EVERSOURCE

Operations Project Approval Form

Project Title: Campville [redacted] ROW Rebuild	Project Number: CD02440
Date Prepared: 03/25/2026	**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: 12/31/2027	**NWS Excludable:** ☒ Yes ☐ No
Total Capital Request: $19.796M	**Authorization Type:** Full Funding

1. Executive Summary

This full funding OPAF revision reflects the impact of CD02350 [redacted] Replacement project which was placed in service due to a normal overload in the 3rd quarter of 2025. The revisions reflect the reduction in overload magnitude and updated 2025 summer peak load data within the project load sheet. The overall scope of the project has not changed, the NWS battery size has been reduced in Option 5. In order to evaluate all the options equally, aging infrastructure replacements in the ROW were included within the NWS option.
Full funding is being requested for this project at a cost of $19,796k, which is 121% of the $16,297k partial funding estimate. There is no change in project scope. The increased project cost of $3,472k is due to increases in indirect costs associated with the planned project work.

The original project was presented as follows:

CD02440 seeks to address contingent loading limitations and aging infrastructure on the [redacted] CT. The [redacted] is a 27.6kV sub-transmission line which originates at the [redacted] substation in Harwinton CT. This circuit is responsible for feeding three smaller distribution substations: [redacted] In total, over 3,100 customers and 11 critical facilities are supplied from this normal feed. The identified portion of the 1[redacted] is comprised of roughly 39,000' of 3-ph 1/0 ACSR conductor. The identified segment includes 152 poles with an average age of 45 years. The [redacted] has experienced 8 reliability related outages in the last 15 years and has seen 3 instances where the segment of 1/0 ACSR was burnt down due to overload under contingency due to switching. To prevent future asset damage due to switching and to address the aging infrastructure within this ROW, it is suggested that this ROW be rebuilt to modern distribution standards, and the entirety of the existing 1/0 ACSR backbone be reconductored. This would result in the reconductoring of 39,000' of 1/0 ACSR backbone, the installation of 99 new steel distribution poles within the ROW, and 80 new wood poles along road-side segments. After project completion, this portion of the 1[redacted] will be

resistant to outage events and will serve as a robust tie point under contingency. The cost for the suggested work is $16.297M.

Title: [redacted] ROW Rebuild
Division: Western
District: Torrington
Town(s): Goshen, Litchfield
Circuits: [redacted]

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Year 2026	Year 2027	Year 2028+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	489.0	489.0	0.0	977.9
Outside Services	2,550.6	2,550.6	0.0	5,101.2
Materials	638.1	638.1	0.0	1,276.2
Removals	273.9	273.9	0.0	547.9
Risk and Contingency	690.5	690.5	0.0	1,381.1
Other	0.0	0.0	0.0	0.0
Subtotal – Direct Costs	**4,642.1**	**4,642.1**	**0.0**	**9,284.2**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	5,255.7	5,255.7	0.0	10,511.4
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal – Indirect Costs	**5,255.7**	**5,255.7**	**0.0**	**10,511.4**
Total Gross Capital Costs	**9,897.8**	**9,897.8**	**0.0**	**19,795.7**
Customer Contribution	0.0	0.0	0.0	0.0
Total Net Capital Project Costs	**9,897.8**	**9,897.8**	**0.0**	**19,795.7**

Explain unique payment provisions, if applicable:

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

The [redacted] is a 27.6kV sub-transmission line that feeds from Harwinton to Kent CT. The circuit travels over 37 miles and passes through 5 towns before it ties with [redacted]. The [redacted] ravels over difficult terrain beginning in Harwinton where it goes off-road through a series of ROWs before traveling through White Woods Nature Preserve in Litchfield, CT. At this point, when traveling through White Woods, the circuit passes through swampland with standing water which makes access difficult. This area was rebuilt using transmission-style steel tower construction Under CD00969 in 2018.

From this point the [redacted] circuit runs roadside between [redacted]. in Litchfield. This portion of the circuit is 3-PH crossarm construction with 1/0 ACSR. The line transitions into [redacted] where it continues north. [redacted], the focus of this project, travels primarily through wetland zones which makes access extremely challenging. Access into this ROW requires use of a track machine, heavy matting, or helicopters. Due to this, restoration efforts are often complicated and time consuming. In addition, this ROW is responsible for servicing over 3100 customers across 3 smaller distribution substations. Among these customers, there are 11 critical facilities, one of which is the main 911 dispatch tower for Litchfield County.

The [redacted] is one of the few major tie points within this area of Connecticut. It shares a single 2-way tie with the [redacted]. This circuit shares a pole-line with the [redacted] for the first mile after it exits the substation. There have been events in the past which caused a loss to both the [redacted] due to this double-circuit line. Under this condition, the [redacted] immediately supports the [redacted]. Unfortunately, due to limited auto-ties within this area, secondary switching operations are often performed to restore additional customers. When this happens, the [redacted] ends up supporting the majority of the [redacted] and the [redacted] via tie points on the [redacted], a smaller distribution substation normally fed by the [redacted] Under these conditions, the 1/0 ACSR backbone on the [redacted] exceeds its 220 normal limit.

[redacted] has experienced 8 outages in the last 15 years. Of these, two were due to burn downs from switching when supporting the [redacted] circuits. More recently, an outage occurred on 7/15/24

within the ROW in which a span of 1/0 ACSR was burnt down under this contingent switching. This outage spawned a drone patrol of the entire ROW which also revealed a broken cross arm and several instances of rotten/deteriorating pole tops and H-Frame structure. The existing infrastructure within the ROW is predominantly 1971-vintage, with an average pole age of 45 years. This combination of load constraints and ageing infrastructure are the primary drivers for the suggested work. Below is the relevant outage history for the last 15 years:

Date	Event Circuit	Cause Type	Structure	Total Customers Affected	Total Cust Mins
7/22/2010	[redacted]	Lightning	P# 18B	794	57,190
10/29/2011		Tree Related	P# 628	3,279	11,696,193
9/12/2013		Overload/Equip Failure	P# 3691	2,370	600,872
11/22/2018		Equip Failure	SCADA_VS:786:14R31-50Z	3,065	136,668
8/29/2020		Tree Related	POLE:CL&P:690:7870922	1,325	5,871
7/7/2021		Lightning	P# 708	1,112	87,848
3/14/2023		Tree Related	SCADA_REC_RR:628:14R31-61R	439	179,990
7/15/2024		Overload/Equip Failure	P# 698	3,147	125,036

b. Project Need

CD02440 suggests a new rebuild of [redacted] in its current footprint with modern distribution standards. This rebuild seeks to address a contingency overload and ageing infrastructure throughout this segment of the [redacted]. Under the suggested work, the 1971-vintage infrastructure and under-sized 1/0 ACSR conductor would be eliminated, ultimately improving capacity for future load growth, and promoting reliability. The suggested work is critical for ensuring future service to the [redacted] ies that rely on the [redacted] as their normal source. Similarly, this work is required to ensure resilience for the [redacted] ckbone and subsequent circuit ties that rely on these 27.6kV sub-transmission lines within the Northwest corner of Connecticut. If the suggested work is not performed within this ROW over [redacted] will be put at continued risk of loss of source due to infrastructure failures. In addition, if the 1/0 ACSR backbone is not upgraded, this line will be at continued risk for overload-related damages due to switching.

c. Project Scope

CD02440 suggests the elimination of the existing 1/0 ACSR and a complete rebuild of [redacted]. Due to the project scale, the suggested work is divided into four segments.

Segment 1: Southern Roadside[redacted] Backbone Reconductoring (P#T58[redacted] Litchfield to P#1336, Milton Rd, Litchfield).

- Reconductor[redacted] existing 1/0 ACSR w/ 556 AL TW
- Replace[redacted] Poles

Segment 2: Southern[redacted] Reconductoring & Rebuild (P#1336,[redacted], Litchfield to P# 709 ½,[redacted], Litchfield)

- Reconductor[redacted] existing 1/0 ACSR with 795 AL TW
- Install[redacted] 1/0 ACSR Neutral
- Replace[redacted] Wood Poles with new steel distribution poles

Segment 3: Northern[redacted] Reconductoring & Rebuild (P#709[redacted] Rd, Litchfield to P#750,[redacted], Goshen)

- Reconductor[redacted] existing 1/0 ACSR with 795 AL TW
- Install[redacted] 1/0 ACSR Neutral
- Replace[redacted] Wood Poles with new steel distribution poles

Segment 4: Northern Roadside[redacted] Reconductoring (P#750[redacted], Goshen to P#787,[redacted] St, Goshen)

- Reconductor[redacted]
- Replace[redacted] Poles

The scope of work associated with the preferred option is as follows:

Major Material:

- [redacted] - Steel Poles
- [redacted]- Wood Poles
- [redacted] - 3-PH 795 AL TW
- [redacted]' - 3-PH 556 AL TW
- [redacted] – 1/0 ACSR Neutral

4. Alternatives Considered

NWS

NWS Exclusion Criteria (select all that apply)

☐ Project cost < $250k	☐ New Service
☐ CDOT Relocation	☐ Generator interconnection project
☒ Maintenance, Asset condition or safety related*	

*Maintenance, Asset condition or safety related justification:
CD02440 seeks to address reliability issues and load constraints along a portion of the [redacted] backbone. This area is comprised of [redacted] wooden pole structures which support approximately [redacted]' of 3-phase 1/0 ACSR Bare conductor via wooden cross arms. The identified assets have an average age of 45 years. There are many instances of rotten crossarms, deteriorating pole tops, failing/split H-Frame structures, and wildlife damage throughout this area. Without addressing these asset conditions, future reliability will be at continued risk. The deteriorating assets hold up the overloaded conductor. Thus, a NWS alone is not a viable option, the costs of NWS alone is in option 5.

Project Option Comparison

Design Criteria	Option				
	1 – 14R31 ROW Rebuild	2 – Aerial Cable Bypass	3 – Aerial Cable Bypass & 19U1/42J1 Tie	4 – 14R31 ROW "Transmission-Style" Rebuild	5 – NWS
	Required to meet project need				
Contingent Loads < 100%	X	X	X	X	X
Addresses Aging Infrastructure	X	X	X	X	x
Eliminates 1/0 ACSR Backbone Limitation	X	X	X	X	
	Additional Benefits (not required to meet scope of project)				
Maintains existing ROW Corridor	X			X	X
Eliminates Need for Track Vehicle & Drone Surveying		X	X		
Improves existing road-side infrastructure		X	X		
Reduces Roadside Exposure	X			X	X

Number of New Ties Created	0	0	1	0	0
Authorization Type	Full	Partial	Partial	Partial	Partial
Capital Cost	$19.795M	$19.651M	$21.306M	$27.972M	$25.1M
Expense Cost	$615k	$612.9k	$662.9k	$872.41k	$0.85M
Total Cost	$20.410M	$20.264M	$21.969M	$28.844M	$28.1M
Total Cost / MVA added	$2,096/MVA	$2,088/MVA	$2,265/MVA	$2,974/MVA	$18,733/MVA
Total Cost / CM Saved	$904.27/CM	$388.30/CM	$264.68/CM	$2,467.94/CM	$1,388.20/CM
Preferred option	X				

Option Summary

Preferred:

Option 1 suggests eliminating [redacted] of existing 1/0 ACSR with a combination of 477 AL TW and 795 AL TW. Roughly [redacted] of the 1/0 ACSR will be reconductored with 795 TW within the ROW. This reconductoring would also include the replacement of [redacted] existing wood poles with new weathered steel poles. The roadside segments, roughly [redacted]' of 1/0 ACSR, would be reconductored with 477 TW. This would require the replacement of roughly [redacted] wood poles. Upon completion the existing [redacted] would be retained and there would be no change to the OH configuration. The cost for this option is $19.795M.

This option is preferred as it resolves the contingent overload while also addressing the ageing infrastructure throughout the ROW. Under this option, the ROW is retained, which reduces road-side exposure and lowers inconvenience to residents near the ROW.

Other(s):

There were three alternate options considered for this project. They are as follows:

Option 2 suggests eliminating [redacted] and re-locating the line road-side via an aerial-cable under-build. this option would require removal of structures from P#1336 near [redacted], Litchfield to P#750 on [redacted] Goshen. Roughly [redacted]' of new 750 AL aerial cable would be installed from P#1336 to P#750 by way of [redacted] An additional segment of 750 AL AC would be installed on Brooks Rd, to feed the [redacted]. In order to retain the existing auto-loop, two new reclosers would be installed near the intersection of [redacted]t. Due to the scope of work required to run the aerial cable bypass, an opportunity to convert a lateral segment of the [redacted] would also be made possible. This conversion would involve the removal of an existing 23/8.32kV step XFMR on [redacted] and the replacement of [redacted] OH transformers & [redacted]UG transformers. Additionally, [redacted]' of 1-ph 477 AAC TW would be installed along [redacted] under the conversion work. After this work is complete [redacted]13 will be eliminated and repositioned as a

new aerial cable bypass and the identified lateral on the 19U2 would be converted from 8.32kV to 23kV. The cost for this option is $19.651M.

This option is not preferred because, despite offering significant accessibility improvements, this option would introduce significant reliability concerns via roadside relocation. In addition, there are concerns with public reception surrounding the larger poles and number of lines that would need to be installed along these residential roads. Currently, Option 1 offers a better design solution.

Option 3 includes all the work from option 2, but with modification to incorporate a new auto-tie between the [redacted]. Under this option, the scope of work surrounding the aerial cable bypass remains the same. The addition of a new 2-way tie between the [redacted] is planned within this option. To make this possible, the conversion of the [redacted] lateral would include an additional line extension for 2 new phases comprised of 477 AAC TW along [redacted]. in Litchfield. A separate extension would be required on the [redacted] side to make this possible, as well. Finally, three new reclosers would be installed to ensure correct operation of the new auto-loop. This would involve a new SR and MR on the [redacted] and one new SR on the [redacted] After completion [redacted] would be eliminated, a new aerial cable bypass would be created along the [redacted] backbone, a lateral tap on the [redacted] would be converted from 8.32kV to 23kV, and a new two-way autoloop would be created between the [redacted]. The cost for this option is $21.306M

This option is not preferred. While this option offers significant benefits to the reliability of the [redacted], it does so at a significant cost. Additionally, the scope of work under this option is well outside the minimum requirements for solving the load and reliability issues outlined for this project's minimum requirements.

Option 4 includes an identical scope of work for segments 1 & 4 as shown in option 1. The suggested work for Segment 2 & 3 is larger in scope. Under this option, [redacted] would be entirely rebuilt using approximately [redacted] light duty steel transmission style poles and Davit arms. A total of [redacted] of 3 phase 795 ACSR and 1 phase OPGW Fiber Optic Neutral. After completion, [redacted] would be significantly less susceptible to reliability related incidents and the capacity of the overhead line would be increased greatly. These improvements would work to help limit the need to access the ROW in the future. The total cost for this option is $27.972M

This option presents a significant improvement over the current ROW construction, but at a significant expense. This option was not selected as the preferred because, despite being incredibly robust, the design does not offer enough benefit over the distribution style construction proposed in option 1 for the cost.

Option 5 suggests a Non-Wires Solution via installation of a 7.5MWh Battery. To eliminate the overload condition under contingency between the [redacted] when supporting the [redacted] 3 load, a minimum of 1.5MVA is required. Assuming a 5-hour duration of overload, a 10-year growth rate of ~0.43%, and a power factor of 0.9, a 7.5MWh battery would be needed. Based on this the total cost for the battery would be $15Million. NWS estimate was calculated at $2M per MWh based on the two lowest of three contractor bids received in Connecticut. The NWS estimate is an all in cost assuming land purchase and interconnection costs of the battery. The cost of option 5 includes addressing the aging infrastructure in the ROW in order to compare the options equally in terms of resolving the overload and aging infrastructure. Total cost of addressing the aging infrastructure within the ROW and installing a battery is estimated to be $28.1M.

This option is not preferred because of the cost and time of procurement of property and materials.

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	3/2025
100% Detailed Engineering Completion	7/2025
Fully Funded	12/2025
Construction Start	1/2026
In Service Date	12/2027

6. Regulatory Decisions

7. Codes and Standards

DSEM 06.651 Spacing of Distribution Lines in Right-of-Way
DSEM 06.301 Pole Replacement
DSEM 06.271 Feeder Backbone Conductor Size Selection
DSEM 06.321 Environmental Considerations

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.	2026	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	2026	High	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2026	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.	2026	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2026	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2026	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2026	High	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	2026	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	2026	High	Use of mats and specialty equipment, only work during certain times of the year.

9. References

References
1. CD00969 – Campville ROW Pole Replacements
2.
3.

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

Attachment	Included in Submittal?
A. Project Checklist	*YES*
B. Cost Estimate	*YES*
C. Geographic Map	*YES*
D. System and Station One-Lines	*YES*
E. Load Sheet	*YES*
F. Other: 2017 Burn Down Photos	*YES*
G. Other: 2024 Burn Down Photos	*YES*
H. Other: ROW 113 Field Photos	*YES*
I. Other: Drone Engineering Patrol Report [7/6/2024]	*NO*

A. Project Checklist

Project Authorization Checklist

Project Initiator: [redacted]
Project #: CD02440
Project Title: [redacted] **ROW Rebuild**
Funding Type:

☒ Partial PAF ☐ Full PAF

Project Alternatives:

☒ Options considered ☒ Explanation why alternatives were not selected

☐ NWA considered ☒ Explanation why preferred option was selected

Project Requirements (Review all, and check all that apply):

NR = Not Required R=Required C = Complete

NR	R	C		NR	R	C	
☒	☐	☐	Easement	☒	☐	☐	TD007
☐	☐	☒	Trimming Estimate Received	☐	☐	☒	ROW trimming Estimate Received
☐	☐	☒	Environmental Review Initiated	☐	☐	☒	Review with Operations
☒	☐	☐	Permits (state roads)	☒	☐	☐	Underground permits
☒	☐	☐	P&C Settings	☐	☒	☐	Material long lead
☒	☐	☐	Synergi load flow				

PAF Documents Attached:

☒ One Lines ☒ Geographical Map ☒ Load Projections ☒ Estimates

☒ Other Documents (List):

PAF Review Complete:

☐ Lead Reviewed by: Date:

☐ Manager Reviewed by: Date:

B. Cost Estimate

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Specific Project Proposal - Project #: CD02440
[redacted]OW Rebuild

Work Classification

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

Ownership / Management

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

Project Information

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

Budget Summary - Preferred Option — 14R31 ROW Rebuild

2026

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	Reconductoring - P#T58 to P#654 - T.W.	Draft	0	28%	$1,229,073	$1,229,073
5	ROW Rebuild - P#654 to P#709 1/2	Draft	0	28%	$3,825,665	$3,825,665
7	Southern ROW Matting	Draft	0	28%	$3,619,789	$3,619,789
8	[redacted]ROW Material Removals - Southern	Draft	0	28%	$239,926	$239,926
18	Environmental Impact Study	Draft	0	24%	$37,200	$37,200
19	ROW Trimming Estimate	Draft	0	24%	$186,000	$186,000
				2026 Total:	**$9,137,653**	**$9,137,653**

2027

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	Reconductoring - P#750 to P#787 - T.W.	Draft	0	32%	$1,599,269	$1,599,269
6	ROW Rebuild - P#709 1/2 to P#750	Draft	0	32%	$4,238,286	$4,238,286
12	[redacted]ROW Material Removals - Northern	Draft	0	32%	$170,949	$170,949
15	Northern ROW Matting	Draft	0	28%	$1,659,840	$1,659,840
				2027 Total:	**$7,668,343**	**$7,668,343**
				Total Project:	**$16,805,996**	**$16,805,996**

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Specific Project Proposal - Project #: CD02440

14R31 ROW Rebuild

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	[redacted] Rebuild	1,2,5,6,7,8,12,15,18,19	$16,805,996	$0	100%	$1,140,674.64	$747.33	☑
O2	[redacted] Aerial Cable Bypass	7,8,9,10,12,14,15,18	$16,747,267	$0	100%	$9,083.41	$320.91	☐
O3	[redacted] Aerial Cable Bypass & [redacted]	7,8,9,10,11,12,13,15,18	$18,156,020	$0	100%	$1,659.95	$218.74	☐
O4	Transmission Style ROW Rebuild	1,2,8,12,16,17,18,19	$23,838,207	$0	100%	$376,815.47	$2,039.62	☐

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14R31 ROW Rebuild

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	Reconductoring - P#T58 to P#654 - T.W.	$1,229,073			$108.66	$46.76
2	Reconductoring - P#750 to P#787 - T.W.	$1,599,269			$141.15	$60.74
3	Reconductoring - P#T58 to P#654 - A.C.	$1,705,482			$0.00	$0.00
4	Reconductoring - P#750 to P#787 - A.C.	$2,166,248			$0.00	$0.00
5	ROW Rebuild - P#654 to P#709 1/2	$3,825,665			$225.10	$96.87
6	ROW Rebuild - P#709 1/2 to P#750	$4,238,286			$249.38	$107.31
7	Southern ROW Matting	$3,619,789			$0.00	$0.00
8	[redacted] Material Removals - Southern	$239,926			$0.00	$0.00
9	Aerial Cable Bypass - P#654 to P#1459	$4,602,816			$222.56	$75.63
10	Aerial Cable Bypass - P#TBD to P#788	$5,813,735			$0.00	$588.49
11	[redacted] - Conversion (3-PH)	$1,024,596			$443.50	$366.86
12	14R31 ROW Material Removals - Northern	$170,949			$0.00	$0.00
13	[redacted]	$987,169			$46.49	$18.34
14	[redacted] Conversion (1-PH)	$603,011			$261.02	$215.91
15	Northern ROW Matting	$1,659,840			$0.00	$0.00
16	T-Style Construction - South	$11,650,152			$2,819.37	$958.13
17	T-Style Construction - North	$8,725,638			$2,111.63	$717.61
18	Environmental Impact Study	$37,200			$0.00	$0.00
19	ROW Trimming Estimate	$186,000			$0.00	$0.00

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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-01

General Information

Segment: 1 - Reconductoring - P#T58 to P#654 - T.W. Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: BB-Reconductoring Trimming Required: ☑ In Service Date: 12/31/2026

Description: P#T58 to 654
- Recondutor existing 1/0 ACSR w/ 477 AL TW
- Replace poles where appropriate

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

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Specific Project Proposal - Project #: CD02440 [redacted] Rebuild

Design Alternative CD02440-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$1,211,567
Contingency Amount:	$387,701
Estimate:	$1,599,269
Reimbursement:	$0
Net Amount:	**$1,599,269**
Description:	

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17		$4,562.48
POLE OH - POLE - 3ph (Telephone custodian)	23-OH12		$92,560.00
POLE OH - POLE - 3ph (Eversource custodian)	23-OH14		$6,078.80
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A		$30,035.20
OTHER OTHER 30% Contractor Adder	23-ALL14		$274,977.00
OTHER OTHER Estimated Traffic Costs	23-ALL14		$20,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 477 AL TW from P#750 to P#788	23-OH27		$728,353.60
OTHER OTHER Tree trimming estimate from arborist	23-ALL14		$55,000.00

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-02

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted] PLUMB HILL RD	[redacted] LITCHFIELD	[redacted]	E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	50%
Cust. Intrrpts:	30%	50%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	197	118	197	140	233
Cost Per Cust. Intr. Saved:	13,553.12	8,131.74	13,553.12	8,131.74	11,427.43	6,856.46
Customer Minutes Saved:	6,798	11,330	6,798	11,330	15,798	26,329
Cost Per Cust. Min. Saved:	235.25	141.15	235.25	141.15	101.23	60.74

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted]Rebuild

Design Alternative CD02440-05

General Information

Segment: 5 - ROW Rebuild - P#654 to P#709 1/2 Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: BB-Rehab+Recond Trimming Required: ☑ In Service Date: 12/31/2026

Description: Rebuild ROW from P#654 to P#709 1/2
- Reconductor w/ 795 AL TW
- Repalce all poles with new Steel construction

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-05

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,988,801
Contingency Amount:	$836,864
Estimate:	$3,825,665
Reimbursement:	$0
Net Amount:	**$3,825,665**

Description:

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17		$9,124.96
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A		$44,769.92
OTHER OTHER 30% Contractor Adder	23-ALL14		$889,125.00
OH WIRE OH - Neutral Install 10,762' 1/0 ACSR Neutral	23-OH31		$89,539.84
OTHER OTHER Install 22 Caisons at various pole locations in low-lying Water Bed A	23-ALL14		$110,000.00
OTHER OTHER Misc Traffic Costs	23-ALL14		$2,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 3-ph 795 AL T.W.	23-OH27		$1,085,670.56
POLE Steel Pole 3PH Replace 58 existing ROW Poles with Steel Structures	23-OH10A		$758,570.40

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-05

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted]	[redacted] LITCHFIELD		E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	75%
Cust. Intrrpts:	30%	75%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	295	118	295	140	350
Cost Per Cust. Intr. Saved:	32,420.89	12,968.36	32,420.89	12,968.36	27,335.94	10,934.22
Customer Minutes Saved:	6,798	16,995	6,798	16,995	15,798	39,494
Cost Per Cust. Min. Saved:	562.75	225.10	562.75	225.10	242.17	96.87

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-06

General Information

Segment: 6 - ROW Rebuild - P#709 1/2 to P#750 Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2027

Work Type: BB-Rehab+Recond Trimming Required: ☑ In Service Date: 6/30/2027

Description: Rebuild ROW from P#709 1/2 to P#750
- Reconductor w/ 795 AL TW
- Repalce all poles with new Steel construction

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 #: CD02440

14R31 ROW Rebuild

Design Alternative

CD02440-06

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$3,210,822
Contingency Amount:	$1,027,463
Estimate:	$4,238,286
Reimbursement:	$0
Net Amount:	**$4,238,286**

Description:

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	$9,124.96
POLE Steel Pole 3PH	23-OH10A	$536,230.80
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	$61,726.08
OTHER OTHER 30% Contractor Adder	23-ALL14	$936,431.00
OH WIRE OH - Neutral Install [redacted] of 1/0 ACSR Neutral	23-OH31	$123,452.16
OTHER OTHER Install 9 Casons for poles in low-lying water beds	23-ALL14	$45,000.00
OTHER OTHER Misc Traffic Costs	23-ALL14	$2,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 795 AL TW	23-OH27	$1,496,857.44

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-06

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 433022375	[redacted]	[redacted] LITCHFIELD		E5-1 D-4	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	75%
Cust. Intrrpts:	30%	75%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	295	118	295	140	350
Cost Per Cust. Intr. Saved:	35,917.67	14,367.07	35,917.67	14,367.07	30,284.28	12,113.54
Customer Minutes Saved:	6,798	16,995	6,798	16,995	15,798	39,494
Cost Per Cust. Min. Saved:	623.45	249.38	623.45	249.38	268.29	107.31

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-07

General Information

Segment: 7 - Southern ROW Matting
Status: Draft
Segment Type: ENVIRONMENTAL
Town: LITCHFIELD
Budget Year: 2026
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2026

Description: Environmental Analysis Cost - $30k
Matting Estimate:

Southern Side (South of Brooks Rd):
P#654 to P#687 - [redacted]
P#696 to P#697 - [redacted]
P#699 to P#704 - [redacted]

Total Matting Distance: [redacted]
Assume:
15% of total distance is [redacted]
35% of total distance is [redacted])
50% of total distance is [redacted]

[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 #: CD02440

[redacted]ebuild

Design Alternative CD02440-07

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,827,960
Contingency Amount:	$791,829
Estimate:	$3,619,789
Reimbursement:	$0
Net Amount:	**$3,619,789**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER	23-ALL14	[redacted]		$792,960.00
OTHER 30% Contractor Adder/Updated Estimating Units Adder				
OTHER	23-ALL14			$2,035,000.00
OTHER Estimated Matting Cost: [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 #: CD02440
[redacted]Rebuild

Design Alternative CD02440-08

General Information

Segment: 8 - [redacted]Material Removals - Southern Status: Draft

Segment Type: OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: Other Trimming Required: ☐ In Service Date: 12/31/2026

Description: Cost for removals of equipment in existing [redacted]tarting from P#1336 to P#709 1/2: 14,838' of OH 3-ph removal
[redacted]tructure Removals

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 #: CD02440

[redacted]Rebuild

Design Alternative CD02440-08

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$187,442
Contingency Amount:	$52,484
Estimate:	$239,926
Reimbursement:	$0
Net Amount:	**$239,926**

Description:

Item Description	CU	$ / Per	Qty	Amount
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	[redacted]		$61,726.08
OTHER OTHER 30% Contractor Adder	23-ALL14			$56,116.00
OTHER OTHER [redacted]	23-ALL14			$69,600.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-12

General Information

Segment: 12 - [redacted]laterial Removals - Northern Status: Draft

Segment Type: OTHER Town: LITCHFIELD Budget Year: 2027

Work Type: Other Trimming Required: ☐ In Service Date: 6/30/2027

Description: Cost for removals of equipment in existing 14R31 ROW starting from P#1336 to P#750: [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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-12

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$129,507
Contingency Amount:	$41,442
Estimate:	$170,949
Reimbursement:	$0
Net Amount:	**$170,949**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	[redacted]		$44,769.92
OTHER OTHER 30% Contractor Adder	23-ALL14			$36,737.00
OTHER OTHER [redacted]	23-ALL14			$48,000.00

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 #: CD02440
[redacted]Rebuild

Design Alternative CD02440-15

General Information

Segment: 15 - Northern ROW Matting
Status: Draft

Segment Type: ENVIRONMENTAL
Town: LITCHFIELD
Budget Year: 2027

Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2027

Description: Matting Estimate:
Northern Side (North of [redacted]:
P#709 1/2 to P#713 - 1,135'
P#717 to P#719 - 606'
P#729 to P#731 - 587'
P#733 to P#737 - 1,139'

Assume
15% of total distance is[redacted]
35% of total distance is[redacted]
50% of total distance is[redacted]

[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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-15

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$1,296,750
Contingency Amount:	$363,090
Estimate:	$1,659,840
Reimbursement:	$0
Net Amount:	**$1,659,840**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER 30% Contractor Adder	23-ALL14	[redacted]		$299,250.00
OTHER OTHER Matting cost for North portion of ROW	23-ALL14			$997,500.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-18

General Information

Segment: 18 - Environmental Impact Study
Status: Draft
Segment Type: OTHER
Town: LITCHFIELD
Budget Year: 2026
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2026
Description: Environmental Impact Study Cost: $30,000

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-18

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$30,000
Contingency Amount:	$7,200
Estimate:	$37,200
Reimbursement:	$0
Net Amount:	**$37,200**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER Cost for Environmental Review	23-ALL14	[redacted]		$30,000.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-19

General Information

Segment: 19 - ROW Trimming Estimate Status: Draft

Segment Type: ETT Town: LITCHFIELD Budget Year: 2026

Work Type: ETT Trimming Trimming Required: ☐ In Service Date: 12/31/2026

Description: ROW Trimming Estimate from P#1336 to P#750:
Trimming Estimate from Arborist: $150,000

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 #: CD02440

[redacted]Rebuild

Design Alternative CD02440-19

Estimate

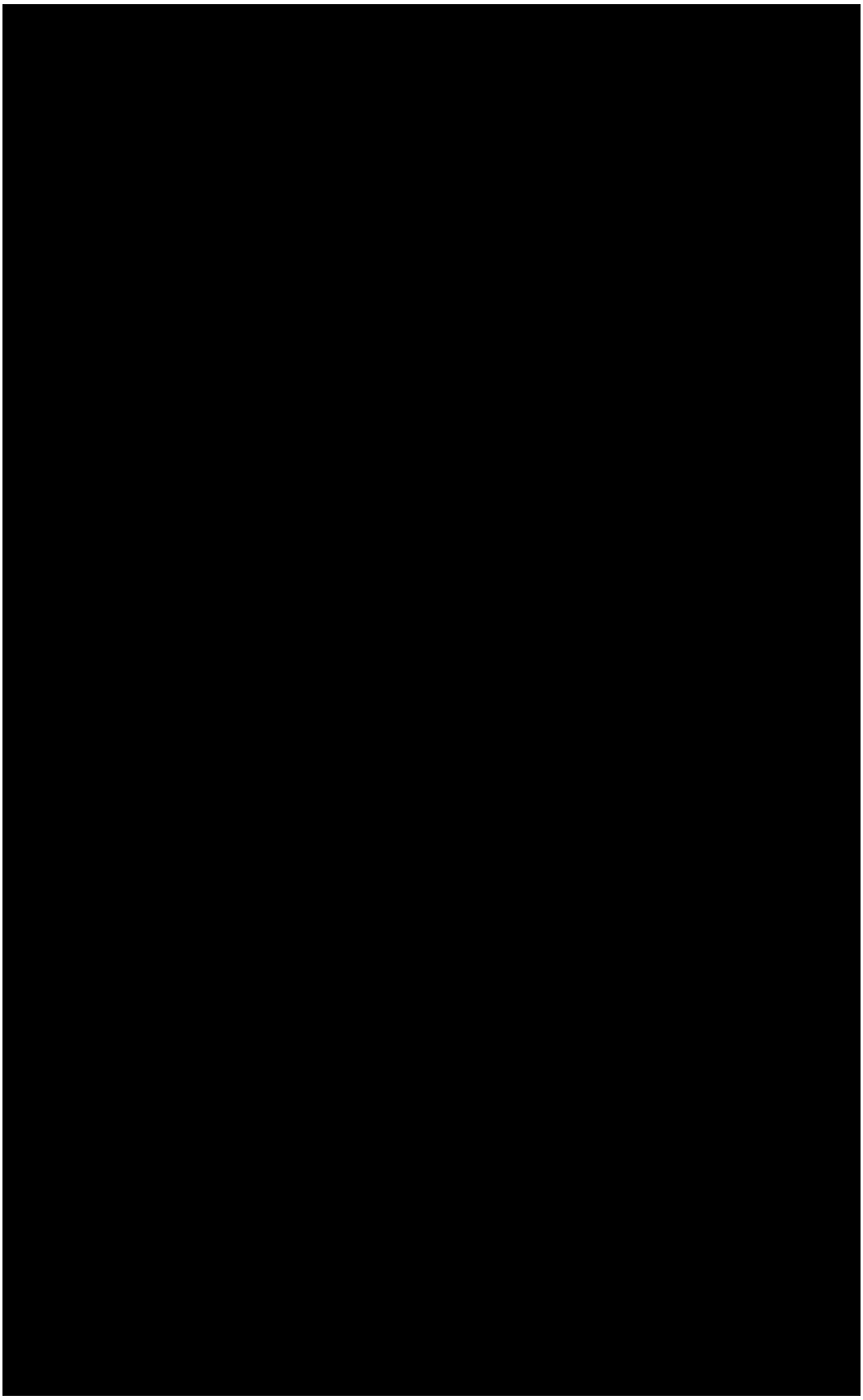
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$150,000
Contingency Amount:	$36,000
Estimate:	$186,000
Reimbursement:	$0
Net Amount:	**$186,000**
Description:	

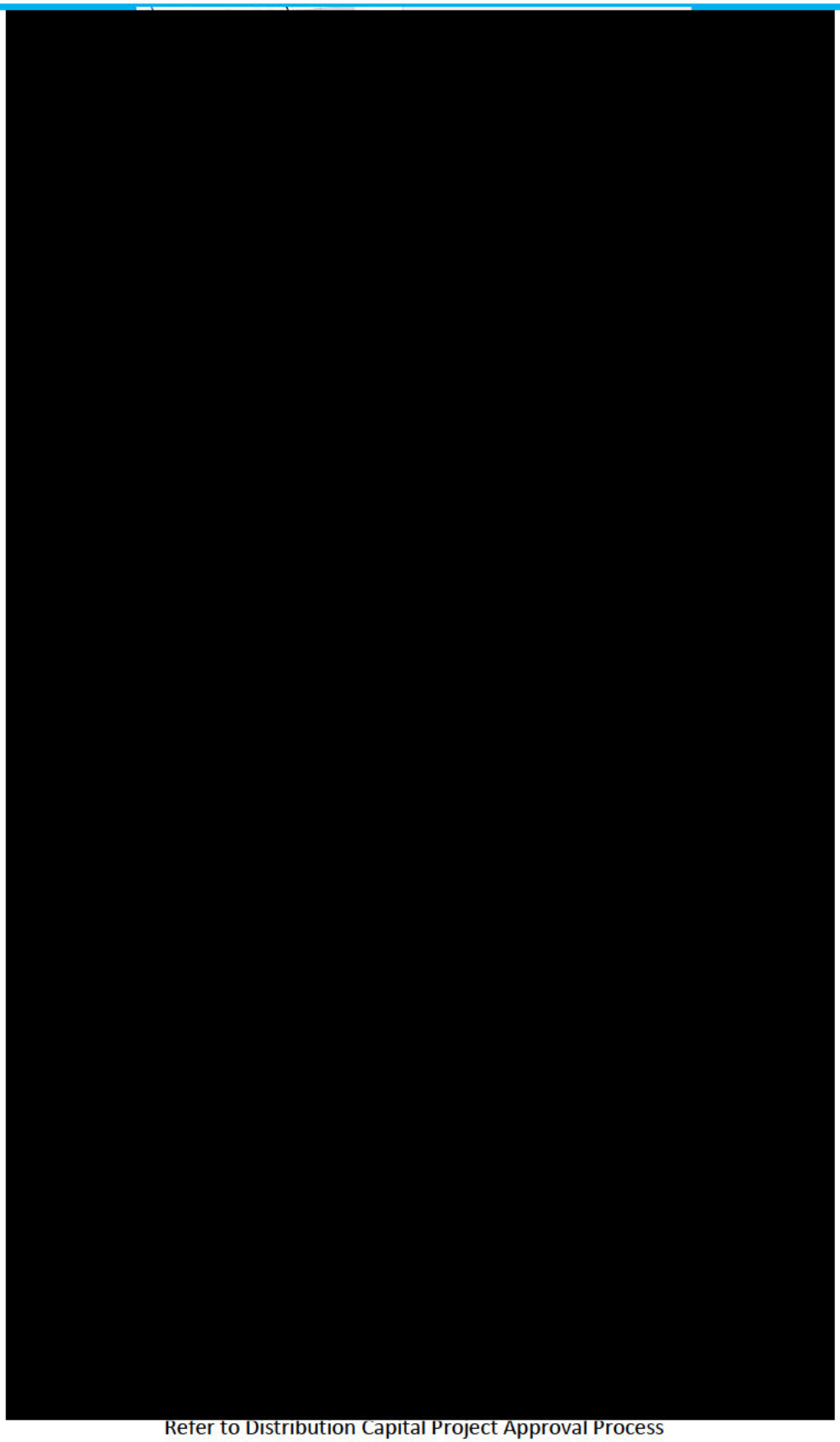
Item Description	CU	[redacted]	Amount
OTHER	23-ALL14		$150,000.00
OTHER Trimming Estimate from Arboristi: Edge to Edge of easement			

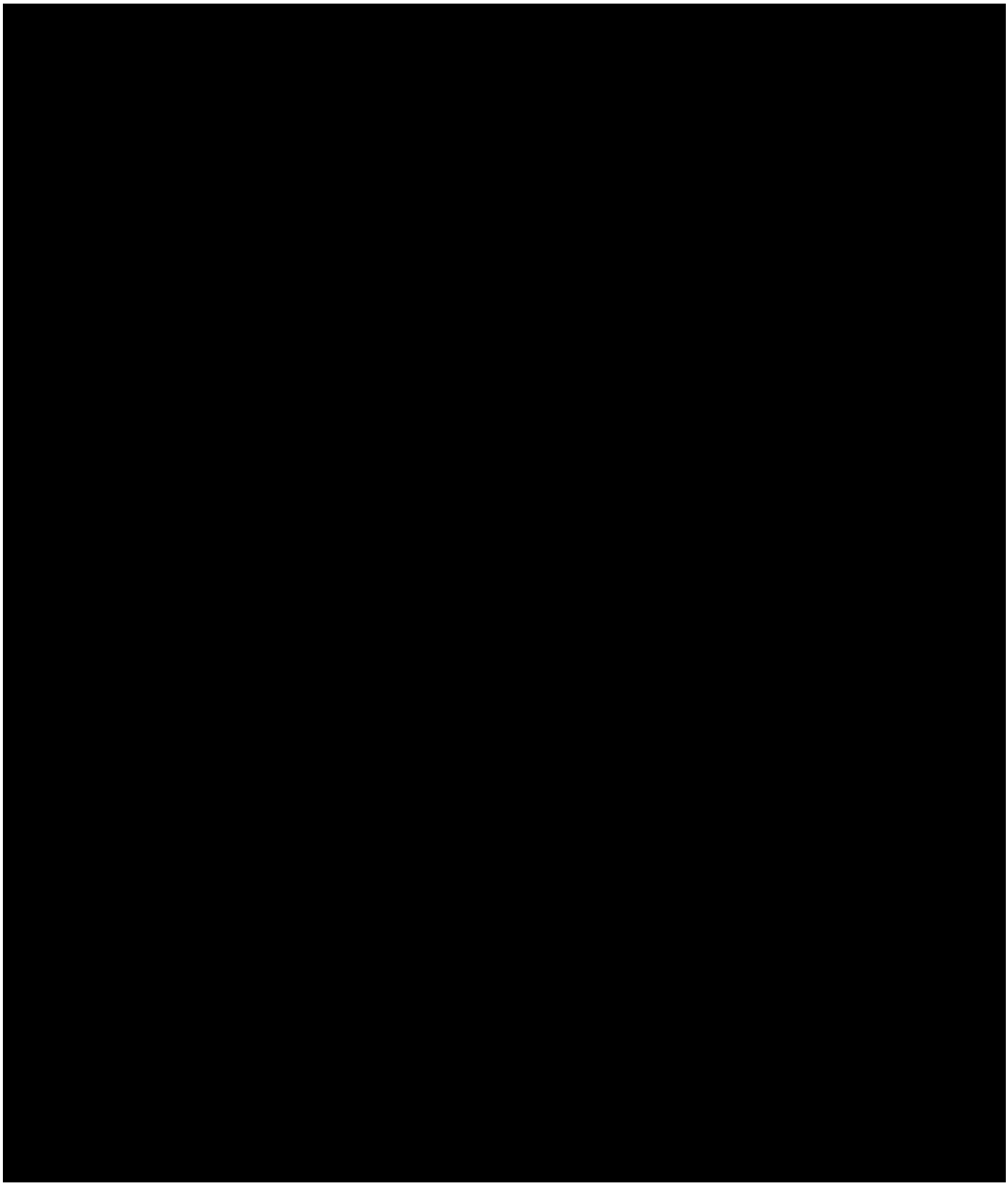
Associated / Impacted Devices

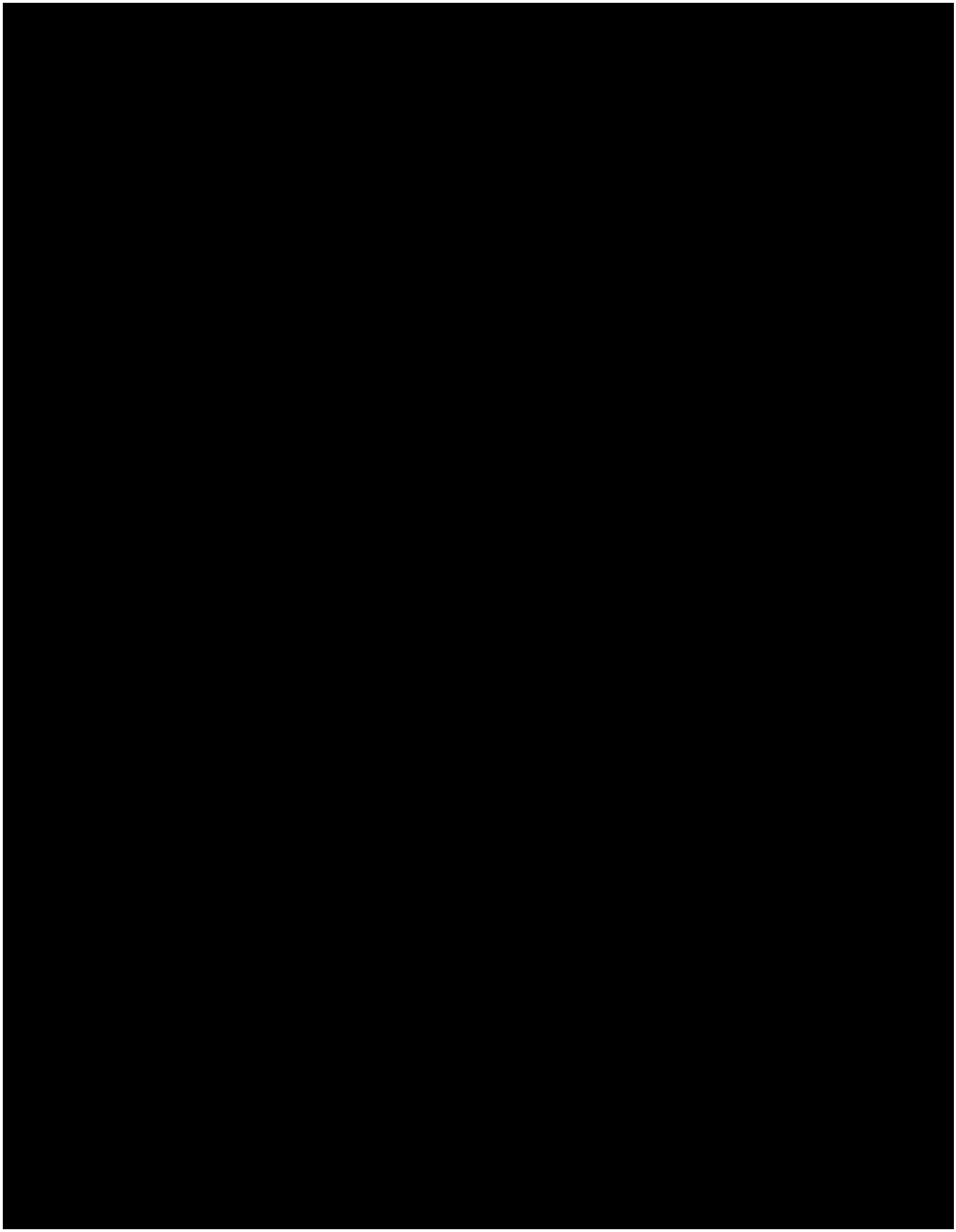
Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

C. Geographic Map



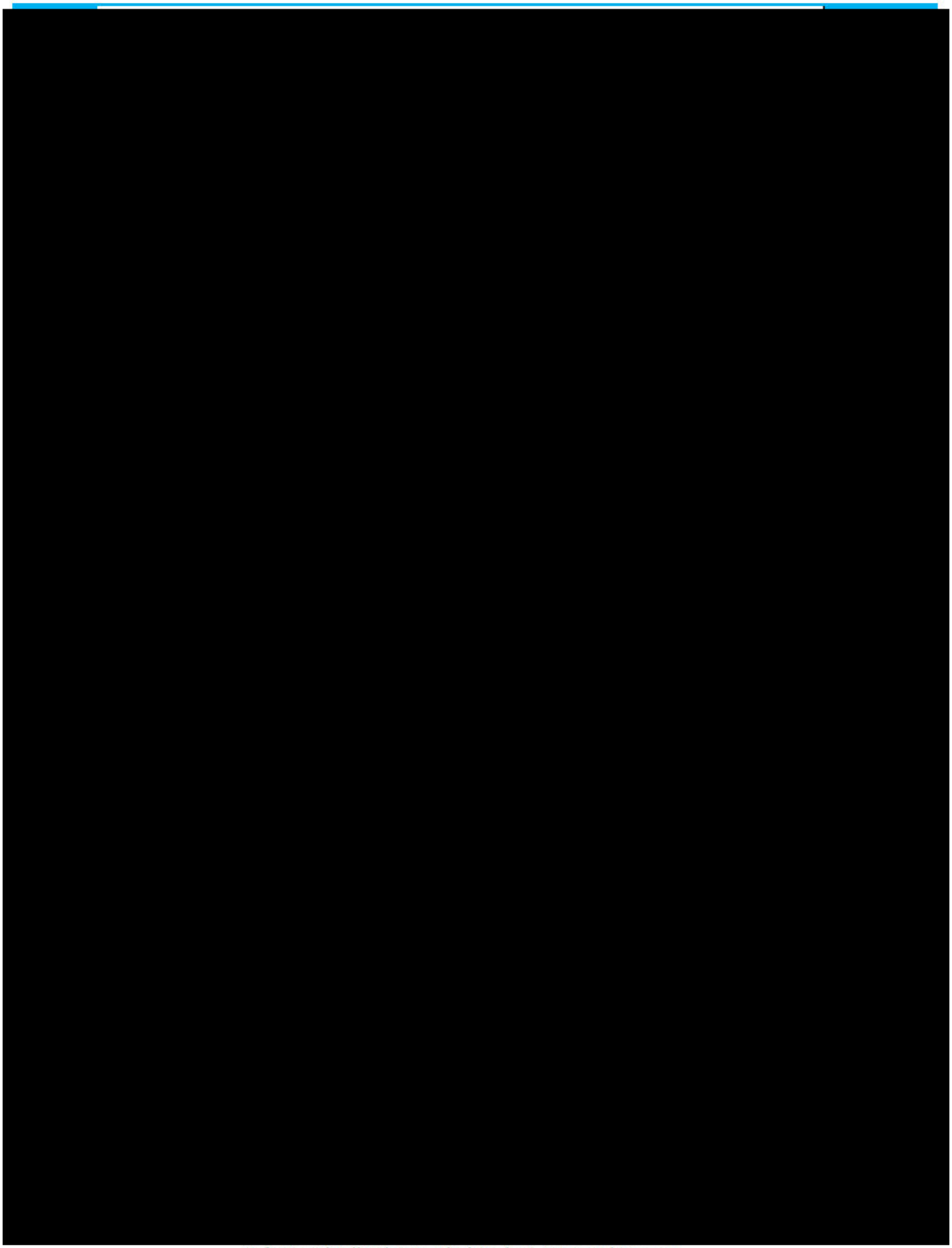


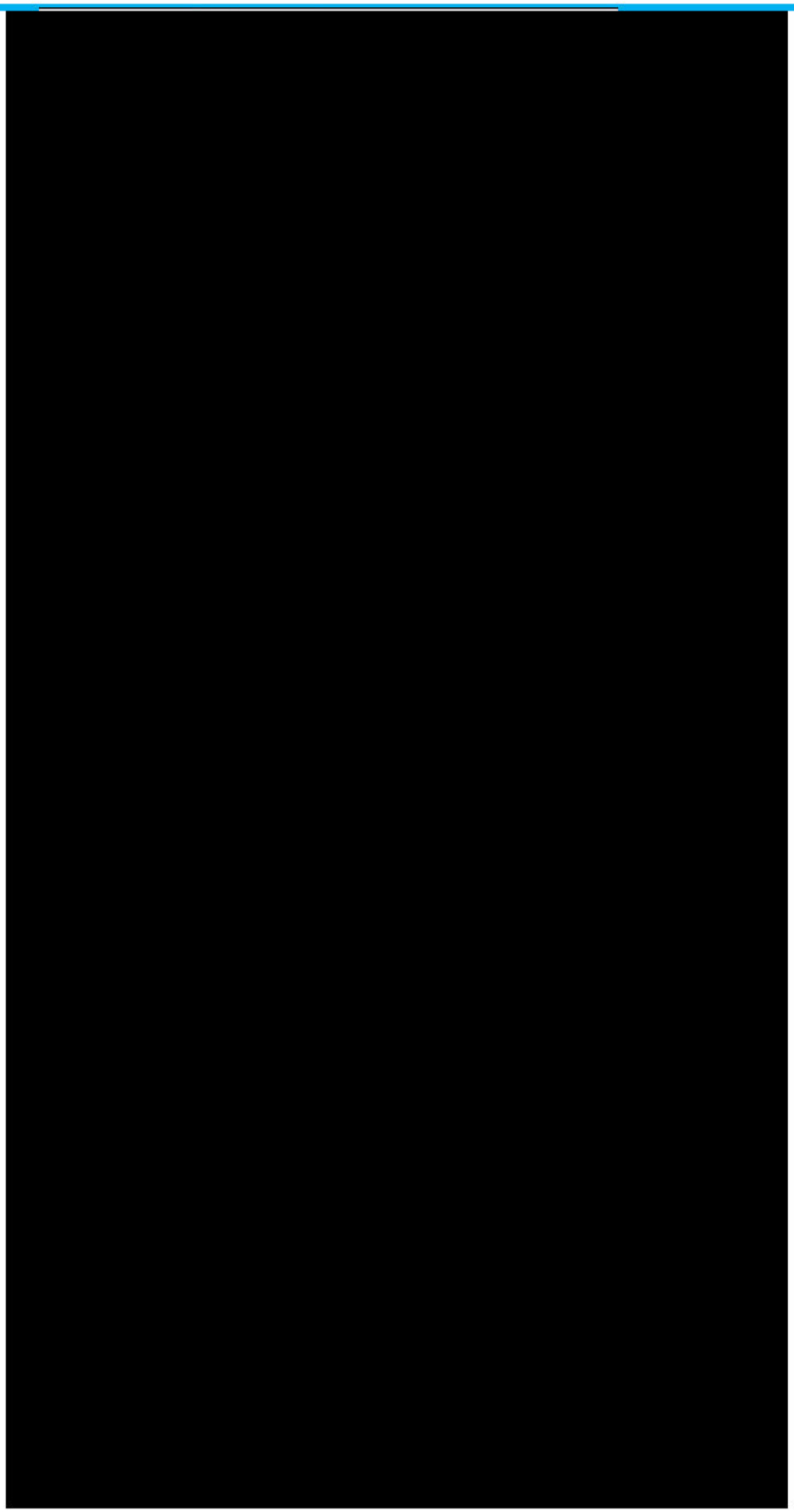


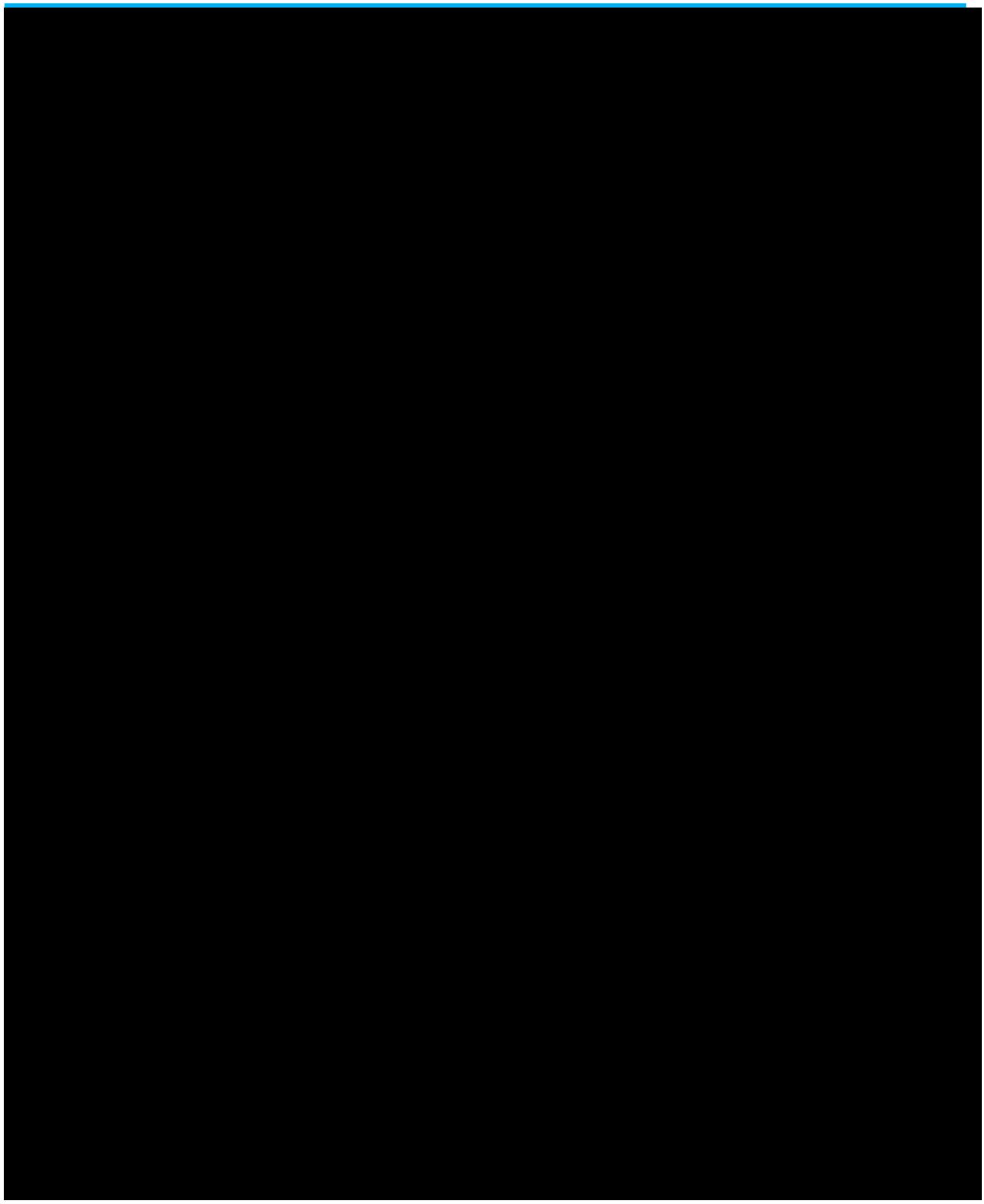


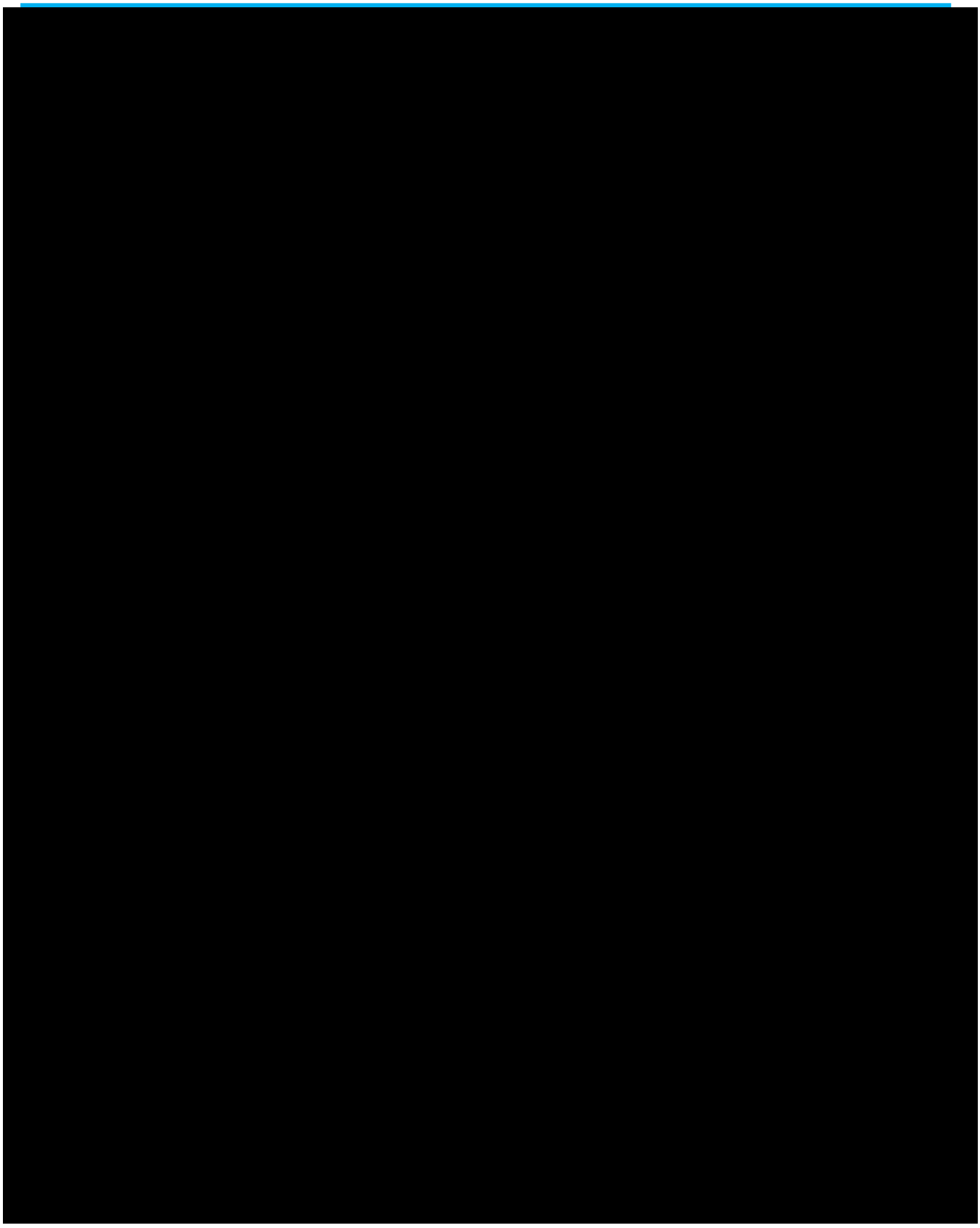
EVERSOURCE

Operations Project Approval Form

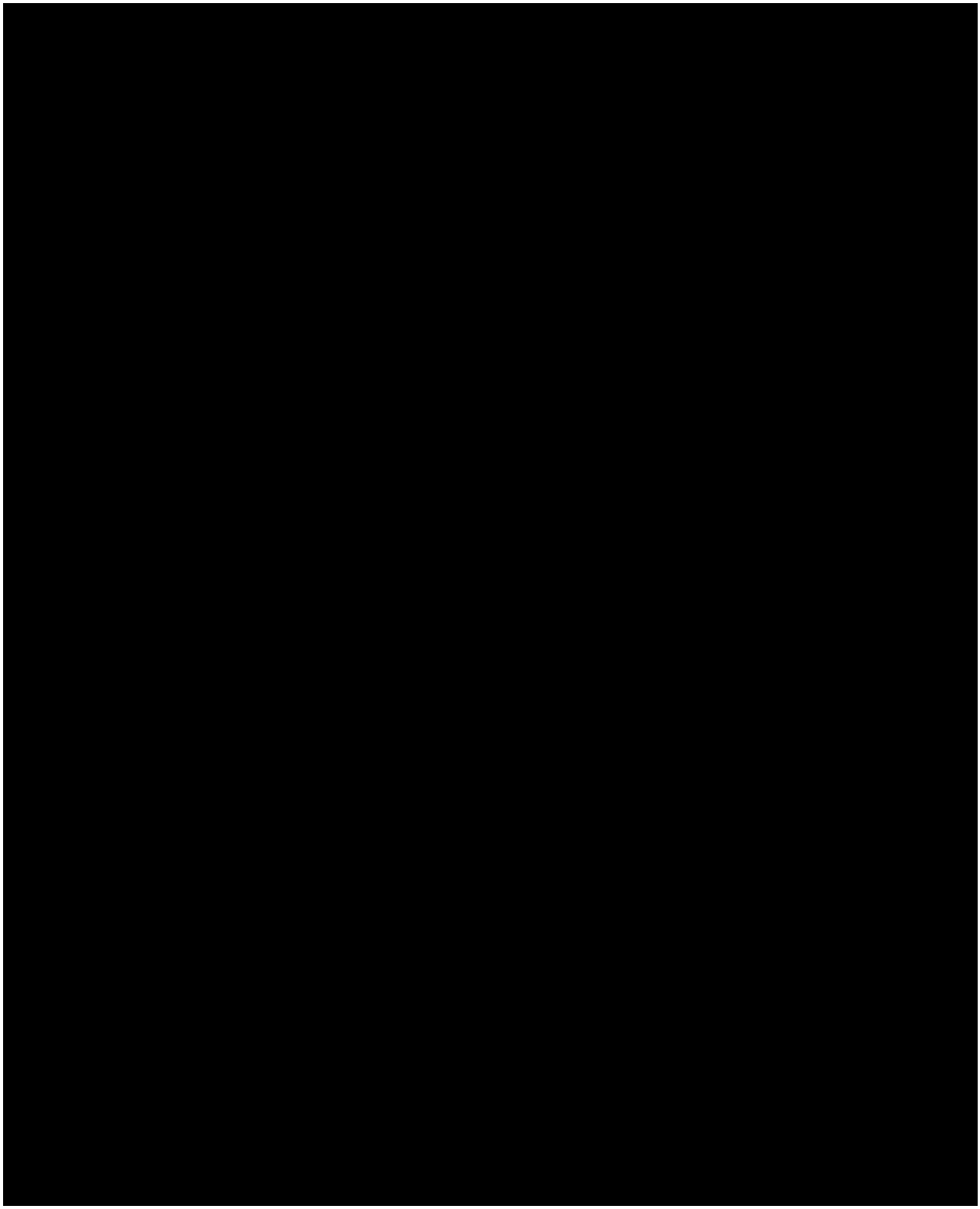








D. Project One-line



[redacted]

E. Load Sheet

[redacted]

[redacted]

Substation Loads

Substation Transformer	Circuits	Voltage	Loads (A)				Normal			Emergency			Comments
			A	B	C	Avg	Rating	% of Rating	Limiting Factor	Rating	% of Rating	Limiting Factor	

[redacted]

Project Number: CD02440

Project Name: 34R51 ROW Rebuild

Project Load Summary

Option 1 - ROW Rebuild

Circuit	S/S	Zones Being Picked Up	kV	Zone Amperes	Load	Normal			Emergency			Comments

[redacted]

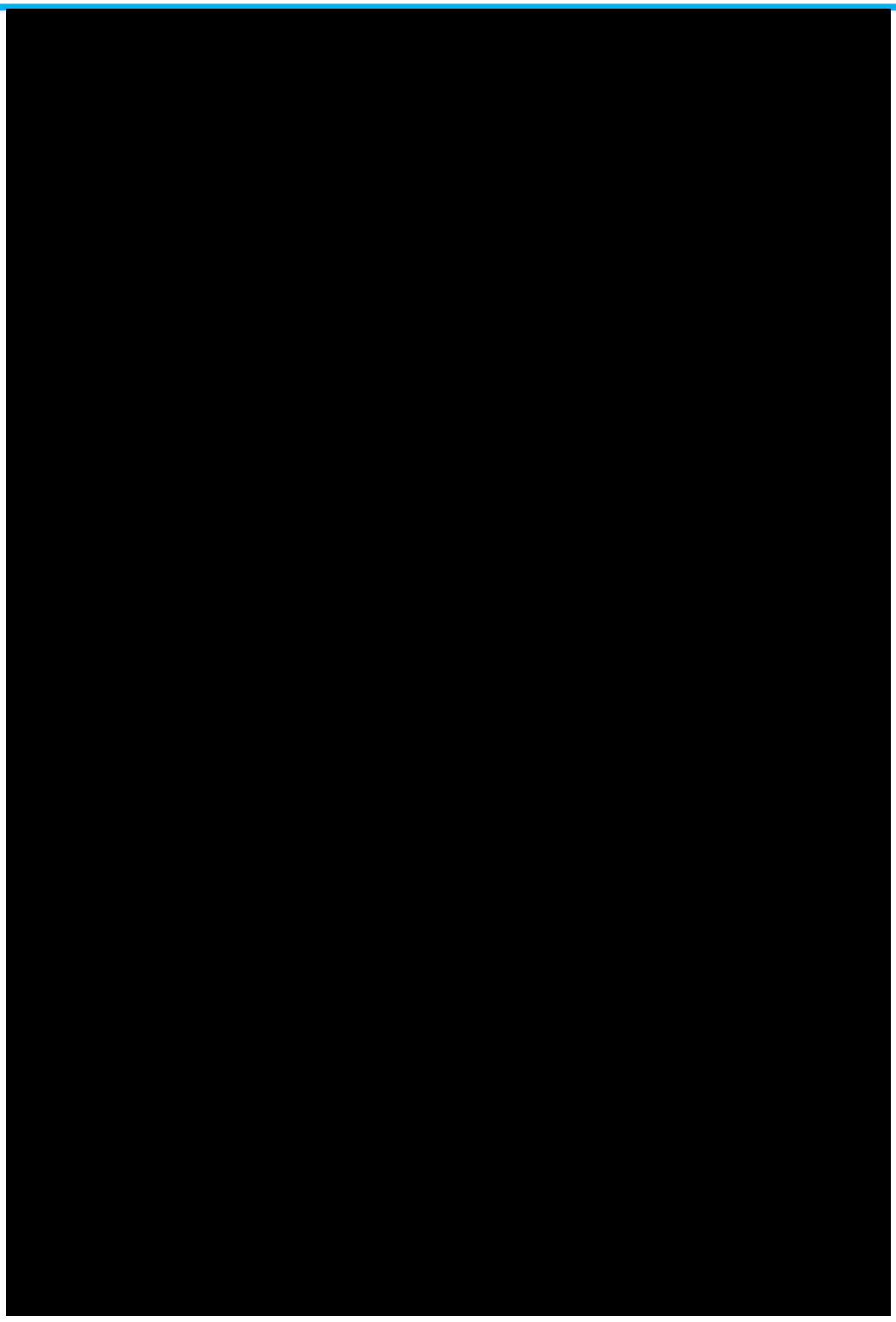
Substation Loads

Substation Transformer	Circuits	Voltage	Loads (A)				Normal			Emergency			Comments
			A	B	C	Avg	Rating	% of Rating	Limiting Factor	Rating	% of Rating	Limiting Factor	

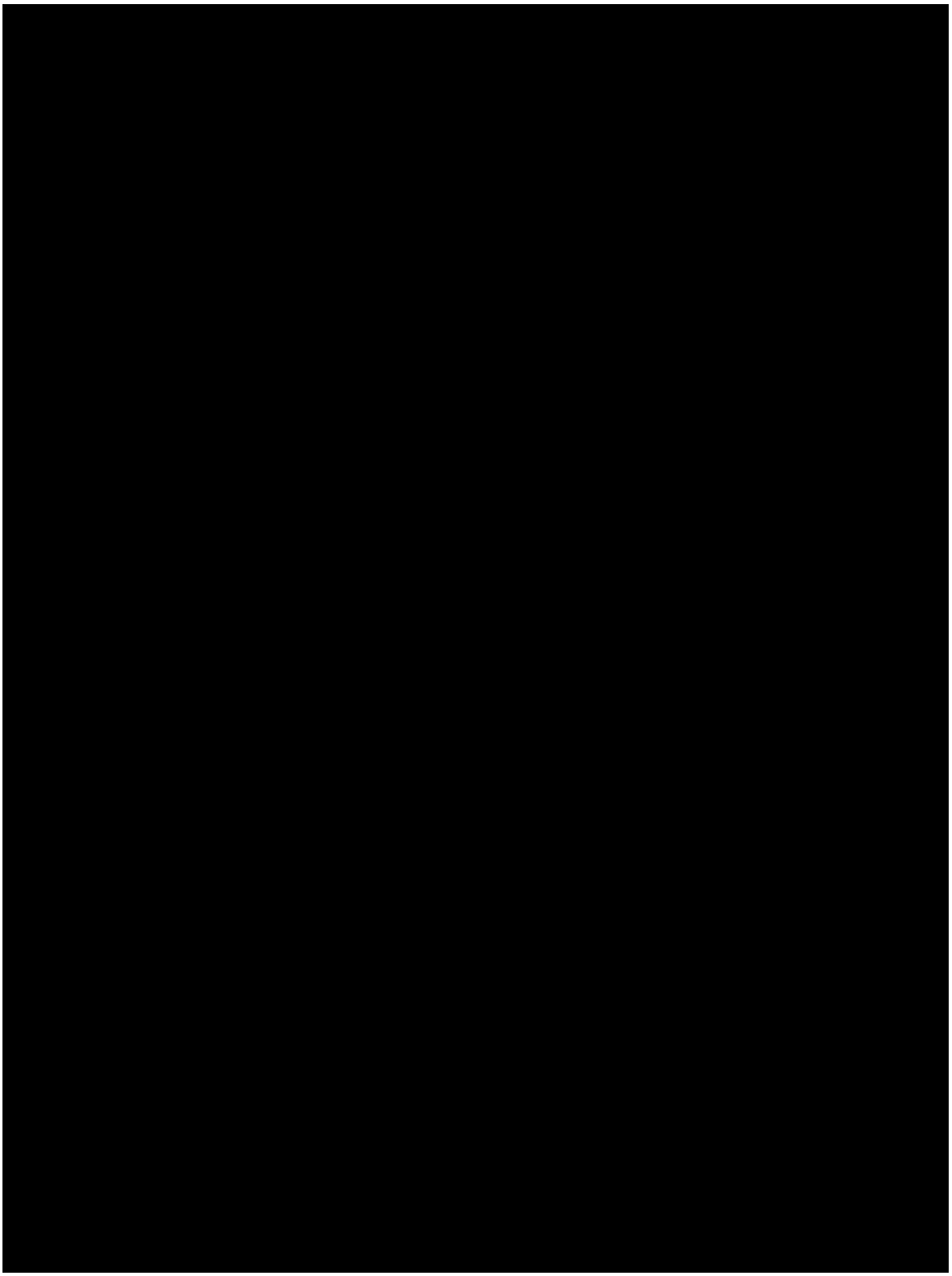
[redacted]

F. 2013 Burn Down Photos

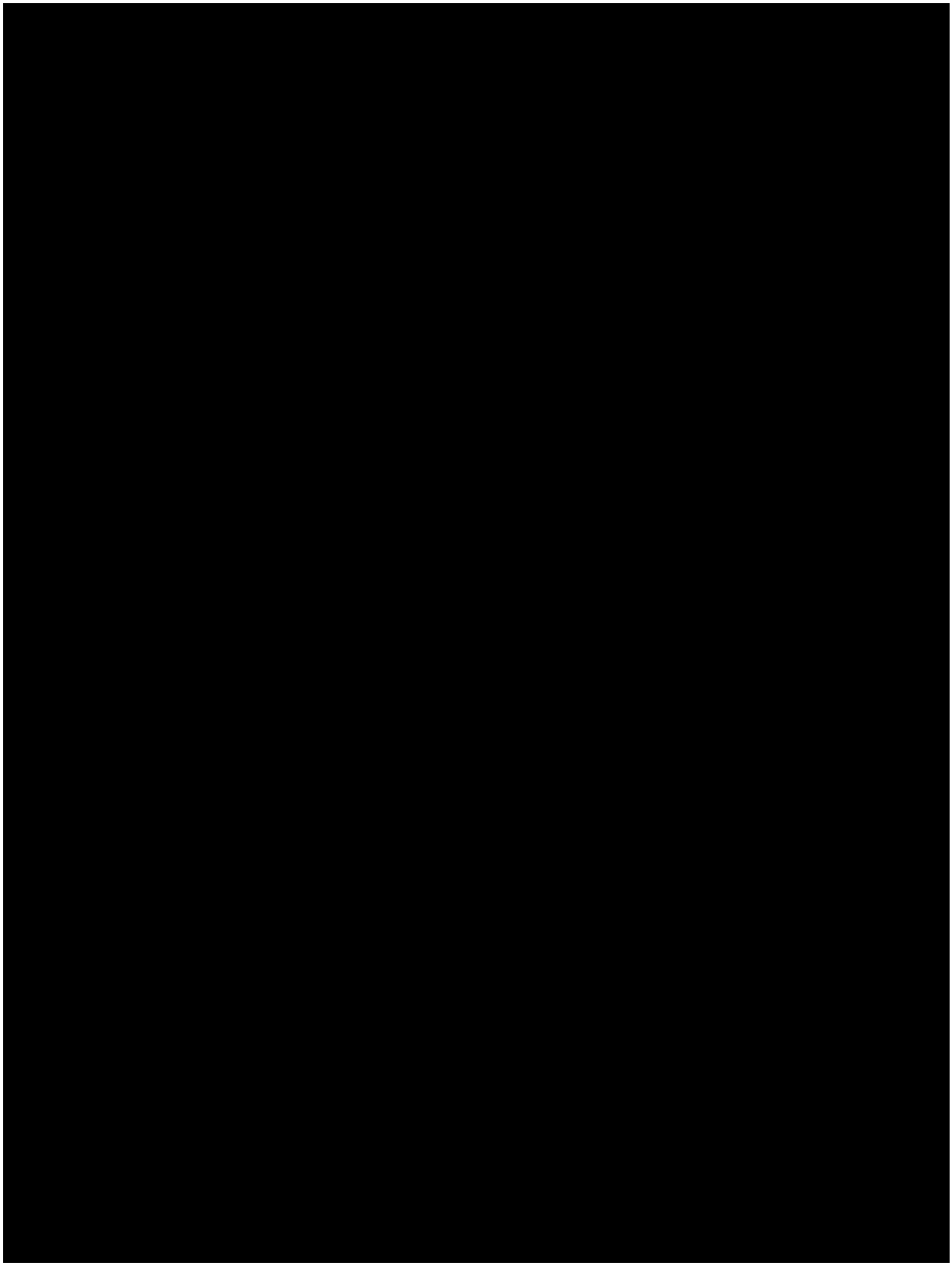


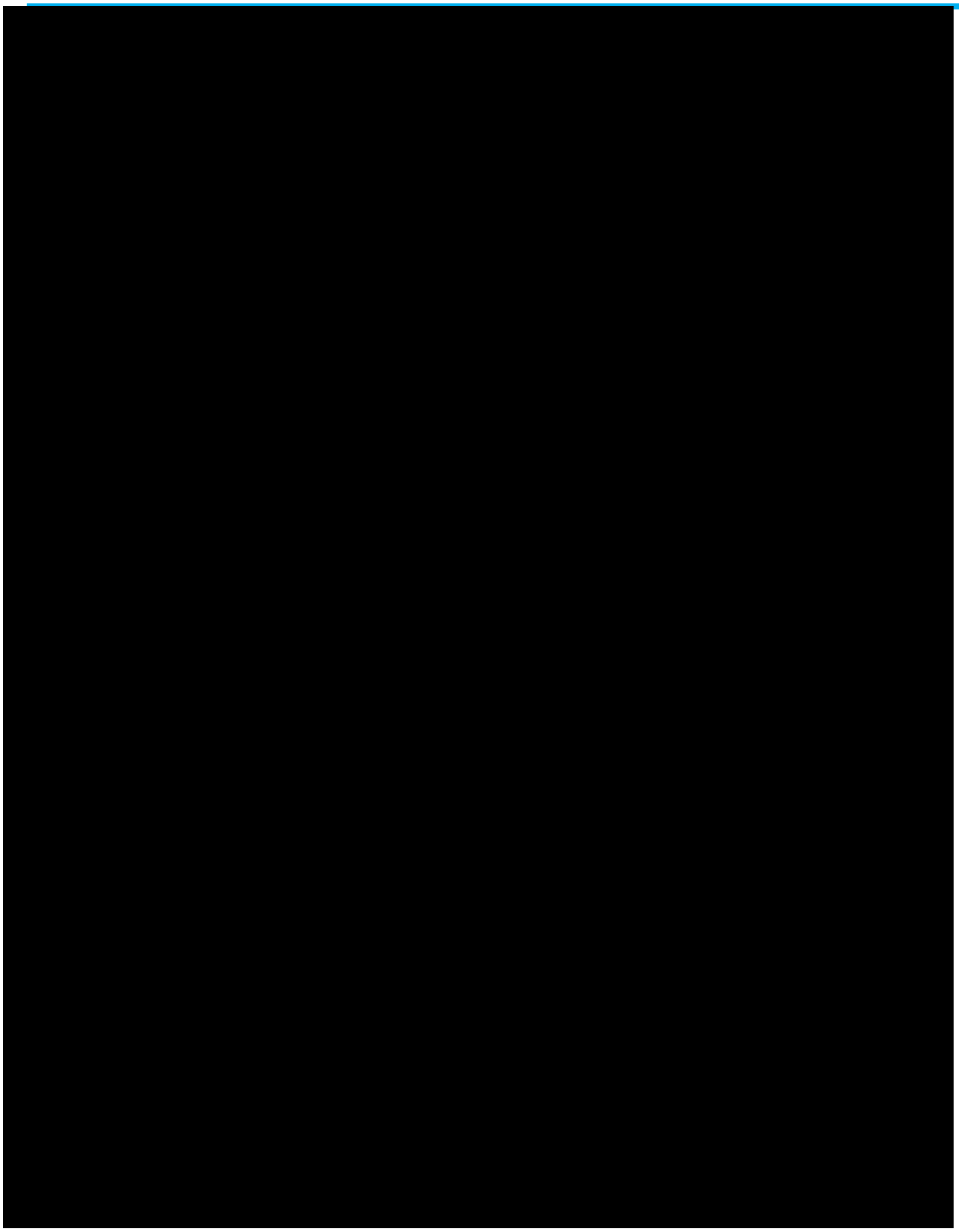


G.2024 Burn Down Photos



H.ROW 113 Field Photos







H-Frame with Split Pole Tops





H Frame with Split Support Structure







H Frame with Wood Pecker Damage



Deteriorating Pole Top

Project Title: [redacted] ROW Rebuild	Project Number: CD02440
Date Prepared: 12/10/2025	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: 12/31/2027	NWS Excludable: ☒ Yes ☐ No
Total Capital Request: $19.796M	Authorization Type: Full Funding

11. Executive Summary

Full funding is being requested for this project at a cost of $19,796k, which is 121% of the $16,297k partial funding estimate. There is no change in project scope. The increased project cost of $3,472k is due to increases in indirect costs associated with the planned project work.

The original project was presented as follows:

CD02440 seeks to address contingent loading limitations and aging infrastructure on the [redacted] near Goshen, CT. The [redacted] This circuit is responsible for feeding three smaller distribution substations: [redacted]. In total, over 3,100 customers and 11 critical facilities are supplied from this normal feed. The identified portion of the [redacted] is comprised of roughly [redacted] of 3-ph 1/0 ACSR conductor. The identified segment includes 152 poles with an average age of 45 years. The [redacted] has experienced 8 reliability related outages in the last 15 years and has seen 3 instances where the segment of 1/0 ACSR was burnt down due to overload under contingency due to switching. To prevent future asset damage due to switching and to address the aging infrastructure within this ROW, it is suggested that this ROW be rebuilt to modern distribution standards, and the entirety of the existing 1/0 ACSR backbone be reconductored. This would result in the reconductoring of [redacted] of 1/0 ACSR backbone, the installation of [redacted] new steel distribution poles within the ROW, and [redacted] new wood poles along road-side segments. After project completion, this portion of the [redacted] will be resistant to outage events and will serve as a robust tie point under contingency. The cost for the suggested work is $16.297M.

Title: [redacted] Rebuild
Division: Western
District: Torrington
Town(s): Goshen, Litchfield
Circuits: [redacted]

12. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Year 2026	Year 2027	Year 2028+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	489.0	489.0	0.0	977.9
Outside Services	2,550.6	2,550.6	0.0	5,101.2
Materials	638.1	638.1	0.0	1,276.2
Removals	273.9	273.9	0.0	547.9
Risk and Contingency	690.5	690.5	0.0	1,381.1
Other	0.0	0.0	0.0	0.0
Subtotal – Direct Costs	**4,642.1**	**4,642.1**	**0.0**	**9,284.2**
Indirect Capital Costs				

Indirect/Overheads (including benefits)	5,255.7	5,255.7	0.0	10,511.4
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal – Indirect Costs	**5,255.7**	**5,255.7**	**0.0**	**10,511.4**
Total Gross Capital Costs	**9,897.8**	**9,897.8**	**0.0**	**19,795.7**
Customer Contribution	0.0	0.0	0.0	0.0
Total Net Capital Project Costs	**9,897.8**	**9,897.8**	**0.0**	**19,795.7**

Explain unique payment provisions, if applicable:

13. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

The [redacted] is a 27.6kV sub-transmission line that feeds from Harwinton to Kent CT. The circuit travels over 37 miles and passes through 5 towns before it ties with the [redacted]. The [redacted] travels over difficult terrain beginning in Harwinton where it goes off-road through a series of ROWs before traveling through [redacted] in Litchfield, CT. At this point, when traveling through White Woods, the circuit passes through swampland with standing water which makes access difficult. This area was rebuilt using transmission-style steel tower construction Under CD00969 in 2018.

From this point the [redacted] circuit runs roadside between [redacted]. in Litchfield. This portion of the circuit is 3-PH crossarm construction with 1/0 ACSR. The line transitions into [redacted] near P#1336 on [redacted] where it continues north. [redacted], the focus of this project, travels primarily through wetland zones which makes access extremely challenging. Access into this ROW requires use of a track machine, heavy matting, or helicopters. Due to this, restoration efforts are often complicated and time consuming. In addition, this ROW is responsible for servicing over 3100 customers

across 3 smaller distribution substations. Among these customers, there are 11 critical facilities, one of which is the main 911 dispatch tower for Litchfield County.

The [redacted] is one of the few major tie points within this area of Connecticut. It shares a single 2-way tie with the [redacted]. The [redacted] is a 27.6kV sub-transmission line which originates at [redacted]. This circuit shares a pole-line with the [redacted] for the first mile after it exits the substation. There have been events in the past which caused a loss to both the [redacted] due to this double-circuit line. Under this condition, the [redacted] immediately supports the [redacted]. Unfortunately, due to limited auto-ties within this area, secondary switching operations are often performed to restore additional customers. When this happens, the [redacted] ends up supporting the majority of the [redacted] and the [redacted] via tie points on the [redacted], a smaller distribution substation normally fed by the [redacted]. Under these conditions, the 1/0 ACSR backbone on the [redacted]

[redacted] has experienced 8 outages in the last 15 years. Of these, two were due to burn downs from switching when supporting the [redacted] and [redacted] circuits. More recently, an outage occurred on 7/15/24 within the ROW in which a span of 1/0 ACSR was burnt down under this contingent switching. This outage spawned a drone patrol of the entire ROW which also revealed a broken cross arm and several instances of rotten/deteriorating pole tops and H-Frame structure. The existing infrastructure within the ROW is predominantly 1971-vintage, with an average pole age of 45 years. This combination of load constraints and ageing infrastructure are the primary drivers for the suggested work. Below is the relevant outage history for the last 15 years:

Start Time	Event Circuit	Cause Type	Customer Minutes	Structure
7/22/2010	[redacted]	Lightning	90584	P# 18B
10/29/2011		Tree Related	7290948	P# 628
9/12/2013		Overload/Equip Failure	574152	P# 3691
11/22/2018		Equip Failure	87779	SCADA_VS:786:14R31-50Z
8/29/2020		Tree Related	1914	POLE:CL&P:690:7870922
7/7/2021		Lightning	153709	P# 708
3/14/2023		Tree Related	129150	SCADA_REC_RR:628:14R31-61R
7/15/2024		Overload/Equip Failure	144716	P# 698

b. Project Need

CD02440 suggests a new rebuild of ROW 113 in its current footprint with modern distribution standards. This rebuild seeks to address a contingency overload and ageing infrastructure throughout this segment of the [redacted] sub-transmission line. Under the suggested work, the 1971-vintage infrastructure and under-sized 1/0 ACSR conductor would be eliminated, ultimately improving capacity for future load growth, and promoting reliability. The suggested work is critical for ensuring future

service to the 3,100+ customers and 11 critical facilities that rely on the [redacted] as their normal source. Similarly, this work is required to ensure resilience for the [redacted] backbone and subsequent circuit ties that rely on these 27.6kV sub-transmission lines within the Northwest corner of Connecticut. If the suggested work is not performed within this ROW over 3100 customers will be put at continued risk of loss of source due to infrastructure failures. In addition, if the 1/0 ACSR backbone is not upgraded, this line will be at continued risk for overload-related damages due to switching.

c. Project Scope

CD02440 suggests the elimination of the existing 1/0 ACSR and a complete rebuild of ROW 113. Due to the project scale, the suggested work is divided into four segments.

Segment 1: Southern Roadside [redacted] Backbone Reconductoring (P#T58 [redacted] d, Litchfield to P#1336, [redacted], Litchfield).
- Reconductor [redacted] existing 1/0 ACSR w/ 556 AL TW
- Replace [redacted] Poles

Segment 2: Southern [redacted] Reconductoring & Rebuild (P#1336, [redacted] Litchfield to P# 709 ½, [redacted], Litchfield)
- Reconductor [redacted] existing 1/0 ACSR with 795 AL TW
- Instal [redacted] 1/0 ACSR Neutral
- Replace [redacted] Wood Poles with new steel distribution poles

Segment 3: Northern [redacted] Reconductoring & Rebuild (P#709 1/2, [redacted] Rd, Litchfield to P#750, [redacted], Goshen)
- Reconductor [redacted] ' existing 1/0 ACSR with 795 AL TW
- Install [redacted] ' 1/0 ACSR Neutral
- Replace [redacted] Wood Poles with new steel distribution poles

Segment 4: Northern Roadside [redacted] Reconductoring (P#750 [redacted], Goshen to P#787, [redacted] Goshen)
- Reconductor [redacted] ' existing 1/0 ACSR w/ 556 AL TW
- Replace [redacted] Poles

The scope of work associated with the preferred option is as follows:

Major Material:

- [redacted] - Steel Poles
- [redacted] - Wood Poles
- [redacted] - 3-PH 795 AL TW
- [redacted] - 3-PH 556 AL TW
- [redacted] – 1/0 ACSR Neutral

14. Alternatives Considered

NWS

NWS Exclusion Criteria (select all that apply)

☐ Project cost < $250k	☐ New Service
☐ CDOT Relocation	☐ Generator interconnection project
☒ Maintenance, Asset condition or safety related*	

*Maintenance, Asset condition or safety related justification:
CD02440 seeks to address reliability issues and load constraints along a portion of the [redacted] backbone. This area is comprised of [redacted] wooden pole structures which support approximately [redacted]' of 3-phase 1/0 ACSR Bare conductor via wooden cross arms. The identified assets have an average age of 45 years. There are many instances of rotten crossarms, deteriorating pole tops, failing/split H-Frame structures, and wildlife damage throughout this area. Without addressing these asset conditions, future reliability will be at continued risk. The deteriorating assets hold up the overloaded conductor. Thus, a NWS alone is not a viable option, the costs of NWS alone is in option 5.

Project Option Comparison

Design Criteria	Option				
	1 – 14R31 ROW Rebuild	2 – Aerial Cable Bypass	3 – Aerial Cable Bypass & 19U1/42J1 Tie	4 – 14R31 ROW "Transmission-Style" Rebuild	5 – NWS & Trouble Pole Removal
	Required to meet project need				
Contingent Loads < 100%	X	X	X	X	X
Eliminates 1/0 ACSR Backbone Limitation	X	X	X	X	
	Additional Benefits (not required to meet scope of project)				
Maintains existing ROW Corridor	X			X	X
Eliminates Need for Track		X	X		

Vehicle & Drone Surveying					
Improves existing road-side infrastructure		X	X		
Reduces Roadside Exposure	X			X	X
Number of New Ties Created	0	0	1	0	0
Authorization Type	Full	Partial	Partial	Partial	Partial
Capital Cost	$19.795M	$19.651M	$21.306M	$27.972M	$52.803M
Expense Cost	$615k	$612.9k	$662.9k	$872.41k	$1,647k
Total Cost	$20.410M	$20.264M	$21.969M	$28.844M	$54.450M
Total Cost / MVA added	$2,096/MVA	$2,088/MVA	$2,265/MVA	$2,974/MVA	$6,236/MVA
Total Cost / CM Saved	$904.27/CM	$388.30/CM	$264.68/CM	$2,467.94/CM	$2,690.25/CM
Preferred option	X				

Option Summary

Preferred:

Option 1 suggests eliminating [redacted]' of existing 1/0 ACSR with a combination of [redacted] AL TW and 795 AL TW. Roughly [redacted]' of the 1/0 ACSR will be reconductored with [redacted] TW within the ROW. This reconductoring would also include the replacement of [redacted] existing wood poles with new weathered steel poles. The roadside segments, roughly [redacted]' of 1/0 ACSR, would be reconductored with [redacted] TW. This would require the replacement of roughly [redacted] wood poles. Upon completion the existing [redacted]13 would be retained and there would be no change to the OH configuration. The cost for this option is $19.795M.

This option is preferred as it resolves the contingent overload while also addressing the ageing infrastructure throughout the ROW. Under this option, the ROW is retained, which reduces road-side exposure and lowers inconvenience to residents near the ROW.

Other(s):

There were three alternate options considered for this project. They are as follows:

Option 2 suggests eliminating ROW 113 and re-locating the line road-side via an aerial-cable under-build. this option would require removal of structures from P#1336 near [redacted] Litchfield to P#750 on

[redacted]., Goshen. Roughly [redacted]' of new 750 AL aerial cable would be installed from P#1336 to P#750 by way of [redacted]. An additional segment of [redacted] AL AC would be installed on [redacted] In order to retain the existing auto-loop, two new reclosers would be installed near the intersection of Brooks Rd & Beach St. Due to the scope of work required to run the aerial cable bypass, an opportunity to convert a lateral segment of the [redacted] would also be made possible. This conversion would involve the removal of an existing 23/8.32kV step XFMR on [redacted] and the replacement of 24 OH transformers & 8 UG transformers. Additionally, [redacted]' of 1-ph 477 AAC TW would be installed along Beach St under the conversion work. After this work is complete ROW 113 will be eliminated and repositioned as a new aerial cable bypass and the identified lateral on the 19U2 would be converted from 8.32kV to 23kV. The cost for this option is $19.651M.

This option is not preferred because, despite offering significant accessibility improvements, this option would introduce significant reliability concerns via roadside relocation. In addition, there are concerns with public reception surrounding the larger poles and number of lines that would need to be installed along these residential roads. Currently, Option 1 offers a better design solution.

Option 3 includes all the work from option 2, but with modification to incorporate a new auto-tie between the [redacted] Under this option, the scope of work surrounding the aerial cable bypass remains the same. The addition of a new 2-way tie between the [redacted] is planned within this option. To make this possible, the conversion of the [redacted] lateral would include an additional line extension for 2 new phases comprised of [redacted] AAC TW along [redacted] in Litchfield. A separate extension would be required on the [redacted] side to make this possible, as well. Finally, three new reclosers would be installed to ensure correct operation of the new auto-loop. This would involve a new SR and MR on the [redacted] and one new SR on the [redacted] After completion [redacted] would be eliminated, a new aerial cable bypass would be created along the [redacted] backbone, a lateral tap on the [redacted] would be converted from 8.32kV to 23kV, and a new two-way autoloop would be created between the [redacted] and the [redacted]. The cost for this option is $21.306M

This option is not preferred. While this option offers significant benefits to the reliability of the [redacted], it does so at a significant cost. Additionally, the scope of work under this option is well outside the minimum requirements for solving the load and reliability issues outlined for this project's minimum requirements.

Option 4 includes an identical scope of work for segments 1 & 4 as shown in option 1. The suggested work for [redacted] is larger in scope. Under this option, [redacted] would be entirely rebuilt using approximately 86 light duty steel transmission style poles and Davit arms. A total of [redacted]' of 3 phase 795 ACSR and 1 phase OPGW Fiber Optic Neutral. After completion, ROW 113 would be significantly less susceptible to reliability related incidents and the capacity of the overhead line would be increased greatly. These improvements would work to help limit the need to access the ROW in the future. The total cost for this option is $27.972M

This option presents a significant improvement over the current ROW construction, but at a significant expense. This option was not selected as the preferred because, despite being incredibly robust, the design does not offer enough benefit over the distribution style construction proposed in option 1 for the cost.

Option 5 suggests a Non-Wires Solution via installation of a 22.5MWh Battery. To eliminate the overload condition under contingency between the [redacted] when supporting the [redacted] load, a minimum of 6.25MVA is required. Assuming a 4-hour outage, a 10-year growth rate of ~0.43%, and a power factor of 0.9, a 22.5MWh battery would be needed. Based on this the total cost for the battery would be $54.450 Million. NWA estimate was calculated at $2M per MWh based on the two lowest of three contractor bids received in Connecticut.

This option is not preferred because it does not address the 1/0 ACSR limitation or the ageing infrastructure throughout the ROW. It does solve the contingent overload but would only be able to support this condition for 4 hours. The preferred option addresses both concerns and does so for a significantly lower cost.

15. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	3/2025
100% Detailed Engineering Completion	7/2025
Fully Funded	12/2025
Construction Start	1/2026
In Service Date	12/2027

16. Regulatory Decisions

17. Codes and Standards

DSEM 06.651 Spacing of Distribution Lines in Right-of-Way
DSEM 06.301 Pole Replacement
DSEM 06.271 Feeder Backbone Conductor Size Selection
DSEM 06.321 Environmental Considerations

18. Risk and Contingencies

Contingencies:

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2026	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	2026	High	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2026	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.	2026	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2026	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2026	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2026	High	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	2026	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	2026	High	Use of mats and specialty equipment, only work during certain times of the year.

19. References

References
1. CD00969 – Campville ROW Pole Replacements
2.
3.

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

Attachment	Included in Submittal?
A. Project Checklist	*YES*
B. Cost Estimate	*YES*
C. Geographic Map	*YES*
D. System and Station One-Lines	*YES*
E. Load Sheet	*YES*
F. Other: 2017 Burn Down Photos	*YES*
G. Other: 2024 Burn Down Photos	*YES*
H. Other: ROW 113 Field Photos	*YES*
I. Other: Drone Engineering Patrol Report [7/6/2024]	*NO*

I. Project Checklist

Project Authorization Checklist

Project Initiator: [redacted]
Project #: CD02440
Project Title: [redacted] **ROW Rebuild**
Funding Type:

☒ Partial PAF ☐ Full PAF

Project Alternatives:

☒ Options considered ☒ Explanation why alternatives were not selected

☐ NWA considered ☒ Explanation why preferred option was selected

Project Requirements (Review all, and check all that apply):

NR = Not Required R=Required C = Complete

EVERSOURCE

Operations Project Approval Form

NR	R	C		NR	R	C	
☒	☐	☐	Easement	☒	☐	☐	TD007
☐	☐	☒	Trimming Estimate Received	☐	☐	☒	ROW trimming Estimate Received
☐	☐	☒	Environmental Review Initiated	☐	☐	☒	Review with Operations
☒	☐	☐	Permits (state roads)	☒	☐	☐	Underground permits
☒	☐	☐	P&C Settings	☐	☒	☐	Material long lead
☒	☐	☐	Synergi load flow				

PAF Documents Attached:

☒ One Lines ☒ Geographical Map ☒ Load Projections ☒ Estimates

☒ Other Documents (List):

PAF Review Complete:

☐ Lead Reviewed by: Date:

☐ Manager Reviewed by: Date:

J. Project Checklist

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Work Classification

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

Ownership / Management

AWC: Torrington
Statewide: No
Owner: Dippelhofer, Eric
Manager: Handler, Robert

Project Information

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

Budget Summary - Preferred Option — 14R31 ROW Rebuild

2026

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	Reconductoring - P#T58 to P#654 - T.W.	Draft	0	28%	$1,229,073	$1,229,073
5	ROW Rebuild - P#654 to P#709 1/2	Draft	0	28%	$3,825,665	$3,825,665
7	Southern ROW Matting	Draft	0	28%	$3,619,789	$3,619,789
8	14R31 ROW Material Removals - Southern	Draft	0	28%	$239,926	$239,926
18	Environmental Impact Study	Draft	0	24%	$37,200	$37,200
19	ROW Trimming Estimate	Draft	0	24%	$186,000	$186,000
				2026 Total:	**$9,137,653**	**$9,137,653**

2027

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	Reconductoring - P#750 to P#787 - T.W.	Draft	0	32%	$1,599,269	$1,599,269
6	ROW Rebuild - P#709 1/2 to P#750	Draft	0	32%	$4,238,286	$4,238,286
12	14R31 ROW Material Removals - Northern	Draft	0	32%	$170,949	$170,949
15	Northern ROW Matting	Draft	0	28%	$1,659,840	$1,659,840
				2027 Total:	**$7,668,343**	**$7,668,343**
				Total Project:	**$16,805,996**	**$16,805,996**

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Specific Project Proposal - Project #: CD02440

14R31 ROW Rebuild

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	[redacted]		$16,805,996	$0	100%	$1,140,674.64	$747.33	☑
O2			$16,747,267	$0	100%	$9,083.41	$320.91	☐
O3			$18,156,020	$0	100%	$1,659.95	$218.74	☐
O4			$23,838,207	$0	100%	$376,815.47	$2,039.62	☐

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Specific Project Proposal - Project #: CD02440

[redacted]ebuild

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	Reconductoring - P#T58 to P#654 - T.W.	$1,229,073			$108.66	$46.76
2	Reconductoring - P#750 to P#787 - T.W.	$1,599,269			$141.15	$60.74
3	Reconductoring - P#T58 to P#654 - A.C.	$1,705,482			$0.00	$0.00
4	Reconductoring - P#750 to P#787 - A.C.	$2,166,248			$0.00	$0.00
5	ROW Rebuild - P#654 to P#709 1/2	$3,825,665			$225.10	$96.87
6	ROW Rebuild - P#709 1/2 to P#750	$4,238,286			$249.38	$107.31
7	Southern ROW Matting	$3,619,789			$0.00	$0.00
8	[redacted]Material Removals - Southern	$239,926			$0.00	$0.00
9	Aerial Cable Bypass - P#654 to P#1459	$4,602,816			$222.56	$75.63
10	Aerial Cable Bypass - P#TBD to P#788	$5,813,735			$0.00	$588.49
11	[redacted]Milton Rd - Conversion (3-PH)	$1,024,596			$443.50	$366.86
12	[redacted]Material Removals - Northern	$170,949			$0.00	$0.00
13	[redacted] Tie	$987,169			$46.49	$18.34
14	[redacted]Milton Rd Conversion (1-PH)	$603,011			$261.02	$215.91
15	Northern ROW Matting	$1,659,840			$0.00	$0.00
16	T-Style Construction - South	$11,650,152			$2,819.37	$958.13
17	T-Style Construction - North	$8,725,638			$2,111.63	$717.61
18	Environmental Impact Study	$37,200			$0.00	$0.00
19	ROW Trimming Estimate	$186,000			$0.00	$0.00

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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-01

General Information

Segment: 1 - Reconductoring - P#T58 to P#654 - T.W. Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: BB-Reconductoring Trimming Required: ☑ In Service Date: 12/31/2026

Description: P#T58 to 654
- Recondutor existing 1/0 ACSR w/ 477 AL TW
- Replace poles where appropriate

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
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Specific Project Proposal - Project #: CD02440

[redacted]Rebuild

Design Alternative CD02440-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$960,214
Contingency Amount:	$268,860
Estimate:	$1,229,073
Reimbursement:	$0
Net Amount:	**$1,229,073**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	[redacted]		$4,562.48
POLE OH - POLE - 3ph (Telephone custodian)	23-OH12			$32,396.00
POLE OH - POLE - 3ph (Eversource custodian)	23-OH14			$72,945.60
OTHER OTHER 30% Contractor Adder	23-ALL14			$216,972.00
OTHER OTHER Estimated Traffic Costs	23-ALL14			$20,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Install 3-Ph 477 AL TW from P#T58 to P#654	23-OH27			$561,195.44
OH WIRE OH - Remove circuit wire (3 phase) Remove 3-ph 1/0 ACSR from P#T58 to P#654	23-OH37A			$23,142.08
OTHER OTHER Trimming Cost from P#T58 to P#654 per Arborist	23-ALL14			$29,000.00

Connecticut Light & Power
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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-01

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted]	LITCHFIELD	[redacted]	E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/14/2024 Years History: 6.01

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	50%
Cust. Intrrpts:	30%	50%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	196	118	196	140	233
Cost Per Cust. Intr. Saved:	10,433.56	6,259.92	10,433.56	6,259.92	8,796.69	5,278.16
Customer Minutes Saved:	6,787	11,311	6,787	11,311	15,771	26,286
Cost Per Cust. Min. Saved:	181.10	108.66	181.10	108.66	77.93	46.76

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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-02

General Information

Segment: 2 - Reconductoring - P#750 to P#787 - T.W. Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: GOSHEN Budget Year: 2027

Work Type: BB-Reconductoring Trimming Required: ☑ In Service Date: 6/30/2027

Description: P#750 to P#787
- Remove [redacted]3-ph 1/0 ACSR
- Insta[redacted]ph 477 AL TW
- Replace poles as needed

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$1,211,567
Contingency Amount:	$387,701
Estimate:	$1,599,269
Reimbursement:	$0
Net Amount:	**$1,599,269**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	[redacted]		$4,562.48
POLE OH - POLE - 3ph (Telephone custodian)	23-OH12			$92,560.00
POLE OH - POLE - 3ph (Eversource custodian)	23-OH14			$6,078.80
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A			$30,035.20
OTHER OTHER 30% Contractor Adder	23-ALL14			$274,977.00
OTHER OTHER Estimated Traffic Costs	23-ALL14			$20,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 477 AL TW from P#750 to P#788	23-OH27			$728,353.60
OTHER OTHER Tree trimming estimate from arborist	23-ALL14			$55,000.00

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted]ebuild

Design Alternative CD02440-02

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted]	[redacted] LITCHFIELD		E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	50%
Cust. Intrrpts:	30%	50%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	197	118	197	140	233
Cost Per Cust. Intr. Saved:	13,553.12	8,131.74	13,553.12	8,131.74	11,427.43	6,856.46
Customer Minutes Saved:	6,798	11,330	6,798	11,330	15,798	26,329
Cost Per Cust. Min. Saved:	235.25	141.15	235.25	141.15	101.23	60.74

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-05

General Information

Segment: 5 - ROW Rebuild - P#654 to P#709 1/2 Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: BB-Rehab+Recond Trimming Required: ☑ In Service Date: 12/31/2026

Description: Rebuild ROW from P#654 to P#709 1/2
- Reconductor w/ 795 AL TW
- Repalce all poles with new Steel construction

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 #: CD02440 [redacted] Rebuild

Design Alternative CD02440-05

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,988,801
Contingency Amount:	$836,864
Estimate:	$3,825,665
Reimbursement:	$0
Net Amount:	**$3,825,665**

Description:

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	[redacted]		$9,124.96
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A			$44,769.92
OTHER OTHER 30% Contractor Adder	23-ALL14			$889,125.00
OH WIRE OH - Neutral Install [redacted] 1/0 ACSR Neutral	23-OH31			$89,539.84
OTHER OTHER Install [redacted] Caisons at various pole locations in low-lying Water Bed Area	23-ALL14			$110,000.00
OTHER OTHER Misc Traffic Costs	23-ALL14			$2,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 3-ph 795 AL T.W.	23-OH27			$1,085,670.56
POLE Steel Pole 3PH Replace [redacted] existing ROW Poles with Steel Structures	23-OH10A			$758,570.40

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-05

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted]	[redacted] LITCHFIELD		E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	75%
Cust. Intrrpts:	30%	75%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	295	118	295	140	350
Cost Per Cust. Intr. Saved:	32,420.89	12,968.36	32,420.89	12,968.36	27,335.94	10,934.22
Customer Minutes Saved:	6,798	16,995	6,798	16,995	15,798	39,494
Cost Per Cust. Min. Saved:	562.75	225.10	562.75	225.10	242.17	96.87

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-06

General Information

Segment: 6 - ROW Rebuild - P#709 1/2 to P#750 Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2027

Work Type: BB-Rehab+Recond Trimming Required: ☑ In Service Date: 6/30/2027

Description: Rebuild ROW from P#709 1/2 to P#750
- Reconductor w/ 795 AL TW
- Repalce all poles with new Steel construction

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-06

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$3,210,822
Contingency Amount:	$1,027,463
Estimate:	$4,238,286
Reimbursement:	$0
Net Amount:	**$4,238,286**

Description:

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	4562.48 / EA	2	$9,124.96
POLE Steel Pole 3PH	23-OH10A	13078.80 / EA	41	$536,230.80
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	4.16 / FT	14,838	$61,726.08
OTHER OTHER 30% Contractor Adder	23-ALL14	1.00 / $	936,431	$936,431.00
OH WIRE OH - Neutral Install [redacted] of 1/0 ACSR Neutral	23-OH31	8.32 / FT	14,838	$123,452.16
OTHER OTHER Install 9 Casons for poles in low-lying water beds	23-ALL14	1.00 / $	45,000	$45,000.00
OTHER OTHER Misc Traffic Costs	23-ALL14	1.00 / $	2,000	$2,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 795 AL TW	23-OH27	100.88 / FT	14,838	$1,496,857.44

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-06

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 433022375	[redacted]	LITCHFIELD	[redacted]	D-4		

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	75%
Cust. Intrrpts:	30%	75%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	295	118	295	140	350
Cost Per Cust. Intr. Saved:	35,917.67	14,367.07	35,917.67	14,367.07	30,284.28	12,113.54
Customer Minutes Saved:	6,798	16,995	6,798	16,995	15,798	39,494
Cost Per Cust. Min. Saved:	623.45	249.38	623.45	249.38	268.29	107.31

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-07

General Information

Segment: 7 - Southern ROW Matting
Status: Draft
Segment Type: ENVIRONMENTAL
Town: LITCHFIELD
Budget Year: 2026
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2026

Description: Environmental Analysis Cost - $30k
Matting Estimate:

Southern Side (South of Brooks Rd):
P#654 to P#687 - 8.700'
P#696 to P#697 - 300'
P#699 to P#704 - 1,496'

Total Matting Distance: 10,496' (1.99 Miles)
Assume:

[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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-07

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,827,960
Contingency Amount:	$791,829
Estimate:	$3,619,789
Reimbursement:	$0
Net Amount:	**$3,619,789**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER	23-ALL14	1.00 / $	792,960	$792,960.00
OTHER 30% Contractor Adder/Updated Estimating Units Adder				
OTHER	23-ALL14	1.00 / $	2,035,000	$2,035,000.00
OTHER Estimated Matting Cost: See Segment Description ([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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-08

General Information

Segment: 8 - [redacted] ial Removals - Southern Status: Draft

Segment Type: OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: Other Trimming Required: ☐ In Service Date: 12/31/2026

Description: Cost for removals of equipment in existing [redacted] V starting from P#1336 to P#709 1/2:
14,838' of OH 3-ph removal
58 Structure Removals

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-08

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$187,442
Contingency Amount:	$52,484
Estimate:	$239,926
Reimbursement:	$0
Net Amount:	**$239,926**

Description:

Item Description	CU	$ / Per	Qty	Amount
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	[redacted]		$61,726.08
OTHER OTHER 30% Contractor Adder	23-ALL14			$56,116.00
OTHER OTHER 58 poles, $[redacted] on for track machine	23-ALL14			$69,600.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-12

General Information

Segment: 12 - [redacted] Material Removals - Northern Status: Draft

Segment Type: OTHER Town: LITCHFIELD Budget Year: 2027

Work Type: Other Trimming Required: ☐ In Service Date: 6/30/2027

Description: Cost for removals of equipment in existing [redacted] rting from P#1336 to P#750:
10,762 of OH 3-ph removal
40 Structure Removals

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-12

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$129,507
Contingency Amount:	$41,442
Estimate:	$170,949
Reimbursement:	$0
Net Amount:	**$170,949**

Description:

Item Description	CU	$ / Per	Qty	Amount
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	[redacted]		$44,769.92
OTHER OTHER 30% Contractor Adder	23-ALL14			$36,737.00
OTHER OTHER 40 Pole Locations [redacted] r track machine	23-ALL14			$48,000.00

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 #: CD02440

[redacted]ebuild

Design Alternative CD02440-15

General Information

Segment: 15 - Northern ROW Matting
Status: Draft

Segment Type: ENVIRONMENTAL
Town: LITCHFIELD
Budget Year: 2027

Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2027

Description: Matting Estimate:
Northern Side (North of Brooks Rd):
P#709 1/2 to P#713 - 1,135'
P#717 to P#719 - 606'
P#729 to P#731 - 587'
P#733 to P#737 - 1,139'

Assume
[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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-15

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$1,296,750
Contingency Amount:	$363,090
Estimate:	$1,659,840
Reimbursement:	$0
Net Amount:	**$1,659,840**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER 30% Contractor Adder	23-ALL14	1.00 / $	299,250	$299,250.00
OTHER OTHER Matting cost for North portion of ROW	23-ALL14	1.00 / $	997,500	$997,500.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-18

General Information

Segment: 18 - Environmental Impact Study
Status: Draft
Segment Type: OTHER
Town: LITCHFIELD
Budget Year: 2026
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2026
Description: Environmental Impact Study Cost: $30,000

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 #: CD02440

14R31 ROW Rebuild

Design Alternative CD02440-18

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$30,000
Contingency Amount:	$7,200
Estimate:	$37,200
Reimbursement:	$0
Net Amount:	**$37,200**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER	23-ALL14	1.00 / $	30,000	$30,000.00
OTHER Cost for Environmental Review				

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 #: CD02440

14R31 ROW Rebuild

Design Alternative CD02440-19

General Information

Segment: 19 - ROW Trimming Estimate
Status: Draft
Segment Type: ETT
Town: LITCHFIELD
Budget Year: 2026
Work Type: ETT Trimming
Trimming Required: ☐
In Service Date: 12/31/2026
Description: ROW Trimming Estimate from P#1336 to P#750:
Trimming Estimate from Arborist: $150,000

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 #: CD02440

14R31 ROW Rebuild

Design Alternative CD02440-19

Estimate

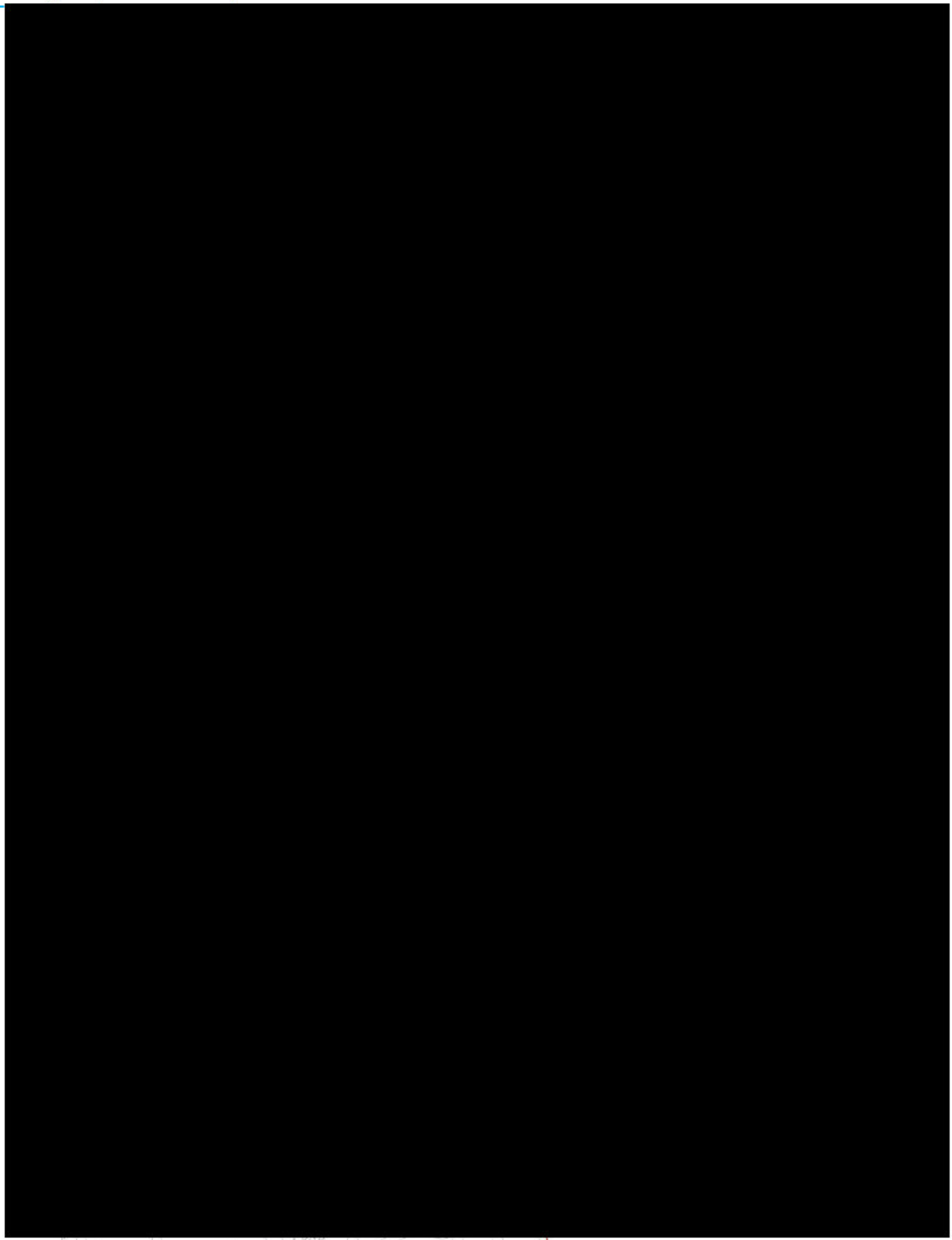
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$150,000
Contingency Amount:	$36,000
Estimate:	$186,000
Reimbursement:	$0
Net Amount:	**$186,000**
Description:	

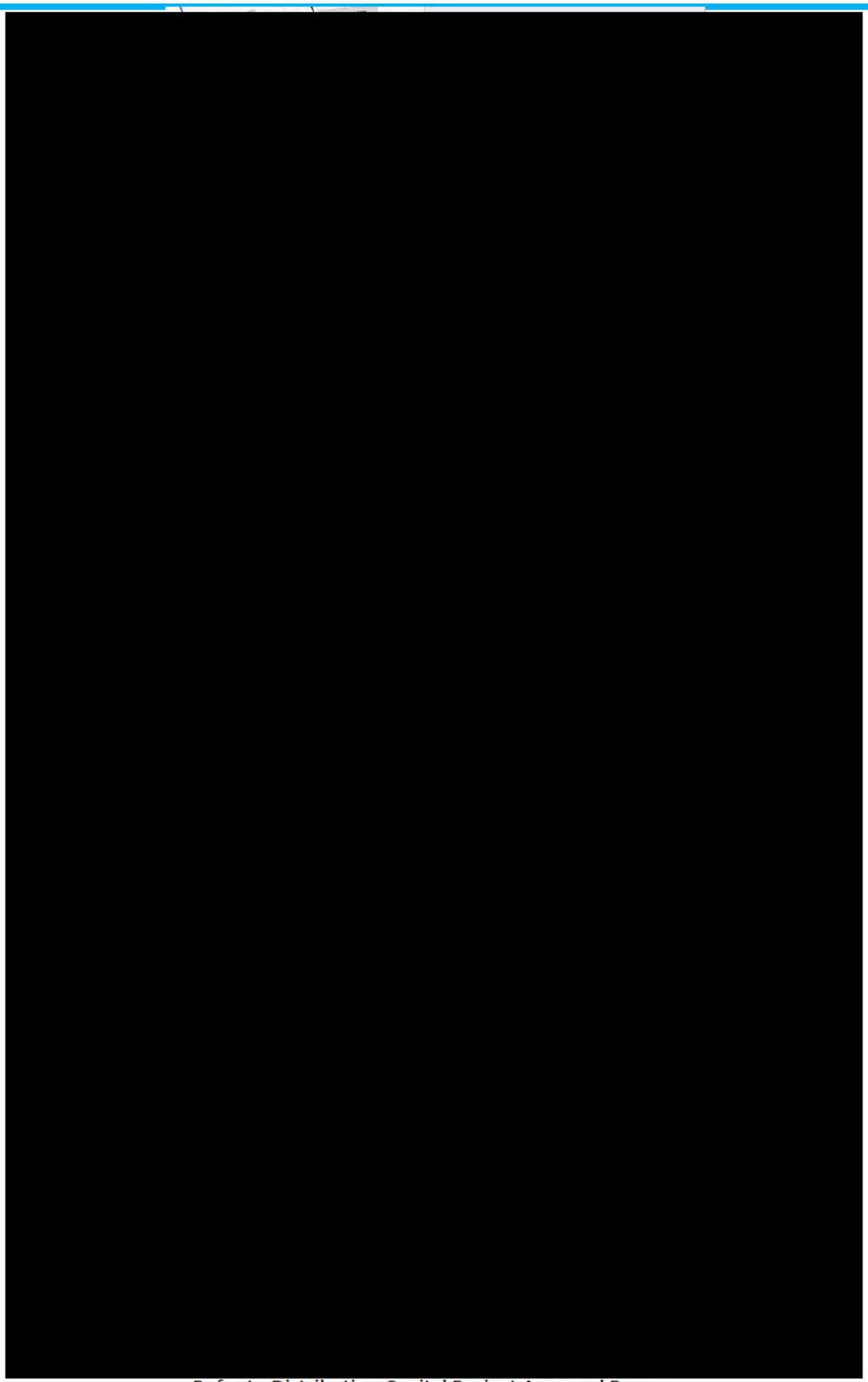
Item Description	CU	$ / Per	Qty	Amount
OTHER	23-ALL14	1.00 / $	150,000	$150,000.00
OTHER Trimming Estimate from Arboristi: Edge to Edge of easement				

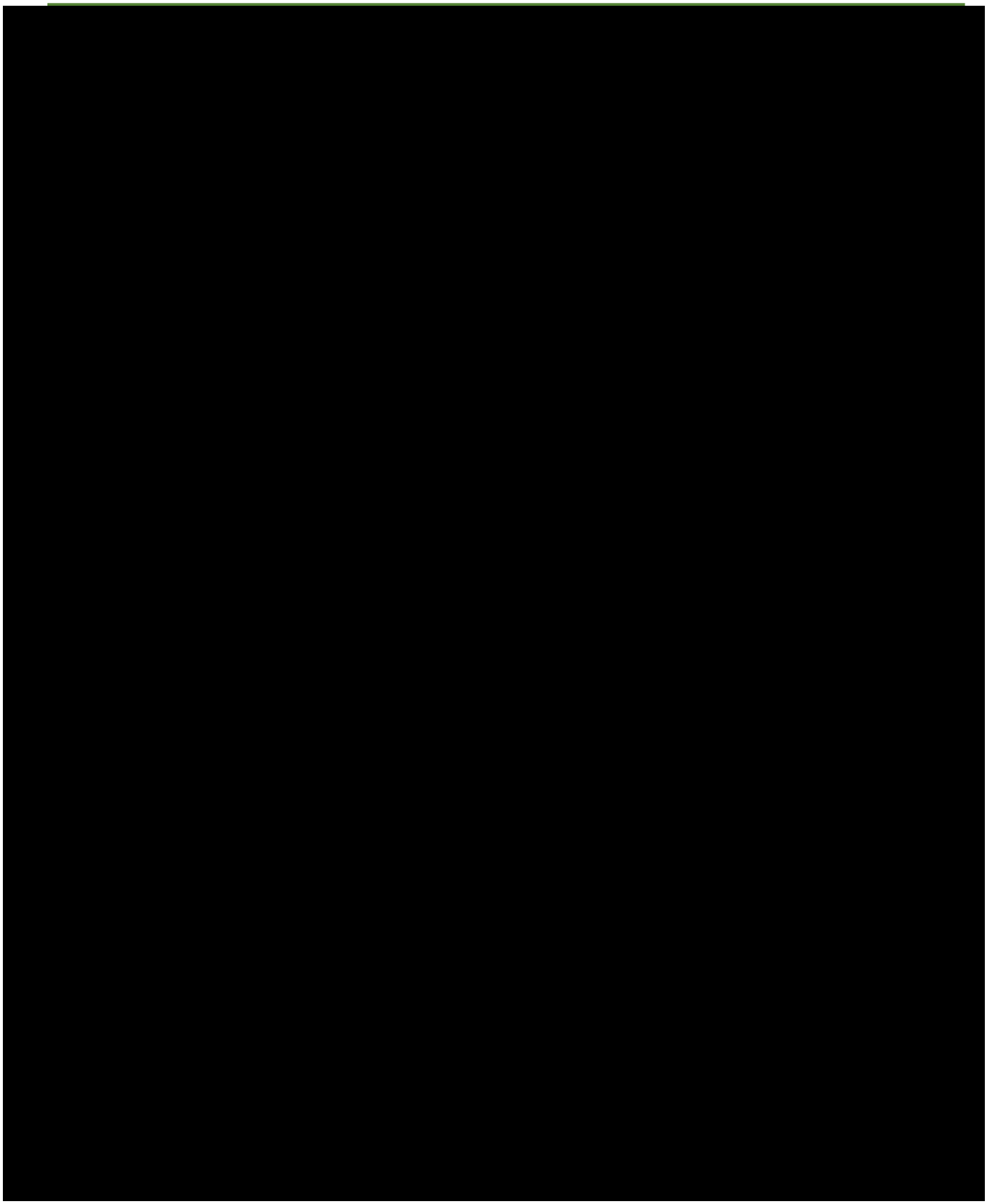
Associated / Impacted Devices

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

K. Geographic Map







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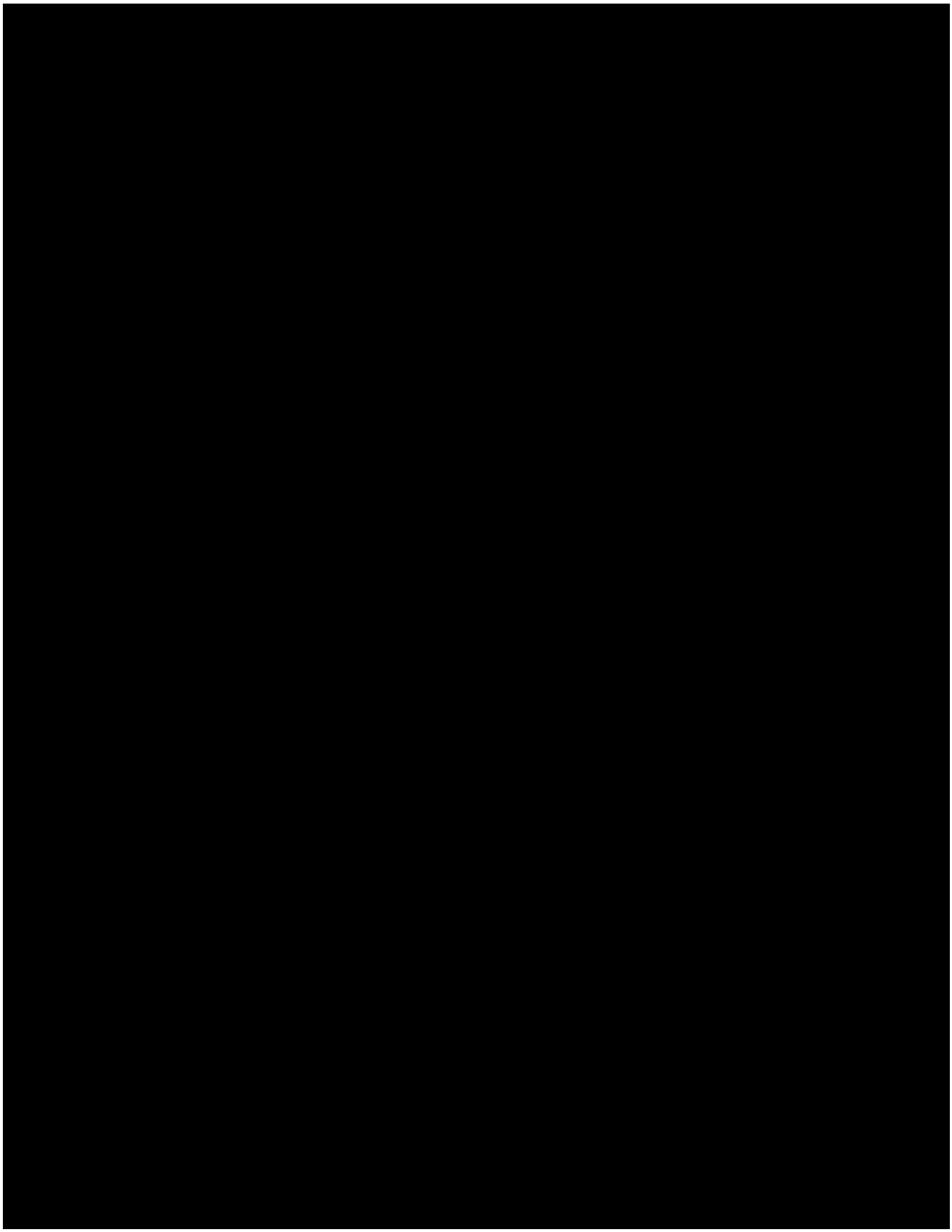
Operations Project Approval Form



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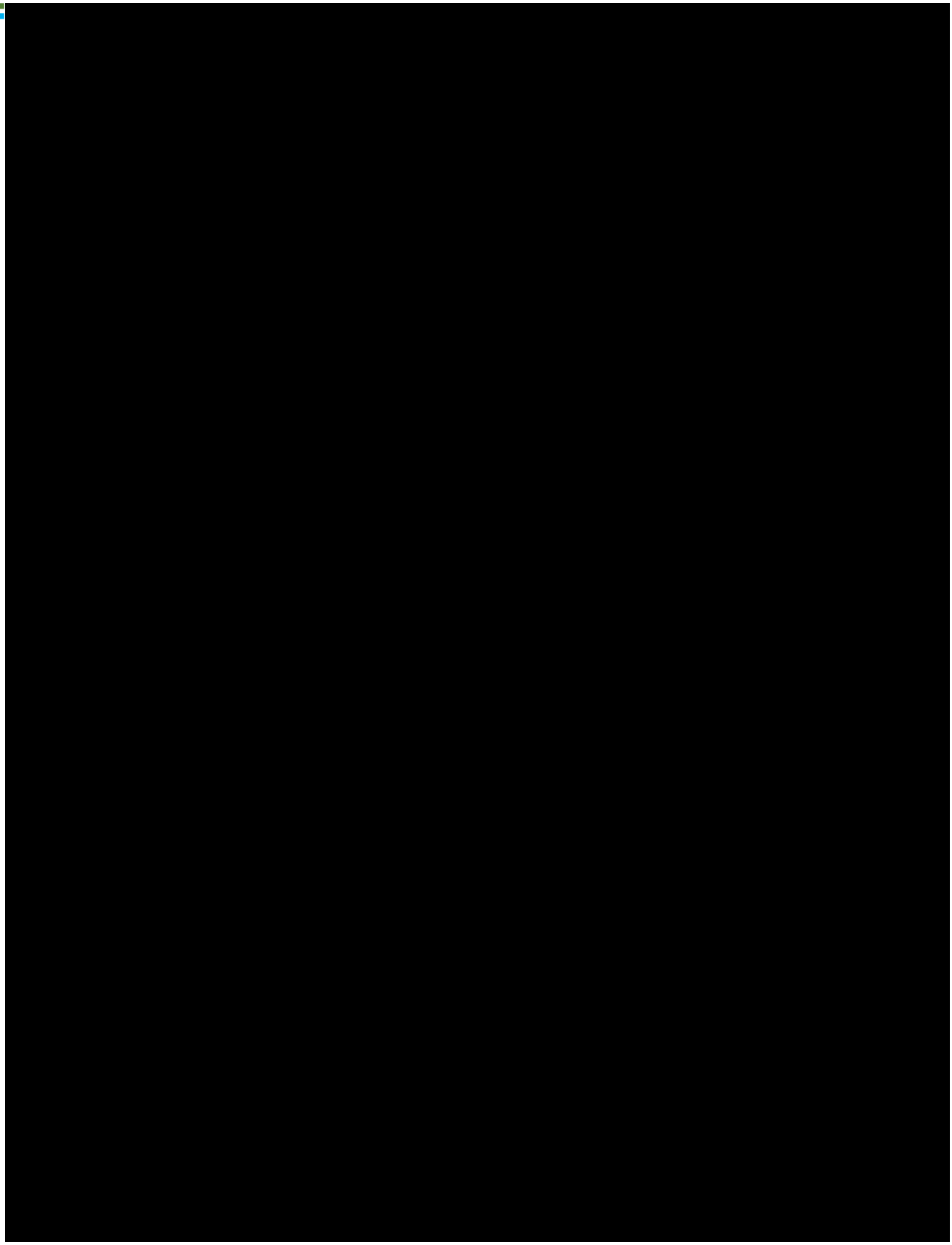
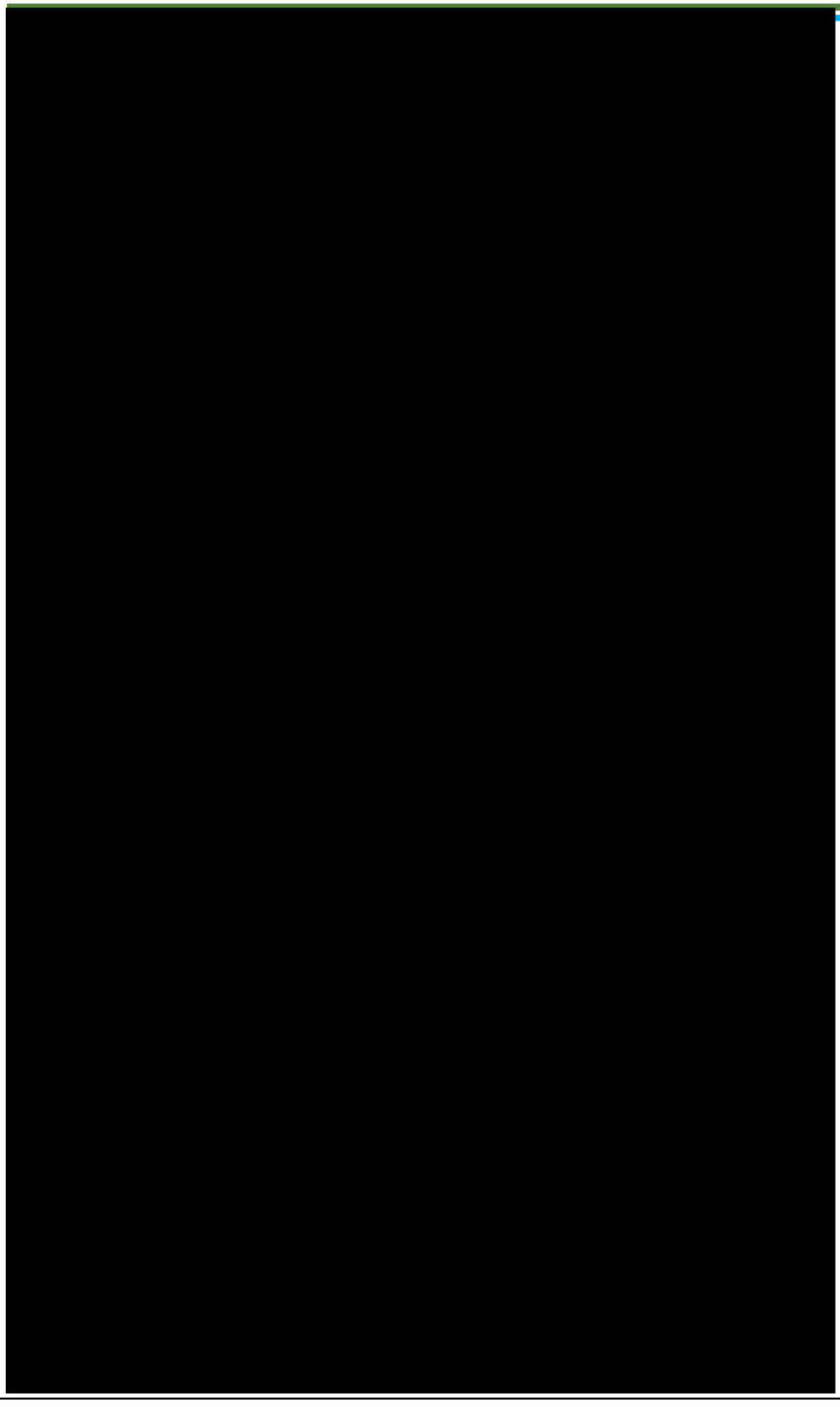
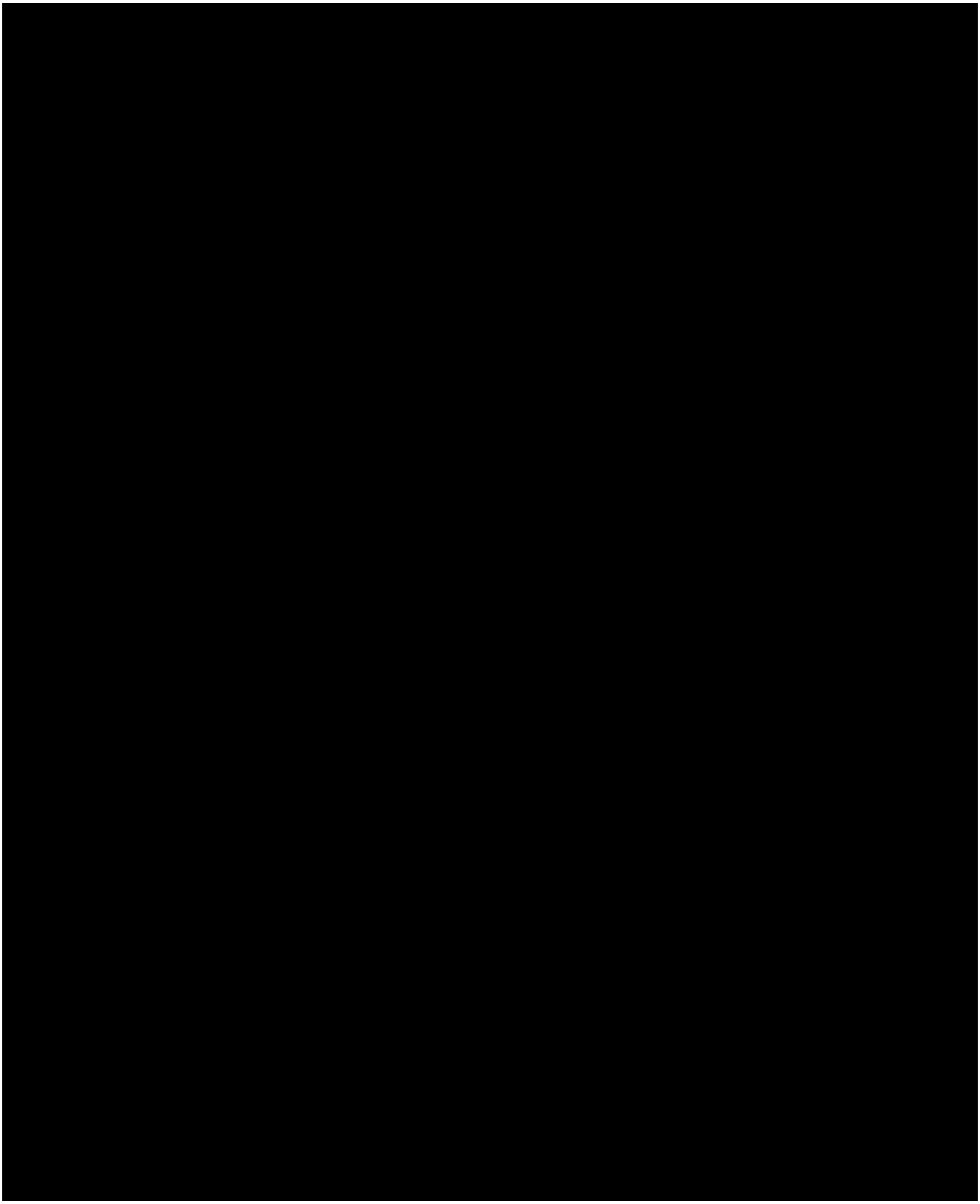
Operations Project Approval Form







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Operations Project Approval Form

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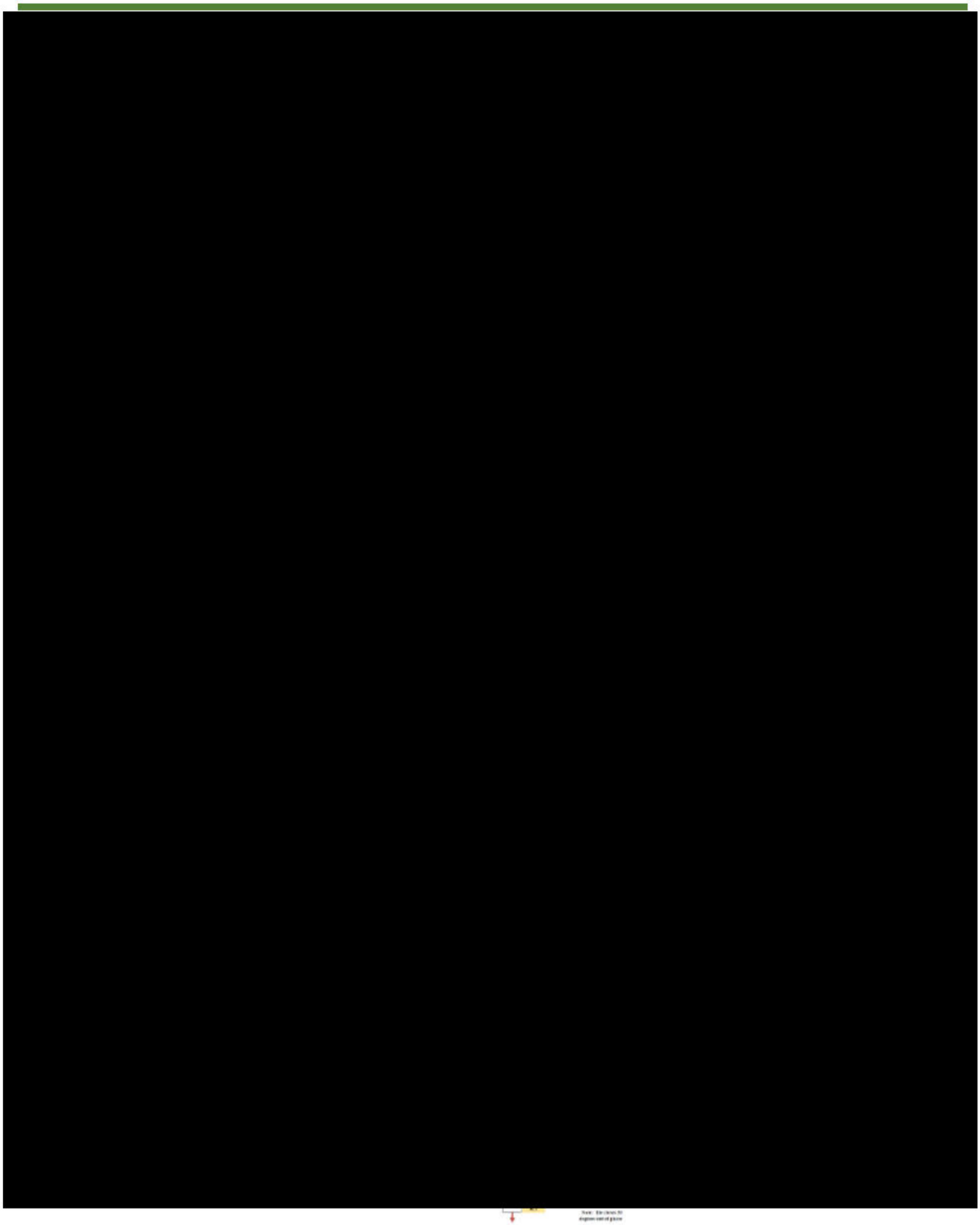
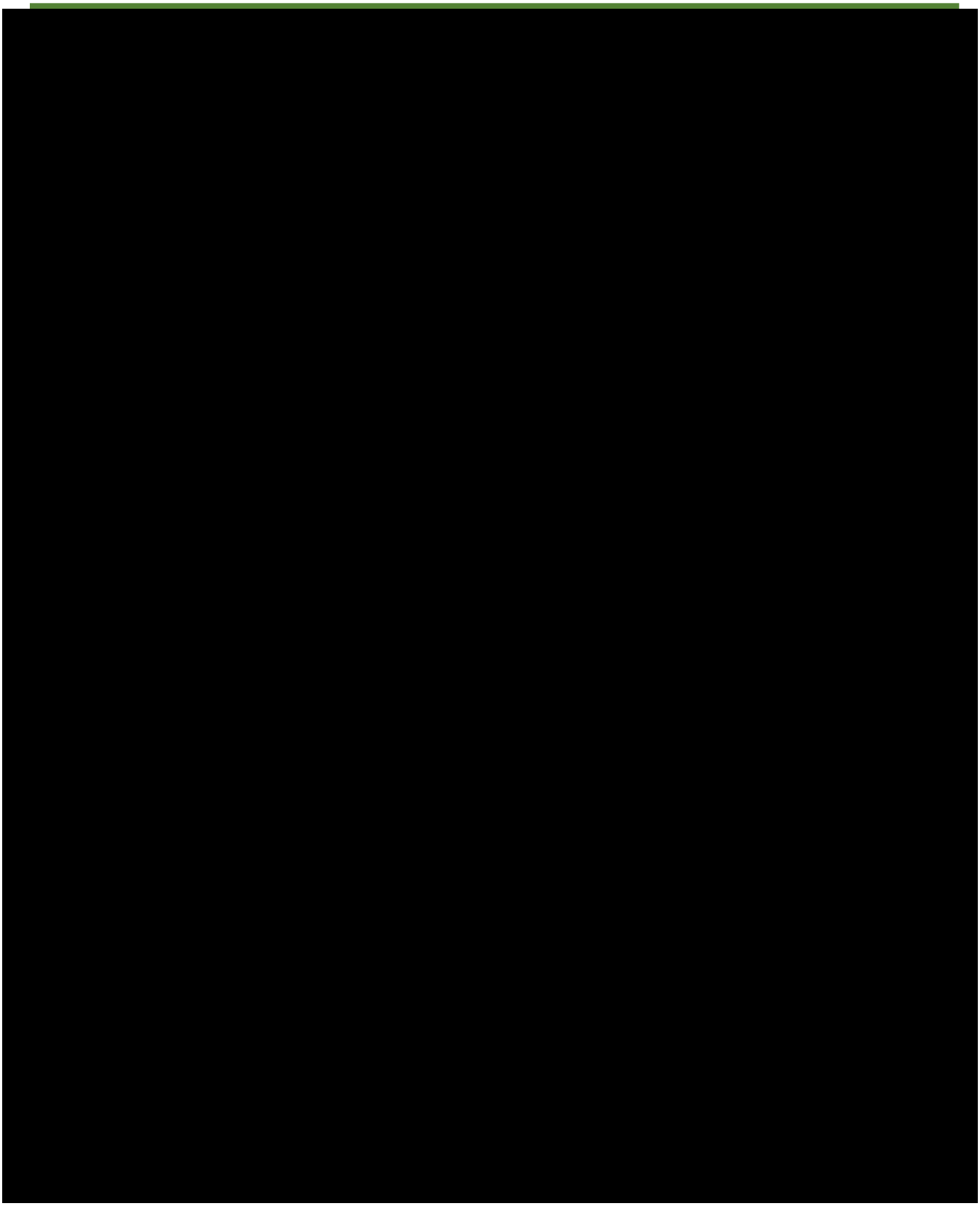
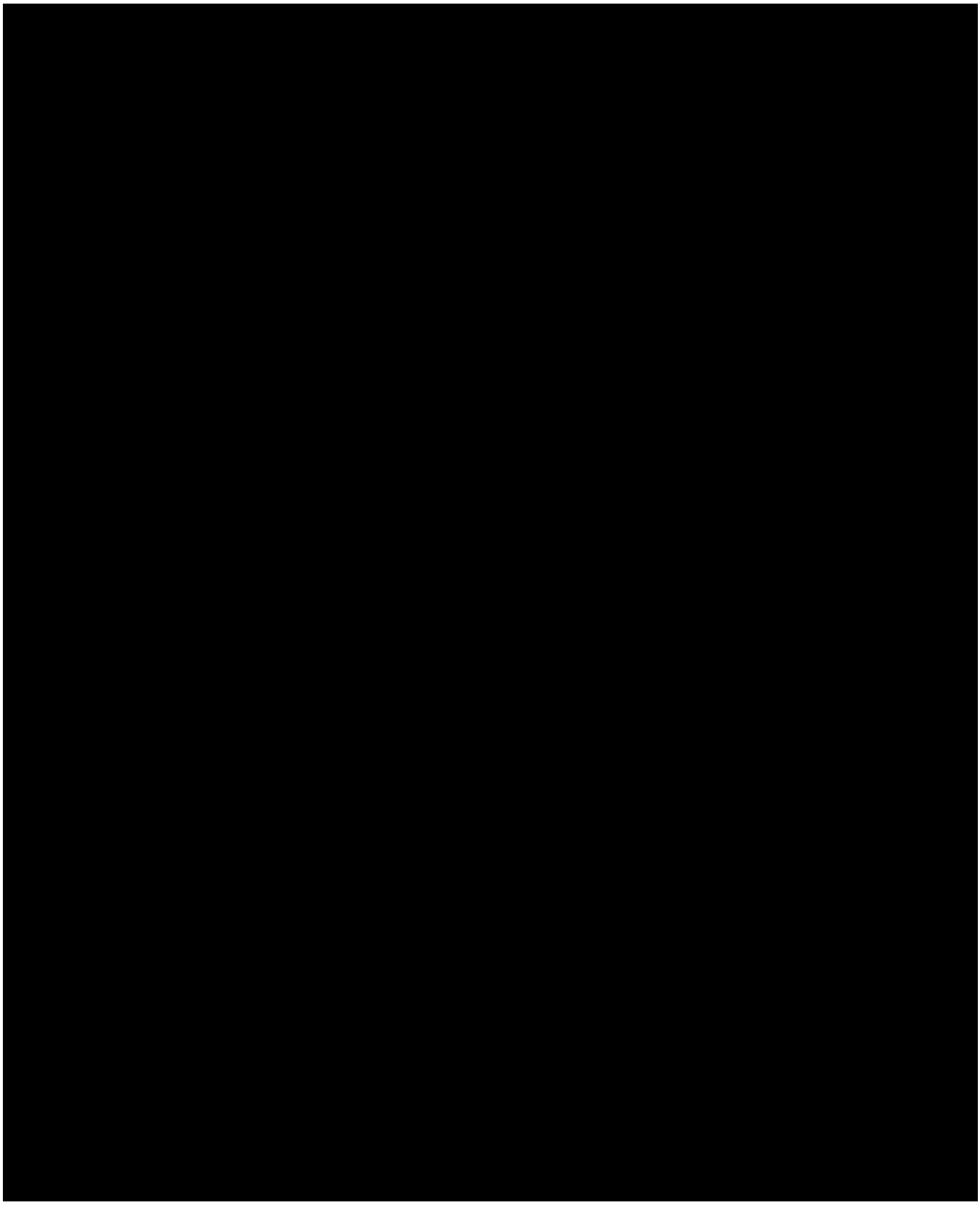
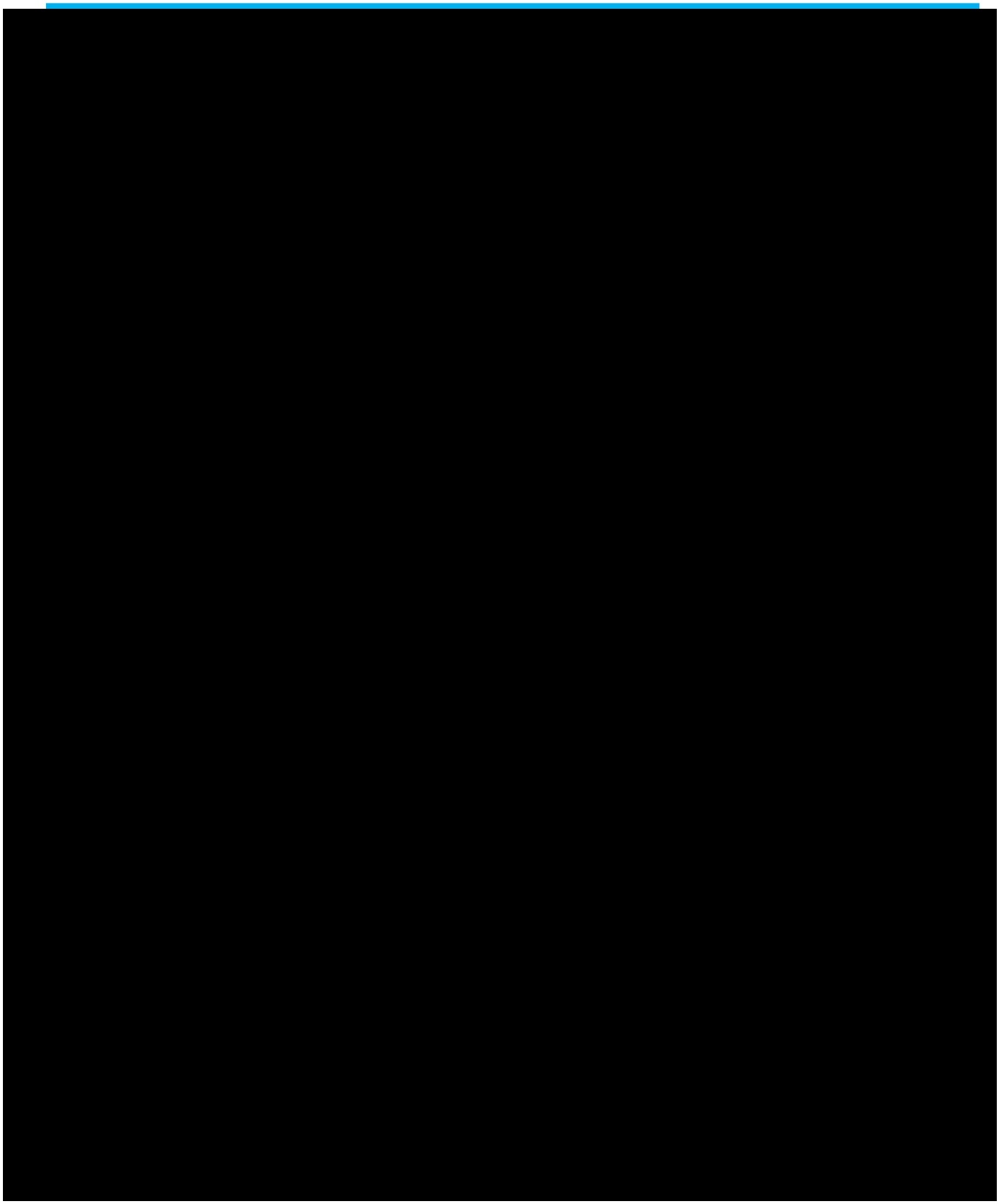
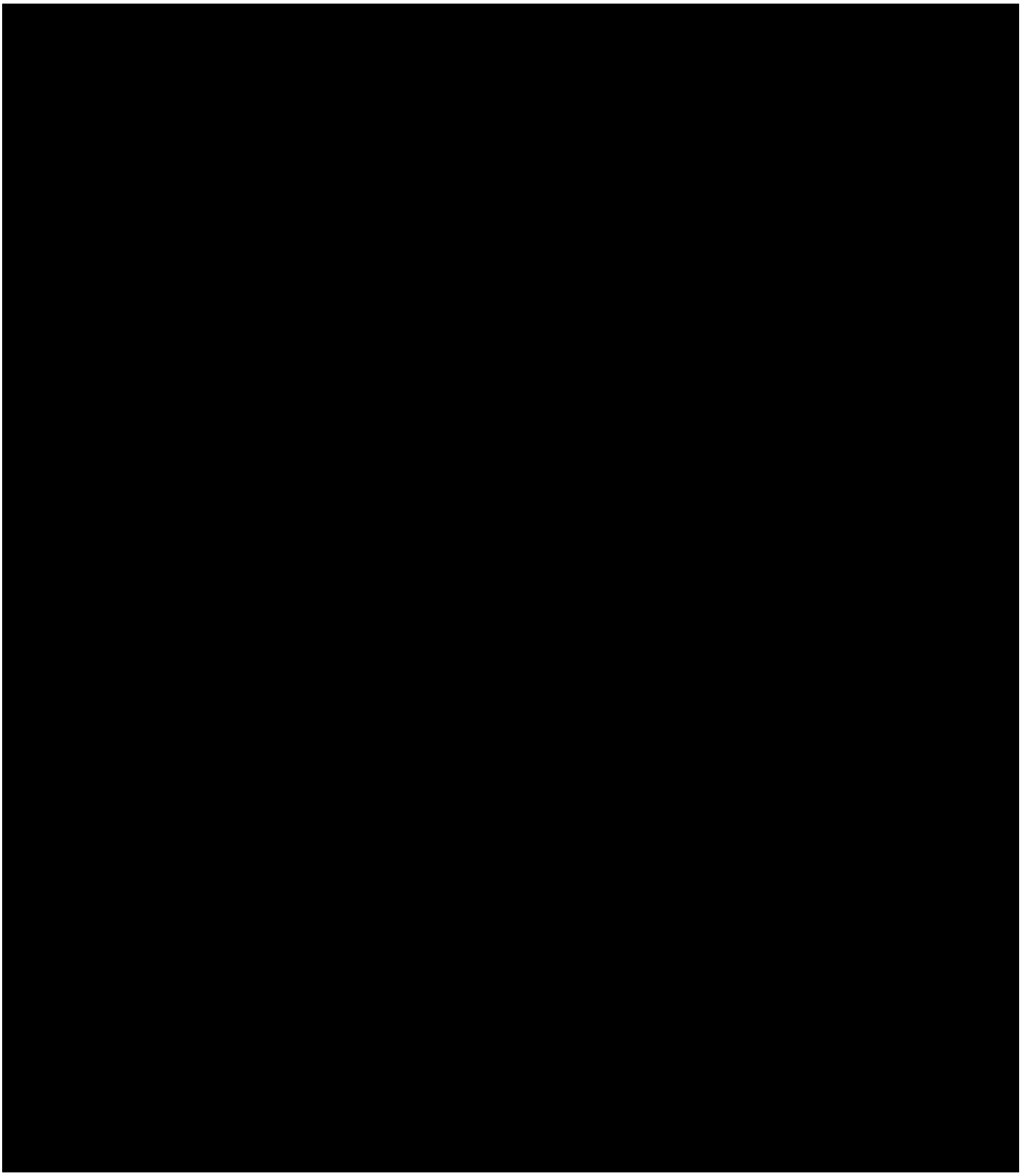
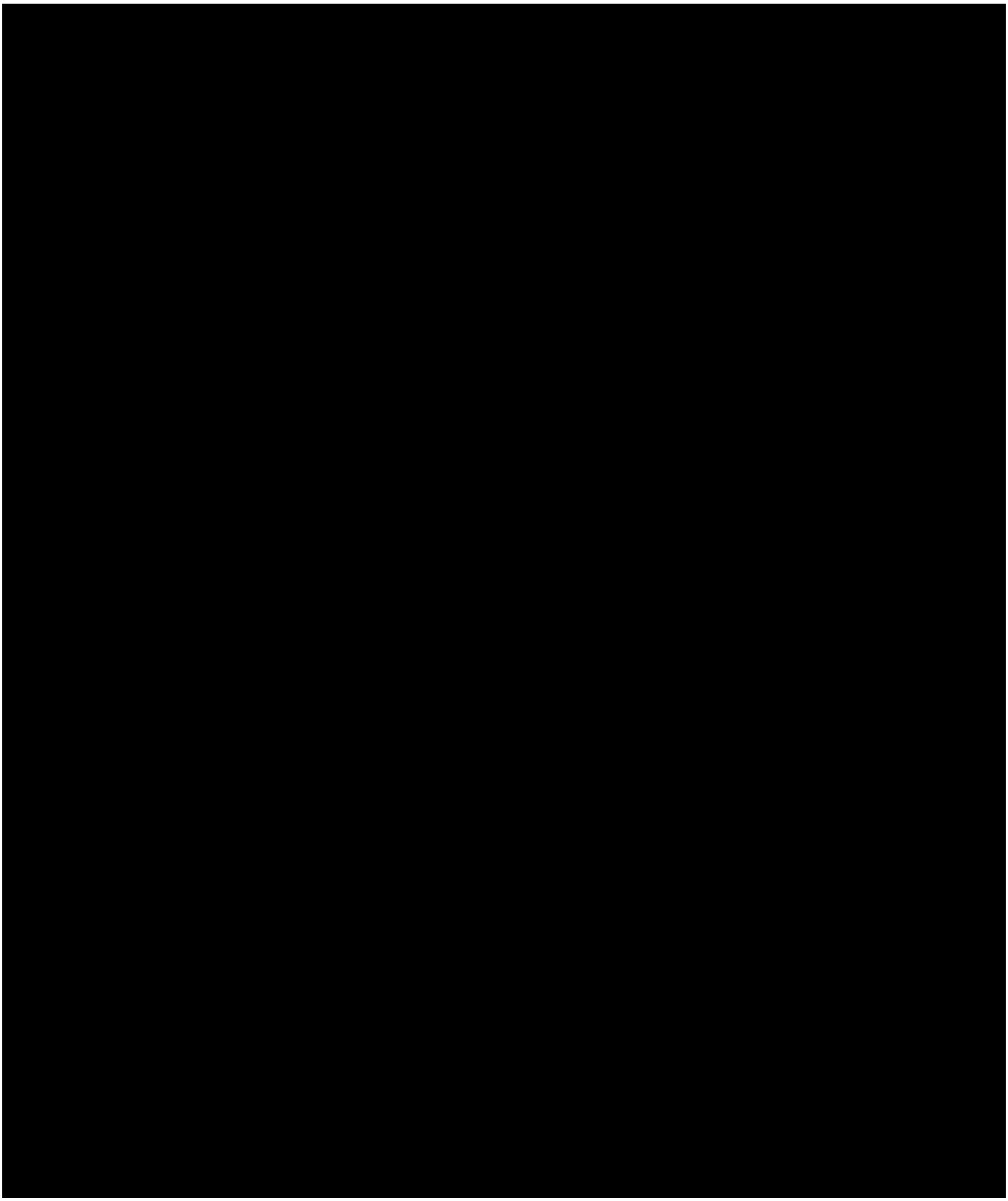




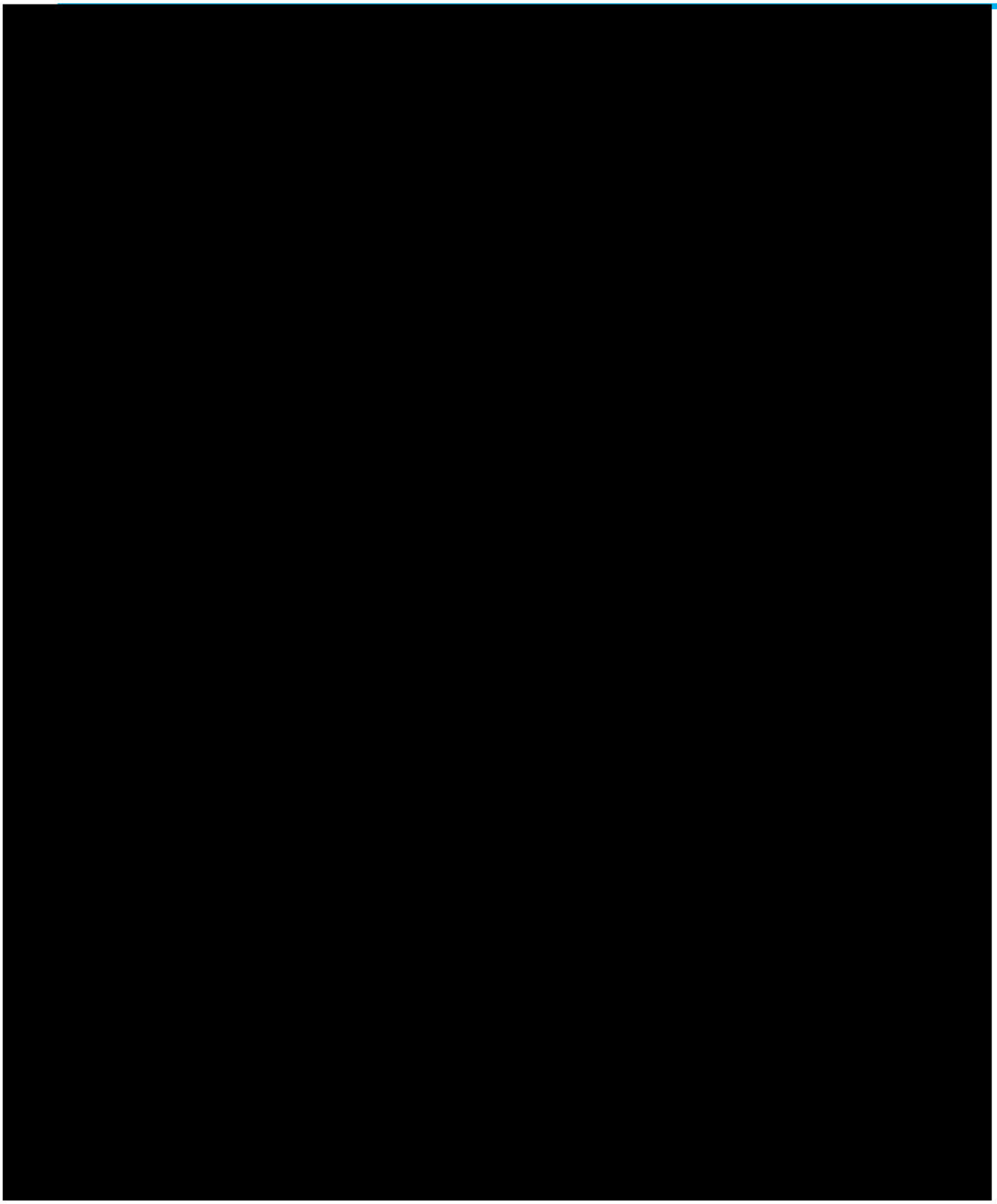


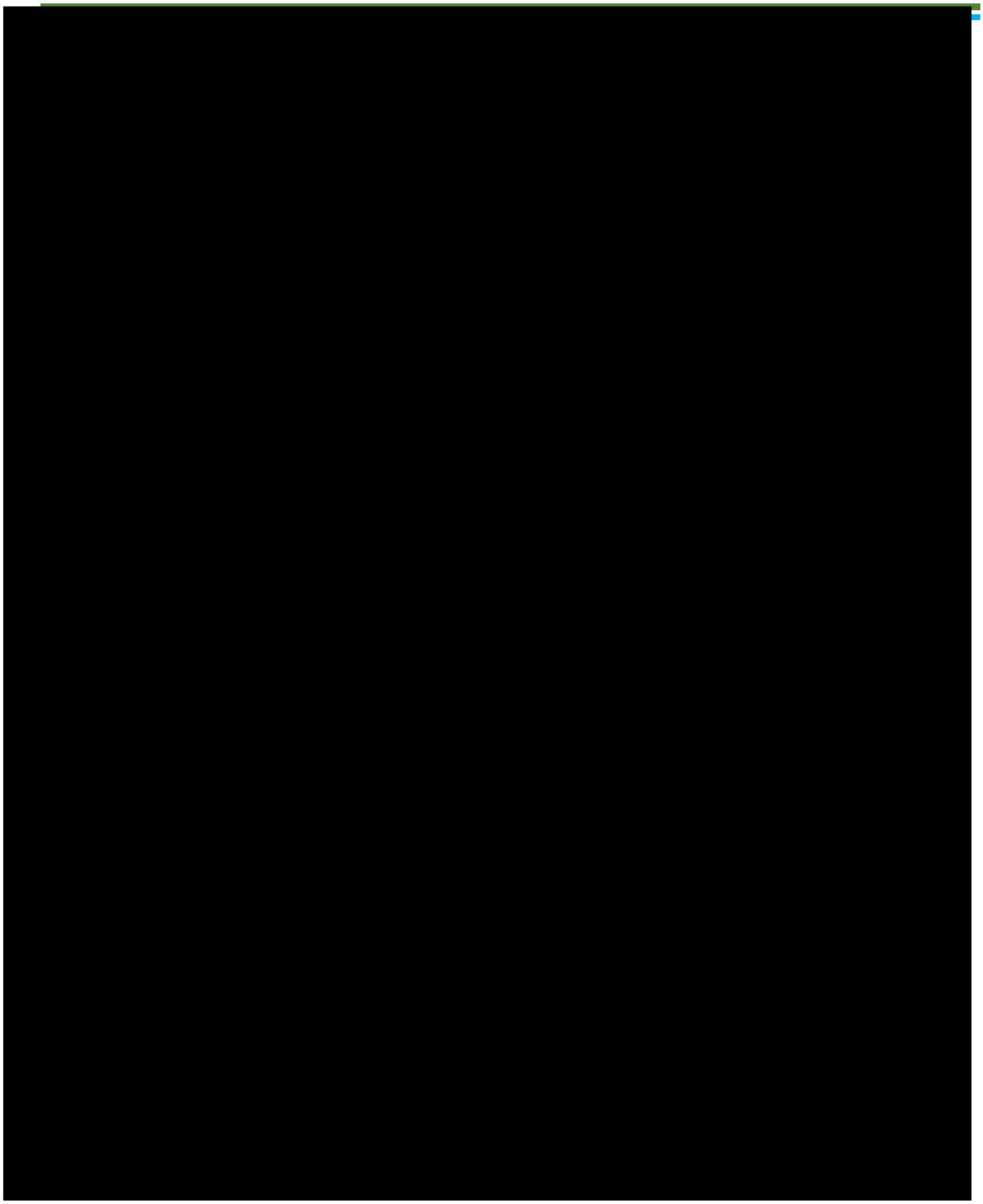


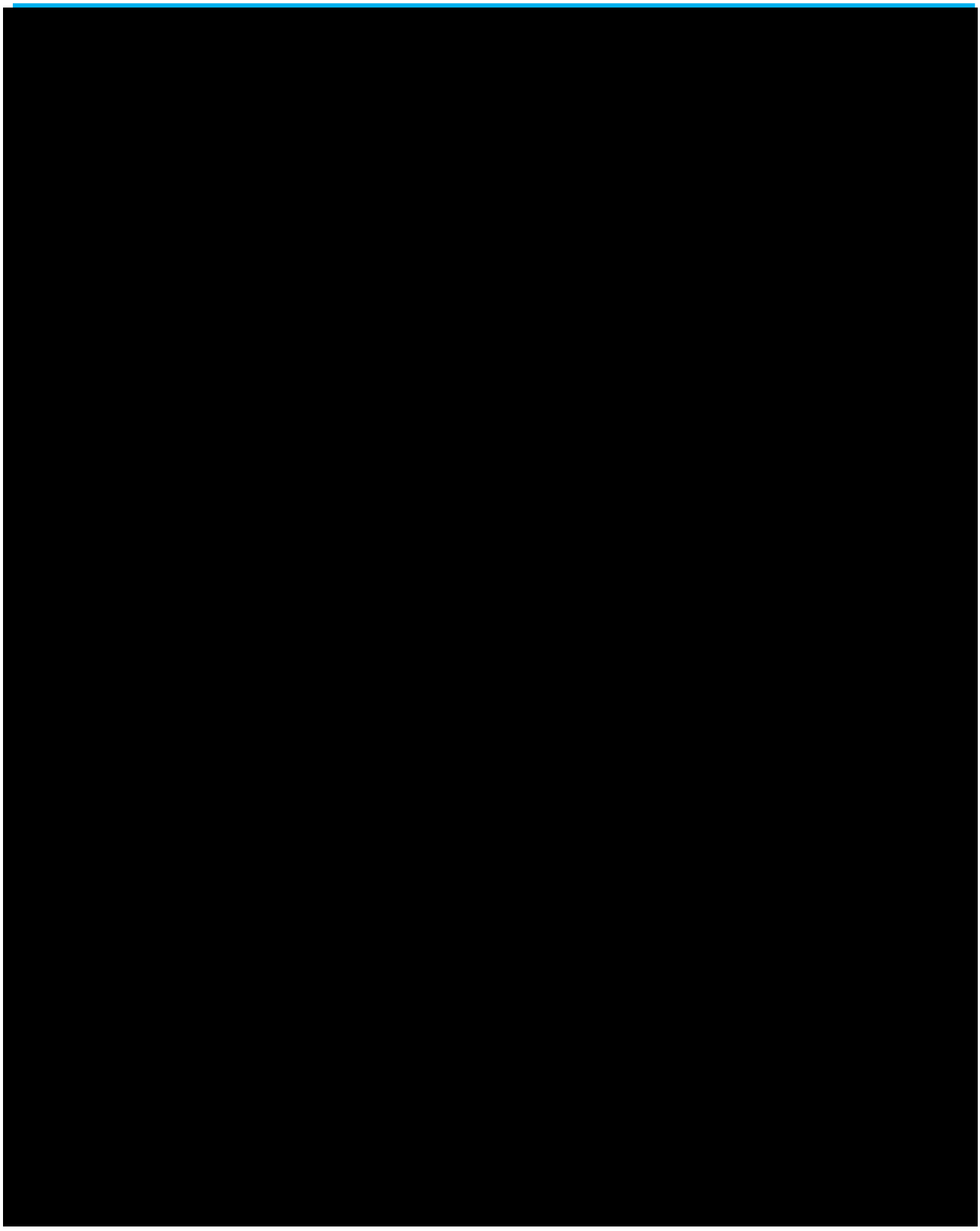


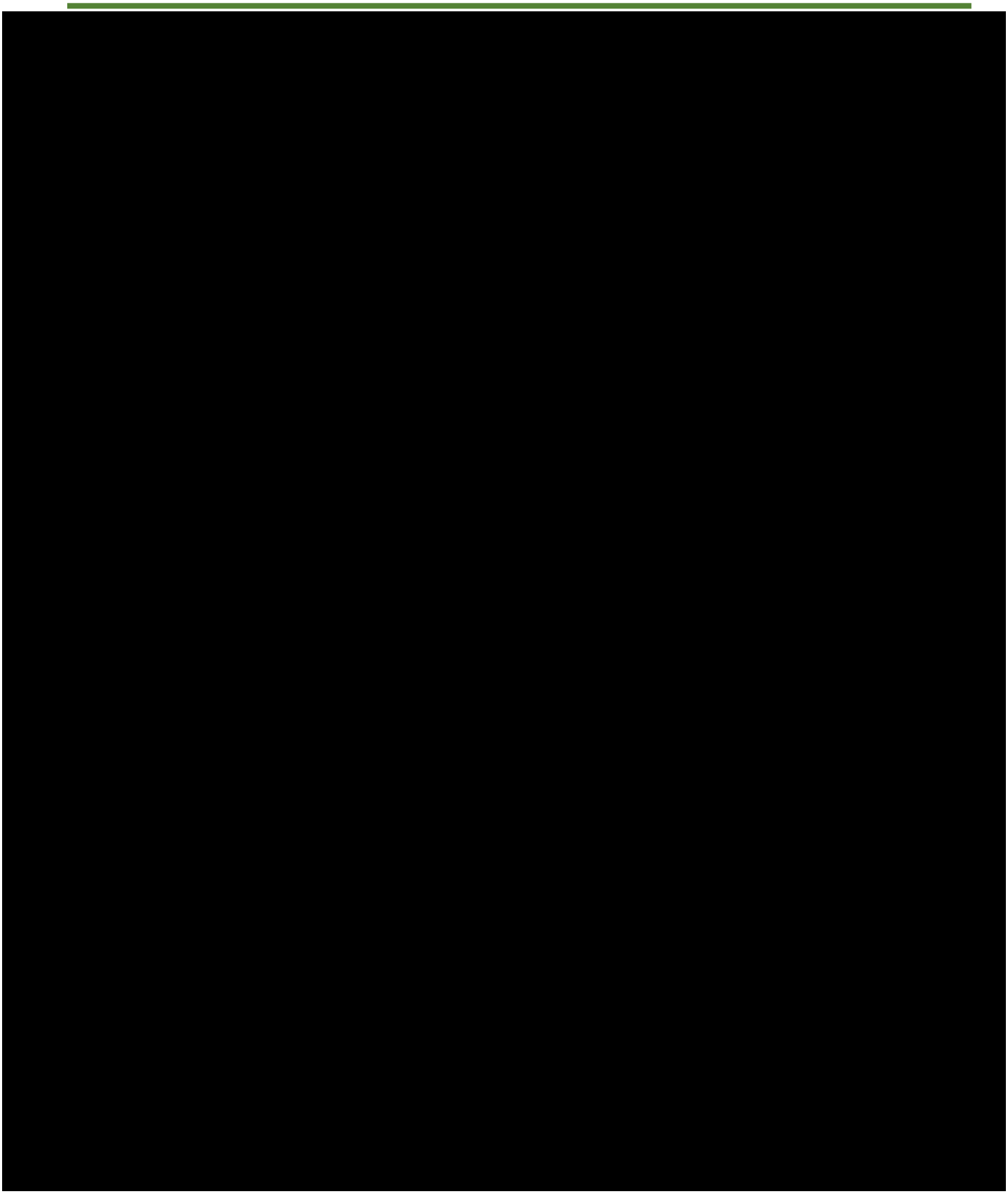


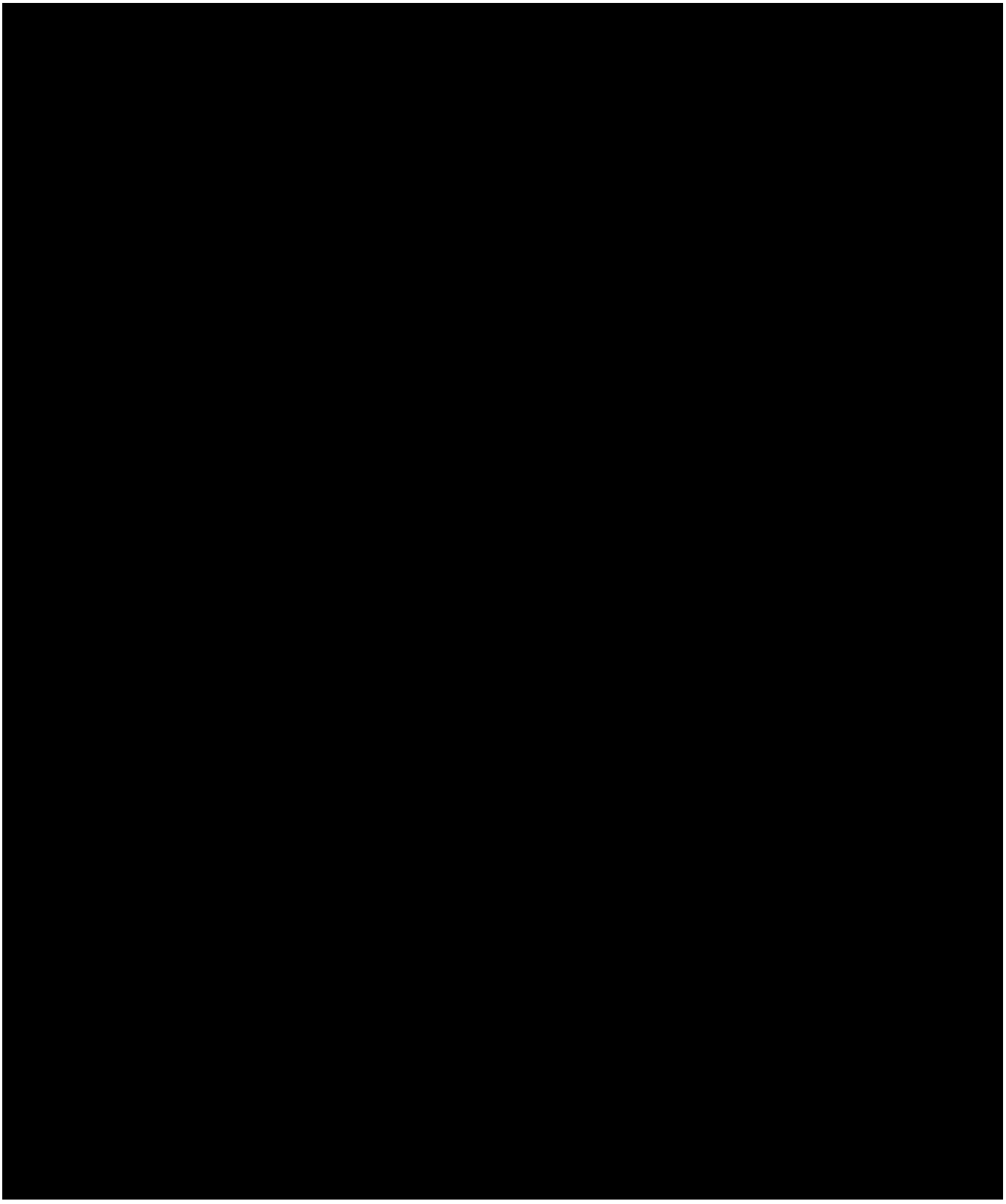
Pole Location with Broken Xarm











EVERSOURCE

Operations Project Approval Form

Project Title: [redacted] Rebuild	Project Number: CD02440
Date Prepared: 03/13/2025	**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: 12/31/2027	**NWS Excludable:** ☒ Yes ☐ No
Total Capital Request: $16.297M	**Authorization Type: Partial Funding**

21. Executive Summary

CD02440 seeks to address contingent loading limitations and aging infrastructure on the [redacted] near Goshen, CT. The [redacted] is a 27.6kV sub-transmission line which originates at the [redacted] substation in Harwinton CT. This circuit is responsible for feeding three smaller distribution substations: [redacted]. In total, over [redacted] customers and 11 critical facilities are supplied from this normal feed. The identified portion of the [redacted] is comprised of roughly [redacted]' of 3-ph 1/0 ACSR conductor. The identified segment includes 152 poles with an average age of 45 years. The [redacted] has experienced 8 reliability related outages in the last 15 years and has seen 3 instances where the segment of 1/0 ACSR was burnt down due to overload under contingency due to switching. To prevent future asset damage due to switching and to address the aging infrastructure within this ROW, it is suggested that this ROW be rebuilt to modern distribution standards, and the entirety of the existing 1/0 ACSR backbone be reconductored. This would result in the reconductoring of [redacted]' of 1/0 ACSR backbone, the installation of [redacted] new steel distribution poles within the ROW, and [redacted] new wood poles along road-side segments. After project completion, this portion of the [redacted] will be resistant to outage events and will serve as a robust tie point under contingency. The cost for the suggested work is $16.297M.

Title: [redacted] Rebuild
Division: Western
District: Torrington
Town(s): Goshen, Litchfield
Circuits: [redacted]

22. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Year 2026	Year 2027	Year 2028+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	371.0	311.3	0.0	682.3
Outside Services	3,016.1	2,531.1	0.0	5,547.3
Materials	1,513.0	1,269.7	0.0	2,782.8
Removals	669.7	562.0	0.0	1,231.7
Risk and Contingency	58.7	49.3	0.0	107.9
Other	0.0	0.0	0.0	0.0
Subtotal – Direct Costs	5,628.5	4,723.5	0.0	10,352.0
Indirect Capital Costs				
Indirect/Overheads (including benefits)	3,031.8	2,544.3	0.0	5,576.1
Capitalized interest or AFUDC, if any	200.9	168.6	0.0	369.6
Subtotal – Indirect Costs	3,232.8	2,712.9	0.0	5,945.7
Total Gross Capital Costs	8,861.3	7,436.4	0.0	16,297.7
Customer Contribution	0.0	0.0	0.0	0.0
Total Net Capital Project Costs	8,861.3	7,436.4	0.0	16,297.7

Explain unique payment provisions, if applicable:

23. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

The [redacted] is a 27.6kV sub-transmission line that feeds from Harwinton to Kent CT. The circuit travels over 37 miles and passes through 5 towns before it ties with the [redacted]. The [redacted] travels over difficult terrain beginning in Harwinton where it goes off-road through a series of ROWs before traveling through White Woods Nature Preserve in Litchfield, CT. At this point, when traveling through White Woods, the circuit passes through swampland with standing water which makes access difficult. This area was rebuilt using transmission-style steel tower construction [redacted] in 2018.

From this point the [redacted] runs roadside between [redacted] and [redacted]. in Litchfield. This portion of the circuit is 3-PH crossarm construction with 1/0 ACSR. The line transitions into [redacted] where it continues north. [redacted] the focus of this project, travels primarily through wetland zones which makes access extremely challenging. Access into this ROW requires use of a track machine, heavy matting, or helicopters. Due to this, restoration efforts are often complicated and time consuming. In addition, this ROW is responsible for servicing over 3100 customers across 3 smaller distribution substations. Among these customers, there are 11 critical facilities, one of which is the main 911 dispatch tower for Litchfield County.

The [redacted] is one of the few major tie points within this area of Connecticut. It shares a single 2-way tie with the [redacted]. The [redacted] is a 27.6kV sub-transmission line which originates at [redacted] substation in New Milford. This circuit shares a pole-line with the [redacted] for the first mile after it exits the substation. There have been events in the past which caused a loss to both the [redacted] due to this double-circuit line. Under this condition, the [redacted] immediately supports the [redacted] Unfortunately, due to limited auto-ties within this area, secondary switching operations are often performed to restore additional customers. When this happens, the [redacted] ends up supporting the majority of the [redacted] and the [redacted] via tie points on the [redacted], a smaller distribution substation normally fed by the [redacted]. Under these conditions, the 1/0 ACSR backbone on the [redacted] exceeds its 220 normal limit.

[redacted] has experienced 8 outages in the last 15 years. Of these, two were due to burn downs from switching when supporting the [redacted] and [redacted] circuits. More recently, an outage occurred on 7/15/24 within the ROW in which a span of 1/0 ACSR was burnt down under this contingent switching. This outage spawned a drone patrol of the entire ROW which also revealed a broken cross arm and several instances of rotten/deteriorating pole tops and H-Frame structure. The existing infrastructure within the ROW is predominantly 1971-vintage, with an average pole age of 45 years. This combination of load

constraints and ageing infrastructure are the primary drivers for the suggested work. Below is the relevant outage history for the last 15 years:

			Customer	
[redacted]				

b. Project Need

CD02440 suggests a new rebuild of [redacted] in its current footprint with modern distribution standards. This rebuild seeks to address a contingency overload and ageing infrastructure throughout this segment of the [redacted] sub-transmission line. Under the suggested work, the 1971-vintage infrastructure and under-sized 1/0 ACSR conductor would be eliminated, ultimately improving capacity for future load growth, and promoting reliability. The suggested work is critical for ensuring future service to the [redacted] customers and 11 critical facilities that rely on the [redacted] as their normal source. Similarly, this work is required to ensure resilience for the [redacted] backbone and subsequent circuit ties that rely on these 27.6kV sub-transmission lines within the Northwest corner of Connecticut. If the suggested work is not performed within this ROW over 3100 customers will be put at continued risk of loss of source due to infrastructure failures. In addition, if the 1/0 ACSR backbone is not upgraded, this line will be at continued risk for overload-related damages due to switching.

c. Project Scope

CD02440 suggests the elimination of the existing 1/0 ACSR and a complete rebuild of ROW 113. Due to the project scale, the suggested work is divided into four segments.

Segment 1: Southern Roadside [redacted] Backbone Reconductoring ([redacted], Litchfield to [redacted], Litchfield).

- Reconductor [redacted]' existing 1/0 ACSR w/ 477 AL TW
- Replace [redacted] Poles

Segment 2: Southern [redacted] Reconductoring & Rebuild ([redacted] Litchfield to [redacted], Litchfield)

- Reconductor [redacted]' existing 1/0 ACSR with 795 AL TW
- Instal [redacted]' 1/0 ACSR Neutral
- Replace [redacted] Wood Poles with new steel distribution poles

Segment 3: Northern ROW 113 Reconductoring & Rebuild [redacted] Litchfield to [redacted], Goshen)

- Reconductor [redacted]' existing 1/0 ACSR with 795 AL TW
- Install [redacted]' 1/0 ACSR Neutral
- Replace [redacted] Wood Poles with new steel distribution poles

Segment 4: Northern Roadside [redacted] Reconductoring ([redacted], Goshen to [redacted], Goshen)

- Reconductor [redacted]' existing 1/0 ACSR w/ 477 AL TW
- Replace [redacted] Poles

The scope of work associated with the preferred option is as follows:

Major Material:

[redacted]

24. Alternatives Considered

NWS

NWS Exclusion Criteria (select all that apply)

☐ Project cost < $250k	☐ New Service
☐ CDOT Relocation	☐ Generator interconnection project
☒ Maintenance, Asset condition or safety related*	

*Maintenance, Asset condition or safety related justification:
CD02440 seeks to address reliability issues and load constraints along a portion of the [redacted]1 backbone. This area is comprised of [redacted] wooden pole structures which support approximately [redacted]' of 3-phase 1/0 ACSR Bare conductor via wooden cross arms. The identified assets have an average age of 45 years. There are many instances of rotten crossarms, deteriorating pole tops, failing/split H-Frame structures, and wildlife damage throughout this area. Without addressing these asset conditions, future reliability will be at continued risk. The deteriorating assets hold up the overloaded conductor. Thus, a NWS alone is not a viable option, the costs of NWS alone is in option 5.

Project Option Comparison

Design Criteria	Option				
	1 – 14R31 ROW Rebuild	2 – Aerial Cable Bypass	3 – Aerial Cable Bypass & [redacted]	4 – [redacted] "Transmission-Style" Rebuild	5 – NWS & Trouble Pole Removal
	Required to meet project need				
Contingent Loads < 100%	X	X	X	X	X
Eliminates 1/0 ACSR Backbone Limitation	X	X	X	X	
	Additional Benefits (not required to meet scope of project)				
Maintains existing ROW Corridor	X			X	X
Eliminates Need for Track Vehicle & Drone Surveying		X	X		
Improves existing road-side infrastructure		X	X		
Reduces Roadside Exposure	X			X	X
Number of New Ties Created	0	0	1	0	0
Authorization Type	Partial	Partial	Partial	Partial	Partial
Capital Cost	$16.298M	$16.241M	$17.608M	$23.117M	$43.639M
Expense Cost	$508.3k	$506.5k	$547.9k	$721.0k	$1,361.1k
Total Cost	$16.806M	$16.747M	$18.156M	$23.838M	$45M
Total Cost / MVA added	$1,733/MVA	$1,726/MVA	$1,872/MVA	$2,458/MVA	$5,154/MVA
Total Cost / CM Saved	$747.33/CM	$320.91/CM	$218.74/CM	$2,039.62/CM	$2,223.35/CM
Preferred option	X				

Option Summary

Preferred:

Option 1 suggests eliminating [redacted] of existing 1/0 ACSR with a combination of [redacted] AL TW and 795 AL TW. Roughly [redacted]' of the 1/0 ACSR will be reconductored with [redacted] TW within the ROW. This reconductoring would also include the replacement of [redacted] existing wood poles with new weathered steel poles. The roadside segments, roughly [redacted]' of 1/0 ACSR, would be reconductored with [redacted] TW. This would require the replacement of roughly [redacted] wood poles. Upon completion the existing [redacted]3 would be retained and there would be no change to the OH configuration. The cost for this option is $16.298M.

This option is preferred as it resolves the contingent overload while also addressing the ageing infrastructure throughout the ROW. Under this option, the ROW is retained, which reduces road-side exposure and lowers inconvenience to residents near the ROW.

Other(s):

There were three alternate options considered for this project. They are as follows:

Option 2 suggests eliminating [redacted] and re-locating the line road-side via an aerial-cable under-build. this option would require removal of structures from [redacted], Litchfield to [redacted] ., Goshen. Roughly [redacted]' of new 750 AL aerial cable would be installed from [redacted]. An additional segment of 750 AL AC would be installed on [redacted], to feed the [redacted] substation. In order to retain the existing auto-loop, two new reclosers would be installed near the intersection of [redacted] Due to the scope of work required to run the aerial cable bypass, an opportunity to convert a lateral segment of the [redacted] would also be made possible. This conversion would involve the removal of an existing 23/8.32kV step XFMR on Beach St and the replacement of [redacted] OH transformers & 8 UG transformers. Additionally, [redacted]' of 1-ph 477 AAC TW would be installed along Beach St under the conversion work. After this work is complete [redacted] will be eliminated and repositioned as a new aerial cable bypass and the identified lateral on the [redacted] would be converted from 8.32kV to 23kV. The cost for this option is $16.241M.

This option is not preferred because, despite offering significant accessibility improvements, this option would introduce significant reliability concerns via roadside relocation. In addition, there are concerns with public reception surrounding the larger poles and number of lines that would need to be installed along these residential roads. Currently, Option 1 offers a better design solution.

Option 3 includes all the work from option 2, but with modification to incorporate a new auto-tie between the [redacted]. Under this option, the scope of work surrounding the aerial cable bypass remains the same. The addition of a new 2-way tie between the [redacted] is planned within this option. To make this possible, the conversion of the [redacted] lateral would include an additional line extension for 2 new phases comprised of [redacted] AAC TW along [redacted] in Litchfield. A separate extension would be required on the [redacted] side to make this possible, as well. Finally, three new reclosers would be installed to ensure correct operation of the new auto-loop. This would involve a new SR and MR on the [redacted] and one new SR on the

[redacted] After completion [redacted] would be eliminated, a new aerial cable bypass would be created along the [redacted] backbone, a lateral tap on the [redacted] would be converted from 8.32kV to 23kV, and a new two-way autoloop would be created between the [redacted] and the [redacted] The cost for this option is $17.608M

This option is not preferred. While this option offers significant benefits to the reliability of the [redacted] it does so at a significant cost. Additionally, the scope of work under this option is well outside the minimum requirements for solving the load and reliability issues outlined for this project's minimum requirements.

Option 4 includes an identical scope of work for segments 1 & 4 as shown in option 1. The suggested work for Segment 2 & 3 is larger in scope. Under this option, [redacted] would be entirely rebuilt using approximately [redacted] light duty steel transmission style poles and Davit arms. A total of [redacted]' of 3 phase 795 ACSR and 1 phase OPGW Fiber Optic Neutral. After completion, [redacted] would be significantly less susceptible to reliability related incidents and the capacity of the overhead line would be increased greatly. These improvements would work to help limit the need to access the ROW in the future. The total cost for this option is $23.117M

This option presents a significant improvement over the current ROW construction, but at a significant expense. This option was not selected as the preferred because, despite being incredibly robust, the design does not offer enough benefit over the distribution style construction proposed in option 1 for the cost.

Option 5 suggests a Non-Wires Solution via installation of a 22.5MWh Battery. To eliminate the overload condition under contingency between the [redacted] when supporting the [redacted] load, a minimum of 6.25MVA is required. Assuming a 4-hour outage, a 10-year growth rate of ~1.43%, and a power factor of 0.9, a 22.5MWh battery would be needed. Based on this the total cost for the battery would be $45 Million. NWA estimate was calculated at $2M per MWh based on the two lowest of three contractor bids received in Connecticut.

This option is not preferred because it does not address the 1/0 ACSR limitation or the ageing infrastructure throughout the ROW. It does solve the contingent overload but would only be able to support this condition for 4 hours. The preferred option addresses both concerns and does so for a significantly lower cost.

25. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	3/2025
100% Detailed Engineering Completion	7/2025
Fully Funded	9/2025

Milestone/Phase Name	Estimated Date
Construction Start	1/2026
In Service Date	12/2027

26. Regulatory Decisions

27. Codes and Standards

DSEM 06.651 Spacing of Distribution Lines in Right-of-Way
DSEM 06.301 Pole Replacement
DSEM 06.271 Feeder Backbone Conductor Size Selection
DSEM 06.321 Environmental Considerations

28. Risk and Contingencies

Contingencies:

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2026	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	2026	High	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2026	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.	2026	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2026	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2026	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2026	High	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	2026	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	2026	High	Use of mats and specialty equipment, only work during certain times of the year.

29. References

References
1. CD00969 – Campville ROW Pole Replacements
2.
3.

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

Attachment	Included in Submittal?

A. Project Checklist	*YES*
B. Cost Estimate	*YES*
C. Geographic Map	*YES*
D. System and Station One-Lines	*YES*
E. Load Sheet	*YES*
F. Other: 2017 Burn Down Photos	*YES*
G. Other: 2024 Burn Down Photos	*YES*
H. Other: ROW 113 Field Photos	*YES*
I. Other: Drone Engineering Patrol Report [7/6/2024]	*NO*

Q. Project Checklist

Project Authorization Checklist

Project Initiator: [redacted]
Project #: CD02440
Project Title: [redacted] **ROW Rebuild**
Funding Type:

☒ Partial PAF ☐ Full PAF

Project Alternatives:

☒ Options considered ☒ Explanation why alternatives were not selected

☐ NWA considered ☒ Explanation why preferred option was selected

Project Requirements (Review all, and check all that apply):

NR = Not Required R=Required C = Complete

NR	R	C		NR	R	C	
☒	☐	☐	Easement	☒	☐	☐	TD007
☐	☐	☒	Trimming Estimate Received	☐	☐	☒	ROW trimming Estimate Received
☐	☐	☒	Environmental Review Initiated	☐	☐	☒	Review with Operations
☒	☐	☐	Permits (state roads)	☒	☐	☐	Underground permits
☒	☐	☐	P&C Settings	☐	☒	☐	Material long lead
☒	☐	☐	Synergi load flow				

PAF Documents Attached:

☒ One Lines ☒ Geographical Map ☒ Load Projections ☒ Estimates

☒ Other Documents (List):

PAF Review Complete:

☐ Lead Reviewed by: Date:

☐ Manager Reviewed by: Date:

R. Project Checklist

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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Work Classification

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

Ownership / Management

AWC: Torrington
Statewide: No
Owner
Manager

Project Information

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

Budget Summary - Preferred Option

14R31 ROW Rebuild

2026

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	Reconductoring [redacted] T.W.	Draft	0	28%	[redacted]	$1,229,073
5	ROW Rebuild [redacted] 1/2	Draft	0	28%		$3,825,665
7	Southern ROW Matting	Draft	0	28%		$3,619,789
8	[redacted] ROW Material Removals - Southern	Draft	0	28%		$239,926
18	Environmental Impact Study	Draft	0	24%		$37,200
19	ROW Trimming Estimate	Draft	0	24%		$186,000
				2026 Total:		**$9,137,653**

2027

ID	Title	Status	Rev #	Contingency	Net Estimate
2	Reconductoring [redacted] T.W.	Draft	0	32%	$1,599,269
6	ROW Rebuild - [redacted]	Draft	0	32%	$4,238,286
12	[redacted] laterial Removals - Northern	Draft	0	32%	$170,949
15	Northern ROW Matting	Draft	0	28%	$1,659,840
				2027 Total:	**$7,668,343**
				Total Project:	**$16,805,996**

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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	[redacted]	1,2,5,6,7,8,12,15,18,19	$16,805,996	$0	100%$	[redacted]	$747.33	☑
O2		7,8,9,10,12,14,15,18	$16,747,267	$0	100%		$320.91	☐
O3		7,8,9,10,11,12,13,15,18	$18,156,020	$0	100%		$218.74	☐
O4		1,2,8,12,16,17,18,19	$23,838,207	$0	100%$		2,039.62	☐

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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	Reconductoring T.W.	$1,229,073				
2	Reconductoring T.W.	$1,599,269				
3	Reconductoring A.C.	$1,705,482				
4	Reconductoring A.C.	$2,166,248				
5	ROW Rebuild -	$3,825,665				
6	ROW Rebuild -	$4,238,286				
7	Southern ROW Matting	$3,619,789				
8	[redacted]laterial Removals - Southern	$239,926				
9	Aerial Cable Bypass [redacted]	$4,602,816				
10	Aerial Cable Bypass [redacted]	$5,813,735				
11	[redacted]	$1,024,596				
12	[redacted]laterial Removals - Northern	$170,949				
13	[redacted]	$987,169				
14	[redacted]1-PH)	$603,011				
15	Northern ROW Matting	$1,659,840				
16	T-Style Construction - South	$11,650,152				
17	T-Style Construction - North	$8,725,638				
18	Environmental Impact Study	$37,200				
19	ROW Trimming Estimate	$186,000				

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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-01

General Information

Segment: 1 - Reconductoring - [redacted] - T.W. Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: BB-Reconductoring Trimming Required: ☑ In Service Date: 12/31/2026

Description [redacted]
- Recondutor existing 1/0 ACSR w/ 477 AL TW
- Replace poles where appropriate

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$960,214
Contingency Amount:	$268,860
Estimate:	$1,229,073
Reimbursement:	$0
Net Amount:	**$1,229,073**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	[redacted]		$4,562.48
POLE OH - POLE - 3ph (Telephone custodian)	23-OH12			$32,396.00
POLE OH - POLE - 3ph (Eversource custodian)	23-OH14			$72,945.60
OTHER OTHER 30% Contractor Adder	23-ALL14			$216,972.00
OTHER OTHER Estimated Traffic Costs	23-ALL14			$20,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Install 3-Ph 477 AL TW from P#T58 to P#654	23-OH27			$561,195.44
OH WIRE OH - Remove circuit wire (3 phase) Remove 3-ph 1/0 ACSR from P#T58 to P#654	23-OH37A			$23,142.08
OTHER OTHER Trimming Cost from P#T58 to P#654 per Arborist	23-ALL14			$29,000.00

Connecticut Light & Power
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Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-01

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted]			E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/14/2024 Years History: 6.01

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	50%
Cust. Intrrpts:	30%	50%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	196	118	196	140	233
Cost Per Cust. Intr. Saved:	10,433.56	6,259.92	10,433.56	6,259.92	8,796.69	5,278.16
Customer Minutes Saved:	6,787	11,311	6,787	11,311	15,771	26,286
Cost Per Cust. Min. Saved:	181.10	108.66	181.10	108.66	77.93	46.76

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-02

General Information

Segment: 2 - Reconductoring - P#750 to P#787 - T.W. Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: GOSHEN Budget Year: 2027

Work Type: BB-Reconductoring Trimming Required: ☑ In Service Date: 6/30/2027

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 #: CD02440
[redacted]ebuild

Design Alternative CD02440-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$1,211,567
Contingency Amount:	$387,701
Estimate:	$1,599,269
Reimbursement:	$0
Net Amount:	**$1,599,269**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	[redacted]		$4,562.48
POLE OH - POLE - 3ph (Telephone custodian)	23-OH12			$92,560.00
POLE OH - POLE - 3ph (Eversource custodian)	23-OH14			$6,078.80
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A			$30,035.20
OTHER OTHER 30% Contractor Adder	23-ALL14			$274,977.00
OTHER OTHER Estimated Traffic Costs	23-ALL14			$20,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 477 AL TW from P#750 to P#788	23-OH27			$728,353.60
OTHER OTHER Tree trimming estimate from arborist	23-ALL14			$55,000.00

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-02

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St.	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted]			E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	50%
Cust. Intrrpts:	30%	50%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	197	118	197	140	233
Cost Per Cust. Intr. Saved:	13,553.12	8,131.74	13,553.12	8,131.74	11,427.43	6,856.46
Customer Minutes Saved:	6,798	11,330	6,798	11,330	15,798	26,329
Cost Per Cust. Min. Saved:	235.25	141.15	235.25	141.15	101.23	60.74

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted]Rebuild

Design Alternative CD02440-05

General Information

Segment: 5 - ROW Rebuild - P#654 to P#709 1/2 Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: BB-Rehab+Recond Trimming Required: ☑ In Service Date: 12/31/2026

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-05

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,988,801
Contingency Amount:	$836,864
Estimate:	$3,825,665
Reimbursement:	$0
Net Amount:	**$3,825,665**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	[redacted]		$9,124.96
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A			$44,769.92
OTHER OTHER 30% Contractor Adder	23-ALL14			$889,125.00
OH WIRE OH - Neutral Install 10,762' 1/0 ACSR Neutral	23-OH31			$89,539.84
OTHER OTHER Install 22 Caisons at various pole locations in low-lying Water Bed Ar	23-ALL14			$110,000.00
OTHER OTHER Misc Traffic Costs	23-ALL14			$2,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 3-ph 795 AL T.W.	23-OH27			$1,085,670.56
POLE Steel Pole 3PH Replace 58 existing ROW Poles with Steel Structures	23-OH10A			$758,570.40

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-05

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 6305203	[redacted]			E6-1 F-2	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	75%
Cust. Intrrpts:	30%	75%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	295	118	295	140	350
Cost Per Cust. Intr. Saved:	32,420.89	12,968.36	32,420.89	12,968.36	27,335.94	10,934.22
Customer Minutes Saved:	6,798	16,995	6,798	16,995	15,798	39,494
Cost Per Cust. Min. Saved:	562.75	225.10	562.75	225.10	242.17	96.87

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-06

General Information

Segment: 6 - ROW Rebuild - P#709 1/2 to P#750 Status: Draft

Segment Type: RECONDUCTORING - OTHER Town: LITCHFIELD Budget Year: 2027

Work Type: BB-Rehab+Recond Trimming Required: ☑ In Service Date: 6/30/2027

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 #: CD02440

[redacted]Rebuild

Design Alternative CD02440-06

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$3,210,822
Contingency Amount:	$1,027,463
Estimate:	$4,238,286
Reimbursement:	$0
Net Amount:	**$4,238,286**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	[redacted]		$9,124.96
POLE Steel Pole [redacted]	23-OH10A			$536,230.80
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A			$61,726.08
OTHER OTHER 30% Contractor Adder	23-ALL14			$936,431.00
OH WIRE OH - Neutral Install 14,838' of 1/0 ACSR Neutral	23-OH31			$123,452.16
OTHER OTHER Install 9 Casons for poles in low-lying water beds	23-ALL14			$45,000.00
OTHER OTHER Misc Traffic Costs	23-ALL14			$2,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil Reconductor w/ 795 AL TW	23-OH27			$1,496,857.44

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted] Rebuild

Design Alternative CD02440-06

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	SCADA_RECLOSER 433022375	[redacted]			E5-1 D-4	4	

Reliability Projection

Title:

Outage Start Date: 11/14/2018 Outage End Date: 11/13/2024 Years History: 6.00

Selected Event Summary

	Non-Storm	Storm	Total
Total Customer Minutes:	135,963	179,990	315,953
Total Customer Interruptions:	2,360	439	2,799
Total Number of Events:	6	3	9

Improvement Factors

	Default	Override
Cust. Minutes:	30%	75%
Cust. Intrrpts:	30%	75%

Calculation Results

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Cust. Interruptions Saved:	118	295	118	295	140	350
Cost Per Cust. Intr. Saved:	35,917.67	14,367.07	35,917.67	14,367.07	30,284.28	12,113.54
Customer Minutes Saved:	6,798	16,995	6,798	16,995	15,798	39,494
Cost Per Cust. Min. Saved:	623.45	249.38	623.45	249.38	268.29	107.31

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02440

[redacted]ebuild

Design Alternative CD02440-07

General Information

Segment: 7 - Southern ROW Matting
Status: Draft
Segment Type: ENVIRONMENTAL
Town: LITCHFIELD
Budget Year: 2026
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2026
Description: Environmental Analysis Cost - $30k
Matting Estimate:

[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 #: CD02440

14R31 ROW Rebuild

Design Alternative

CD02440-07

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,827,960
Contingency Amount:	$791,829
Estimate:	$3,619,789
Reimbursement:	$0
Net Amount:	**$3,619,789**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER	23-ALL14	[redacted]		$792,960.00
OTHER 30% Contractor Adder/Updated Estimating Units Adder				
OTHER	23-ALL14			$2,035,000.00
OTHER Estimated Matting Cost: See Segment Description (8,140 Mats at $250/Mat)				

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 #: CD02440

[redacted] ROW Rebuild

Design Alternative CD02440-08

General Information

Segment: 8 - [redacted] Material Removals - Southern Status: Draft

Segment Type: OTHER Town: LITCHFIELD Budget Year: 2026

Work Type: Other Trimming Required: ☐ In Service Date: 12/31/2026

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-08

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$187,442
Contingency Amount:	$52,484
Estimate:	$239,926
Reimbursement:	$0
Net Amount:	**$239,926**

Description:

Item Description	CU	$ / Per	Qty	Amount
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	[redacted]		$61,726.08
OTHER OTHER 30% Contractor Adder	23-ALL14			$56,116.00
OTHER OTHER 58 poles [redacted]r location for track machine	23-ALL14			$69,600.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-12

General Information

Segment: [redacted] ROW Material Removals - Northern Status: Draft

Segment Type: OTHER Town: LITCHFIELD Budget Year: 2027

Work Type: Other Trimming Required: ☐ In Service Date: 6/30/2027

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 #: CD02440

[redacted]ebuild

Design Alternative CD02440-12

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	32.00%
SubTotal:	$129,507
Contingency Amount:	$41,442
Estimate:	$170,949
Reimbursement:	$0
Net Amount:	**$170,949**

Description:

Item Description	CU	$ / Per	Qty	Amount
OH WIRE OH - Remove circuit wire (3 phase)	23-OH37A	[redacted]		$44,769.92
OTHER OTHER 30% Contractor Adder	23-ALL14			$36,737.00
OTHER OTHER 40 Pole Locations, [redacted]er location for track machine	23-ALL14			$48,000.00

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 #: CD02440 [redacted] Rebuild

Design Alternative CD02440-15

General Information

Segment: 15 - Northern ROW Matting
Status: Draft
Segment Type: ENVIRONMENTAL
Town: LITCHFIELD
Budget Year: 2027
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2027
Description: Matting Estimate:

[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 #: CD02440

[redacted]ebuild

Design Alternative CD02440-15

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$1,296,750
Contingency Amount:	$363,090
Estimate:	$1,659,840
Reimbursement:	$0
Net Amount:	**$1,659,840**
Description:	

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER 30% Contractor Adder	23-ALL14	[redacted]		$299,250.00
OTHER OTHER Matting cost for North portion of ROW	23-ALL14			$997,500.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-18

General Information

Segment: 18 - Environmental Impact Study
Status: Draft
Segment Type: OTHER
Town: LITCHFIELD
Budget Year: 2026
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2026
Description: Environmental Impact Study Cost: $30,000

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-18

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$30,000
Contingency Amount:	$7,200
Estimate:	$37,200
Reimbursement:	$0
Net Amount:	**$37,200**

Description:

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER Cost for Environmental Review	23-ALL14	[redacted]		$30,000.00

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 #: CD02440

[redacted] Rebuild

Design Alternative CD02440-19

General Information

Segment: 19 - ROW Trimming Estimate Status: Draft

Segment Type: ETT Town: LITCHFIELD Budget Year: 2026

Work Type: ETT Trimming Trimming Required: ☐ In Service Date: 12/31/2026

Description: [redacted]
Trimming Estimate from Arborist: $150,000

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 #: CD02440

[redacted]Rebuild

Design Alternative CD02440-19

Estimate

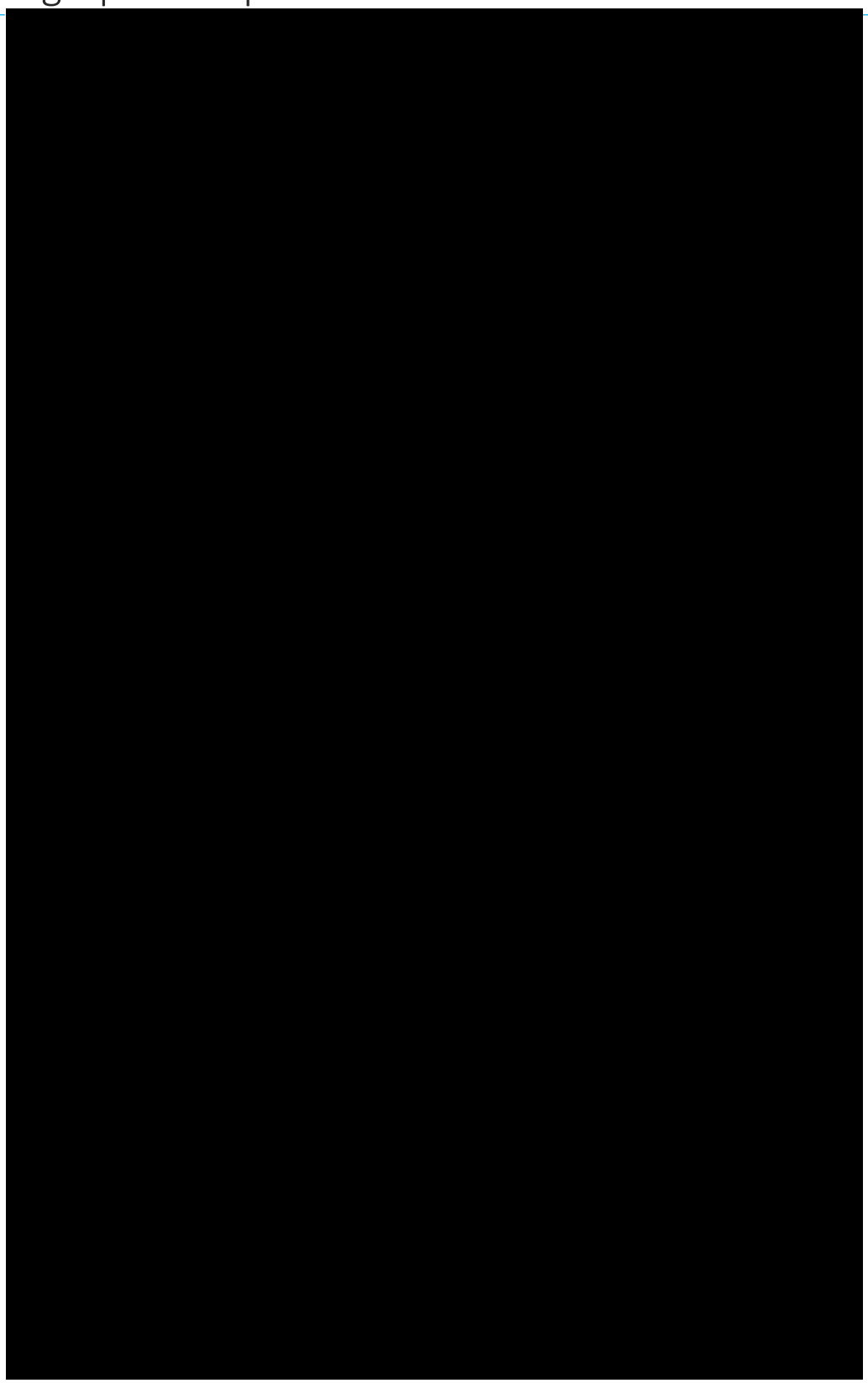
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$150,000
Contingency Amount:	$36,000
Estimate:	$186,000
Reimbursement:	$0
Net Amount:	**$186,000**
Description:	

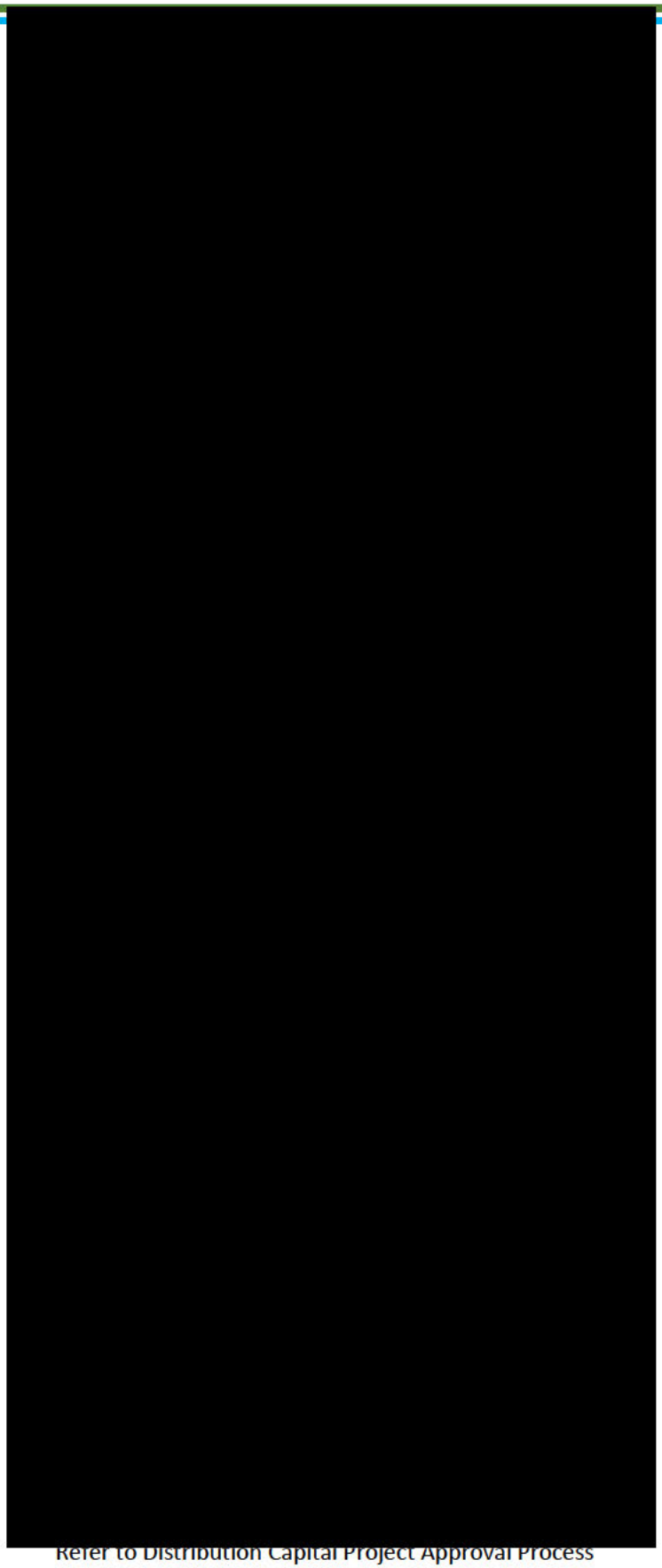
Item Description	CU	$ / Per	Qty	Amount
OTHER	23-ALL14	[redacted]		$150,000.00
OTHER Trimming Estimate from Arboristi: Edge to Edge of easement				

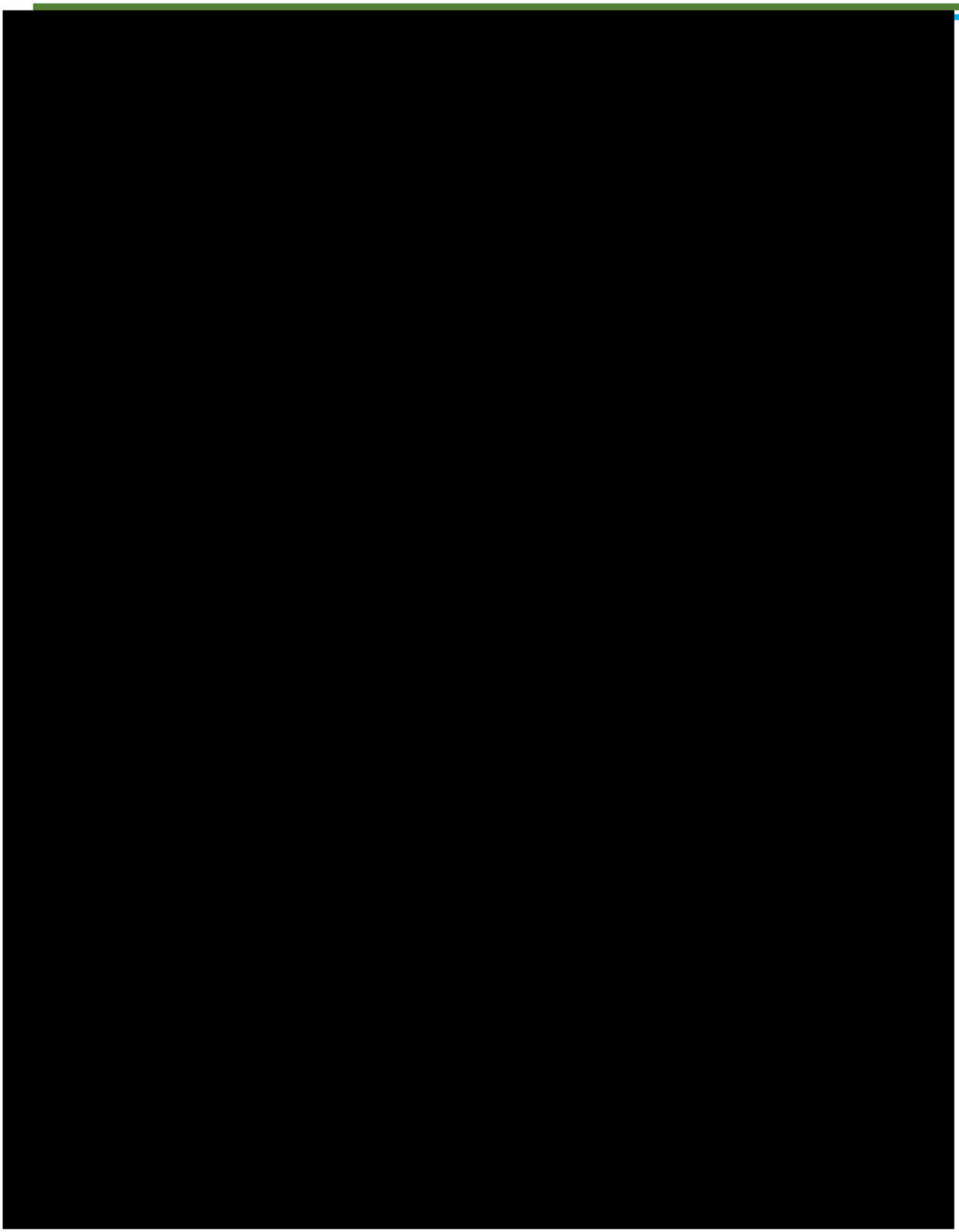
Associated / Impacted Devices

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

S. Geographic Map







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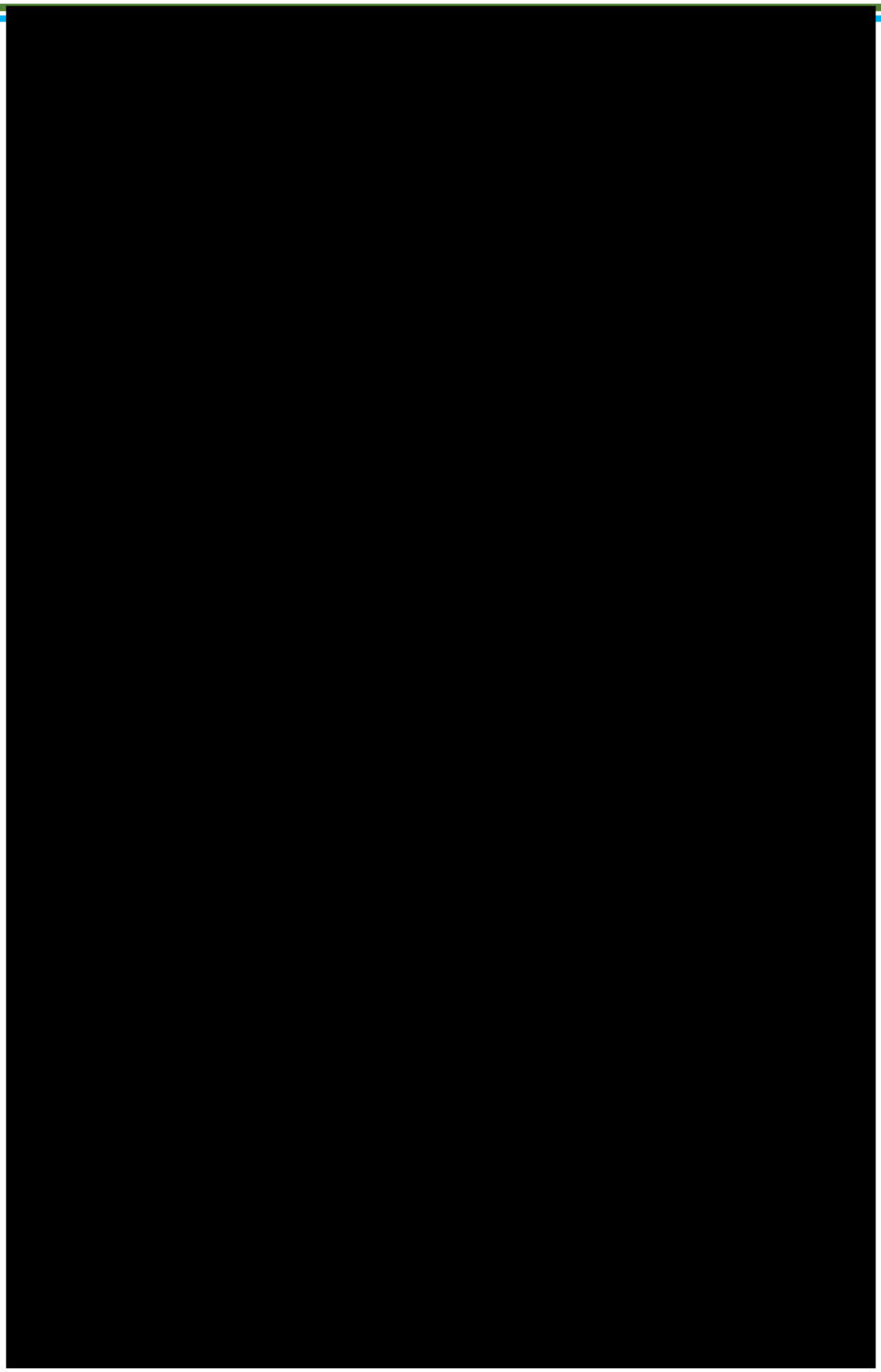

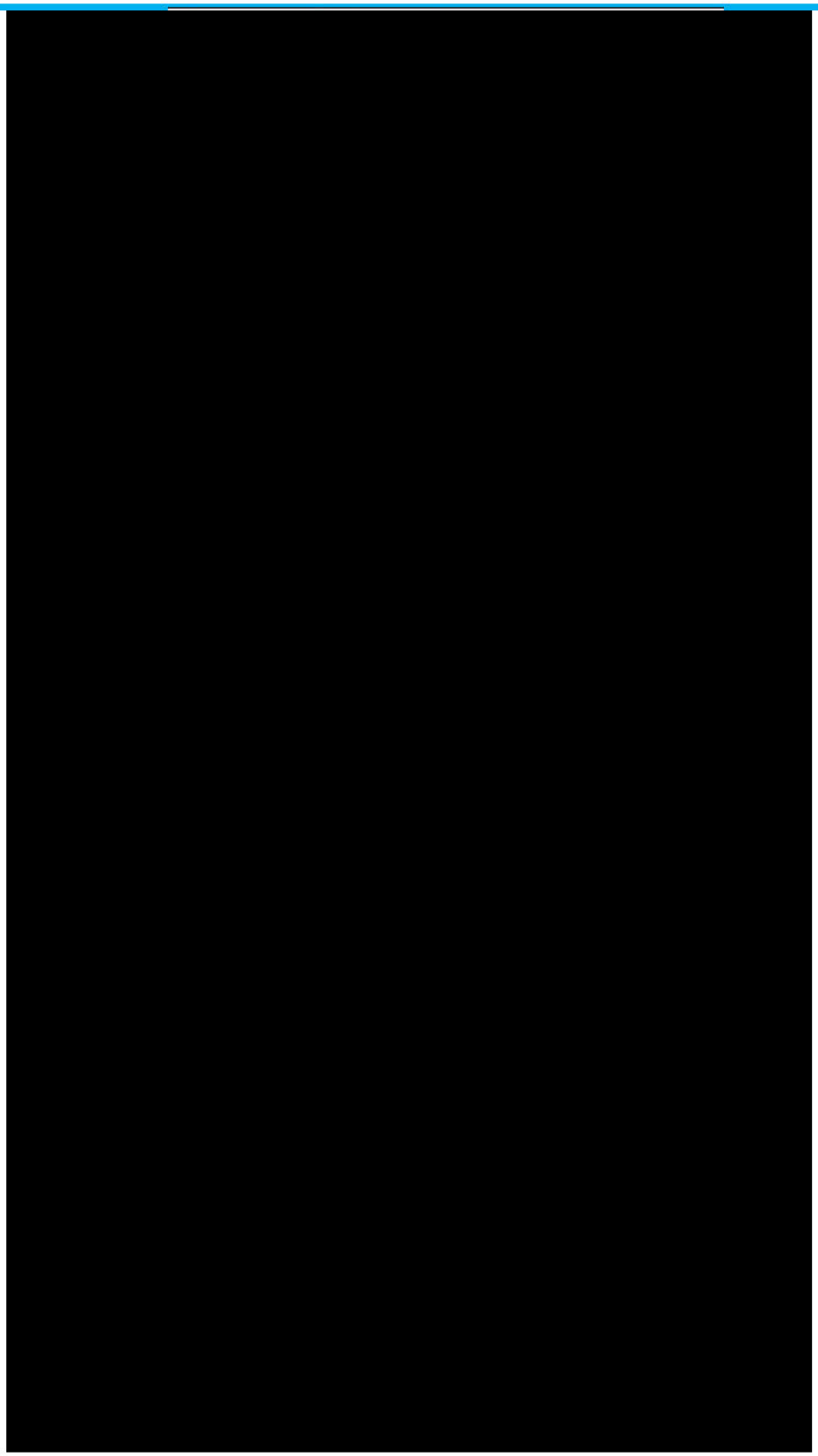

[redacted]

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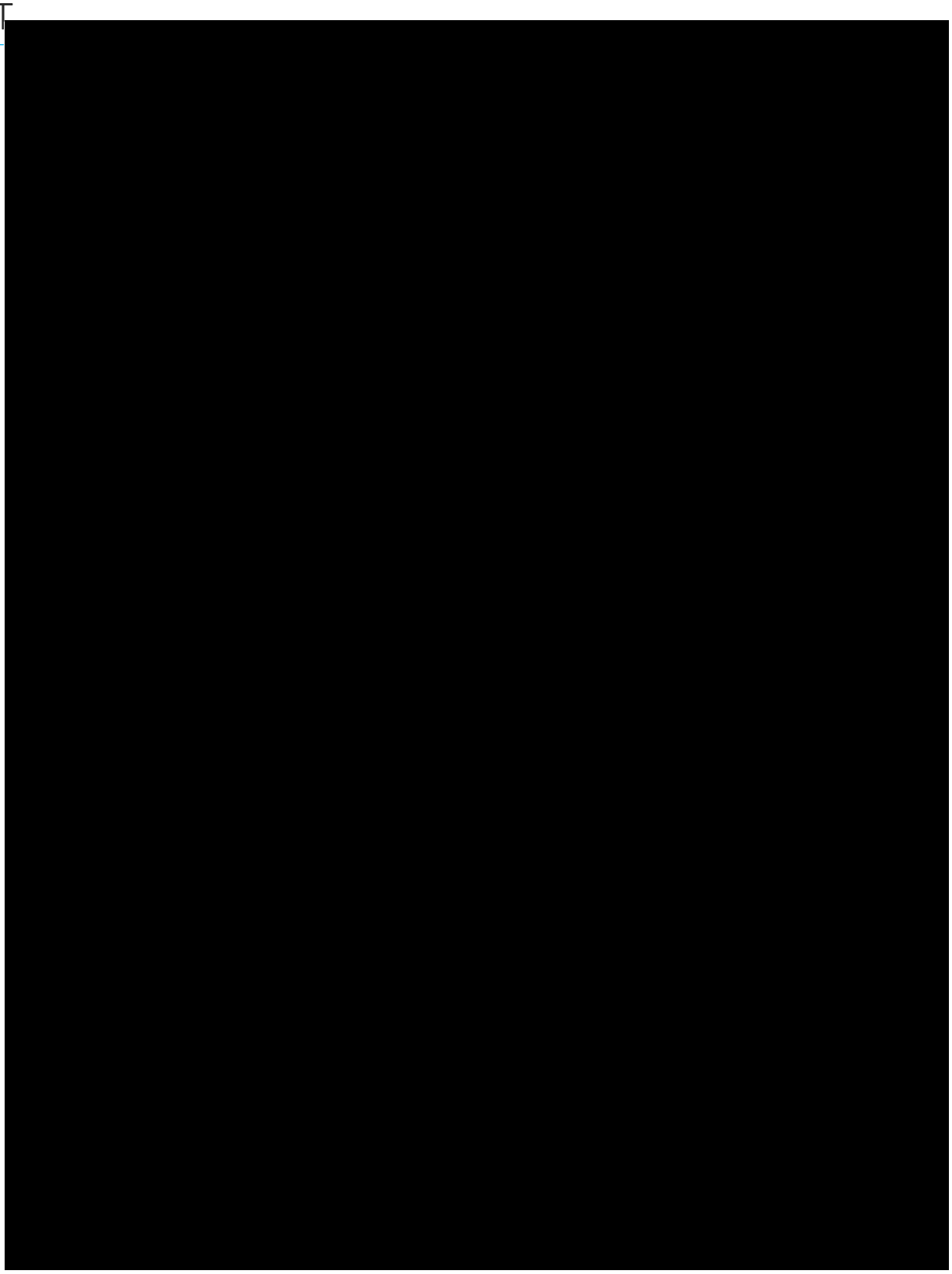
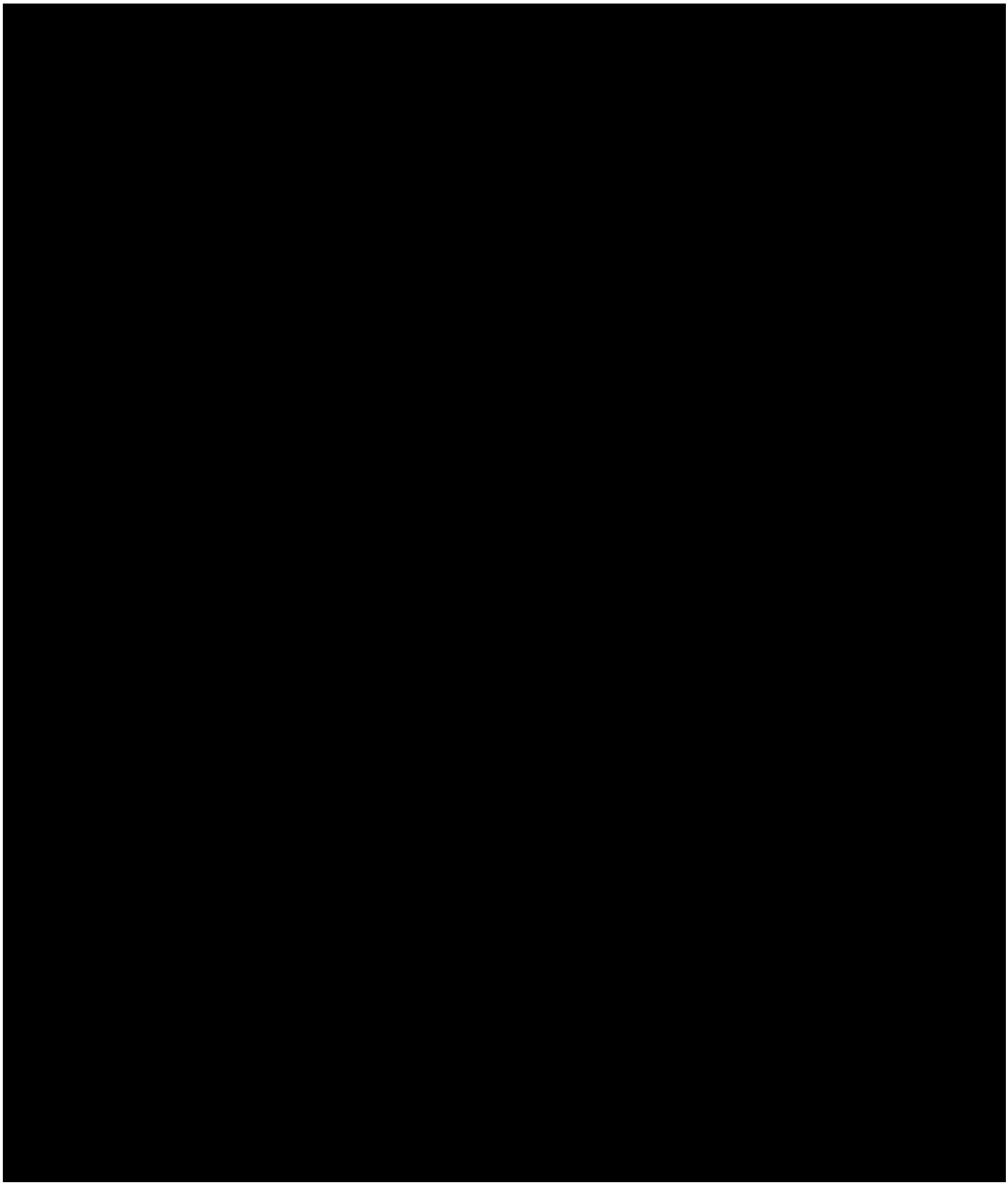


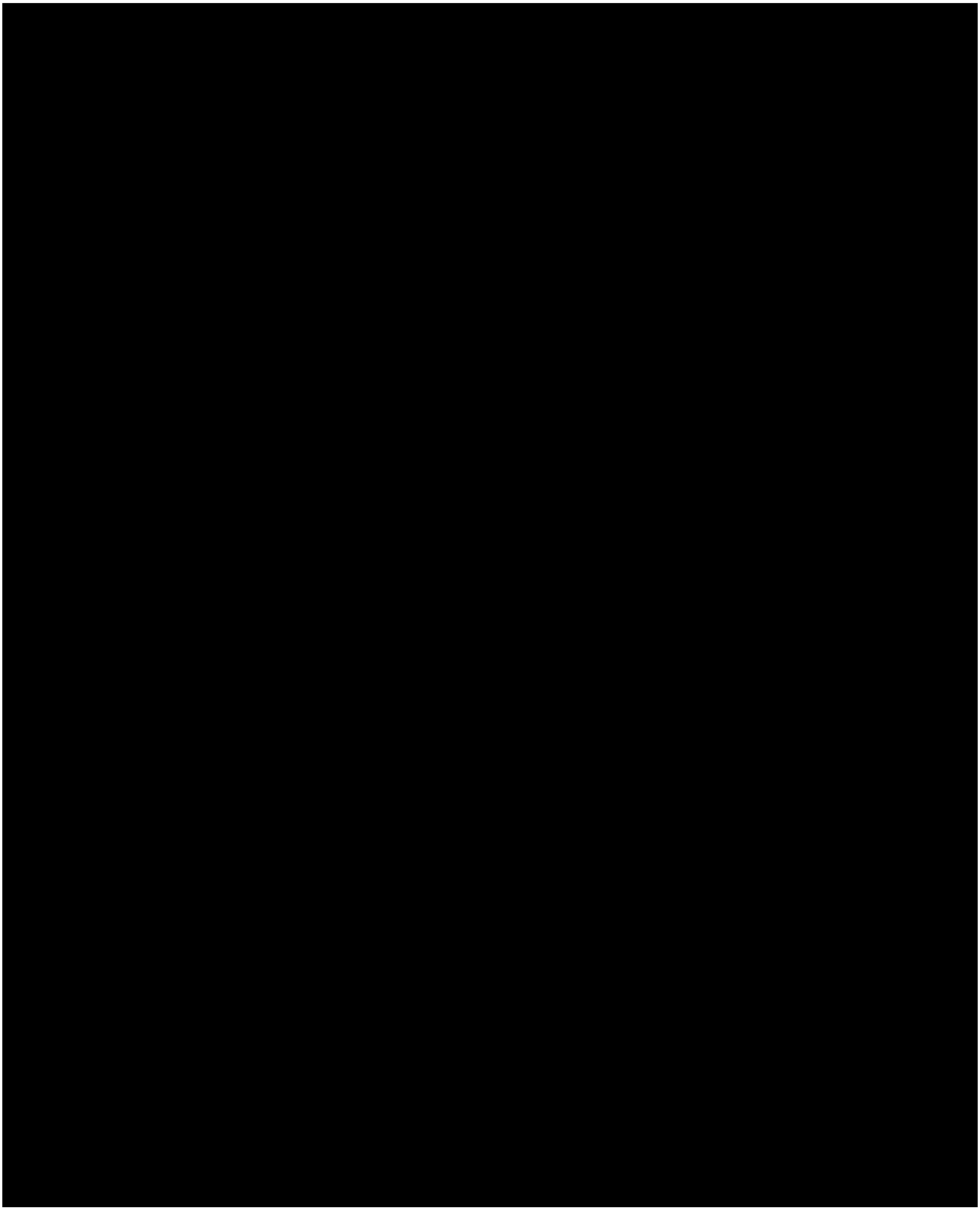
[redacted]

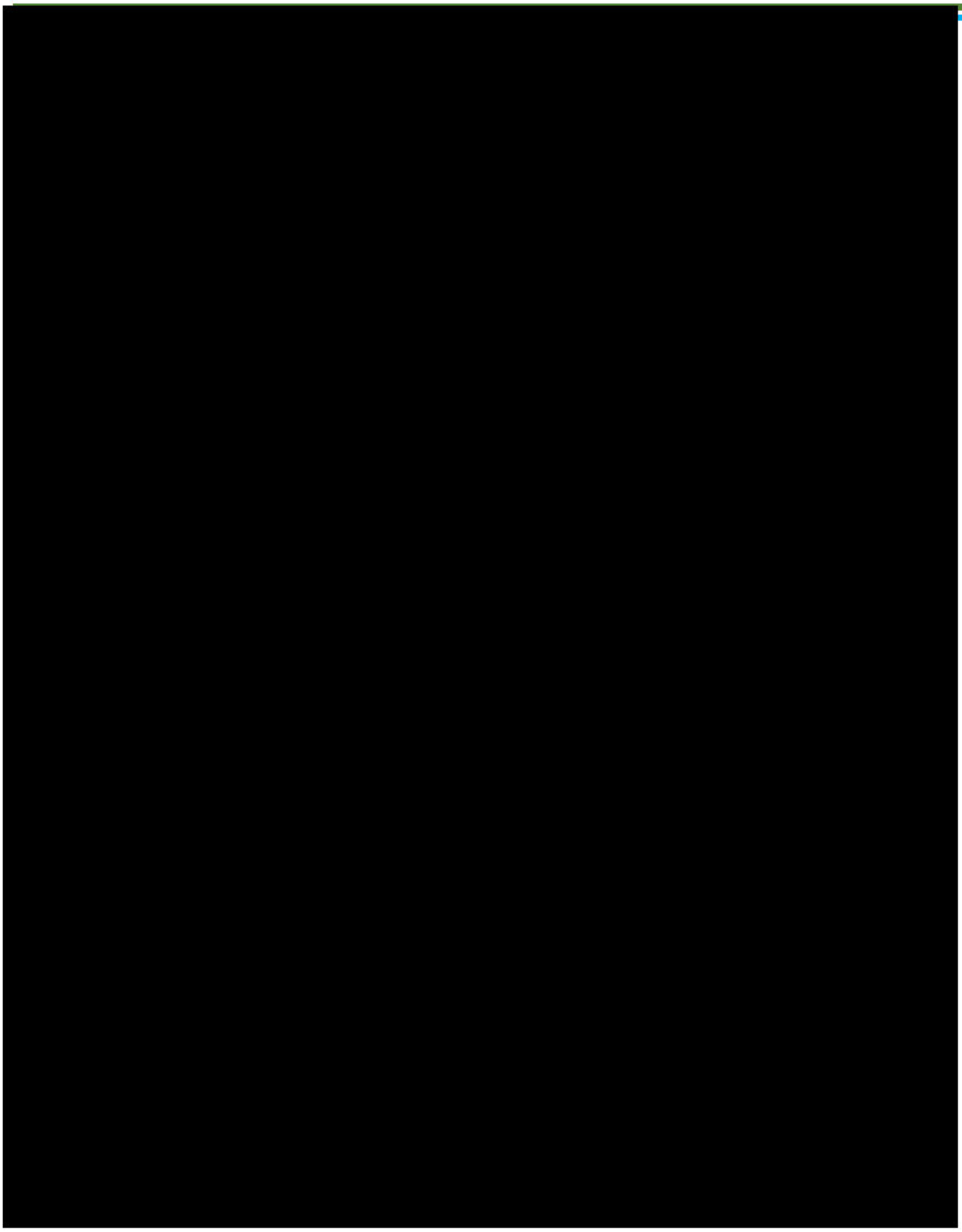
U.Load Sheet

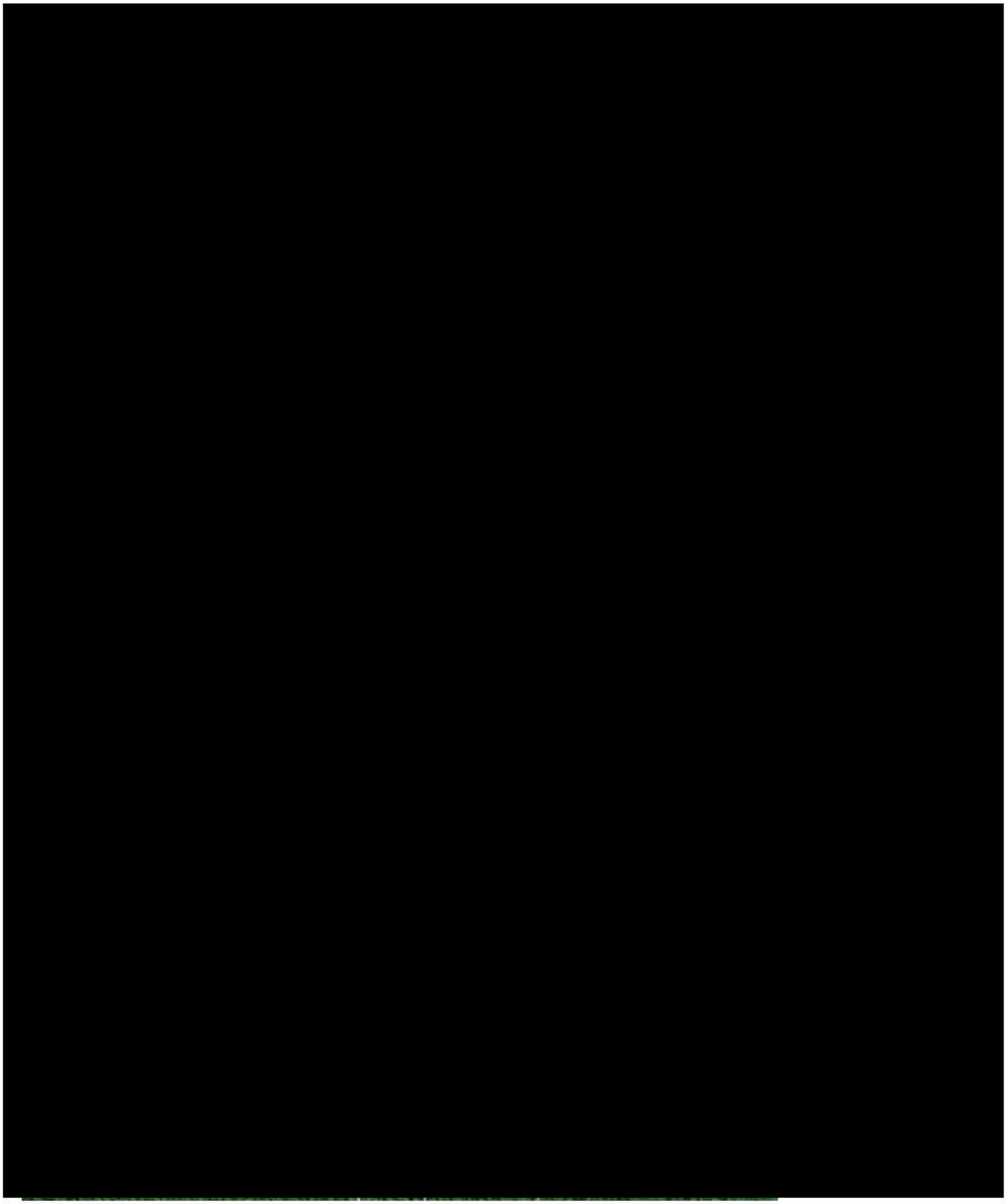
[redacted]



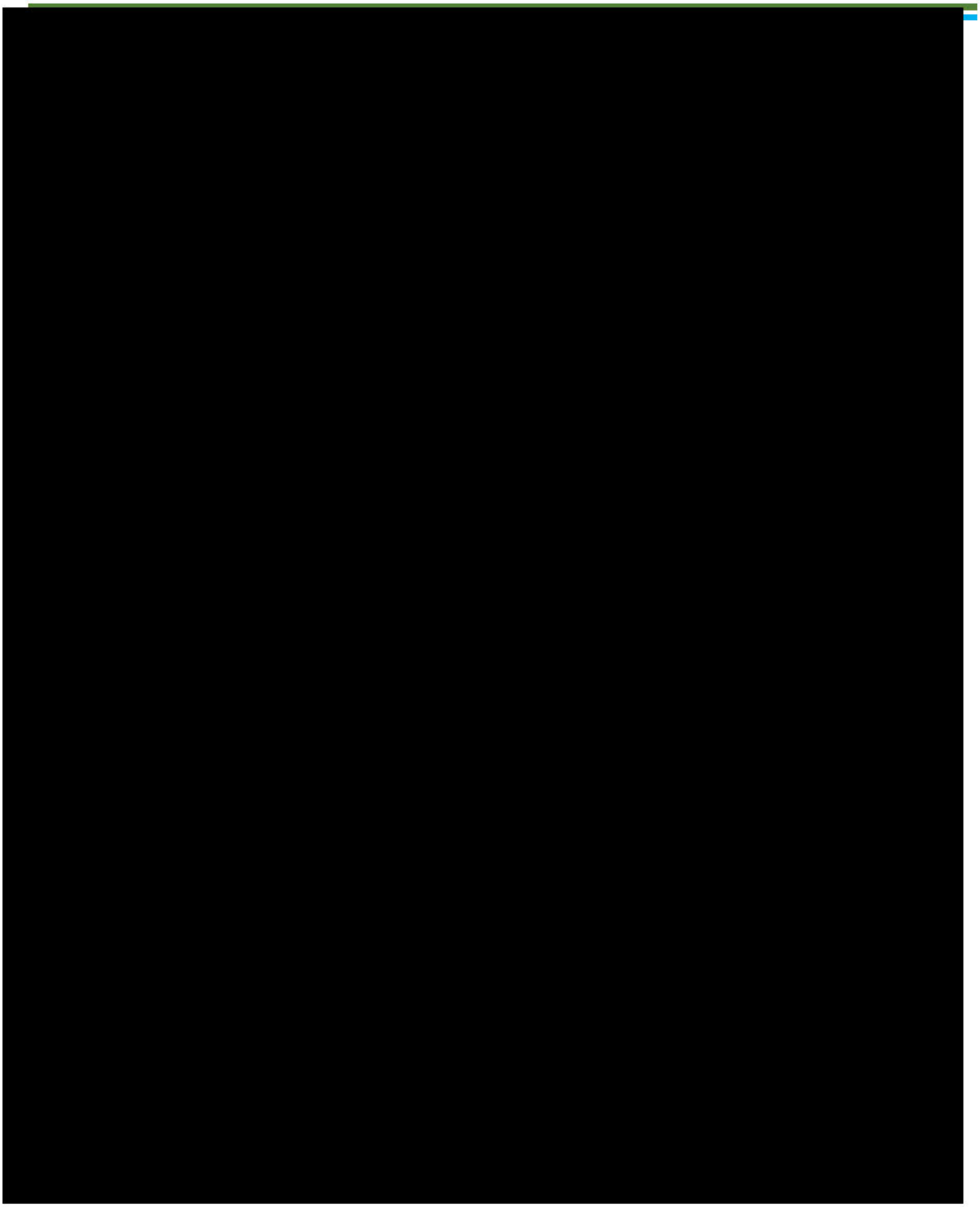
V. 2013 Burn Down Photos

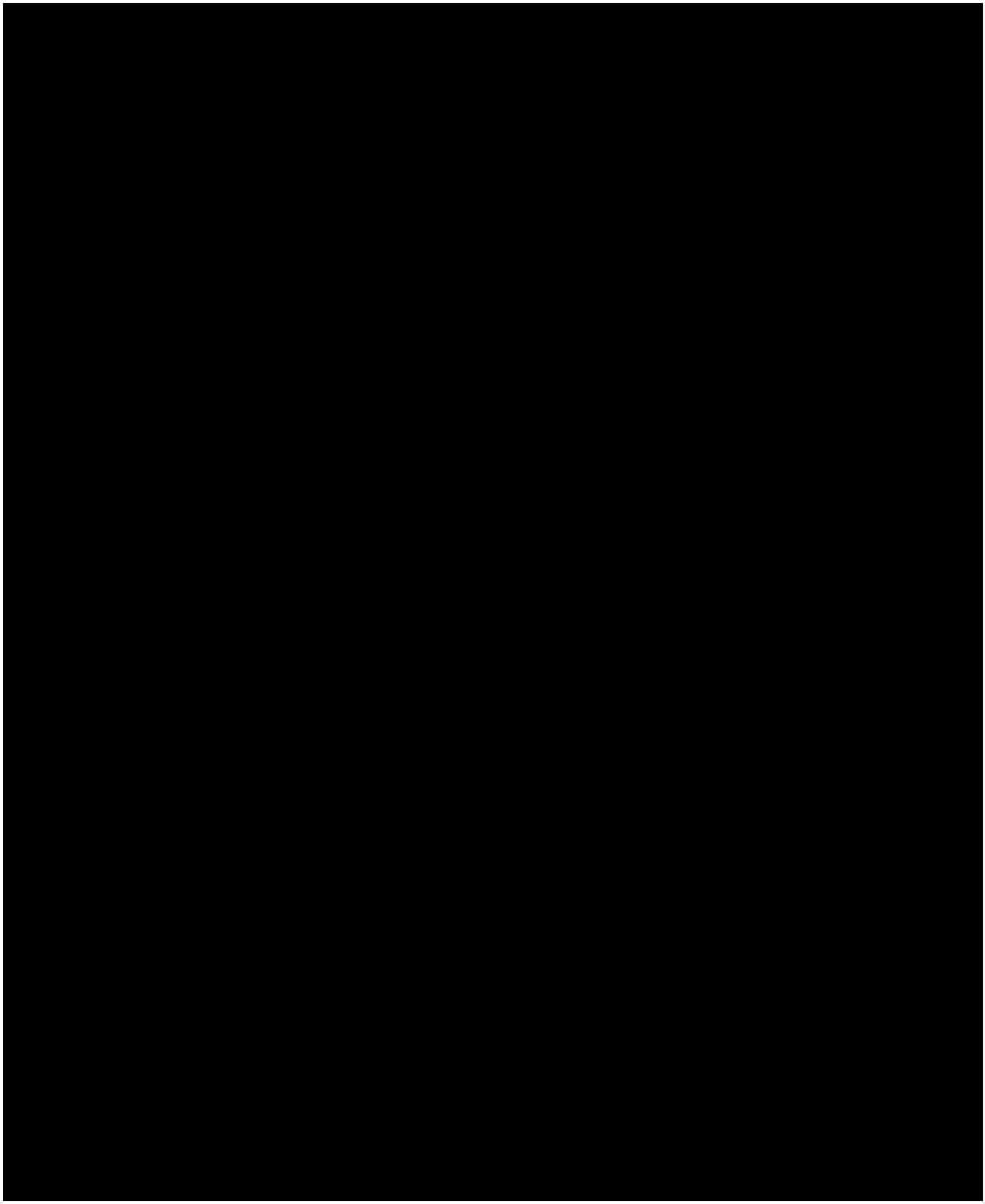


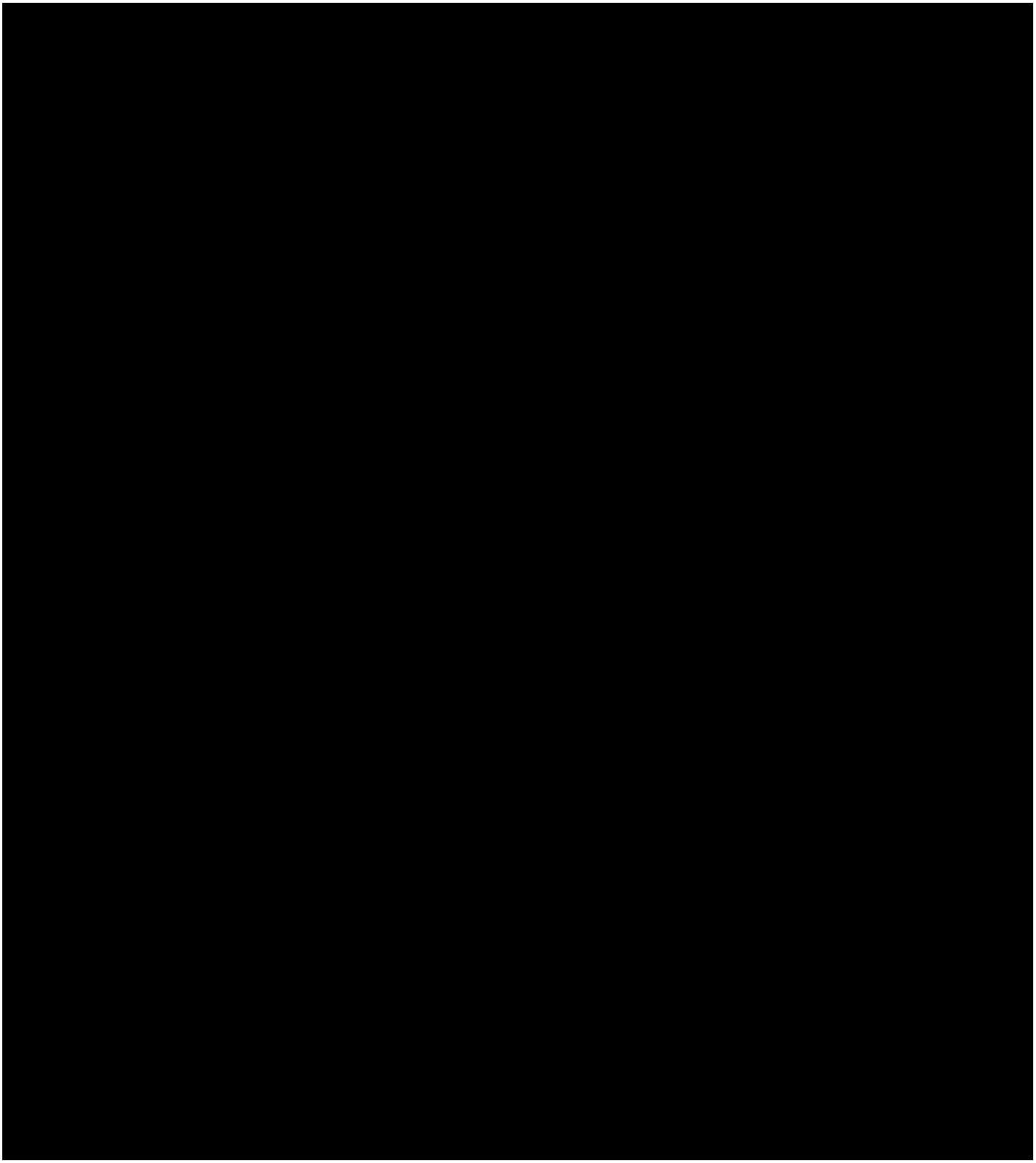




Pole Location with Broken Xarm







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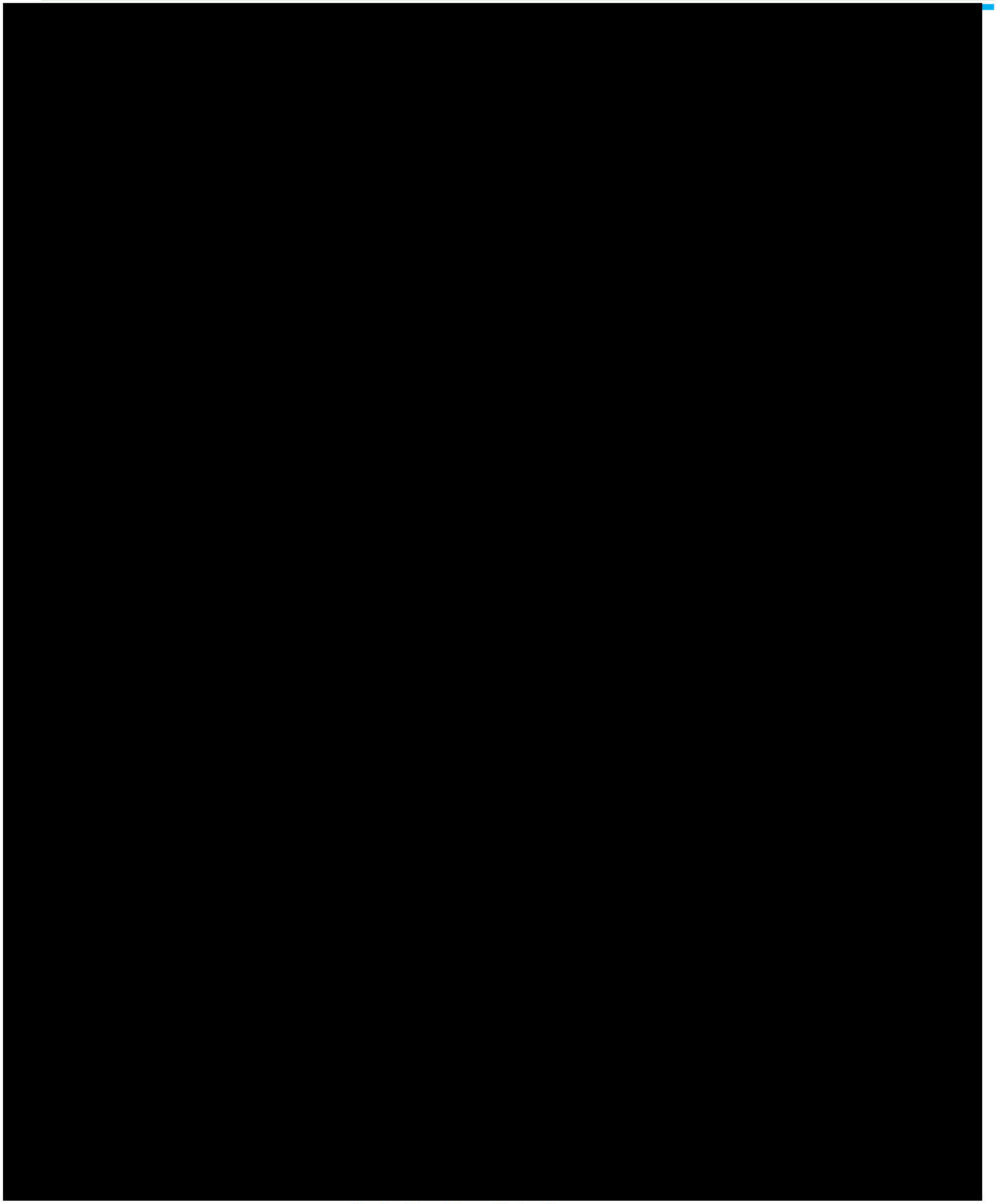

Deteriorating Pole Top

EVERSOURCE

Project Approval Form

Project Title: [redacted] **Rebuild**	**Project Number: CD02440**
Date Prepared: 03/13/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** Distribution Line Reliability
Project Manager: [redacted]	**Project Type:** RIGHT OF WAY LINES
Project Sponsor [redacted]	**Capital Investment part of 5-year plan?** No
	Emergency Related Request? No
Total Request ($): $30k	**Authorization Type:** Initial Funding

1. Project Need Statement

CD02440 seeks to address reliability issues and aging infrastructure on the [redacted] near Goshen, CT. The [redacted] is responsible for feeding the [redacted] circuits, which when combined, serve over [redacted] customers. The identified portion of the [redacted] is comprised of roughly [redacted] of 3-ph 1/0 ACSR conductor. The identified segment includes [redacted] poles with an average age of 45 years. The [redacted] has experienced 4 reliability related outages in the last 4 years and has seen multiple instances where the segment of 1/0 ACSR was burnt down due to overload under contingency.

Title: [redacted] Rebuild

Division: Western

District: Torrington

Town(s): Goshen, Litchfield

2. Project Objectives

To mitigate future reliability concerns and to address improve the overall conductor limit along the [redacted] CD02440 suggests the replacement of the existing 1/0 ACSR conductor. The scope of work includes reconductoring of [redacted]' of 1/0 ACSR Bare with 795 TW and the installation of roughly [redacted] steel poles. The initial requested amount is $30k.

Project Initiator:_____

Engineering Approval:_____