EVERSOURCE

Project Approval Form

Project Title: 2024 TripSaver Program	Project Number: CD02340
Date Prepared: 12/20/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** SMART SWITCHES PROGRAM
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: 12/31/24	
Total Capital Request: 12,000	**Authorization Type:** Partial Funding

1. Executive Summary

Project CD02340 proposes to install Trip Savers at 1155 fused lateral locations in Connecticut to reduce the number of outages caused by transient type events (Tree, Animal, Lightning, Patrolled Nothing Found).

A Trip Saver is a self–powered, electronically controlled, single–phase, cutout–mounted vacuum interrupter recloser. The Trip Saver is designed to eliminate the sustained interruption that occurs when a lateral fuse cutout operates in response to a transient fault. It also can eliminate momentary circuit interruptions that occur when a substation circuit breaker or source–side line recloser would otherwise trip to prevent a lateral fuse cutout from operating in response to a transient fault.

Based on previous year's results, it is projected that the number of permanent outage events and the Customer Minutes Interrupted (CMI) will be reduced by approximately 50% on the fused laterals that are selected. (See table in the Background / Justification section of the PAF document.)

CD02340 is requesting Preliminary Funding of $12,000K for the Eversource CT Trip Saver Program

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2024	Year 2	Year 3+	Total
Internal Labor and Construction Equipment	654.2	0.0	0.0	654.2
Outside Services	1,342.2	0.0	0.0	1,342.2
Materials	6,230.6	0.0	0.0	6,230.6
Removals	716.8	0.0	0.0	716.8
Other	31.0	0.0	0.0	31.0
Risk and Contingency	0.0	0.0	0.0	0.0
Subtotal	**8,974.8**	**0.0**	**0.0**	**8,974.8**

Indirect Capital Costs	2024	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	2,883.1	0.0	0.0	2,883.1
Capitalized interest or AFUDC, if any	142.1	0.0	0.0	142.1
Subtotal	**3,025.2**	**0.0**	**0.0**	**3,025.2**
Total Capital Costs (Gross)	**12,000.0**	**0.0**	**0.0**	**12,000.0**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net)	**12,000.0**	**0.0**	**0.0**	**12,000.0**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

Based on previous year's results, it is projected that the number of permanent outage events and the Customer Minutes Interrupted (CMI) will be reduced by approximately 70% on the fused laterals that are selected. For consistency, based on the standardized recloser improvement indices utilized for all projects, 50% of customer interruption & 50% customer mins saved was utilized in our projections of system improvement.

Comparison of August YTD Data for Prior 4 Year Avg vs Post Construction (2019):

AUGUST YTD	PRIOR 4 YR PERIOD				PRIOR 4 YR AVG	POST CONSTR		
ES REPORTABLE	2015	2016	2017	2018	15-19	2019	REDUCTION	CHANGE
CUSTOMERS AFFECTED	9,914	21,331	10,989	12,269	13,626	3,626	10,000	-73%
# EVENTS	100	196	113	106	129	37	92	-71%
CMI	1,149,291	2,870,324	1,277,797	1,658,729	1,739,035	476,048	1,262,987	-73%

AUGUST YTD	PRIOR 4 YR PERIOD				PRIOR 4 YR AVG	POST CONSTR		
WITH STORMS	2015	2016	2017	2018	15-19	2019	REDUCTION	CHANGE
CUSTOMERS AFFECTED	11,293	29,067	13,776	28,010	20,537	5,795	14,742	-72%
# EVENTS	117	258	136	254	191	56	135	-71%
CMI	2,104,549	9,176,665	1,645,425	25,297,525	9,556,041	1,222,124	8,333,917	-87%

Project Need

Project CD02340 proposes to install Trip Savers at 1155 fused lateral locations in Connecticut to reduce the number of outages caused by transient type events (Tree, Animal, Lightning, Patrolled Nothing Found). Locations were prioritized by customer interruptions. Major storm Isais was excluded from the events. Based on the standardized recloser improvement indices, 50% of customer interruption & 50% customer mins saved was utilized.

The installation of these 1250 Trip Savers (included in the appendix) will provide the following annual customer interruptions and SAIDI reductions:

Trip Saver Additional Locations 2023 CD02197						
State	#locations	Devices	CI Saved	CMI Saved	SADI Saved	Total $/CMS
CT	1155	1250	9,250	2,880,906	2.23	$4.17

b. Project Scope

Refer to 'Distribution Partial/Full Funding Request Form – Guide, rev1'.

Install Trip Savers at 1155 fused lateral locations in Connecticut. 1250 trip savers are to be done in 2024 as follows:

Division	#locations	Devices
CT CENTRAL	315	335
CT EASTERN	302	332
CT WESTERN	538	583

Major Material:

CD02340 Trip Savers	
Fuse Size	Devices
25K	**358**
40K	**313**
65K	**413**
80K	**13**
100K	**123**
140K	**30**
Total	**1250**

4. Alternatives Considered

Do Nothing: 1155 fused lateral locations in Connecticut will continue to experience outages caused by transient type events (Tree, Animal, Lightning, Patrolled Nothing Found).

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	11-9-2023
100% Detailed Engineering Completion	1-31-24
Fully Funded	2-30-24
Construction Start	2-30-24
In Service Date	12-31-24

6. Regulatory Decisions

7. Codes and Standards

DSEM 10-431 - TripSaver II General



8. Risk and Contingencies

Contingencies:

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2024	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction resources not available to perform the work.	2024	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2024	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Storm delays	2024	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2024	Low	Schedule work to minimize system abnormal time. Most of this work will require system to be abnormal for any extended period of time.

9. References

References
1.
2.
3.
4.
5.

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. P6 Schedule	*NO*
C. Geographic Map	*NO*
D. System and Station One-Lines	*NO*
E. Other	*NO*
F. 2024 Locations	*YES*

A. Cost Estimates

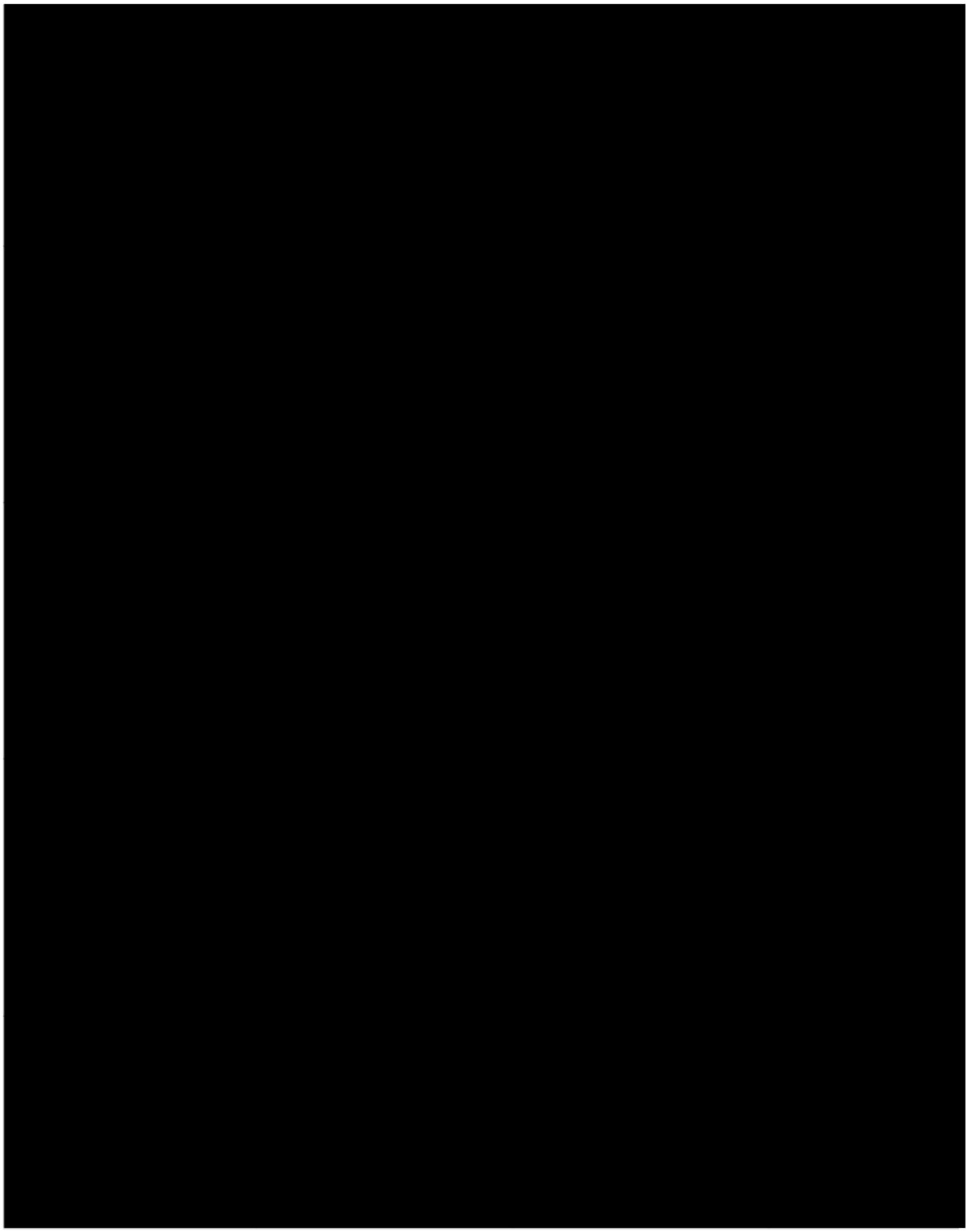
Design Alternative CD02340-01

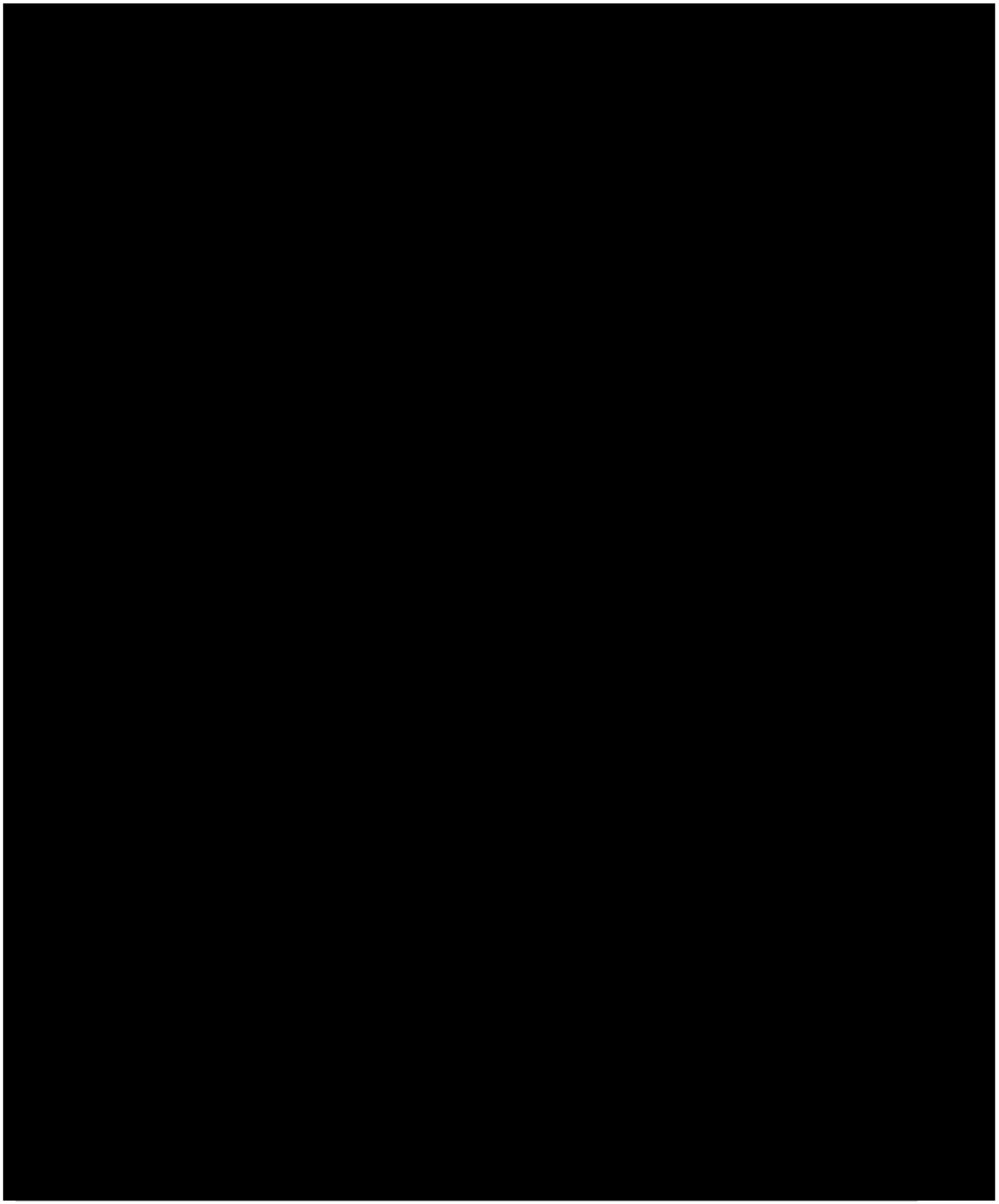
Estimate

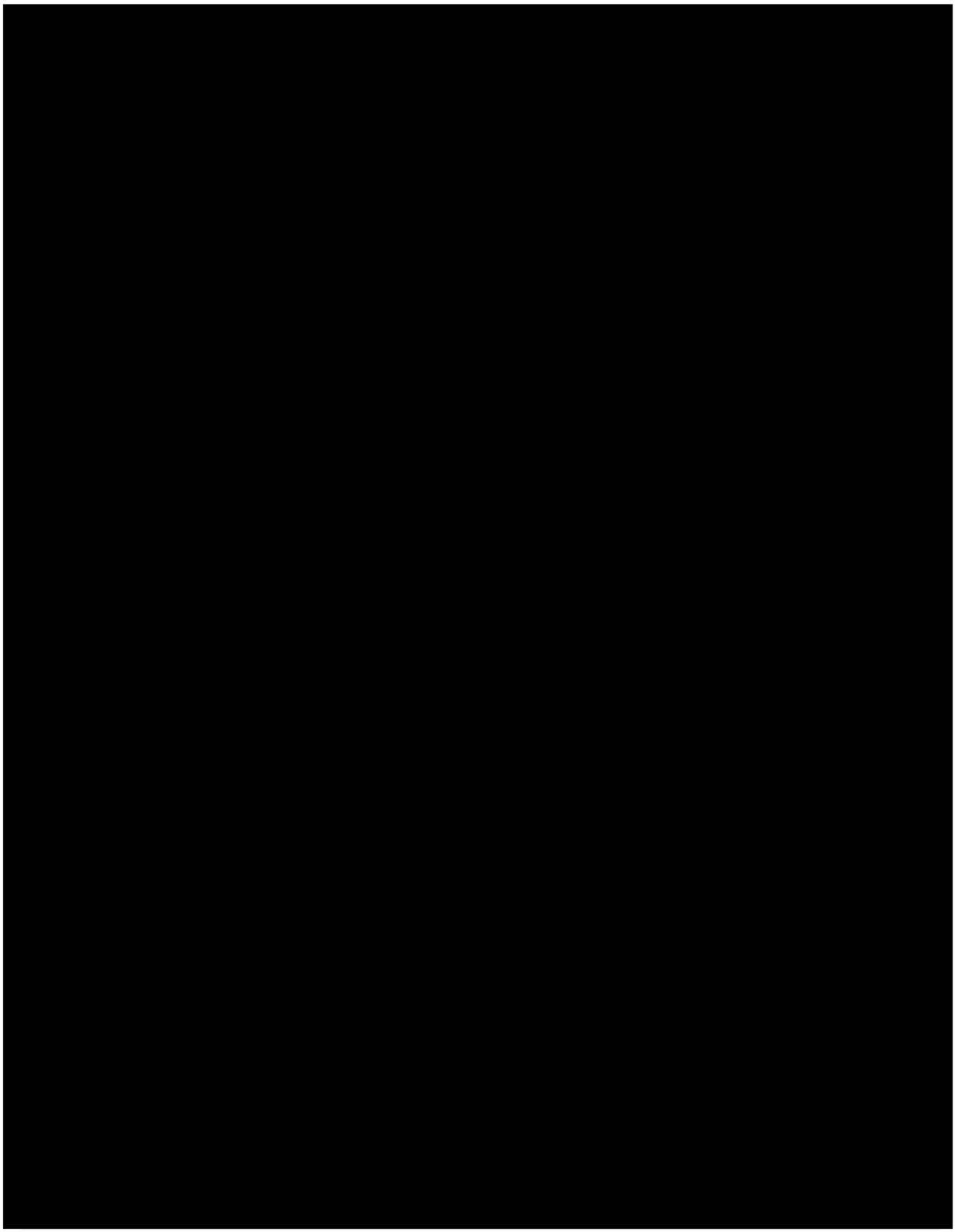
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$9,674,000
Contingency Amount:	$2,321,760
Estimate:	$11,995,760
Reimbursement:	$0
Net Amount:	**$11,995,760**
Description:	

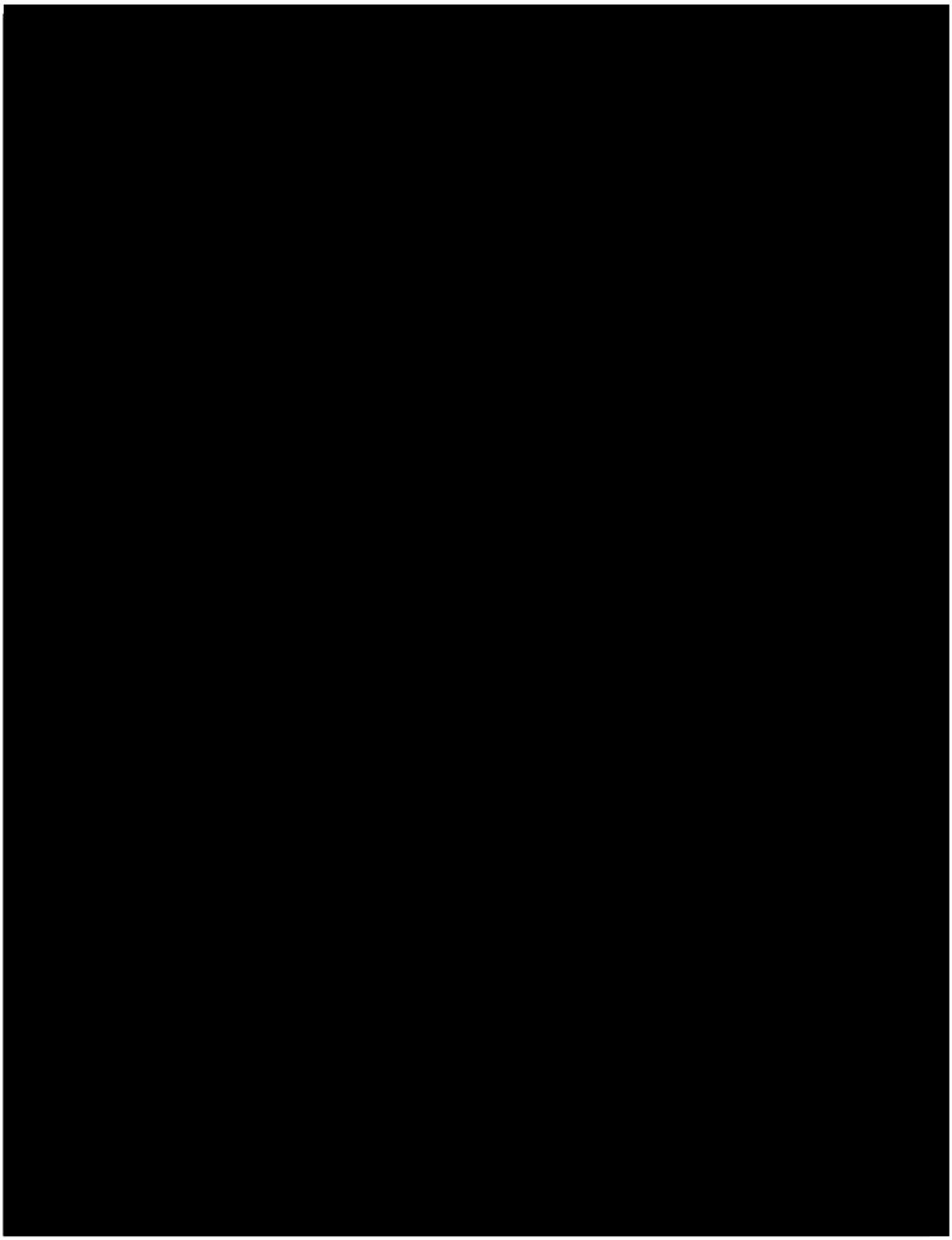
Item Description	CU	[redacted]	Amount
SECTIONALIZE 1PH Tripsaver	23-OH41A		$8,616,000.00
SECTIONALIZE 3PH Tripsaver	23-OH41B		$1,058,000.00

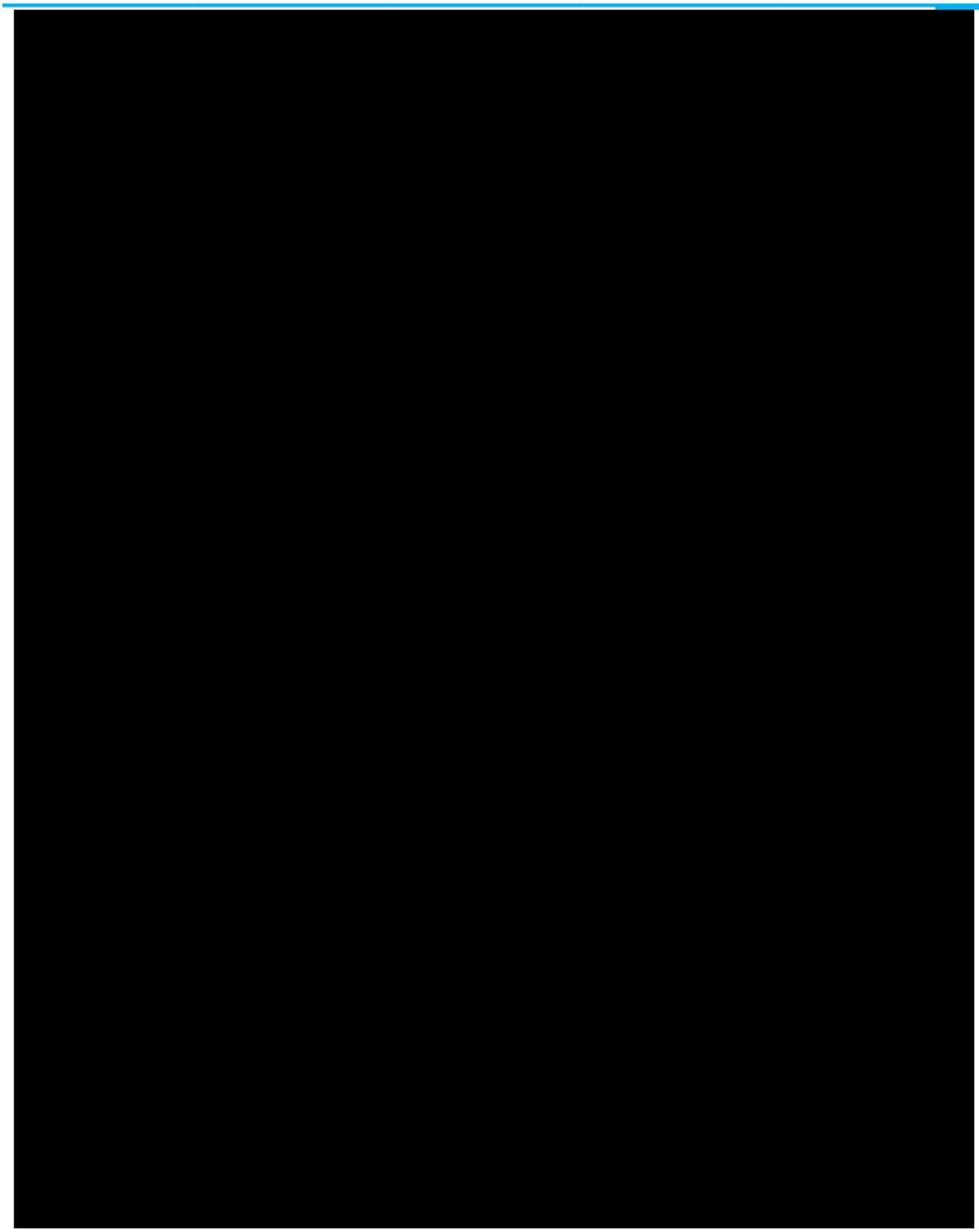
F. Locations

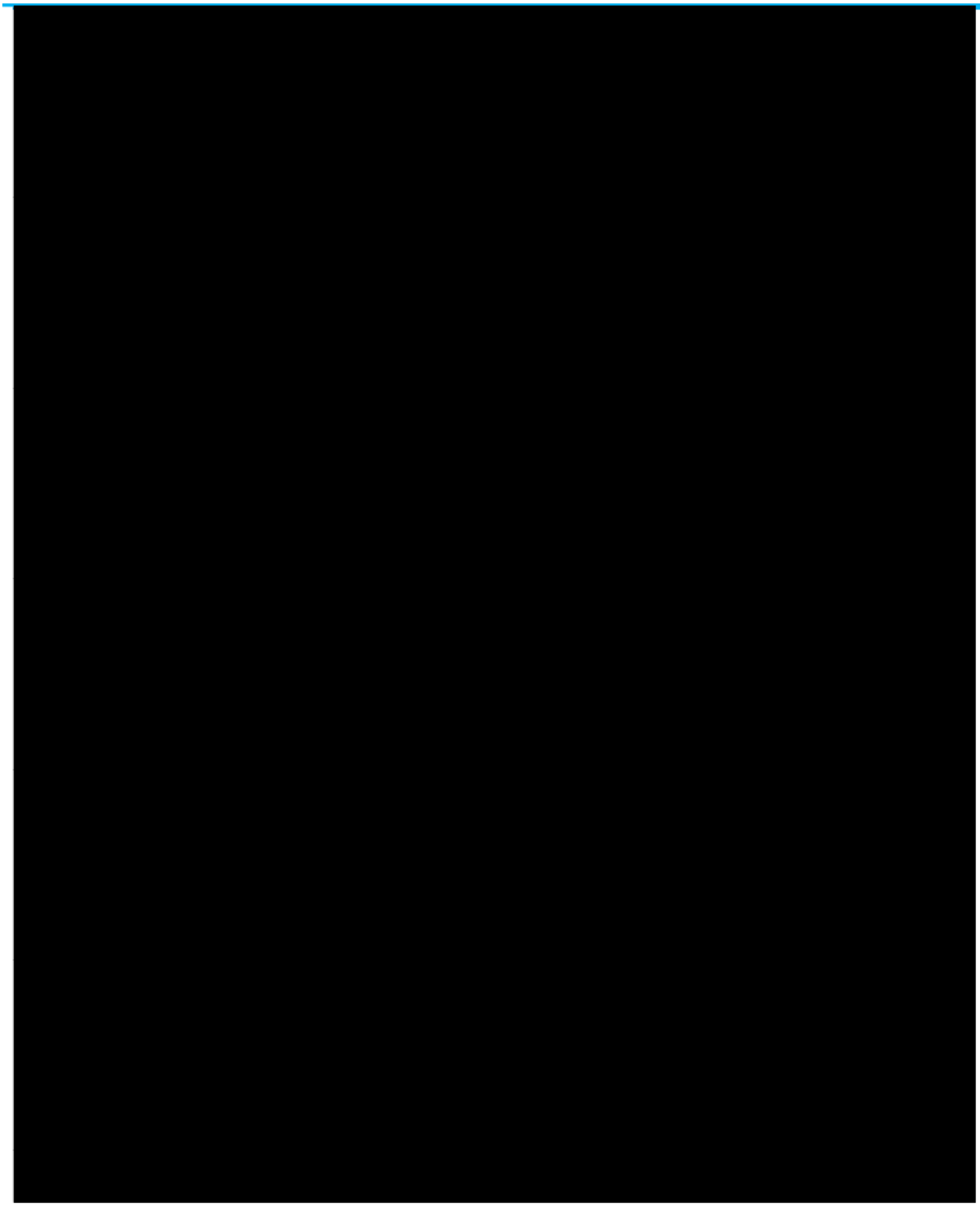


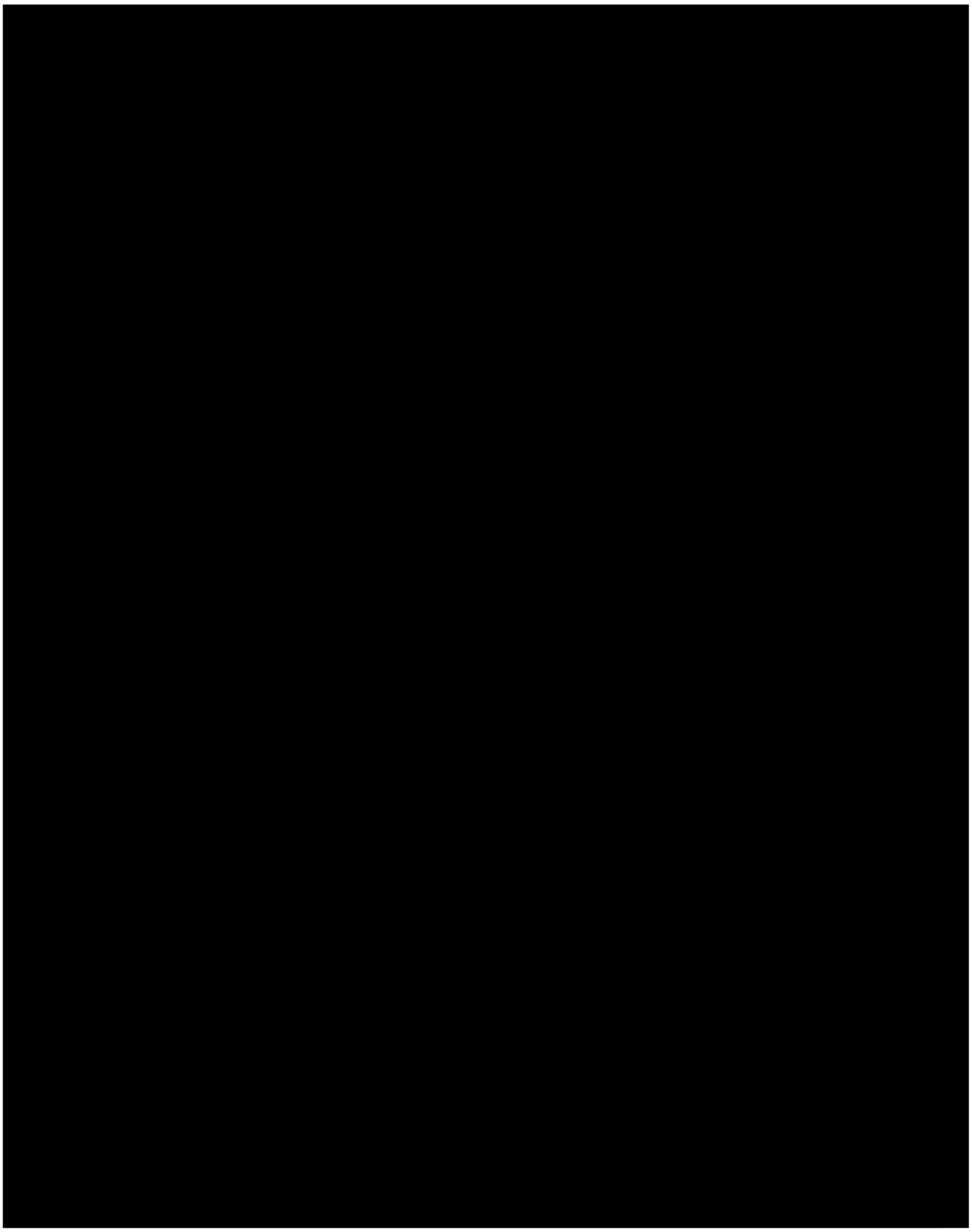












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