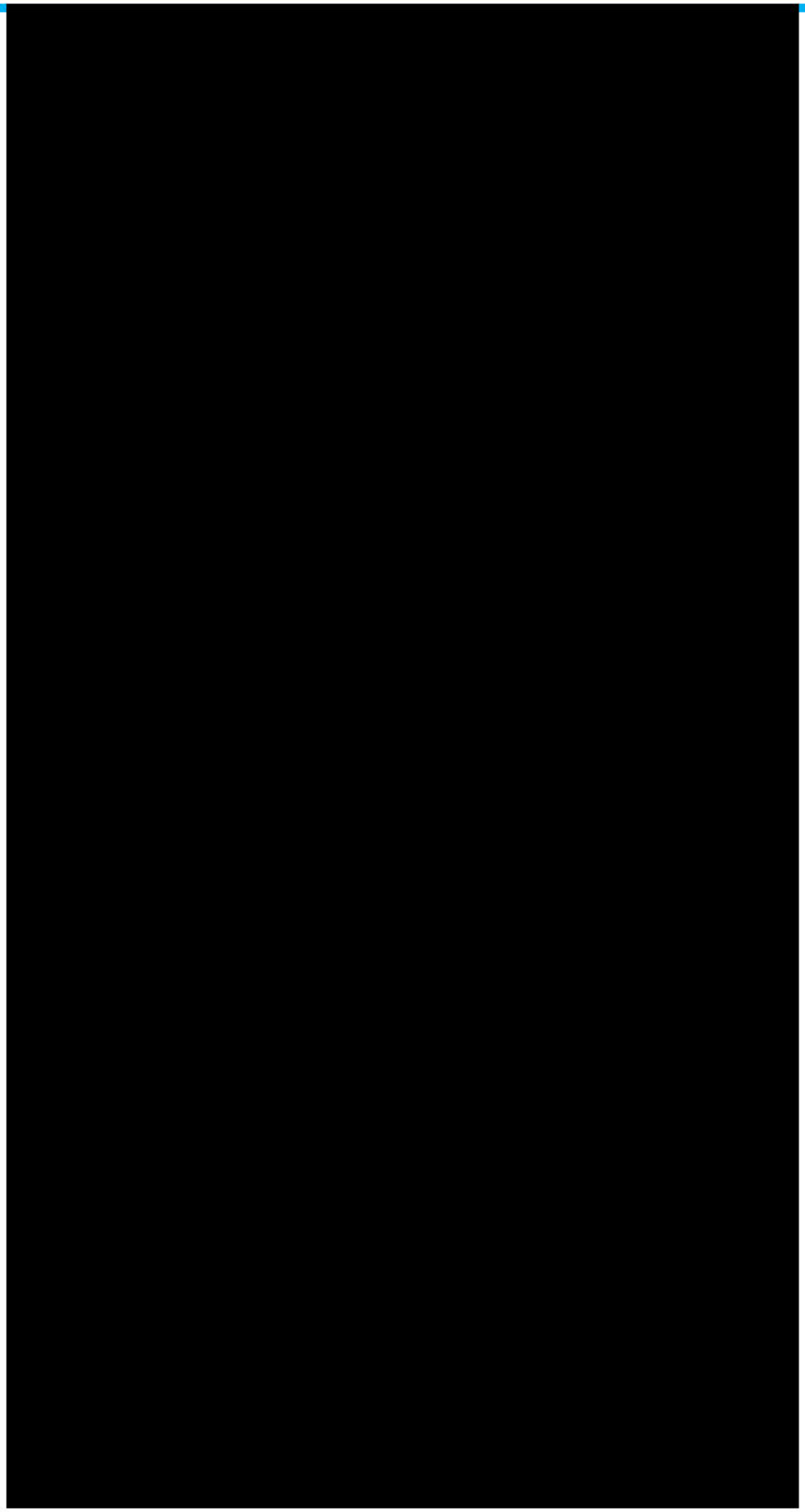
| Capital Costs | Year 2024 | Year 20__ | Year 20__+ | Total |
|---|---|---|---|---|
| **Direct Capital Costs** | | | | |
| Internal Labor and Construction Equipment | 135.7 | 0.0 | 0.0 | 135.7 |
| Outside Services | 1,103.4 | 0.0 | 0.0 | 1,103.4 |
| Materials | 553.5 | 0.0 | 0.0 | 553.5 |
| Removals | 245.0 | 0.0 | 0.0 | 245.0 |
| Risk and Contingency | 21.5 | 0.0 | 0.0 | 21.5 |
| Other | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal – Direct Costs | **2,059.2** | **0.0** | **0.0** | **2,059.2** |
| **Indirect Capital Costs** | | | | |
| Indirect/Overheads (including benefits) | 1,109.2 | 0.0 | 0.0 | 1,109.2 |
| Capitalized interest or AFUDC, if any | 73.5 | 0.0 | 0.0 | 73.5 |
| Subtotal – Indirect Costs | **1,182.7** | **0.0** | **0.0** | **1,182.7** |
| **Total Gross Capital Costs** | **3,241.8** | **0.0** | **0.0** | **3,241.8** |
| Customer Contribution | **$0** | **$0** | **$0** | **$0** |
| **Total Net Capital Project Costs** | **3,241.8** | **0.0** | **0.0** | **3,241.8** |

# 13. Technical Justification

## Background, Project Need/Justification, and Project Scope

### a. Background

[redacted]



## b. Project Need

[redacted]

## c. Project Scope

[redacted]

[redacted]

**Major Material:**

- 950 feet of 1,000 kcmil Cu EPR cable.
- 2,650 750 kcmil Al aerial cable.
- 21,000 feet of 556 kcmil tree wire.
- 1,616 feet of 500 kcmil EPR cable.
- Two reclosers.

## 14. Alternatives Considered

[redacted]

[redacted]

| Authorization Type | Partial | Partial | Partial | Partial |
|---|---|---|---|---|
| Capital Cost | $0.88M | $0.41M | $0.76M | $3.2M |
| Expense Cost | $0.02M | $0.02 | $0.03 | $0.1M |
| Total Cost | $0.90M | $0.43M | $0.79M | $3.3M |
| Cost / MVA added | $/MVA | $/MVA | $/MVA | $0.62M/MVA |
| Preferred option | | | | X |

**Preferred Option.**

[redacted]

**Option One ($877K.)**

This option [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
  - [redacted]

[redacted]

**Option Two ($427K.)**

This option swaps [redacted]

**Option Three ($787K.)**

This option swaps [redacted]

## 15. Project Schedule

Add any additional milestones that are pertinent to the project.

| Milestone/Phase Name | Estimated Date |
|---|---|
| Partial Approval | 4/5/2023 |
| 100% Detailed Engineering Completion | 10/1/2023 |
| Fully Funded | 11/1/2023 |
| Construction Start | 1/1/2024 |
| In Service Date | 6/1/2024 |

## 16. Regulatory Decisions

## 17. Codes and Standards

## 18. Risk and Contingencies

Contingencies:

Risk Mitigation:

| Risk Event | Risk Horizon | Likelihood of Occurrence | Risk Mitigation |
|---|---|---|---|
| Actual cost is higher than estimated due to scope changes. | 2024 | 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 | 2024 | Medium | 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. | 2023 | Medium | Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost. |
| Materials Shortage or long lead times | 2024 | Medium | Pre-order long lead time material; minimize the use of non-standard and non-stocked material. |

| | | | |
|---|---|---|---|
| Storm delays | 2024 | Medium | If storm activity delays work, we may be forced to use external resources. |
| System abnormal configuration | 2024 | 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 | 2024 | Medium | 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 | 2024 | Medium | Use of mats and specialty equipment, only work during certain times of the year. |

## 19. References

| References |
|---|
| 1. |
| 2. |
| 3. |
| 4. |
| 5. |

## 20. Attachments (One Line Diagrams, Images, etc.)

| Attachment | Included in Submittal? |
|---|---|
| A. Cost Estimate | *YES* |
| B. P6 Schedule | *NO* |
| C. Geographic Map | *NO* |

| | |
|---|---|
| D. System and Station One-Lines | *YES* |
| E. Other | *NO* |
| F. Load Sheets | *YES* |

**Attachment A. Cost Estimate.**

**Segment Seven, install UG under transmission line.**

EVERSOURCE

## Supplement Authorization Form

Design Alternative CD02172-07

**Estimate**

| | Preliminary Estimate Summary |
|---|---|
| Revision Number: | 0 |
| Contingency: | 24.00% |
| SubTotal: | $500,847 |
| Contingency Amount: | $120,203 |
| Estimate: | $621,051 |
| Reimbursement: | $0 |
| Net Amount: | **$621,051** |
| Description: | |

| Item Description | CU | [redacted] | Amount |
|---|---|---|---|
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 23-ALL18 | | $65,000.00 |
| OH WIRE<br>OH - Remove circuit wire (3 phase) | 23-OH37A | | $1,456.00 |
| SECTIONALIZE<br>OH-Vertical Disconnect Switches-600/900 amp 3-1ph | 23-OH43 | | $80,208.96 |
| UG CABLE<br>DB/UG - 750/1000 - 3-1/C (3ph) Cu | 23-UG114B | | 16,064.00 |
| CONDUIT<br>UG-Ductline-up to 12 duct - Traveled Way / Paved | 23-UG137 | | $20,332.00 |
| CONDUIT<br>UG-Ductline-up to 12 duct-Non- Traveled/Non-Paved | 23-UG138 | | $85,904.00 |
| ENCLOSURE<br>UG - MANHOLE - Precast | 23-UG139 | | $81,882.32 |
| ACT<br>ACT Estimate for Contractor Crews<br>Excavating Contractor Add. Cost | 23-ALL12 | | $50,000.00 |

**Segment Eight, extend the** [redacted]

Design Alternative CD02172-08

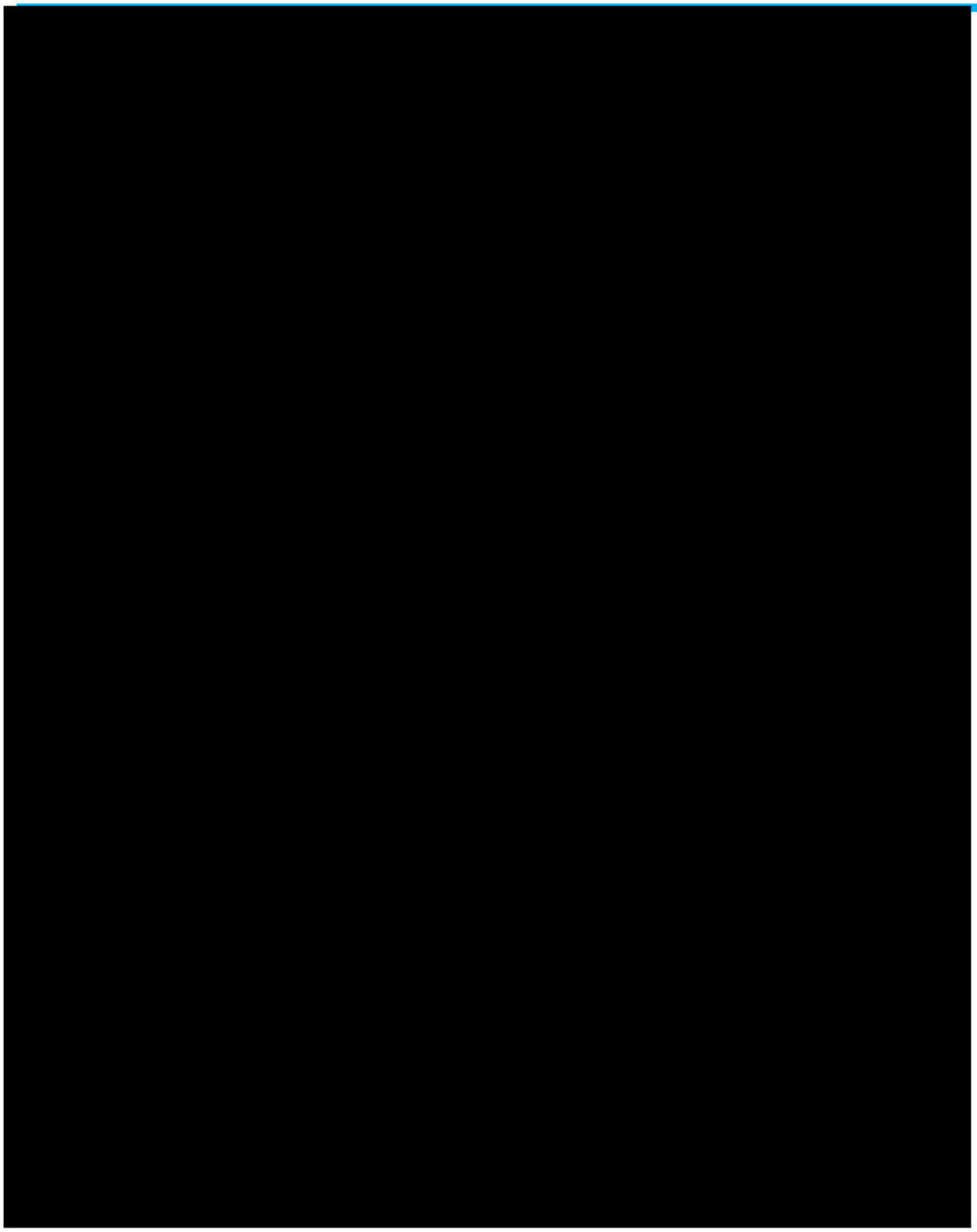
**Estimate**

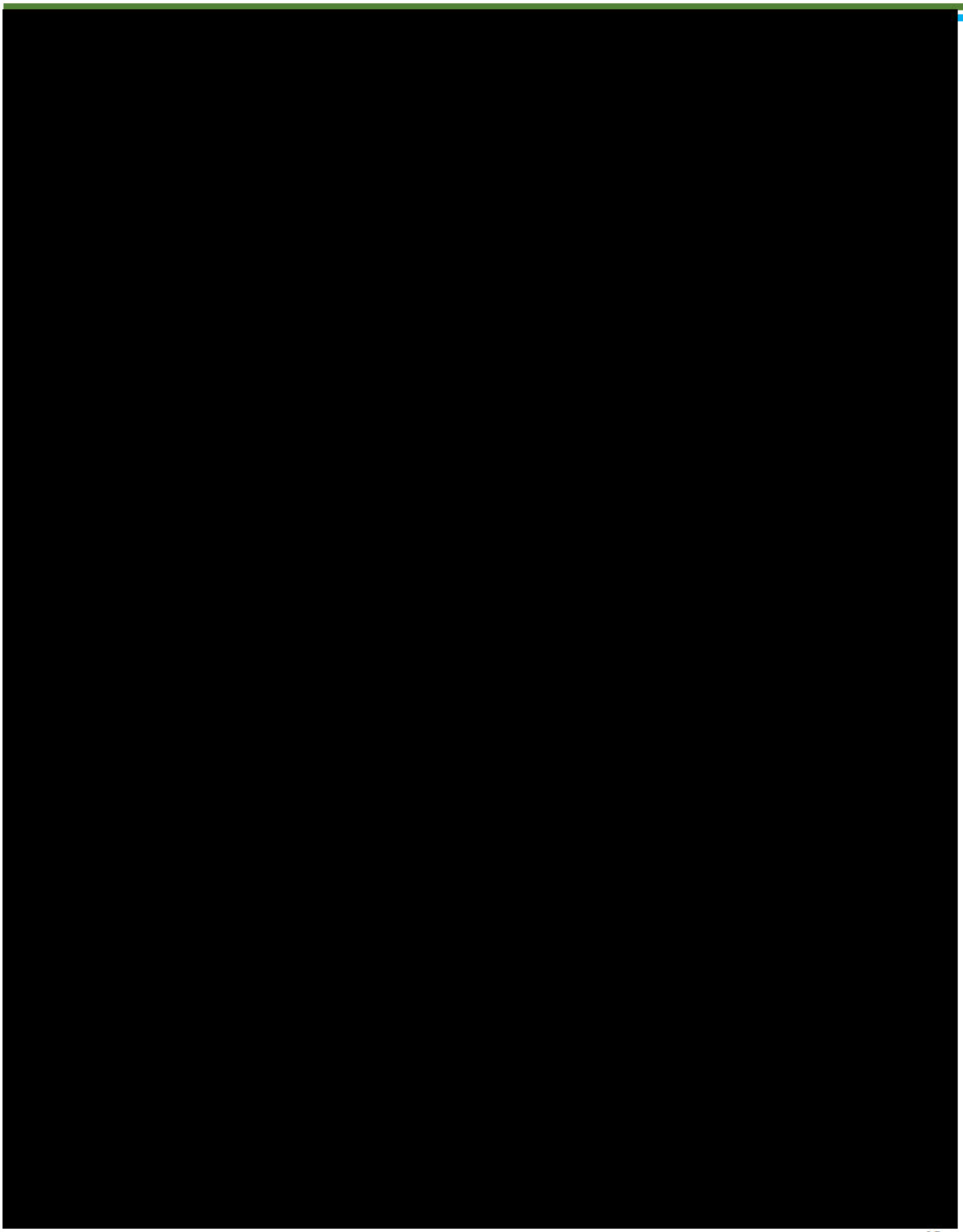
| | Preliminary Estimate Summary |
|---|---|
| Revision Number: | 0 |
| Contingency: | 24.00% |
| SubTotal: | $2,195,082 |
| Contingency Amount: | $526,820 |
| Estimate: | $2,721,902 |
| Reimbursement: | $0 |
| Net Amount: | **$2,721,902** |
| Description: | |

| Item Description | CU | Amount |
|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 23-ALL17 | $9,124.96 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 23-ALL18 | $227,078.00 |
| ACT<br>ACT Estimate for Contractor Crews<br>30% adder for contractor labor. | 23-ALL12 | $454,155.00 |
| OH WIRE<br>OH-Install Aerial Cable-existing poles (any gauge)<br>A. [redacted] | 23-OH36 | $275,080.00 |
| OH WIRE<br>OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil<br>A. [redacted] | 23-OH27 | $181,584.00 |
| OH WIRE<br>OH - Line Extension w/Aerial Cable - (any gauge)<br>A1. [redacted] | 23-OH35 | $65,520.00 |
| POLE<br>OH - POLE - 3ph (Eversource custodian)<br>A1. [redacted] | 23-OH14 | $85,103.20 |
| CONDUIT<br>UG-Ductline-up to 12 duct - Traveled Way / Paved<br>B1. [redacted] Between MH #55 and 8963 | 23-UG137 | $28,464.80 |
| CONDUIT<br>UG-Ductline-up to 12 duct - Traveled Way / Paved<br>B1. [redacted] Install two six-inch conduits between MH# 56 and new riser pole [redacted] | 23-UG137 | $16,265.60 |

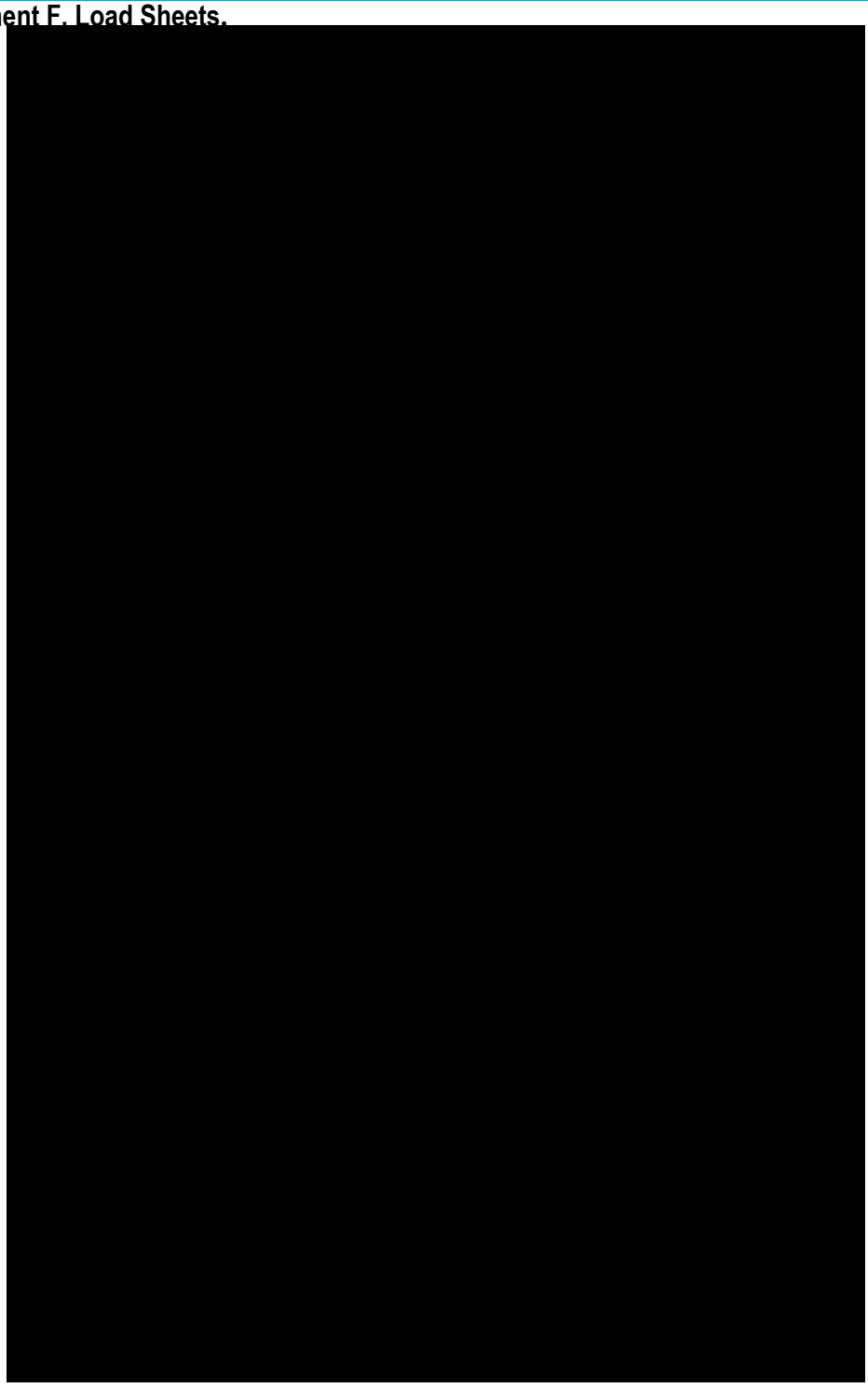
| Design Alternative | | | | CD02172-08 |
|---|---|---|---|---|
| POLE<br>DB/UG - Riser - 3ph<br>B2. [redacted] | 23-UG146 | | | $28,065.44 |
| SECTIONALIZE<br>OH-Vertical Disconnect Switches-600/900 amp 3-1ph<br>B2. [redacted] New Riser pole. | 23-OH43 | | | $13,368.16 |
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Between MH #56 and #55 | 23-UG114 | | | $48,678.24 |
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Between MH #56 and #55 | 23-UG114 | | | $48,678.24 |
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Double 500 kcmil Cu EPR between MH #55 and pole # 896 | 23-UG114 | | | $29,858.40 |
| UG CABLE<br>DB/UG - 350/500 - 3-1/C (3ph) Cu<br>B3. [redacted] Double 500 kcmil Cu EPR between MH #56 and new riser | 23-UG114 | | | $19,000.80 |
| SECTIONALIZE<br>OH-Vertical Disconnect Switches-600/900 amp 3-1ph<br>B7. [redacted] | 23-OH43 | | | $13,368.16 |
| EQUIPMENT<br>OH - Remove Capacitor, any kVAR<br>C1 [redacted] | 23-OH54 | 2340.00 / LOC | 1 | $2,340.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>C2. [redacted] with Cooper Nova | 23-OH38 | 62386.48 / LOC | 1 | $62,386.48 |
| OH WIRE<br>OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil<br>D1 [redacted] | 23-OH27 | 100.88 / FT | 2,600 | $262,288.00 |
| OH WIRE<br>OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil<br>D2 [redacted] | 23-OH27 | 100.88 / FT | 2,600 | $262,288.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>E. [redacted] | 23-OH38 | 62386.48 / LOC | 1 | $62,386.48 |

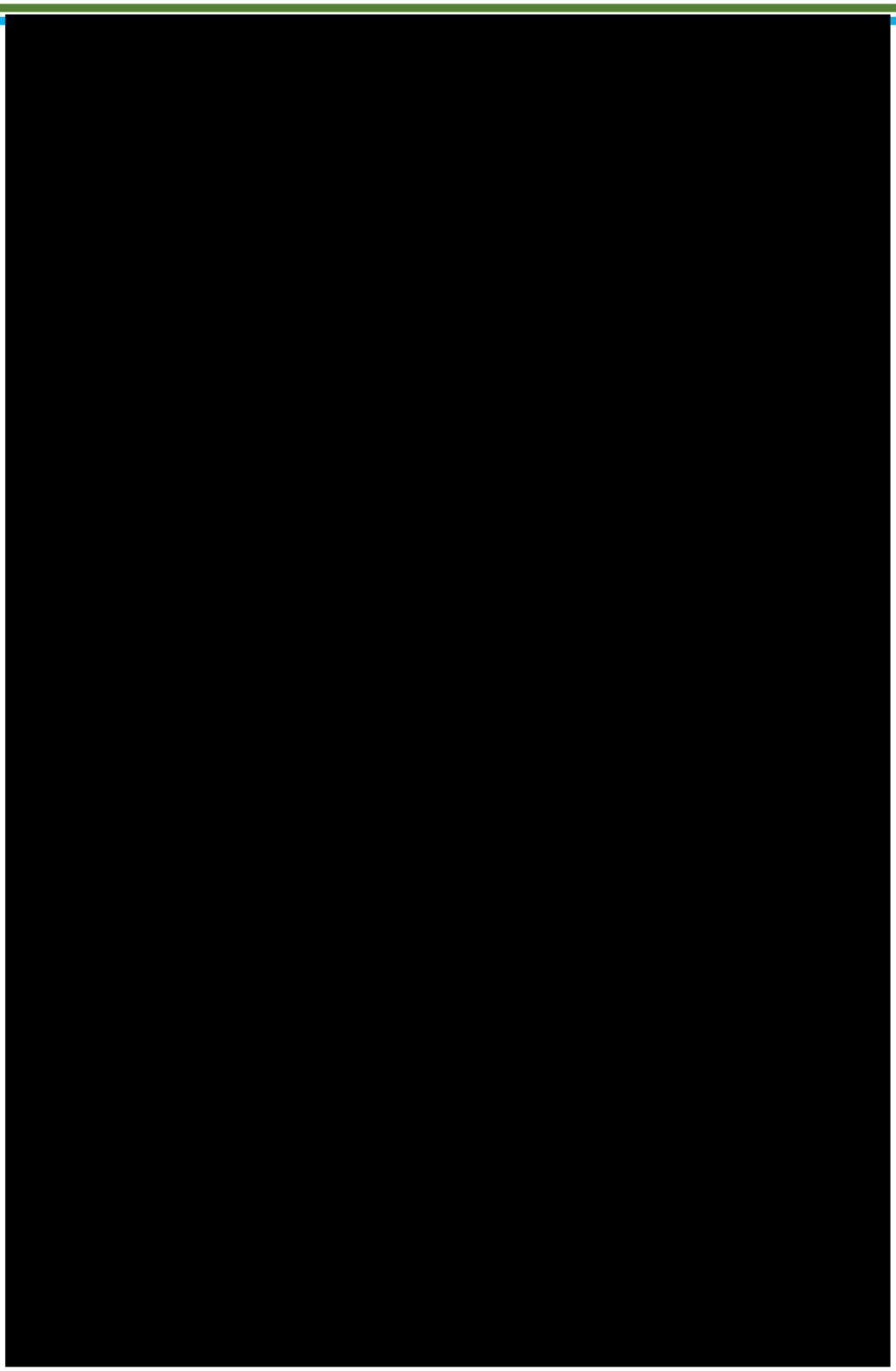
**Attachment D. System and Station One-Lines.**

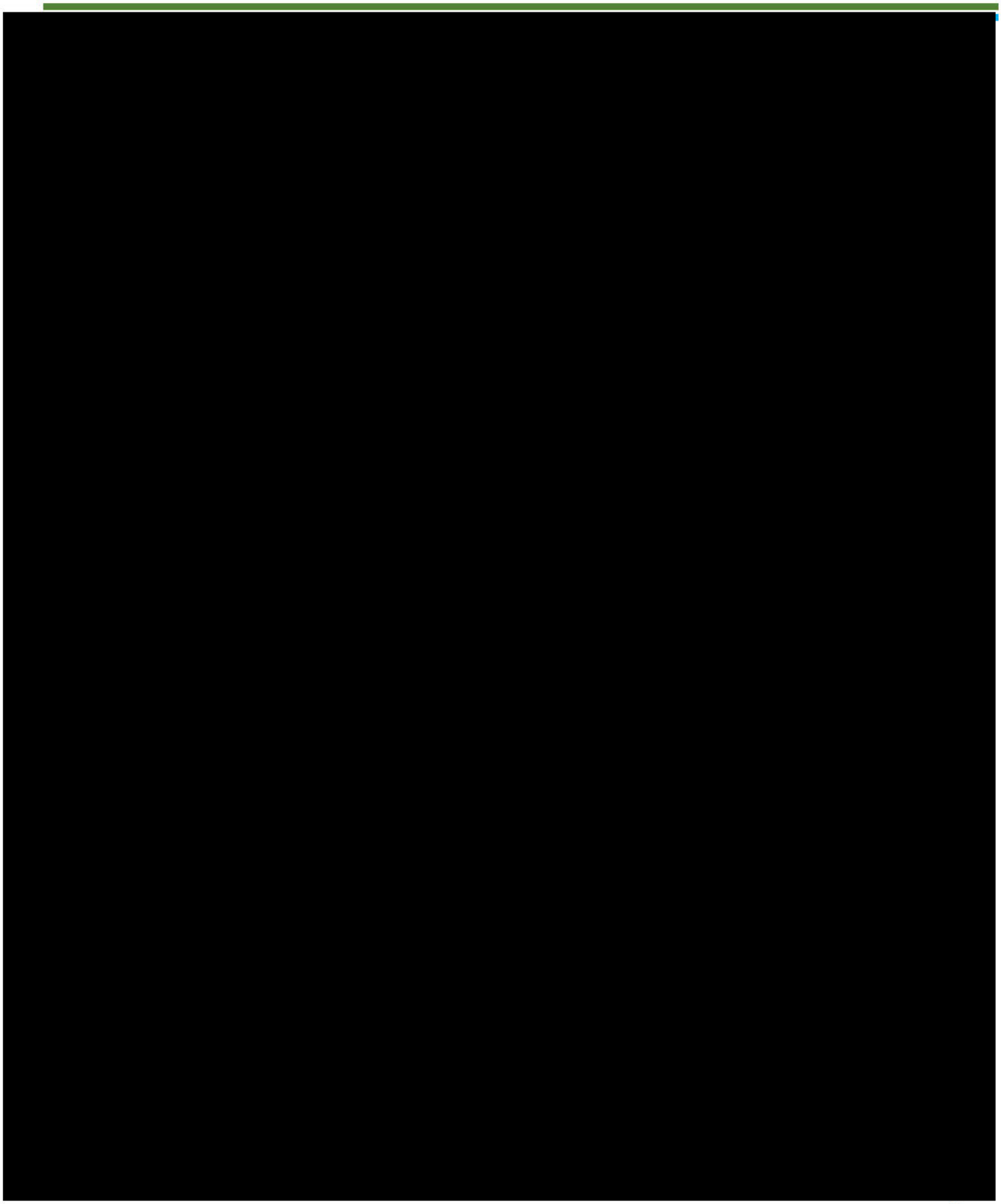




**Attachment F, Load Sheets.**







**After Load Sheets.**

