Annual Heat Trace Panel Checklist (CTG-4)

1	Condition of panel?	
2	Main breaker on?	
3	Panel energized?	
4	Breakers Tripped?	
5	Other problems?	
6	Work-Order Written?	

Circuit Amps

1		19	
2		20	N/A
3		21	
4		22	
5		23	
6	N/A	24	
7		25	
8	N/A	26	
9		27	
10	N/A	28	
11		29	
12	N/A	30	
13		31	
14	N/A	32	
15		33	
16	N/A	34	N/A
17		35	
18	N/A	36	

Inspected by: _____ Date: _____

Note: "N/A" refers to spare breakers, not currently in use.

Annual Heat Trace Panel Checklist (CTG-3)

1	Condition of panel?	
2	Main breaker on?	
3	Panel energized?	
4	Breakers Tripped?	
5	Other problems?	
6	Work-Order Written?	

Circuit Amps

1		19	
2		20	N/A
3		21	
4		22	
5		23	
6	N/A	24	
7		25	
8	N/A	26	
9		27	
10	N/A	28	
11		29	
12	N/A	30	
13		31	
14	N/A	32	
15		33	
16	N/A	34	N/A
17		35	
18	N/A	36	

Inspected by: _____ Date: _____

Note: "N/A" refers to spare breakers, not currently in use.

Annual Heat Trace Panel Checklist (CTG-2)

1	Condition of panel?	
2	Main breaker on?	
3	Panel energized?	
4	Breakers Tripped?	
5	Other problems?	
6	Work-Order Written?	

Circuit Amps

1		19	
2		20	N/A
3		21	
4		22	
5		23	
6	N/A	24	
7		25	
8	N/A	26	
9		27	
10	N/A	28	
11		29	
12	N/A	30	
13		31	
14	N/A	32	
15		33	
16	N/A	34	N/A
17		35	
18	N/A	36	

Inspected by: _____ Date: _____

Note: "N/A" refers to spare breakers, not currently in use.

Annual Heat Trace Panel Checklist (STG)

1 Condition of panel? _____
2 Main breaker on? _____
3 Panel energized? _____
4 Breakers Tripped? _____
5 Other problems? _____
6 Work-Order Written? _____

Circuit Amps

1	_____	19	_____
2	_____	20	_____
3	_____	21	_____
4	_____	22	_____
5	_____	23	_____
6	_____	24	_____
7	_____	25	_____
8	_____	26	_____
9	_____	27	_____
10	_____	28	_____
11	_____	29	_____
12	_____	30	_____
13	_____	31	_____
14	_____	32	_____
15	_____	33	_____
16	_____	34	_____
17	_____	35	_____
18	_____	36	_____

Inspected by: _____ Date: _____

Note: "N/A" refers to spare breakers, not currently in use.

Annual Heat Trace Panel Checklist (Cooling Tower)

1	Condition of panel?	
2	Main breaker on?	
3	Panel energized?	
4	Breakers Tripped?	
5	Other problems?	
6	Work-Order Written?	

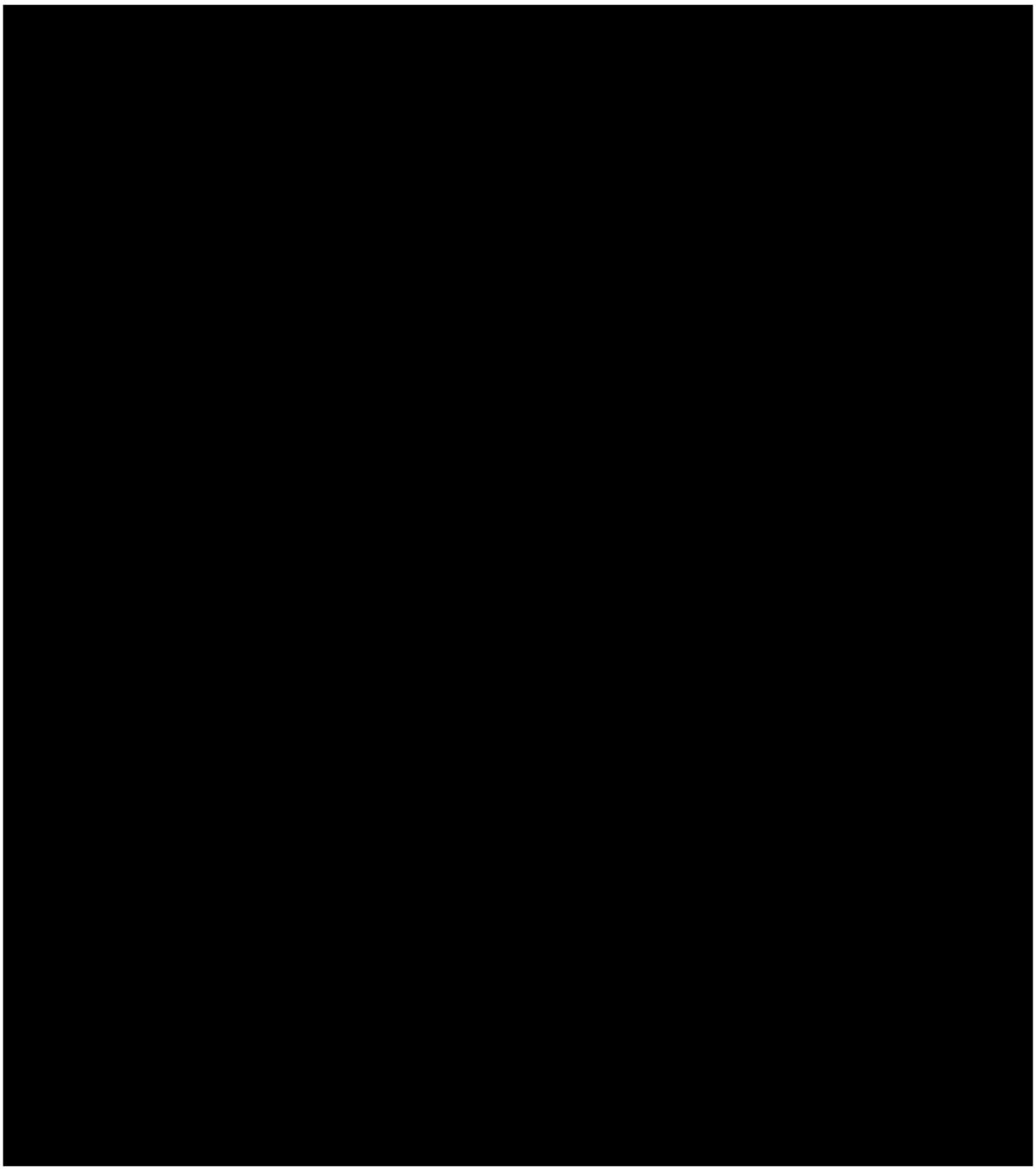
Circuit Amps

1		19	
2		20	N/A
3		21	
4		22	
5		23	
6	N/A	24	
7		25	
8	N/A	26	
9		27	
10	N/A	28	
11		29	
12	N/A	30	
13		31	
14	N/A	32	
15		33	
16	N/A	34	N/A
17		35	
18	N/A	36	

Inspected by: _____ Date: _____

Note: "N/A" refers to spare breakers, not currently in use.

Attachment 3: Winter Readiness Supplies and Consumables



Attachment 4: Permanent Building Space Heaters

Date:_____ Technician:_____

Combination Air Conditioning / Heating Units

System Condition:	OK	NOT OK
Admin. Building / Control Room		
All MCC Buildings		
All Boiler Feedwater Pump Buildings		
Demin. Water Lab		
Aux. Boiler Water Lab		
All CEMS Buildings		
Switchyard Control Building		
CT Electrical Cabs		
CT AVR Cabs		

Heat Lamps—Thermostat Controlled

System Condition:	OK	NOT OK
All Deluge Buildings		

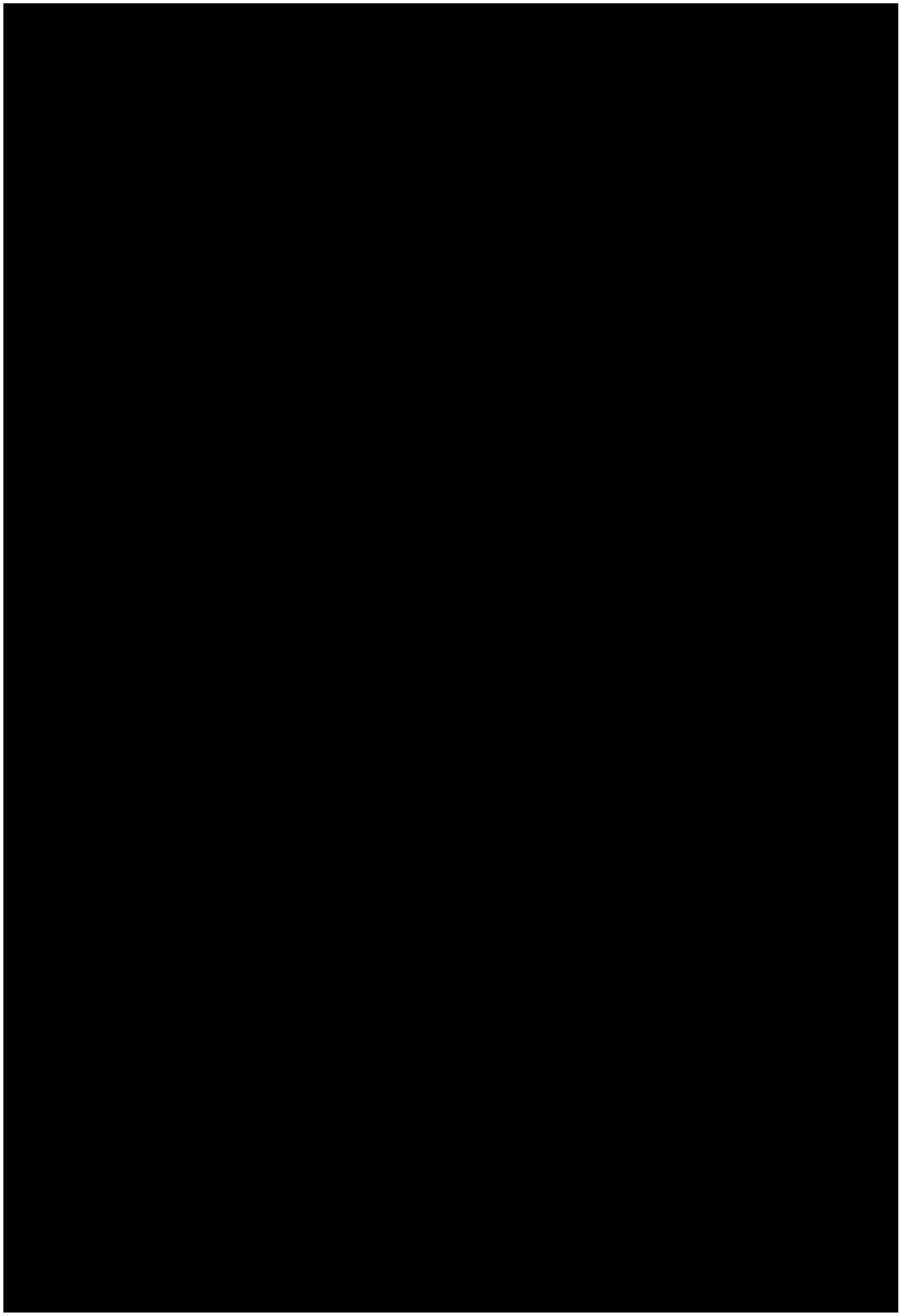
Heating Units Suspended from the Ceiling

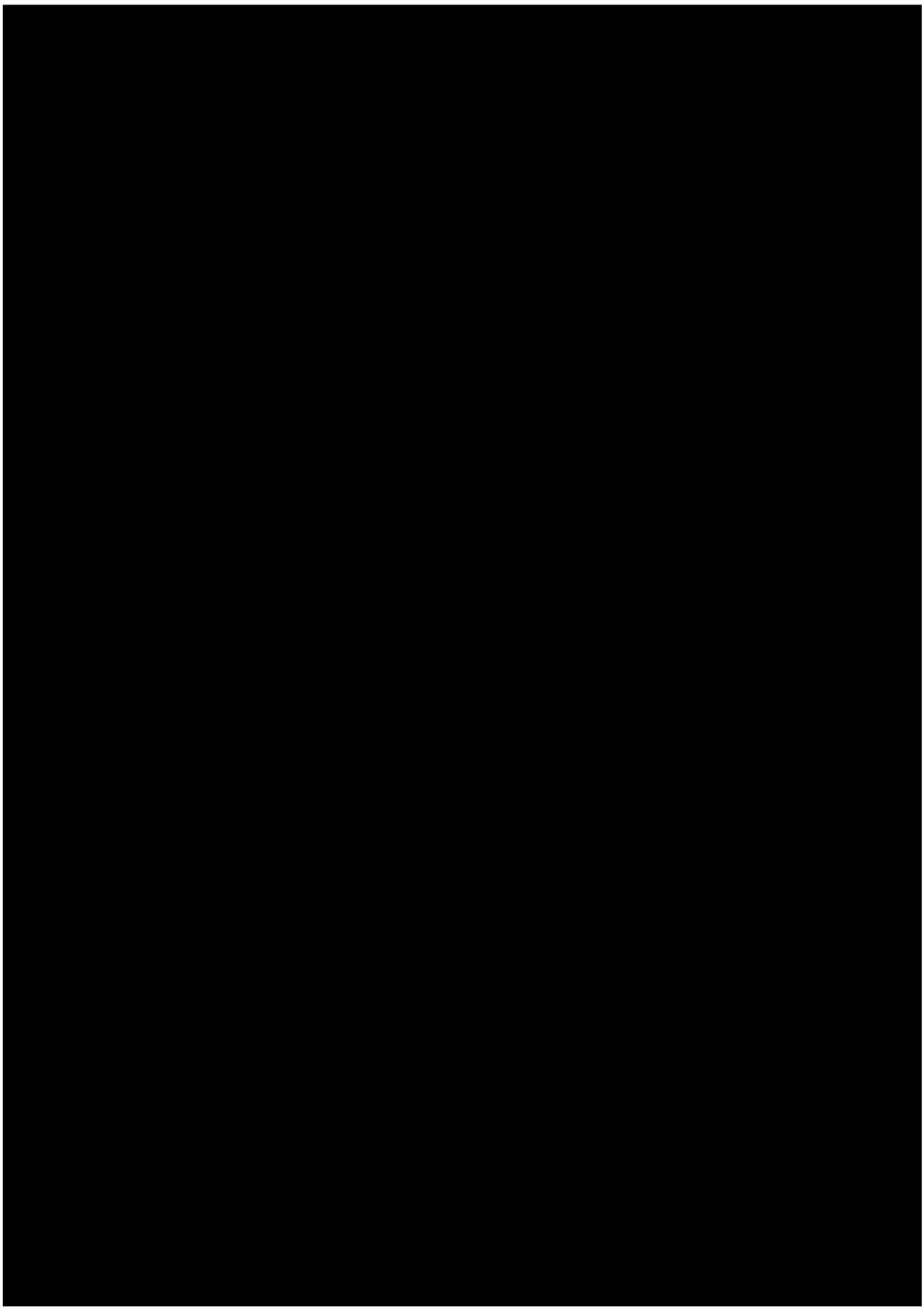
System Condition:	OK	NOT OK
Warehouse / Shop		
Demin. Building		
Firewater Pump Building		
Raw Water Filter Room		
CT Mechanical Packages		

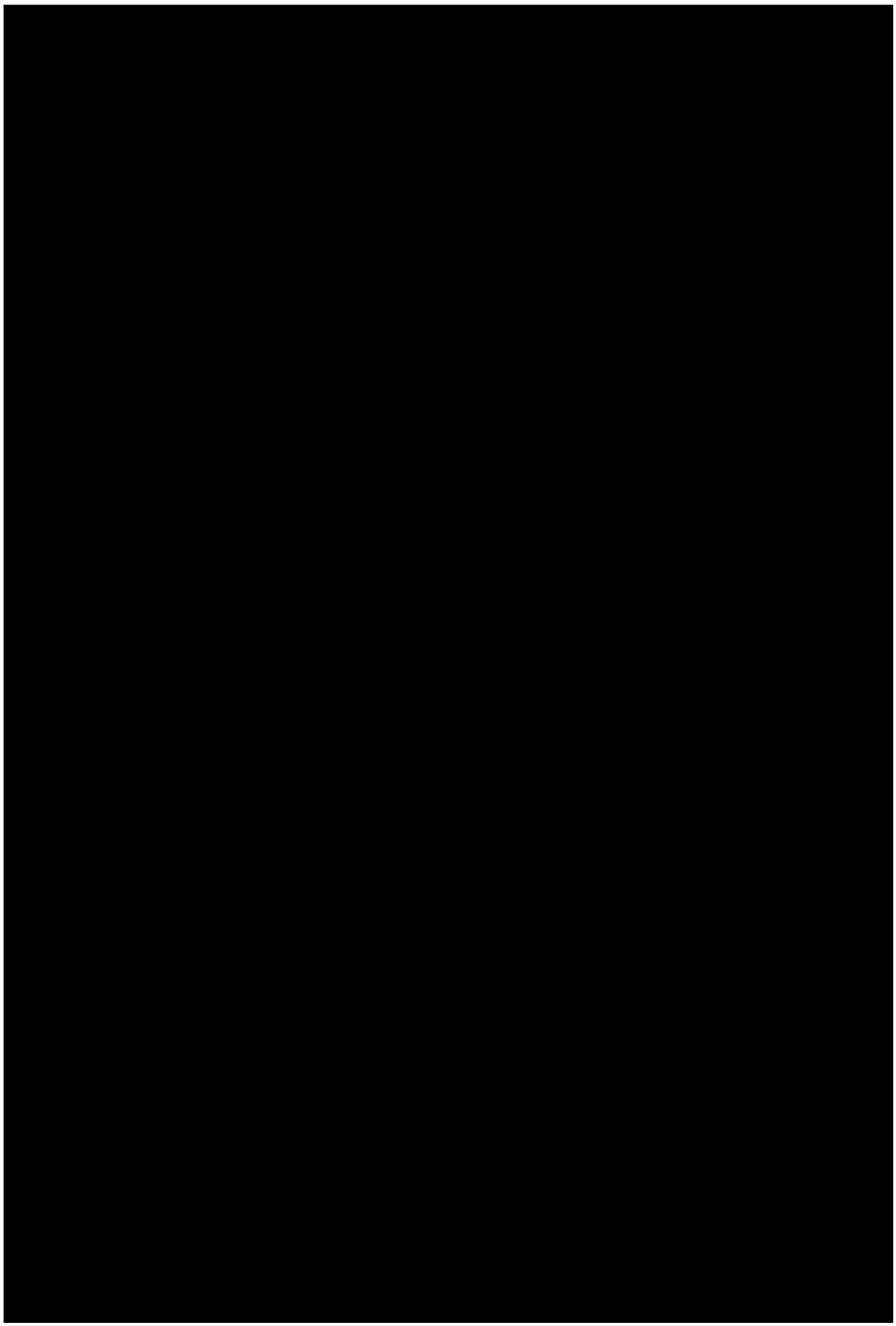
Summary: Note any discrepencies and any work orders written if found.

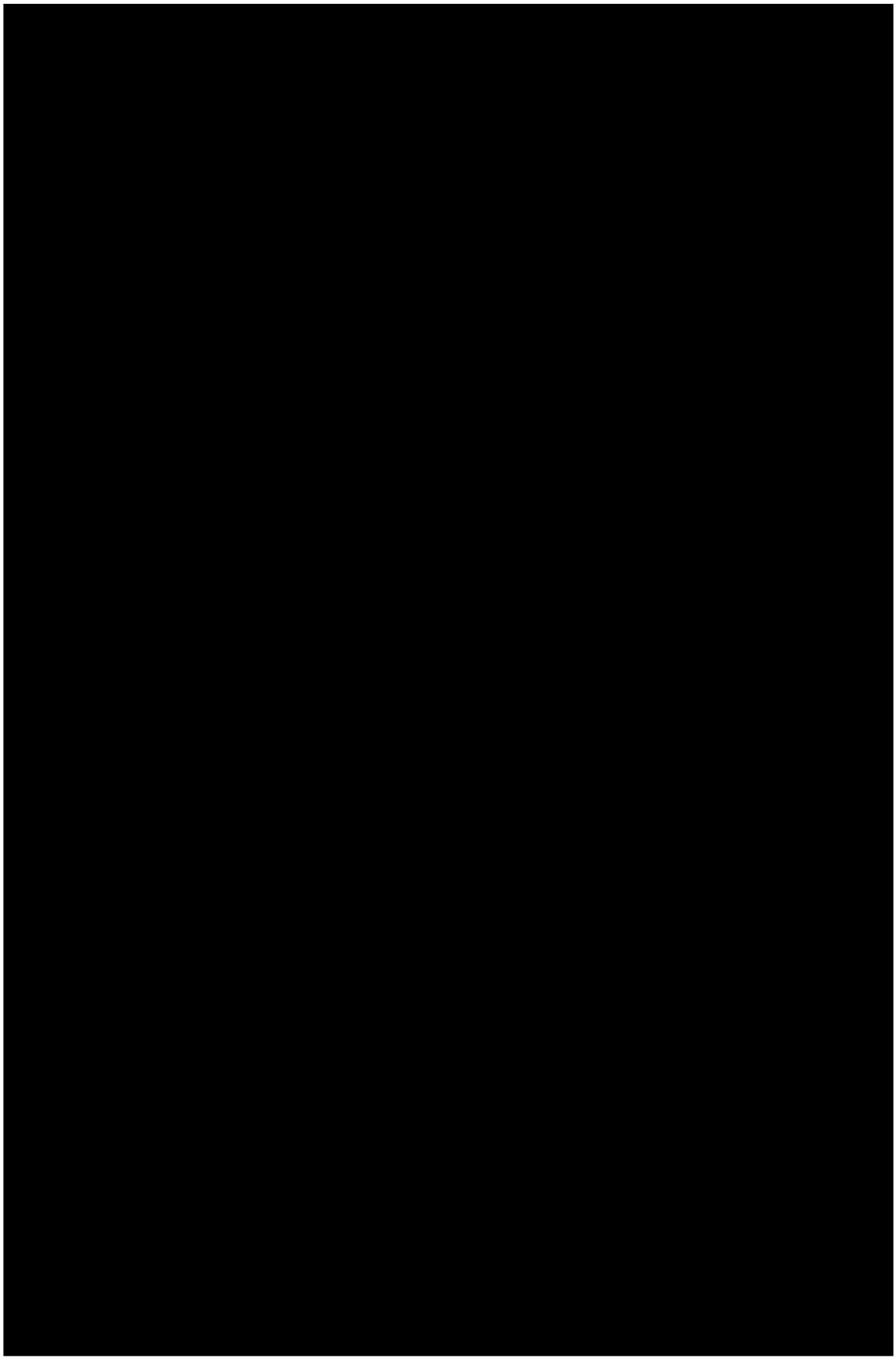
Attachment 5: Space Heater Check for Critical Equipment Breakers (Not Applicable)

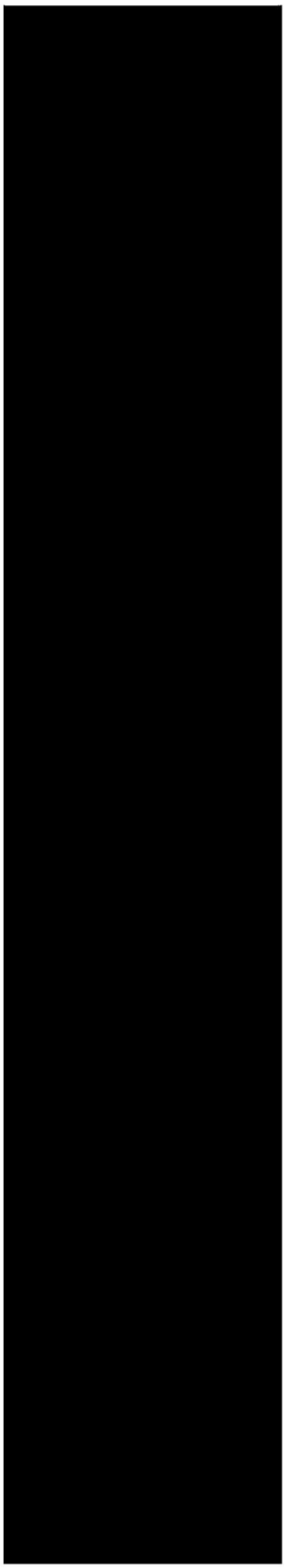
Attachment 6: Instrument Box Heater Check

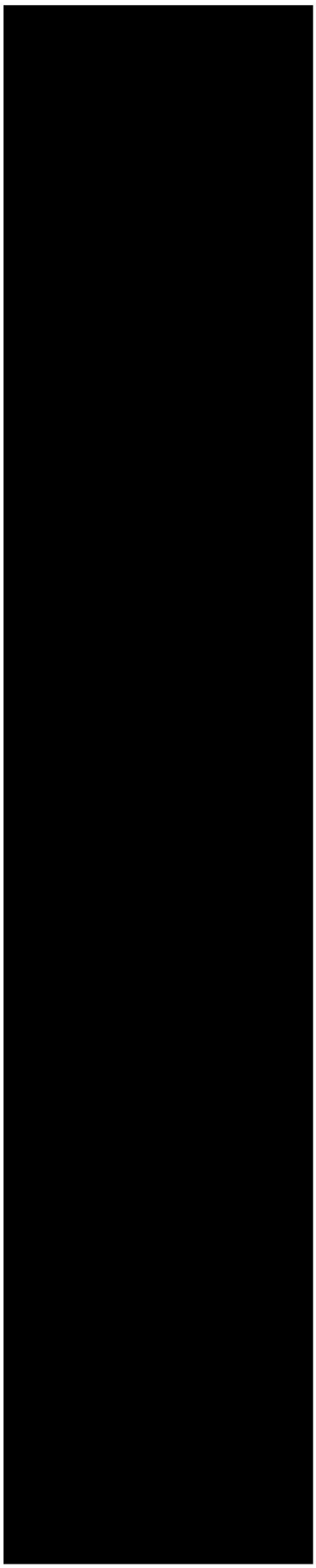


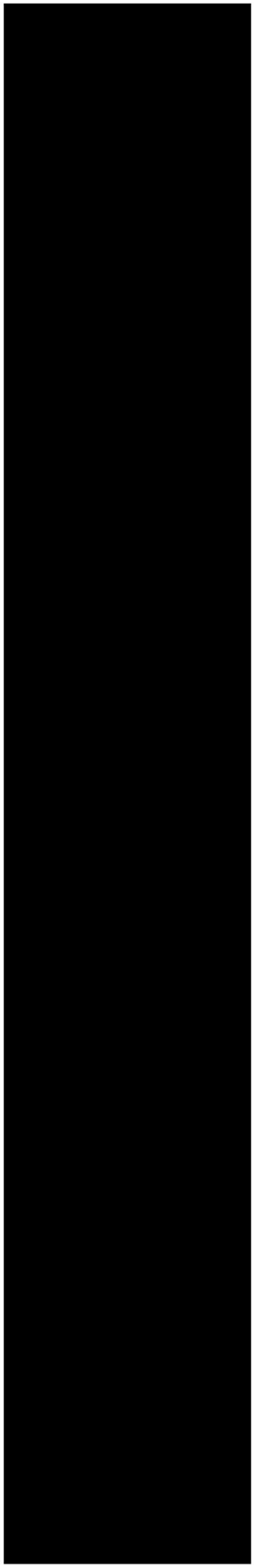


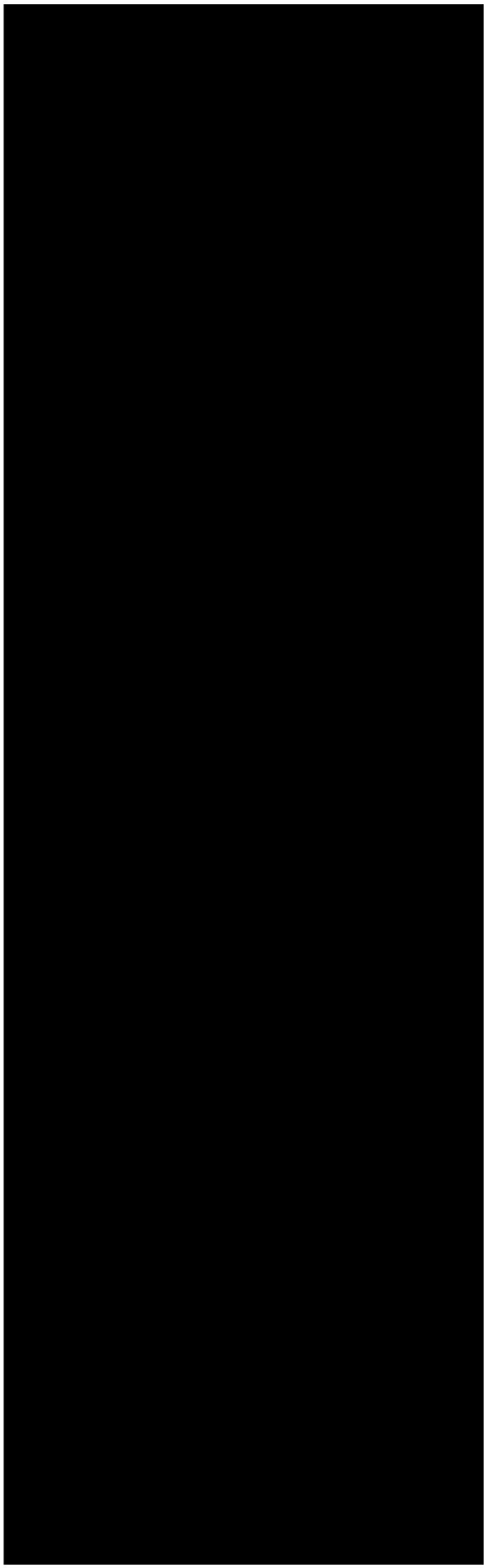


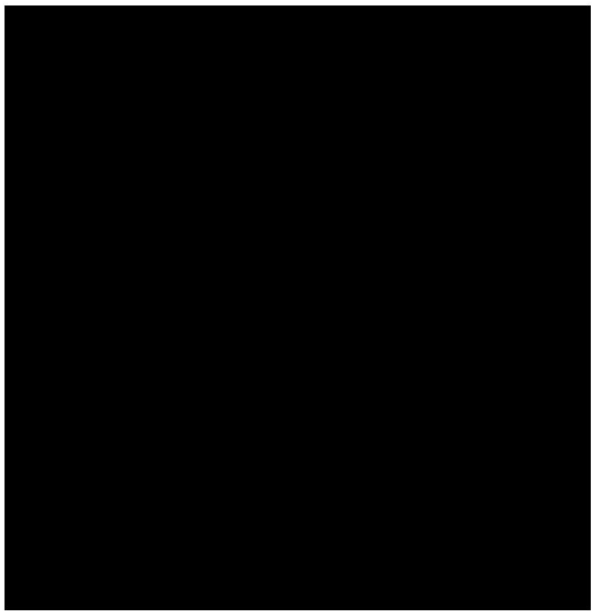




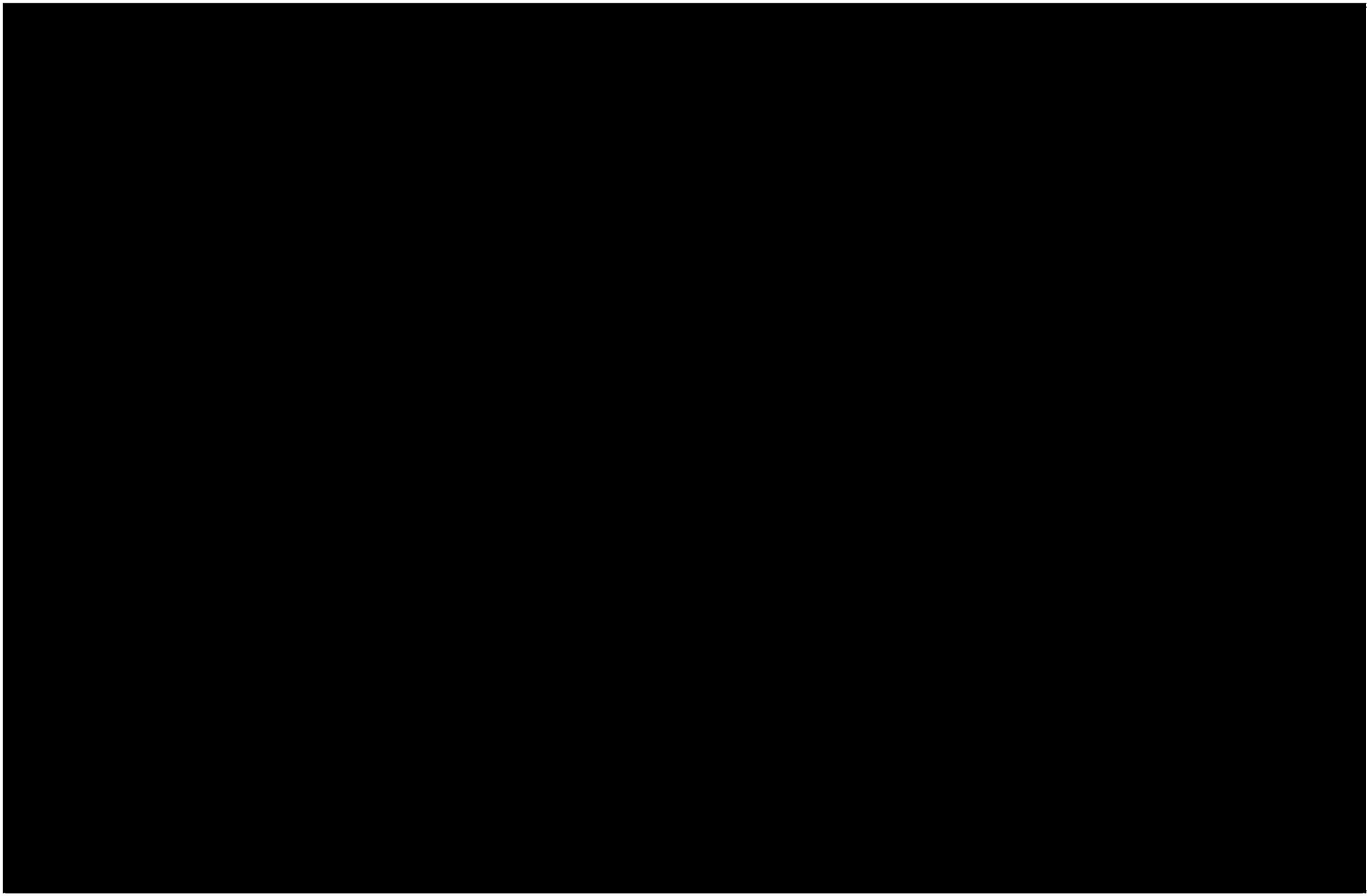


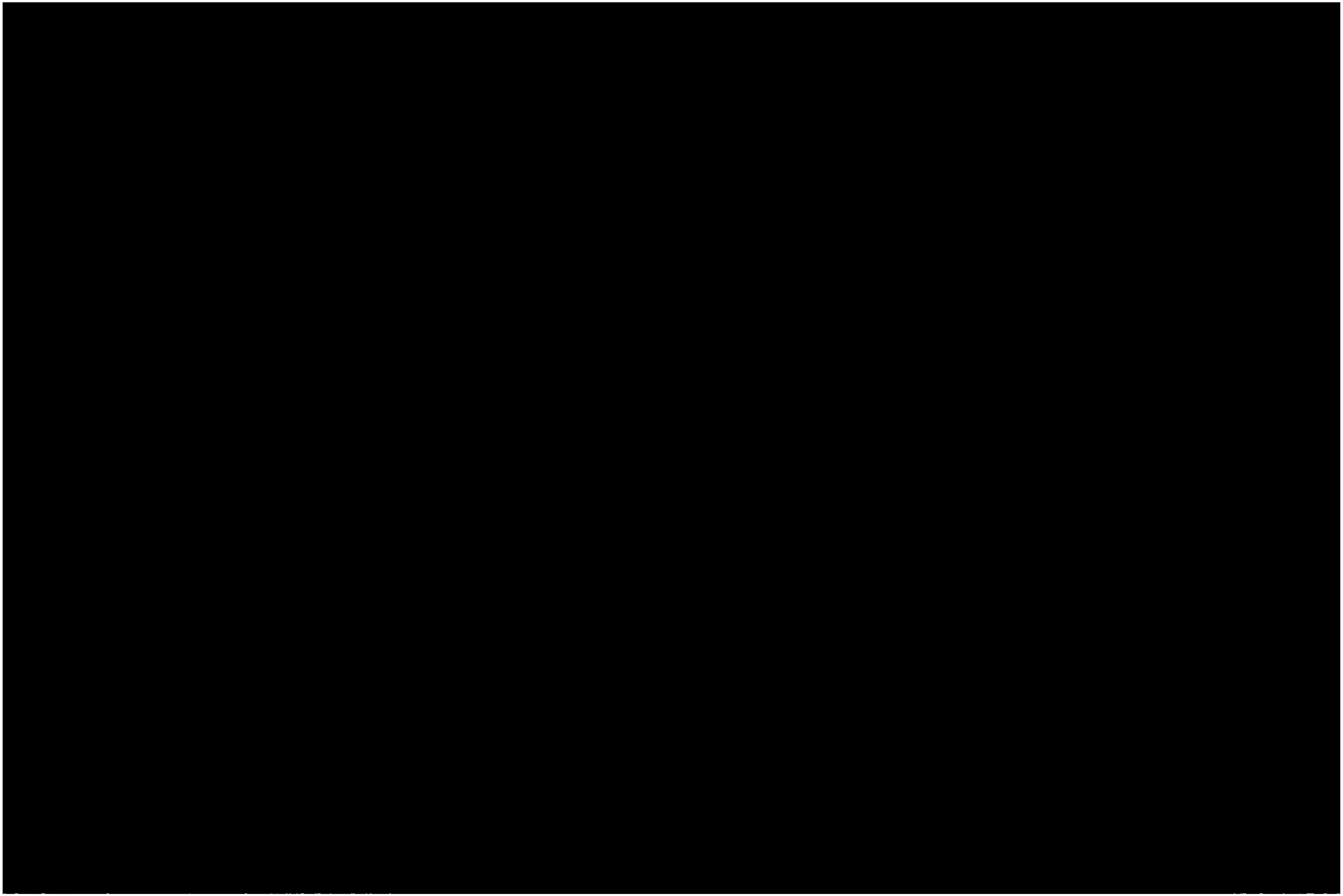






Attachment 7: Temporary Windbreaks





Attachment 8: Draining Equipment

Attachment 9: Personnel/Operator Training

Training Rosters and Training Materialsshould be retained by Plant for 5 years.

Employee Name	Date Training Complete	Employee Signature	Comments

Attachment 10: Winter Readiness Action Timeline

Key Milestone	Recommended Completion	Comments
Initial Annual Pre-Winter Readiness Meeting	May–July	Meeting to review: Plant Winter Readiness Plan, Open Corrective "Winter" Work Orders and PMs
Final Workscope and Actions Required	August–September	Finalized workscope approved by Plant Manager to implement prior to winter
Operations Procedures Reviewed and Updated as Required	October	Site specific Winter Operations Procedures reviewed and updated based on lessons learned and new equipment added
Winter Readiness Training	November	Complete training for plant personnel involved with Winter Preparedness and Winter Operations
Winter Readiness Certification by the Plant Manager	November	Provided to RVP. Reference Attachment 17
Winter Readiness Activities Completed	December 1	This date may vary for specific plants based on location
Post – Winter Meeting	March–April	Review specific plant lessons learned from the past winter.

Attachment 11: BAYTOWN Winter Readiness Certification

To: (Regional VP, Operations Name)

From: (Plant/General Manager Name)

Subject: Winter Readiness Certification

(Plant Name) has reviewed the requirements of the Plant Specific Plans and Procedures related to Winter Readiness preparation and Winter Operation, and by copy of this letter is ready to certify (Plant Name) winter readiness. [Plant] has completed review of plant winter readiness and implemented preventive and corrective actions required to provide reasonable assurance of operation during foreseeable winter conditions at the site. In-progress items relating to winter operation are summarized below.

A. The basis for our certification is as follows:

1. Significant outcomes of system reviews
2. Status of preventive maintenance affecting Winter Readiness
3. Status of corrective maintenance affecting Winter Readiness
6. Status of modifications/projects affecting Winter Readiness
7. Status of Operations Winter Readiness Procedures/Checklists
8. Status of Winter Readiness supplies
9. Other

B. Winter readiness items not completed

1. Reason
2. Open Actions Items
3. Owner & Due Date

CALPINE®
NYSE CPN

Baytown Energy Center Procedure Manual

PROCEDURE: EXTREME COLD WEATHER GUIDELINES

NUMBER: BEC-BT-0002	REVISION: 2	Gaines Wright	9-22-21
	GENERAL	(PLANT MANAGER)	DATE

Table of Contents Page

This form, when completed, SHALL be retained for a minimum of 5 years.

1.0 Purpose and Scope

1.1 Provide instruction for protecting equipment as required per the Calpine Standard CPN-102A.

1.2 Provide instructions for protecting equipment during extreme cold weather season (October 31st to March 31st of the following year) when outside air temperature is predicted to decrease or decreases to **ANY** of the following conditions:

1.2.1 LESS THAN or EQUAL to [redacted] for 24 hours

1.2.2 LESS THAN or EQUAL to [redacted]

1.3 Provide instructions for Restoration from Freezing Weather

2.0 Definitions

2.1 CT: combustion turbine

2.2 DCS: distributed control system

2.3 EHS: Environmental Health and Safety

2.4 ERCOT ISO: Electrical Reliability Council of Texas Independent System Operator

2.5 TCEQ: Texas Commission of Environment Quality

3.0 General Information

3.1 The Plant Manager SHALL implement this procedure prior to or upon a National Weather Service or company meteorologist prediction of falling temperatures within any of the limits described in Section 1.0.

3.2 Temperature indication for determining the outside air temperature to decide when to enter this procedure or change to a different condition SHALL be used in following order:

3.2.1 DCS ambient air temperature. (2TAMB/ZQ01 OR 3TAMB OR 4TAMB)

3.2.2 Nearest National Weather Service weather observation location (typically the nearest airport).

3.3 Failure to maintain the Battery Room temperature [redacted] MAY result in degrading the discharge capability of the battery should a loss of offsite power occur.

3.4 Failure to maintain CT electrical package temperature [redacted] MAY result in degrading the discharge capability of the CT battery should a loss of offsite power occur.

3.5 IF an instrument is suspected of freezing, THEN the instrument indication SHALL be monitored to verify reliability.

3.5.1 IF an instrument indication is unreliable, THEN an alternate method of monitoring the affected process variable SHOULD be established.

3.5.2 IF an instrument freezes, THEN actions SHALL be taken to return the instrument to service.

3.6 Equipment/systems outside the confines of heated buildings SHALL be inspected per Form 1 (Freezing Weather Walkdown Guidelines) for deficiencies that could promote freezing.

3.7 WOs SHALL be implemented as soon as practical to repair any equipment/system deficiency that could promote freezing.

3.8 Out-of-Service equipment SHALL be evaluated for cold weather preparation (e.g., isolation/draining of tanks, isolation/draining non-essential equipment, installing temporary shelters, installing temporary heaters, and installing temporary insulation).

3.9 IF outside temperature is [redacted] all Freeze Protection Panels SHALL be monitored for operability at least every four hours. (Logsheet3 page 28

3.10 Follow Electrical Safety Precautions of EHS-17 (Electrical Safety) when accessing Heater Controls. Open, energized circuits exist inside the heater control enclosures.

3.11 Operation of a drain valve in a system that leads to the oily water separator GREATER THAN 1 turn open could result in overloading the oily water separator. Direct all draining activities to be performed at rates which can be handled by the oily water separator. (Transformer dike drains, Ammonia dike drains, etc)

3.12 Some Freeze Protection Circuits have Remote High Temperature Switches to prevent **local boiling in small dead legs of piping** (e.g. outside eyewash stations) or for when during normal operations the piping is full of hot water\steam but may be subject to freezing when shutdown. (i.e., HP, IP, and LP Drum instrument lines). In these cases, the heat trace is NOT ENERGIZED if the piping/tubing is "Hot" when the freeze protection panels are placed in "Hand/On" unless the piping/tubing system is below the applicable temperature switch setpoint.

3.13 The blank on the right side of certain steps in this procedure is for tracking completion of important activities. The blank can be initialed by either the person performing the procedure step or the person responsible for ensuring the step is completed as directed (e.g., the CRO can initial for the Yard Watch performed actions, etc...).

4.0 References

4.1 Procedures:

4.1.1 BEC Integrated Contingency Plan Sect II.4, Severe Weather Plan

4.1.2 BEC-BT-001, Seasonal Preparedness Guidelines

4.1.3 BEC-BT-002, Freezing Weather Guidelines

4.1.4 EHS-17, Electrical Safety

4.1.5 BEC-SOP-202, Boiler Feedwater

4.1.6 BEC-SOP-501, Raw Water

4.2 Commitments:

4.2.1 ERCOT ISO Winter Weather Readiness for Texas Generators Whitepaper; May 3, 2011

4.2.2 Texas Public Utility Commission Emergency Operations Plan Filing of Calpine Corporation; April 30, 2008.

5.0 Responsibilities

5.1 The Plant Manager is responsible for ensuring overall implementation of this procedure.

5.1.1 Deciding that emergency actions are necessary to prevent equipment damage OR lost power production during any declared severe weather condition (cold).

5.1.2 Maintaining Checklist 3 (Cold Weather Checklist – Severe Weather Condition 3)

5.1.3 Maintaining Checklist 2 (Cold Weather Checklist – Severe Weather Condition 2)

5.1.4 Maintaining Checklist 1 (Cold Weather Checklist – Severe Weather Condition 1)

5.1.5 Logging emergency action taken, date/time in Control Room Logbook.

5.2 The Operations Manager is responsible for:

5.2.1 Ensuring operator actions are implemented in a timely manner to support implementation of this procedure.

5.2.2 Ensuring equipment deficiencies are properly prioritized to support continued plant operations.

5.3 The Maintenance Manager is responsible for:

5.3.1 Ensuring maintenance activities are performed in a timely manner to support implementation of this procedure.

5.3.2 Ensuring equipment deficiencies that could impact continued plant operations are addressed according to priority of importance.

5.4 Operators are responsible for:

5.4.1 Implementing the procedure as directed in a timely manner.

5.4.2 Reporting equipment deficiencies which could impact cold weather operations as soon as possible.

5.5 Maintenance Technicians are responsible for:

5.5.1 Implementing work activities as directed by the Maintenance Manager in support of this procedure.

5.5.2 Reporting equipment deficiencies which could impact cold weather operations as soon as possible.

NOTE

- Steps in Section 5.5.2 MAY be performed concurrently.
- Steps in Section 5.5.2, have separate entry conditions and MAY be entered independently.

6.0 General Winter Operations Procedure Guidelines

6.1 WHEN outside air temperature decreases to OR is predicted to decrease to [redacted] for GREATER THAN 24 hours, THEN IMPLEMENT the following actions:

6.1.1 RECORD the date and time for declaring Severe Weather Condition 3, 2, or 1 in the Control Room Logbook.

6.1.2 PERFORM Addendum 1 (Cold Weather Readiness Actions), **Prior To** Outside air Temperature reaching [redacted]. pg.16, 17 _____

6.1.3 REVIEW the Checklist 3 (Cold Weather Checklist – Severe Weather Condition 3) for additional actions that MAY be necessary to perform. Pg. 22

_____

_____

6.1.4 IF any additional actions are necessary to perform, THEN RECORD the additional actions taken in the Control Room Logbook.

6.1.5 ENSURE equipment/systems that are not enclosed by or inside protective permanent plant buildings SHALL be inspected per Form 1 (Cold Weather Readiness Actions) for deficiencies that could promote freezing. FREEZING WEATHER WALKDOWN CRITERIA pg. 23, 24 _____

6.1.6 ENSURE all Freeze Protection Systems are in operation and operable or in repair. _____

6.1.7 ENSURE all instrument enclosure space heaters are in operation and operable or in repair. _____

6.1.8 ENSURE to inspect any existing temporary instrument or temporary equipment is properly protected to ensure adequate compensatory actions are implemented to prevent freezing. _____

6.1.9 IF any Deluge Valve House, Fire Pump Room, or CEMS Room Temperature is [redacted], THEN ENSURE the appropriate Room Heaters have energized. Turn on heaters ahead of time. _____

6.1.10 IF any electrical package is [redacted] THEN ENSURE the appropriate Room Heaters have energized and or add heater. _____

This form, when completed, SHALL be retained for a minimum of 5 years.

6.1.11 IF the Plant Battery Room Temperature is [redacted] THEN ENSURE the Room Heater has energized or add a heater. _____

6.2 WHEN outside air temperature decreases to OR is predicted to decrease to [redacted] THEN IMPLEMENT the following actions:

6.2.1 COMPLETE the applicable portion of the Checklist 3 (Cold Weather Checklist – Severe Weather Condition 3). Pg 22 _____

6.2.2 ENSURE Step 6.1 is in progress. Pg. 6 _____

NOTE

IF desired, THEN additional actions MAY be taken in anticipation of dropping temperatures. This will assist in keeping the following rooms warm.

6.2.3 IMPLEMENT Fire Pump Room Extreme Cold Weather Guidelines per Section 7.0. Pg. 11 _____

6.2.4 IMPLEMENT Deluge Valve House Extreme Cold Weather Guidelines per Section 8.0. Pg. 12 _____

6.2.5 IMPLEMENT Water Treatment Plant Extreme Cold Weather Guidelines per Section 9.0 Pg. 13 _____

6.2.6 IF the Main Cooling Tower Blowdown piping is **NOT** in service, THEN DRAIN the blowdown line to prevent freezing.

6.2.7 MONITOR the Plant Battery Room temperature. _____

6.2.7.1 IF the Plant Battery Room temperature is [redacted] THEN PLACE one electric heater in the Plant Battery Room. _____

- ENSURE Heater maximum 1500 watt capacity _____
- ENSURE Heater is set on the floor of the Plant Battery Room below the battery bank. _____

- [redacted]

6.2.8 MONITOR the electrical package temperature.

6.2.8.1 IF an electrical package temperature is [redacted], THEN PLACE one electric heater in the affected electrical package.

- ENSURE Heater maximum 1500 watt capacity
- ENSURE Heater is set on the floor near the Battery Charger.
- [redacted]

6.2.9 ENSURE ALL Water Treatment Building Doors are kept CLOSED.

NOTE

Room Temperature logs MAY be taken every 6 hours until room air temperatures [redacted] then room temperature logs SHOULD be taken every 4 hours. The Plant Manager MAY request room temperature logs be taken at shorter intervals of time as the weather dictates.

6.2.10 ENSURE the following logs have been initiated to monitor the room temperatures every 4 to 6 hours:

- Logsheet 1 ()
- Logsheet 2 ()
- Logsheet 3 ()

6.3 IF the outside air temperature is projected to be [redacted] for 8 hours or GREATER, THEN PERFORM the following:

- Step 6.1
- Step 6.2

This form, when completed, SHALL be retained for a minimum of 5 years.

NOTE

- Freeze Protection/Heat Trace Panels SHOULD be monitored for operability/discrepancies
  - IF panel lamp(s) are available, they SHOULD be illuminated/extinguished properly
    - Power available lamp illuminated
    - Circuit failure alarm lamp properly illuminated
    - Heaters Energized lamp illuminated
    - Alarms lamp NOT illuminated
  - If control switch located on panel it SHOULD be in AUTO or ON
  - Space heaters SHOULD be in service
- Discrepancies SHOULD be handled in the following ways:
  - Indicate on Log, reference to remark section
  - Record Deficiency in Remarks Section of Log
  - Notify Control Room
  - Initiate WO(s) for identified deficiency
  - Record WO number Remarks Section of Operator Logsheet.

6.4 IF outside air temperature is [redacted] THEN PERFORM Logsheet 2 (Room Temperature Logsheet) **at least every four hours**. _____

6.5 IF outside air temperature is [redacted], **AND** wind speed is **LESS THAN 10 MPH AND** outside air temperature remains [redacted] THEN COMPLETE the applicable portion of Checklist 2 (Cold Weather Checklist – Severe Weather Conditions). _____

6.6 IF outside air temperature is [redacted] THEN PERFORM the following logsheets at the specified intervals:

6.6.1 Logsheet 1 (Instrument Enclosure Inspection Logsheet) _____

6.6.2 Logsheet 3 (Freeze Protection Panel Inspection Logsheet) _____

This form, when completed, SHALL be retained for a minimum of 5 years.

6.7 WHEN the outside air temperature is decreasing to OR is predicted to be, either one of the following:

- Outside air temperature [redacted]
- Outside air temperature [redacted] wind speed is **GREATER THAN** or **EQUAL to 20 MPH**
- REMAIN [redacted] **for GREATER THAN 24 hours**

THEN IMPLEMENT the following actions:

6.7.1 COMPLETE the applicable portion of the Checklist 1 (Cold Weather Checklist – Severe Weather Condition 1). _____

6.7.2 ENSURE the following Steps are complete or in progress:

	In Progress	Complete	
• Step 6.1	_____	_____	_____
• Step 6.2	_____	_____	_____
• Step 6.3	_____	_____	_____
• Step 6.4	_____	_____	_____

6.8 WHEN outside air temperature is [redacted], THEN GO TO Section 10.0 Restoration from Freezing Weather. _____

This form, when completed, SHALL be retained for a minimum of 5 years.

7.0 Fire Pump Room Extreme Cold Weather Guidelines

> NOTE
>
> Room Temperature logs MAY be taken every 6 hours until room air temperatures [redacted] then room temperature logs SHOULD be taken every 4 hours. Plant Manager MAY request room temperature logs be taken at shorter intervals of time as the weather dictates.

7.1 MONITOR Fire Pump Room temperatures AND RECORD the readings on Logsheet 1 (Room Temperature Logsheet) at the following intervals:

7.1.1 RECORD room temperatures approximately every 4 hours until outside air temperature is [redacted] _____

7.1.2 IF any Fire Pump Room Temperature is [redacted], THEN ENSURE the appropriate Room Heaters have energized. _____

a. IF Fire Pump Room temperature stabilizes at [redacted], THEN RECORD the room temperature approximately every 4 hours until outside air temperature is [redacted] _____

7.2 WHEN outside air temperature is [redacted], THEN GO TO Section 10.0, Restoration from Freezing Weather. _____

8.0 Deluge Valve House Extreme Cold Weather Guidelines

NOTE

Room Temperature logs MAY be taken every 6 hours until room air temperatures drop [redacted], then room temperature logs SHOULD be taken every 4 hours. Plant Manager MAY request room temperature logs be taken at shorter intervals of time as the weather dictates

8.1 IF outside air temperature is [redacted] THEN ENSURE ALL Deluge Valve House doors properly CLOSED. _____

8.2 IF the temperatures in the individual Deluge Valve House Rooms are [redacted] (Severe Weather Condition 1), THEN PLACE a portable electric heater (maximum 1500 watt capacity each) in the each of the affected rooms.. _____

8.3 MONITOR Deluge Valve House room temperatures AND RECORD the values on Logsheet 2 (Room Temperature Logsheet) at the following intervals:

8.3.1 RECORD Temperatures every 4 hours until outside air temperature is [redacted] _____

8.3.2 IF ANY Deluge Valve House room temperature is [redacted], THEN ENSURE the thermostatically controlled heat lamps are functioning.

8.4 WHEN outside air temperature is [redacted], THEN GO TO Section 10.0, Restoration from Freezing Weather. _____

9.0 Water Treatment Plant Extreme Cold Weather Guidelines

9.1 When outside air temperature is [redacted], close all walk-in doors and the roll-up door on demin building and stage a portable kerosene heater inside. _____

9.2 ENSURE a wind break is built to protect the clarifier decant instrumentation. _____

9.3 ENSURE a wind break is built to protect the Neutralization Tank Pump Skid Are from the cold weather. _____

9.4 IF the Water Treatment Building room temperature is [redacted], THEN ENSURE the appropriate Room Heaters have energized. _____

9.5 WHEN outside air temperature is [redacted] THEN GO TO Section 10.0 Restoration from Freezing Weather. _____

10.0 Restoration from Freezing Weather

NOTE

Steps in Section 10.0 10.0MAY be performed concurrently.

If the forecast temperature is expected to go [redacted] within the next 24 hours, THEN desired portions of this Section MAY be delayed as directed by the Plant Manager.

If the Plant Manager is reasonably sure that another Cold Weather Alert will occur in the near future, THEN temporary insulation and/or heating materials MAY remain in place.

Temporary heaters left in place SHALL BE properly secured until needed again.

10.1 IMPLEMENT the following actions at [redacted]

10.1.1 PLACE ALL Fire Pump Room HVAC Supply Fans in AUTO. _____

10.1.2 Place ALL Water Treatment Building HVAC Supply Fans in AUTO. _____

10.1.3 SECURE ANY temporary heaters that were installed. _____

10.1.4 REMOVE ANY temporary wind breaks that were installed. _____

10.1.5 REMOVE ANY temporary enclosures that were installed. _____

10.1.6 REMOVE ANY temporary insulation that was installed. _____

10.1.7 REMOVE ANY temporary heat tracing that was installed. _____

10.1.8 EITHER PLACE Temporary Heating materials issued in storage, OR DISCARD the Temporary Heating materials **NO** longer suitable for reuse. _____

10.1.9 IF a Cold Weather Alert is canceled AND Senior Management agrees that another Cold Weather Alert is **NOT** imminent, THEN return all temporary heating materials to their proper storage location. _____

10.1.10 STOP ANY special temperature monitoring or logging initiated. _____

This form, when completed, SHALL be retained for a minimum of 5 years.

10.1.11 IF any "Additional necessary actions taken" were recorded in the Control Room Logbook per Checklist 1, Checklist 2 or Checklist 3 THEN ENSURE actions are restored as necessary. _____

10.1.12 RECORD the date and time for canceling Severe Weather Condition 3, 2, or 1 in the Control Room Logbook. _____

11.0 Support Documents

This form, when completed, SHALL be retained for a minimum of 5 years.

Cold Weather Readiness Plan Guidelines

NOTE

Addendum 1 (Cold Weather Plan Readiness) will be performed in sections or in its entirety according to CSN-102A action Timeline.

Performance of Addendum 1 (Cold Weather Readiness), Log sheet when there is an expectation for Cold Weather Operations and is expected to be performed ONCE PER SHIFT during Cold Weather Operations.

1.0 Document the minimum plant design operating temperature with consideration to determine the lowest ambient temperature at which the unit is able to reliably operate (taking into account wind chill considerations). Review any modifications performed to the plant over the past year to assure these modifications meet the minimum plant design operating temperature, or if different, document the minimum temperature limitations of these modifications.

2.0 Review of the past winter's issues and experience with any equipment freezing issues. Document this review and the changes required to prevent reoccurrence. Any identified. Action Items are to be documented and tracked in the Maximo system.

3.0 Identify the Critical Equipment to the plants operation that may be impacted by cold weather. List this equipment in the plan as an attachment.

4.0 Identify what type of heat tracing (constant wattage, parallel constant wattage, mineral insulated, power limiting, and self-regulating) is used for the critical equipment, and develop PM's for annual testing prior to winter (include testing methods and historical results). Provide list in the Readiness Plan as an attachment showing the circuits, and testing methods.

5.0 Document the maintenance performed on the instrument air system. Document how moisture is removed from the instrument air system, and what is the design dew point (and how dew point is monitored). PM's are recommended to be in place to maintain the instrument air system (utilizing Maximo). The records of the maintenance performed should be reviewed prior to winter operation.(dryers switch on time vs humidity)

6.0 Review open corrective work orders under the program category "Seasonal", and the task category "Winter", and those that may impact winter reliability should be considered for correction prior to winter operation. Open corrective work orders that may impact winter reliability (and are approved to be performed) shall be managed by the Site Winter Readiness Coordinator, and the status reported regularly to the Plant Manager, Operations Manager, and the Maintenance Manager.

7.0 Perform a walkdown (to be scheduled in Maximo as a Winter Readiness PM) of the Critical Equipment's insulation and lagging, and identify areas of insulation that should be considered for repairs prior to winter operation. This work requires documentation in Maximo, by corrective work orders created from the Winter Readiness walkdown PM.

7.1	Water Systems	_____
7.2	Bulk Gas System	_____
7.3	Caustic System	_____
7.4	LP Drum Instrumentation	_____
7.5	IP Drum Instrumentation	_____
7.6	HP Drum Instrumentation	_____
7.7	Steam Turbine Pressure Transmitters	_____
7.8	Condenser Level Transmitters	_____
7.9	Condenser Vacuum Pressure Transmitters	_____
7.10	Condensate Pump Flow Transmitters	_____
7.11	Condensate Pump Suction Pressure Transmitters	_____
7.12	Condensate Pump Discharge Pressure Transmitters	_____
7.13	Condenser Vacuum Pump Skid	_____
7.14	HRSG Feedwater Pump Discharge Pressure Transmitters	_____
7.15	HRSG Feedwater Pump Suction Pressure Transmitters	_____

This form, when completed, SHALL be retained for a minimum of 5 years.

7.16 HRSG Feedwater Pump Flow Transmitters _____

8.0 Consumables and supplies (listed as part of the Winter Readiness Plan) are required to be on hand prior to any significant cold weather event. Examples include: tarps (make sure heavy duty material), extension cords, temporary heaters, fuel, rope, insulation, duct tape, portable electric heaters, heat lamps and lights, and temporary heat tracing.

9.0 Test portable heaters and equipment that are in storage (PM in Maximo to assure this is scheduled and completed)

10.0 Verify all permanent building heaters are operating correctly. List all heaters in the Winter Readiness Plan (include where the heaters are located within the in Maximo to assure this is scheduled and completed.plant). This must be a PM

11.0 PM'sare recommended to be in place to check all space heaters on critical equipment breakers. These breakers need to be listed in the Winter Readiness Plan.

12.0 PM's shall be in place to verify the correct operation of all instrument box heaters (O'Brian, Hoffman, etc.). These boxes (with locations) should be listed as attachments to the Winter Readiness Procedure.

13.0 PM's in place to install temporary wind breaks and place temporary heaters. Note: plywood should not be used for flooring over grating for temporary wind break areas. If tarps are used, make sure heavy duty material that will last for the entire winter period. A map showing the location of temporary tarps should be included in the plan.

14.0 A list of equipment that requires draining for the entire winter operation needs to be included. Examples include: evaporative coolers, inlet fogging, chillers, etc. This must be a Winter Readiness PM in Maximo.

15.0. Winter readiness procedures review with plant.

Checklist 1 Cold Weather Checklist – Severe Weather Condition 1

SEVERE WEATHER CONDITION 1:

- Outside air temperature [redacted]
- Outside air temperature [redacted] **AND** wind speed is **GREATER THAN** or **EQUAL to** [redacted]
- Remain [redacted] **for GREATER THAN 24 hours**

OR

ERCOT ISO issues Emergency Preparation Step D (Severe Cold Weather Alert)

NOTE

Severe Weather CONDITION 1 MAY be declared early at Plant Manager discretion.

Operations personnel will use alternative HRSG and Aux. Boiler steam drum level indications to monitor in the event of the failure of the primary level indications in the DCS.

The Plant Manager is responsible for completion of Checklist 1 (Cold Weather Checklist –Severe Weather Condition 1). This checklist MAY be performed independently of actions being implemented by BEC-BT-0002 (Extreme Cold Weather Guidelines).

1.0 SEVERE WEATHER CONDITIONS 2 & 3 actions complete. _____

2.0 SEVERE WEATHER CONDITIONS 2 & 3 monitoring actions are continuing. _____

3.0 Additional necessary actions taken are recorded in the Control Room Logbook. _____

4.0 ENSURE EHS has requested discretionary enforcement from TCEQ related to possible air emission execedances necessary to protect grid reliability. _____

5.0 Place auxiliary boilers #1 &#2 in service. Maintain main flame at minimum load. _____

6.0 ENSURE temporary wind breaks or enclosures are built to protect sensitive instrumentation.

This form, when completed, SHALL be retained for a minimum of 5 years.

6.1	HP Drum level and pressure transmitters	_____
6.2	IP Drum level and pressure transmitters	_____
6.3	LP Drum level pressure transmitters	_____
6.4	CT Fuel Gas Heater IP Feedwater pressure transmitters	_____
6.5	HRSG Feedwater Pump suction and discharge pressure transmitters	_____
6.6	HRSG Feedwater Pump flow transmitters	_____
6.7	Condensate Pump flow transmitters	_____
6.8	Condensate Pump suction and discharge pressure transmitters	_____
6.9	Condenser level transmitters	_____
6.10	Condenser vacuum pressure transmitters	_____
6.11	Gland Steam pressure transmitters	_____
6.12	Steam Turbine pressure transmitters	_____
6.13	Ammonia Transfer Pump Skid	_____
6.14	Non-enclosed Safety Showers and Eyewash Stations	_____

NOTE

Management coverage will be scheduled around the clock.

At LEAST one Mechanical Maintenance Technician AND at LEAST one I&E Technician SHALL be assigned to dayshift and nightshift.

Contractor personnel MAY be used to supplement staffing levels to meet the around the clock staffing requirements.

The Plant Manager is responsible for completion of Checklist 1 (Cold Weather Checklist –Severe Weather Condition 1). This checklist MAY be performed independently of actions being implemented by BEC-BT-0002 (Extreme Cold Weather Guidelines).

This form, when completed, SHALL be retained for a minimum of 5 years.

7.0	ENSURE Operations and Maintenance staffing levels are increased to provide around the clock coverage.	_____
8.0	ENSURE the Operations or Maintenance Manager is assigned to provide backshift managerial coverage during winter weather event.	_____
9.0	ENSURE sufficient food, blankets, cots, drinking water, etc… is available at the plant should roads become impassable due to inclement weather.	_____
10.0	ENSURE sufficient bulk chemicals are available.	_____
11.0	ENSURE sufficient fuel for portable heaters is available.	_____
12.0	SUSPEND all discretionary maintenance that could affect plant availability.	_____

This form, when completed, SHALL be retained for a minimum of 5 years.

SEVERE WEATHER CONDITION 2:

Outside air temperature [redacted] **AND** wind speed **LESS THAN** [redacted] but remain [redacted]

OR

ERCOT ISO has issued Emergency Preparation Step C (Cold Weather Alert)

NOTE

Severe Weather CONDITION 2 MAY be declared early at Plant Manager discretion.

1.0	SEVERE WEATHER CONDITION 3 actions complete OR in progress.	_____
2.0	SEVERE WEATHER CONDITION 3 monitoring actions are continuing.	_____
3.0	Additional necessary actions taken are recorded in the Control Room Logbook.	_____
4.0	SUSPEND all discretionary maintenance that could affect plant availability.	_____

This form, when completed, SHALL be retained for a minimum of 5 years.

SEVERE WEATHER CONDITION 3:

Outside air temperature**:**

- [redacted]
- [redacted]

NOTE

Severe Weather CONDITION 3 MAY be declared early at Plant Manager discretion.

Plant will have an additional Operator as well as extra staff on site to help with any additional issues that may arise.

1.0 Freeze Protection Panels in operation. _____

2.0 Susceptible Out-Of-Service equipment drained OR protected. _____

3.0 Susceptible In-Service equipment is protected. _____

4.0 Non-Essential HVAC is secured. _____

5.0 Verify COLD WEATHER SUPPLY STORAGE is stocked. _____

6.0 Temporary Shelters are inspected. _____

7.0 Temporary Heat Tracing in place, tagged & operating. _____

8.0 Increased inspection frequency of high freeze potential areas. _____

9.0 Temporary Logs initiated to monitor room temperatures. _____

10.0 Personnel assigned to place and refuel portable heaters. _____

11.0 Outside air temperature continuously displayed in Control Room. _____

12.0 Additional necessary actions taken are recorded in the Control Room Logbook. _____

13.0 The Operations Manager shall notify the Corporate Insurance Department of additional temporary heaters.(phone number-) _____

This form, when completed, SHALL be retained for a minimum of 5 years.

NOTE

The following conditions are identified as potential problems when exposed to freezing weather. This should not be construed as an all inclusive list.

1.0 Valve bonnets which are **NOT** insulated in a piping system which is insulated.

2.0 Freeze Protection leaves a gap where the pipe either goes underground or enters a building.

3.0 Freeze Protection ends before the Tee or Reducer at a pipe size transition, leaving a portion of the smaller pipe unprotected.

4.0 Freeze Protection ends at an equipment or system interface, leaving interface flanges or skid-mounted piping and instrumentation unprotected.

5.0 Local Instrumentation (gauge glasses, PIs, sensing lines, etc) is **NOT** freeze protected and space heaters are **NOT** provided in instrument cabinets.

6.0 Freeze Protection is **NOT** continuous at pipe supports.

- 6.1 Demineralized Water
- 6.2 Fire Protection (wet pipe sections)
- 6.3 Service Water
- 6.4 Ammonia Supply

7.0 Insulation or heat tracing has **NOT** been restored after Maintenance.

8.0 6" and smaller piping and pumps which contain water and are **NOT** insulated SHALL be evaluated for off-normal operation.

9.0 6" and smaller valves in a larger line which are **NOT** heat-traced.

10.0 Freeze Protection is **NOT** provided at tank vacuum breakers, level gauges, instrumentation, etc.

This form, when completed, SHALL be retained for a minimum of 5 years.

11.0 Freeze Protection is **NOT** provided for extended vents and drains (evaluation SHALL be performed on a case-by-case basis to determine if susceptibility/fin-affected cooling is present).

12.0 ENSURE fan cooler condensation is **NOT** leaking onto other cold components and freezing.

13.0 ENSURE condensation in Instrument Air-line drains located in cold weather areas is drained.

14.0 Any water-filled piping, pump, heat exchanger, or other components that are **NOT** insulated and are **NOT** in service, SHALL be evaluated for possible draining. (Tanks are the exception.)

This form, when completed, SHALL be retained for a minimum of 5 years.

Date: **Note: this logsheet is to be attached to the Yard Watch Logsheet.**

Enclosure Number	Enclosure Location	0600-1800	1800-0600
	Top HRSG #2		
	Top HRSG #3		
	Top HRSG #4		
	Aux Boilers North		
	Decant Pumps		
	Neut. TK Pump Skid		
	BFW PUMP #2		
	BFW PUMP #3		
	BFW PUMP #4		
	Kettle Boiler #2		
	Kettle Boiler #3		
	Kettle Boiler #4		
	STG Gland Steam		
	NaOH/ HCL Skid		
	Raw H20 Inlet to Demin		

Notes

1. Record SAT/UNSAT to denote operability of Instrument Enclosure Space Heaters.
2. WOs SHALL be written for failed space heaters.
3. Notify CRO of any inoperable Freeze Protection Circuits and implement compensatory freeze protection measures to determined necessary.

This form, when completed, SHALL be retained for a minimum of 5 years.

Date: _____ **Note: this logsheet is to be attached to the Yard Watch Logsheet.**

Room	Low	Norm	High	Units						
CT-2 Elect. Package	[redacted]		[redacted]	°F						
CT-3 Elect. Package				°F						
CT-4 Elect. Package				°F						
STG GSU Deluge Valve House				°F						
CT-2 GCU Deluge House				°F						
CT-3 GSU Deluge Valve House				°F						
CT-4 GSU Deluge Valve House				°F						
Boiler Feedwater Pump Building #2.				°F						
Boiler Feedwater Pump Building #3				°F						

This form, when completed, SHALL be retained for a minimum of 5 years.

Room	Low	Norm	High	Units						
Boiler Feedwater Pump Building #4	[redacted]		[redacted]	°F						
Switchyard Battery Room				°F						
STG Battery Room				°F						
Fire Water Pump Room				°F						
STG MCC				°F						
CTG MCC				°F						
Cooling Tower MCC				°F						
Switchyard Deluge				°F						
Ammonia Deluge				°F						

This form, when completed, SHALL be retained for a minimum of 5 years.

Date: _____ **Note: this logsheet is to be attached to the Yard Watch Logsheet.**

Panel Number	Panel Location	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800
1. STG-HTP-001	[redacted]												
2. HTFP-1													
3. HRSG-HTP-004													
4. HRSG-HTP-003													
5. HRSG-HTP-002													
6. WT-HTP-01													
7. CT-HTP-002													

Notes

4. Record SAT/UNSAT to denote operability of Freeze Protection Panels.
5. WOs SHALL be written for failed circuits.
6. Notify CRO of any inoperable Freeze Protection Circuits and implement compensatory freeze protection measures to determined necessary.
7. If less than 32 degrees readings every 4 hours at least

This form, when completed, SHALL be retained for a minimum of 5 years.

Date: _____ **Note: this logsheet is to be attached to the Yard Watch Logsheet.**

Panel Number	Panel Location	1900	2000	2100	2200	2300	0000	0100	0200	0300	0400	0500	0600
1. STG-HTP-001	[redacted]												
2. HTFP-1													
3. HRSG-HTP-004													
4. HRSG-HTP-003													
5. HRSG-HTP-002													
6. WT-HTP-01													
7. CT-HTP-002													

Notes

1. Record SAT/UNSAT to denote operability of Freeze Protection Panels.
2. WOs SHALL be written for failed circuits.
3. Notify CRO of any inoperable Freeze Protection Circuits and implement compensatory freeze protection measures to determined necessary.

This form, when completed, SHALL be retained for a minimum of 5 years.

This form, when completed, SHALL be retained for a minimum of 5 years.

CALPINE®
NYSE CPN

Bosque Energy Center Procedure Manual

DOCUMENT: PLANT SPECIFIC WINTER READINESS PLAN

NUMBER: BOSQ-IW-0001 REVISION: 1

DS MA

DocuSigned by:

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PLANT MANAGER

11-17-2021

DATE

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- Attachment 9 Additional Winter Readiness Considerations
- Attachment 10: Personnel/Operator Training
- Attachment 11: Winter Readiness Actions Timeline
- Attachment 12: Bosque Winter Readiness Certification

1.0 PURPOSE

The purpose of this document is to describe the process to be used for preparing the Plant for reliable operations during the Winter Period by ensuring compliance with the Plant Specific Winter Readiness Plan (the "Plan"). The Plan is to be used in conjunction with the Winter Readiness Standard (the "Standard"), Plant Specific BOP 046 Cold Weather Operating Procedure (the "Procedure"), the Winter Readiness Actions Timeline, checklists, worksheets, and Maximo PMs.

2.0 SCOPE

For the purpose of this procedure, the Winter Period is from November 1 through March 15. This Plan directs the management of the scope of work activities for staff to complete before cold weather arrives. This Winter Readiness Plan is not the same as the Procedure. The Plan is to provide guidance for preparing the plant to endure winter temperatures without unplanned or forced outages or derates. The Plant staff will implement the Procedure only when the ambient temperature is low enough to cause potential problems. The intent of the Plan is to identify reliability issues that are directly related to cold weather, not reliability issues in general.

3.0 DEFINITIONS

Critical Equipment: Plant equipment that, during cold weather events, has the potential to: initiate a unit trip, impact unit startup, initiate an automatic runback, adversely affect environmental controls that may cause an outage or derate, adversely affect the delivery of fuel or water supply to the unit, or create a safety hazard.

Winter Period: The period from November 1 through March 15.

4.0 RESPONSIBILITIES

Plant Manager

The Plant Manager is responsible for:

- Developing and revising (based on lessons learned) the Plant's Plan and the Procedure. The Plan and Procedure must address all recommendations in the Standard that are applicable to the Plant.
- Performing or delegating Winter Readiness Coordinator responsibilities.
- Approving Plant Specific Plans and Procedures and ensuring all identified winter readiness work is completed prior to its required winter completion date.

- Ensure all Plant specific planned winter readiness activities and identified preventive maintenance ("PM") and corrective maintenance are entered into Maximo. All winter planned and repair work is to be documented in Maximo using the program category "Seasonal" and the task category "Winter".

- Routinely updating the RVP on the Plant's winter readiness status.

- Verifying the Plant's winter readiness and formally certifying that readiness to the RVP prior to winter.

- During cold weather operation, ensuring the Plant Procedure is implemented, and any issues identified are corrected in a timely manner to assure continued reliable winter operation.

Maintenance Manager

The Maintenance Manager is responsible for:

- Implementing the Plant Plan and revising the Plan as required based on lessons learned.

- Ensuring the Winter Readiness PMs and other activities are in Maximo and implemented in accordance with the timeline included in the Plant's Plan and documented in Maximo (using the category "Seasonal" and the task category "Winter").

- Ensuring initial adequate stock of any consumables and supplies required to be on hand prior to any significant cold weather event (list included in the Plan) and re-ordering such stock of consumables and supplies when appropriate.

- During Winter Period, timely identifying and addressing any equipment deficiencies that could impact reliable operation during cold weather and properly documenting all repairs in Maximo.

Operations Manager

The Operations Manager is responsible for:

- Implementing the Plant Procedure and revising the Procedure as advisable based on lessons learned.

- Reviewing the Plant Operations Procedure before each Winter Period (October) to ensure the operating procedures, checklists, and instructions are current and include any new equipment added to the plant configuration since the previous Winter Period.

Include in the review, Calpine fleet lesson learned, NERC lessons learned, and general industrial best practices that may have become known since last Winter Period.

- Reviewing the ongoing winter operation activities implemented during cold weather events, including activities identified in the rounds sheets and other checklists, in the Plant Procedure.

- Verifying that the Plant communications system is operational and that backup communications are in place.

Winter Readiness Coordinator

A Winter Readiness Coordinator shall be appointed by the Plant Manager. The Winter Readiness Coordinators are responsible for communicating and tracking activities needed to achieve sustained reliability and availability during extreme weather events and for routinely reporting to the Plant Manager the status of the Plant's winter readiness preparations. The Plant Winter Readiness Coordinator supports the Operations and Maintenance Managers as required in performing their responsibilities as outlined above.

Specific responsibilities include:

- Chairing scheduled winter readiness meetings at intervals appropriate to the Plant.

- Tracking and reporting status of the Plant's winter readiness preparations.

- Procuring and positioning winter readiness consumables and supplies required to be on hand prior to any significant cold weather event (list included in the Plant Plan).

5.0 THE PLAN

In accordance with the Standard, the Plant has developed a Plan which includes its performance and documentation of the following activities, whenever applicable:

1. Minimum Plant Design Operating Temperature. As of the date of this Plan Rev., the minimum design temperature for Plant operations [redacted] for Power Block 2, there is no minimum design temperature stated for Power Block 1.

   The Plant reviews any Plant modifications made in the previous year to verify that the modifications have not impacted the minimum plant design operating temperature.

   The Plant reviews any Plant modifications made in the previous year to verify that the modifications have not impacted the minimum plant design operating temperature.

This annual review is scheduled on PM # 30113 and the results are documented in the Plant's SharePoint or Maximo.

2. Review of Lessons Learned. The Plant reviews equipment freezing issues experienced over the previous year to determine lessons learned and incorporates lessons learned into the Plant Plan to avoid any reoccurrence.

   This review is scheduled in PM #106531 and any identified action items are placed in Maximo work orders and identified with program code "Season" and Task Code "Winter" and reviewed during annual training with Plant staff. Any lessons learned may also be documented in the Plant's SharePoint.

3. Review Critical Equipment List. A list of Plant Critical Equipment that may be impacted by cold weather is attached as Attachment 1 to this Plan (Critical Instrument List).

4. Identify Heat Trace Type, Develop PMs for Monthly Testing from Nov. 1 to March 31. The type of heat tracing used at the Plant is the mineral insulated and self-regulating. Heat tracing is used to protect instruments and other vulnerable equipment from freezing. PM #104026 is in Maximo for monthly testing from November 1 through March 31. Any issues found during these PM checks are documented as follow up work orders in Maximo and identified with program code "Season" and Task Code "Winter." Attached to the Plan is Attachment 2 (Heat Trace List), identifying the circuits, testing method, ambient temperature when tested.

5. Perform Instrument Air System Maintenance. The Instrument Air System is critical to the operation of the Plant. Instrument Air System components are given high priority when malfunctions occur. The Plant's Instrument Air System is designed to maintain a dew point of -40°F dew point temperature. A dew point meter is installed in the discharge of plant air compressors and has indication and alarms tied into the DCS. The instrument air system automatically blows down moisture at the air compressor. Plant Operators will verify automatic valves are working correctly and manually blow down other air system low points of moisture prior to extreme cold conditions.

   An annual review of the Instrument Air system maintenance is performed on PM #117477 prior to winter operation.

6. Review Corrective Maintenance Work Orders. As part of the Winter Period preparation, a review of open Corrective Maintenance Work Orders having program code "Seasonal", and Task Code "Winter" is conducted to determine their potential impact on winter readiness and shall be integrated into the Plant's work week. The review is documented as part of the Plan on PM #110094.

7. Perform Plant Insulation Walkdown. Perform a Plant walk down of the Critical Equipment's insulation and lagging and identify areas of insulation that should be considered for repair prior to winter operation. PM #106397 is in place to generate a work order for this review. Any corrective work is documented in Maximo by corrective work orders created during the Winter Readiness walkdown.

8. Winter Readiness Consumables and Supplies. A list of consumables and supplies kept in store for freeze protection is contained in Attachment 3 (Winter Readiness Consumables and Supplies). An inventory check is performed by Operations personnel PM #110050.

9. Test Portable Heaters and Heat Lamps. Portable space heaters used for freeze protection are kept in a designated storage area for winter supplies. An operational test is performed on these portable heaters annually by Operations personnel PM #103510 of the Plan.

10. Test Permanent Building Space Heaters. An annual operational/functional check of all space heaters permanently installed in Plant buildings is conducted annually to ensure proper operations under PM # 105689 and 117476. A copy of the list of permanent building space heaters and their location is attached in Attachment 4 (Permanent Building Space Heaters).

11. Check Glycol Concentration. PM #110052 is performed annually to ensure the glycol concentration level is at the correct concentration.

12. Space Heaters on Critical Instrument Breakers. PM #110048 is performed annually to test all space heaters on critical equipment breakers. A list of breakers and inspection criteria is attached in Attachment 5 (Space Heater Check for Critical Equipment Breakers) of this Plant.

13. Operation Check of Instrument Box Heaters on Critical Instruments. PM #110047 is in place to check box heaters on critical instruments. A list of instrument box heaters on critical instruments is attached in Attachment 6 (Instrument Box Heater Check).

14. Installation and Disassembly of Temporary Wind Breaks / Enclosures. Windbreaks and temporary heaters are installed annually to protect critical equipment from freezing. PM # 102656 is performed each year to erect wind breaks/enclosures. A map of temporary windbreak locations around the Plant is attached in Attachment 7 (Temporary Windbreaks).

15. Draining Equipment. Attachment 8 (Draining Equipment) lists equipment that requires draining for the winter operation. PM #110053 is active to initiate the draining procedure.

16. Fuel Oil Handling Equipment. Not applicable. The Plant does not have any fuel oil handling equipment.

17. Icing Prevention Equipment. Each year PM #110051 is instituted to inspect icing prevention equipment.

18. Additional Preparations for Susceptible Plants. If required, among other things, the additional considerations contained in Attachment 9 (Additional Winter Readiness Considerations) may be performed by the Plant is performed each year.

19. Annual Plan Review. This Plan will be reviewed annually by Plant management. PM# 110094 is in place to ensure the annual reviews are performed.

20. Personnel/Operator Training. Winter readiness refresher training is completed annually as part of the Plant's Procedure prior to the Winter Period. The training will include any applicable Plant modifications, past winter lesson's learned, alternative instrumentation should the Plant's primary instrumentation becomes unreliable.

    Personnel and Operator Training is documented as part of the Plan on PM # 110100 and attendance by Plant personnel should be documented in writing in Attachment 10 (Personnel/Operator Training) and retained.

21. Winter Readiness Action Timeline. Attachment 11 (Winter Readiness Action Timeline) of this Plan contains a timeline for winter readiness actions and milestones.

6.0 The Procedure

In accordance with the Standard, the Plant implements the Procedure when

1. BOP 046 Cold Weather Operating Procedure When outside ambient air temperature at the Plant is predicted to decrease or decreases to [redacted] ("Winter Weather Conditions") the Plant Operations Team implements the Procedure which is stored in the Plant Share Drive (P:\Public\BOSQUE PROCEDURES \COLD WEATHER OPERATIONS, including completing the Freezing Weather Actions and Logsheets.

7.0 Pre-Winter Plant Status Reviews and Readiness Certification

Prior to the onset of the Winter Period each Plant Manager verifies winter readiness and formally communicates site status to the RVP (see example Attachment 12 (Bosque Winter Readiness Certification). RVPs review regional winter readiness status and certify status to the EVP Operations.

8.0 REFERENCES

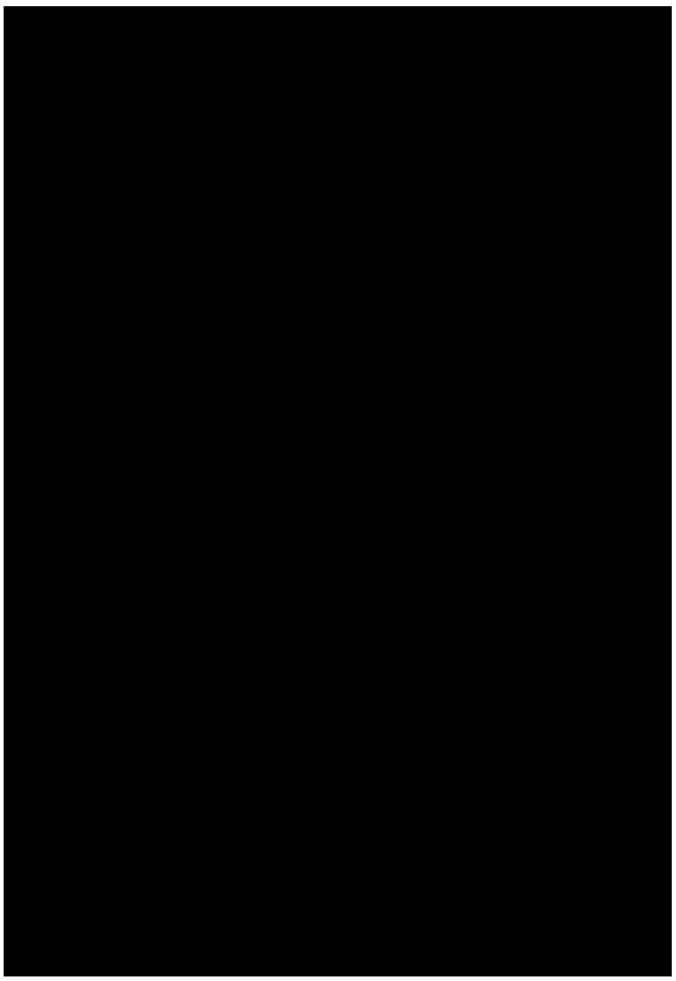
- CSN-1021 (Winter Readiness Standard)
- CPN-714 (Records management)

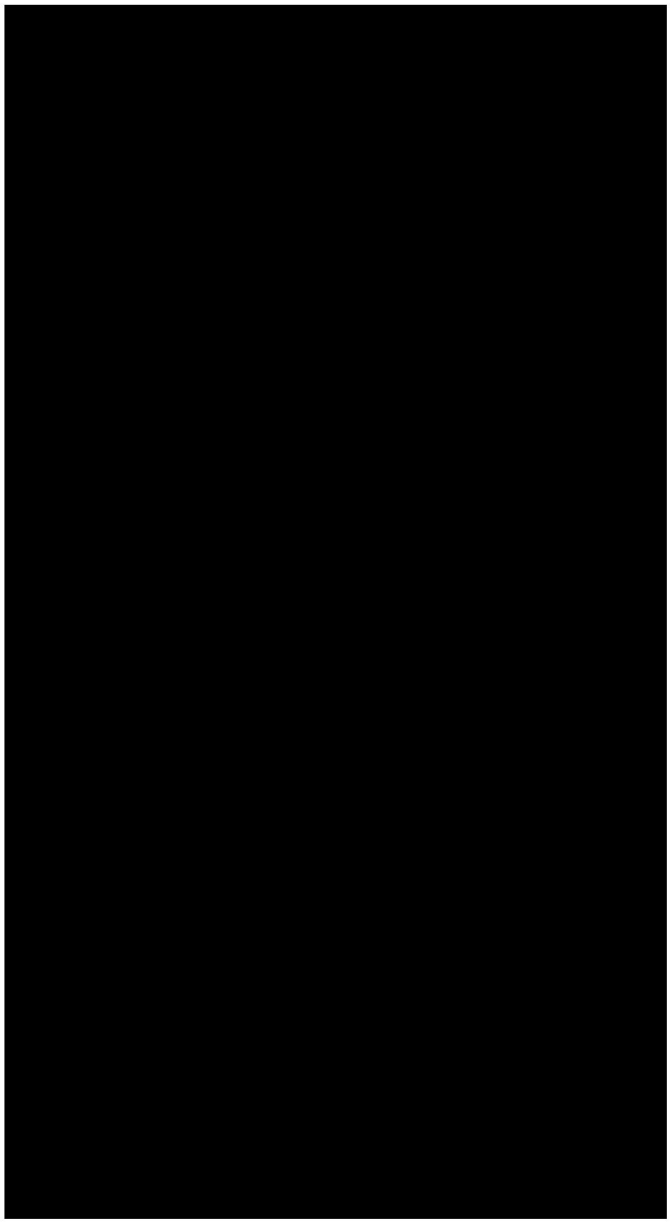
- CSN-101 (WORK MANAGEMENT PROGRAM)
- Management OF Design Change Procedure

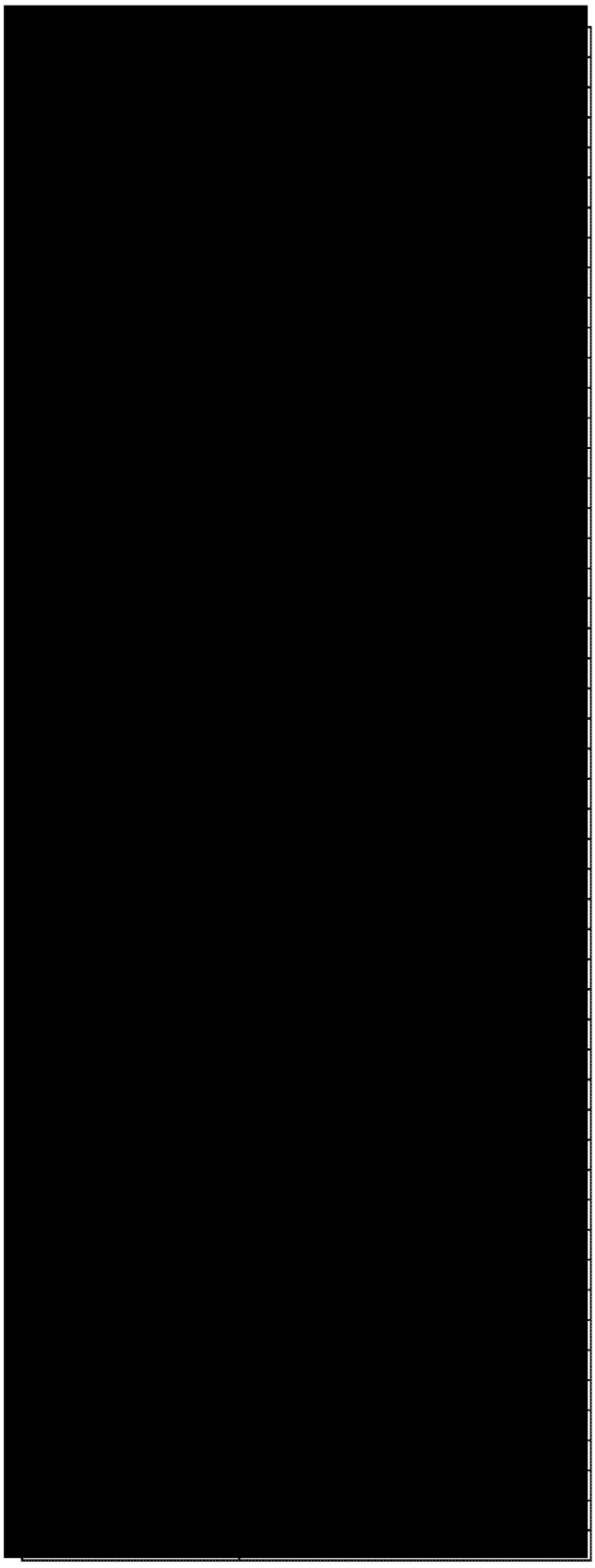
SUPPORT DOCUMENTS

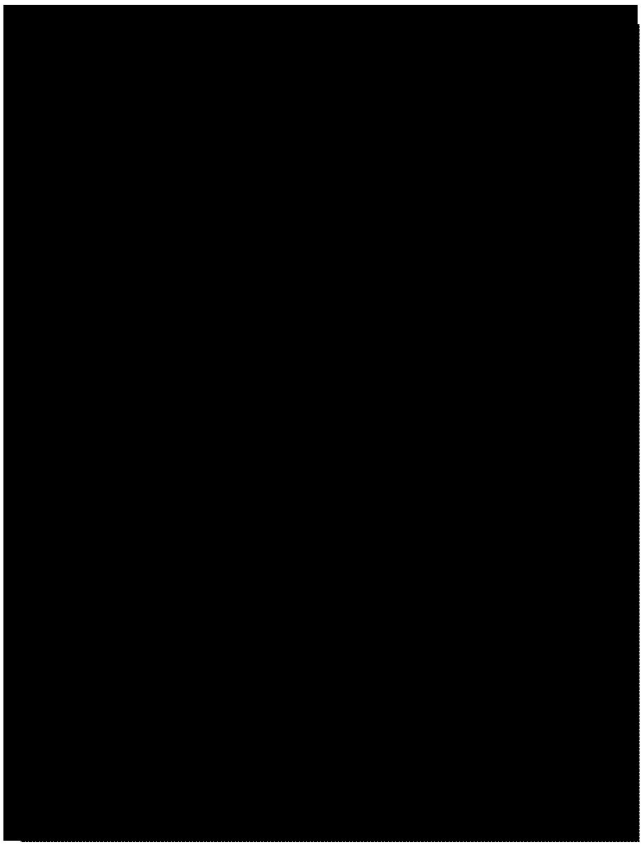
Attachment 1:	Critical Instrument List
Attachment 2:	Heat Tracing List
Attachment 3:	Winter Readiness Consumables and Supplies
Attachment 4:	Permanent Building Space Heaters
Attachment 5:	Space Heater Check for Critical Equipment Breakers
Attachment 6:	Instrument Box Heater Check
Attachment 7:	Temporary Windbreaks
Attachment 8:	Draining Equipment
Attachment 9:	Personnel/Operator Training
Attachment 10:	Winter Readiness Actions Timeline
Attachment 11:	Bosque Winter Readiness Certification

Attachment 1: Critical Instrument List

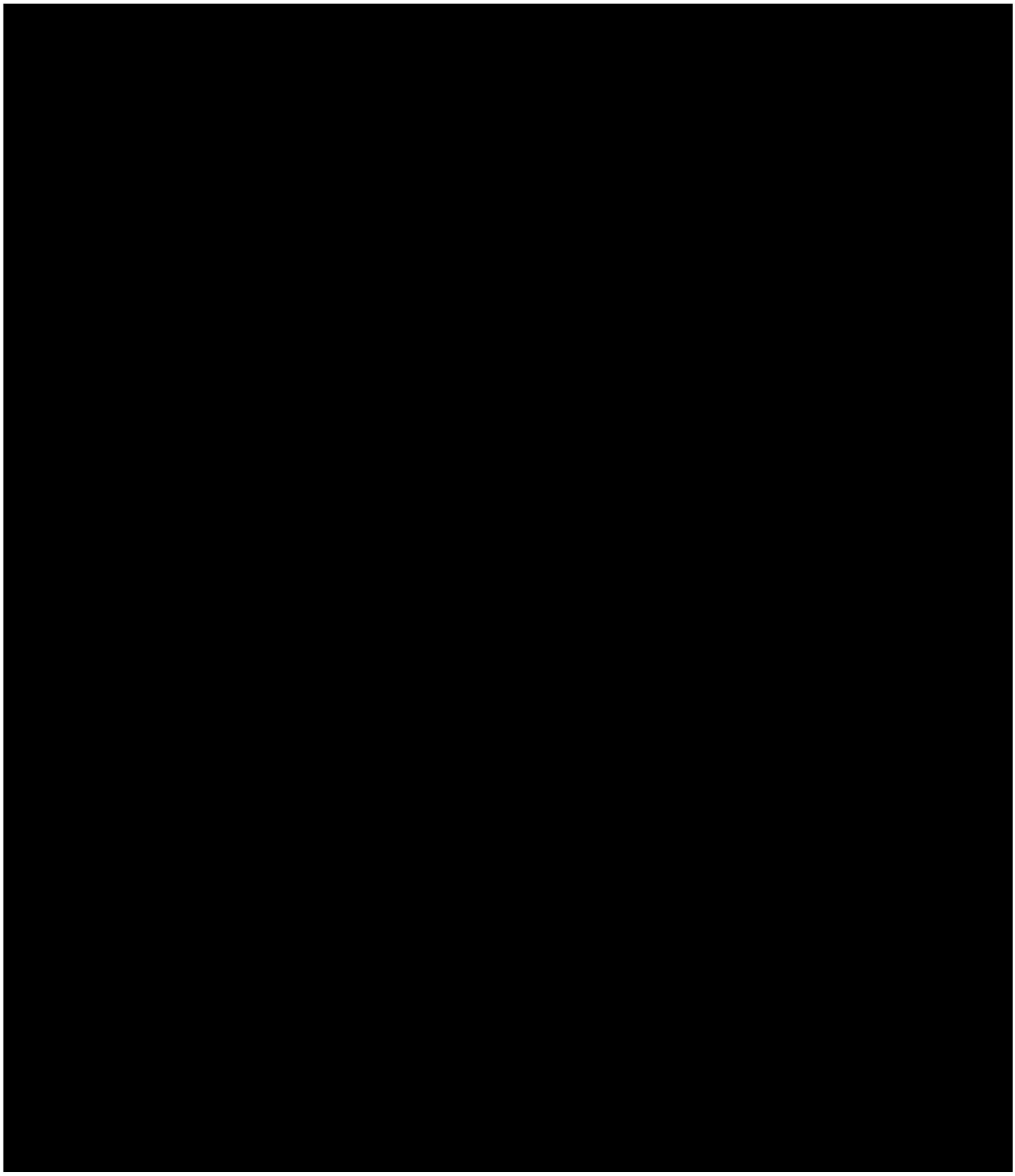


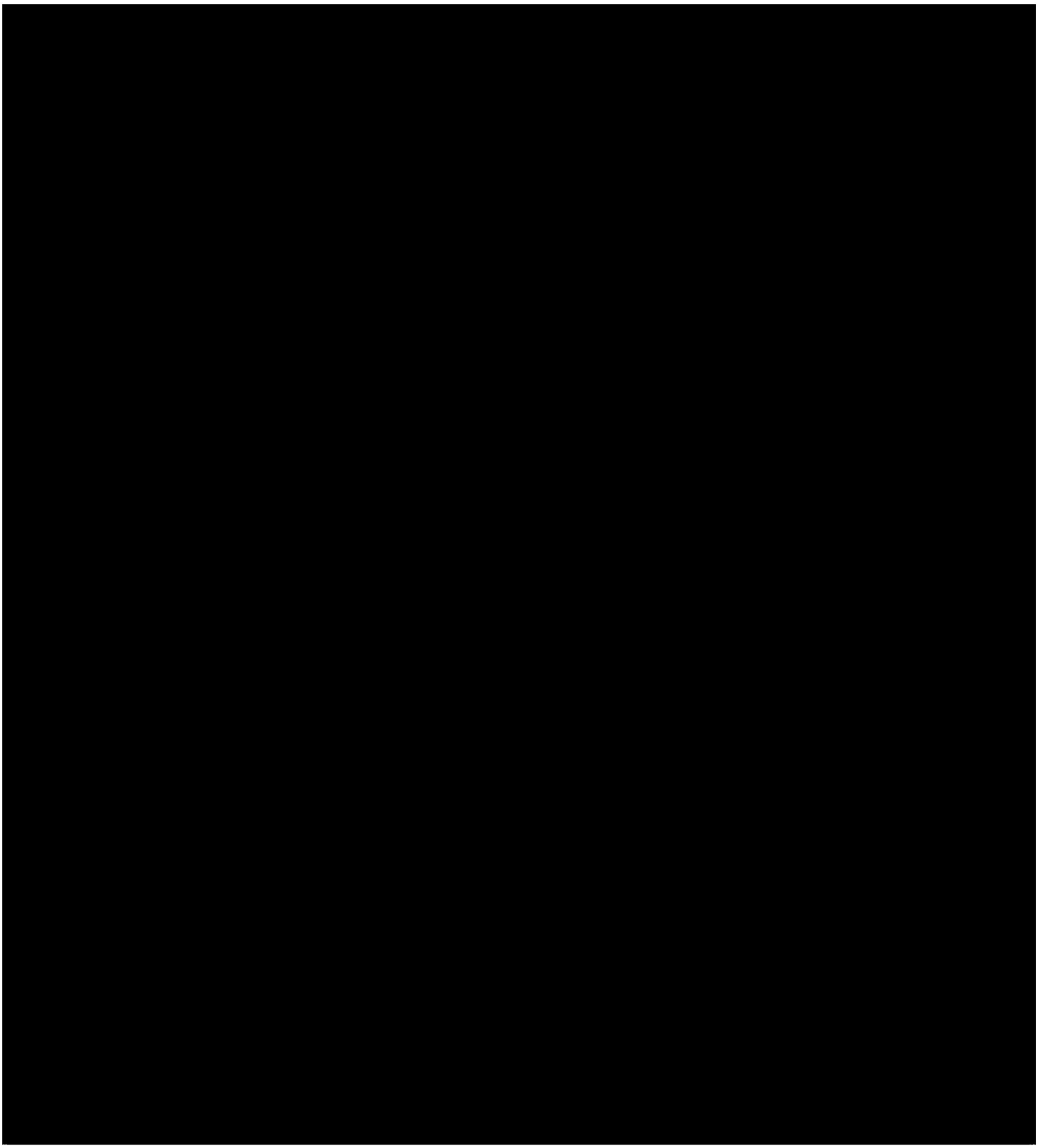


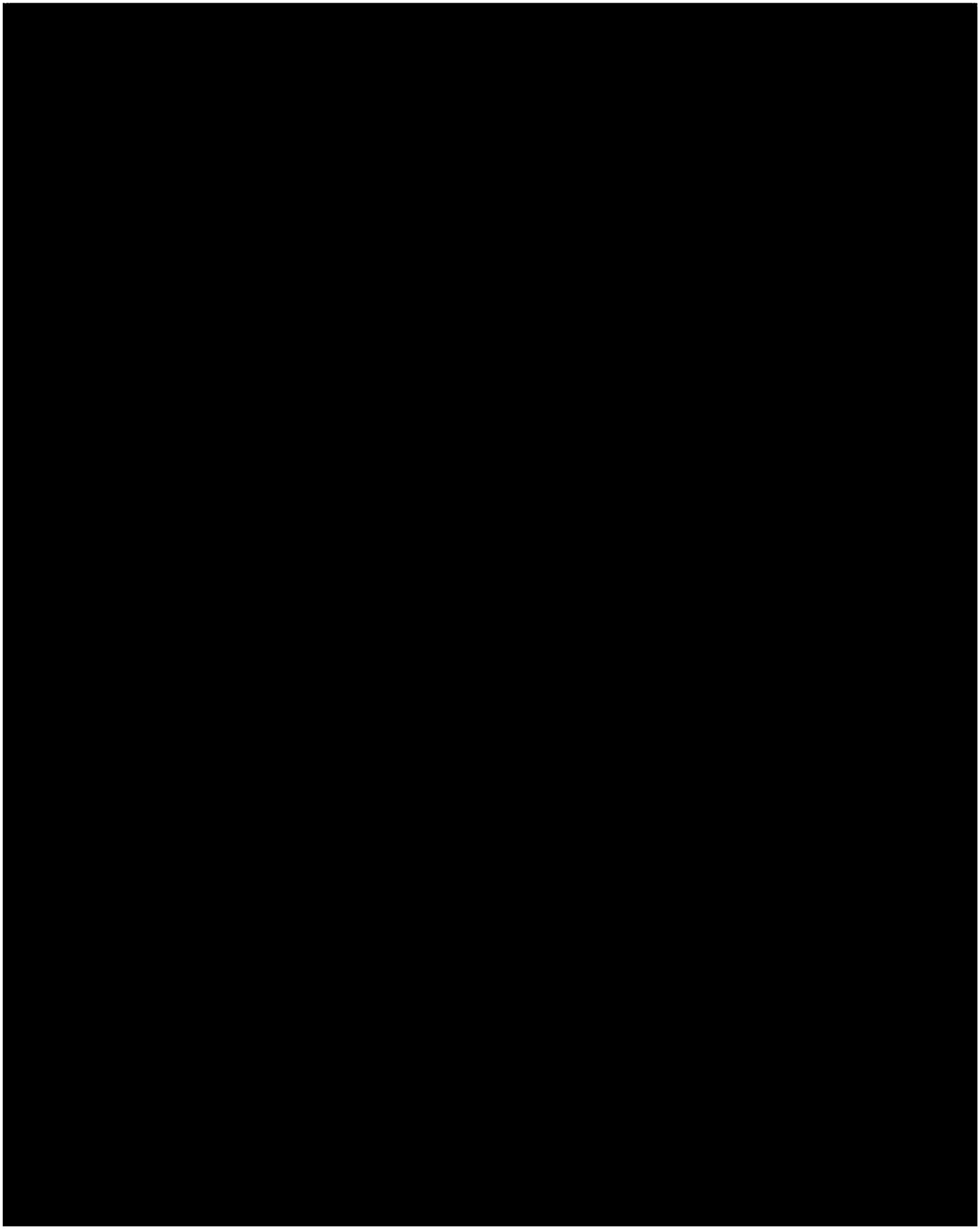


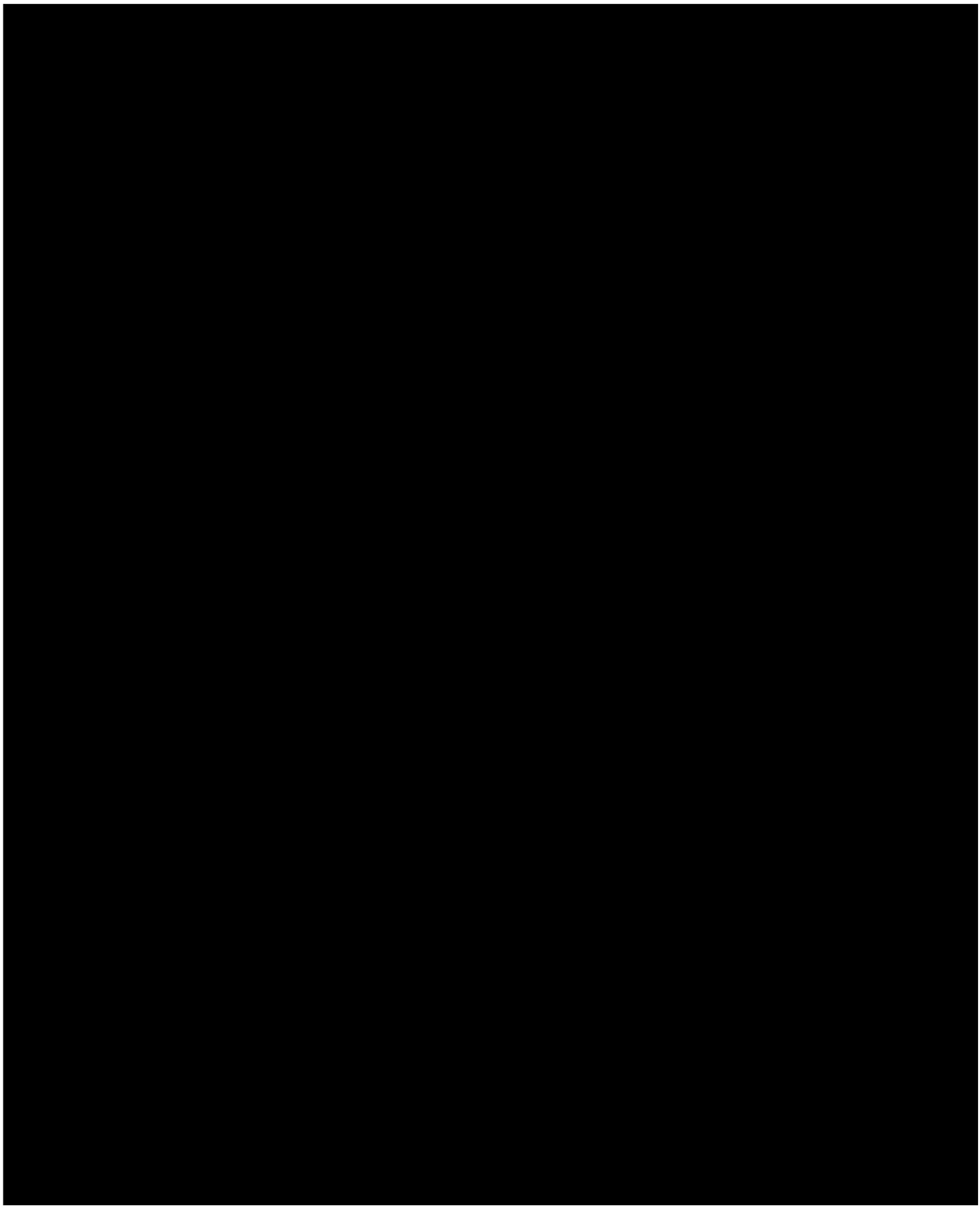


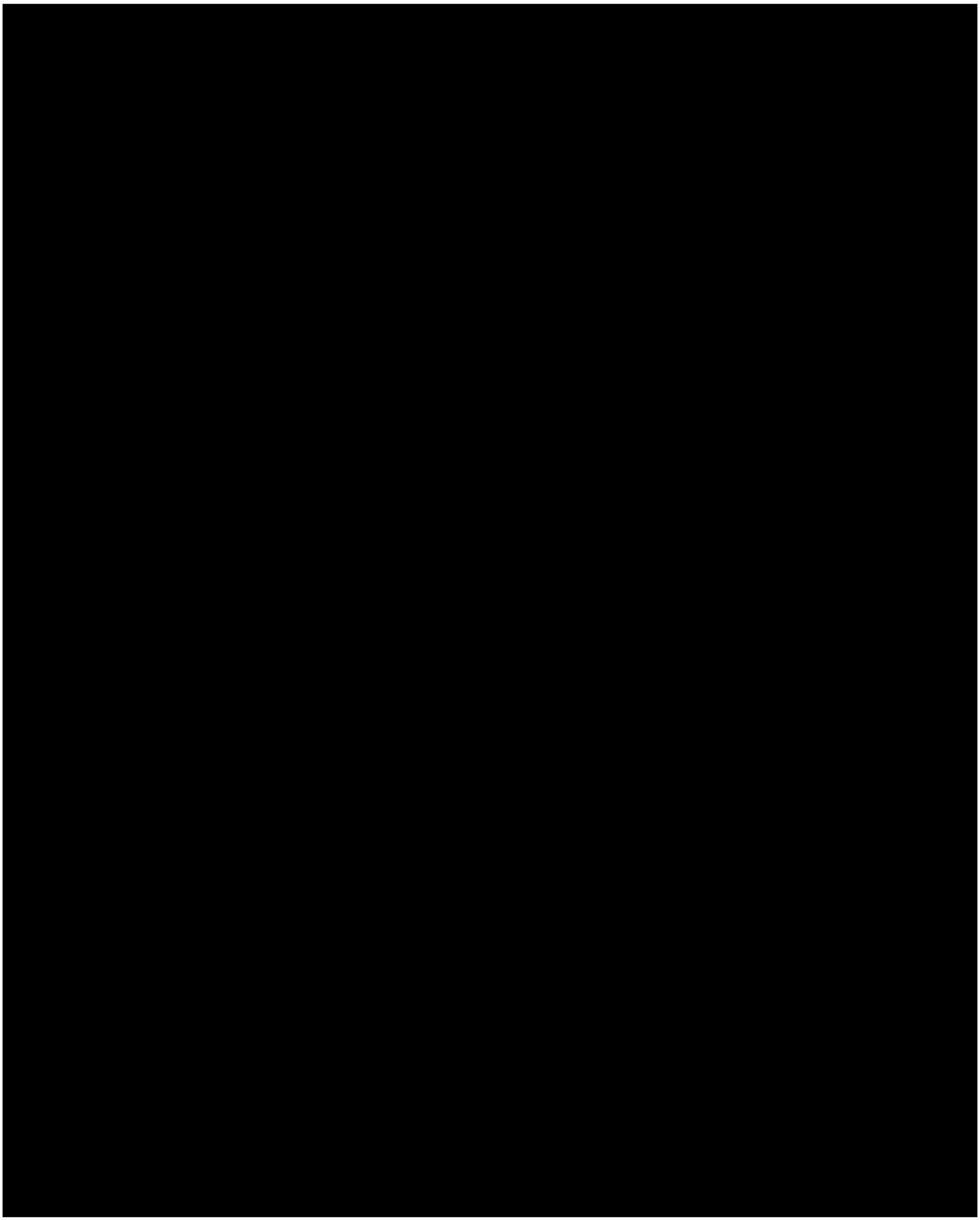
Attachment 2: Heat Tracing List

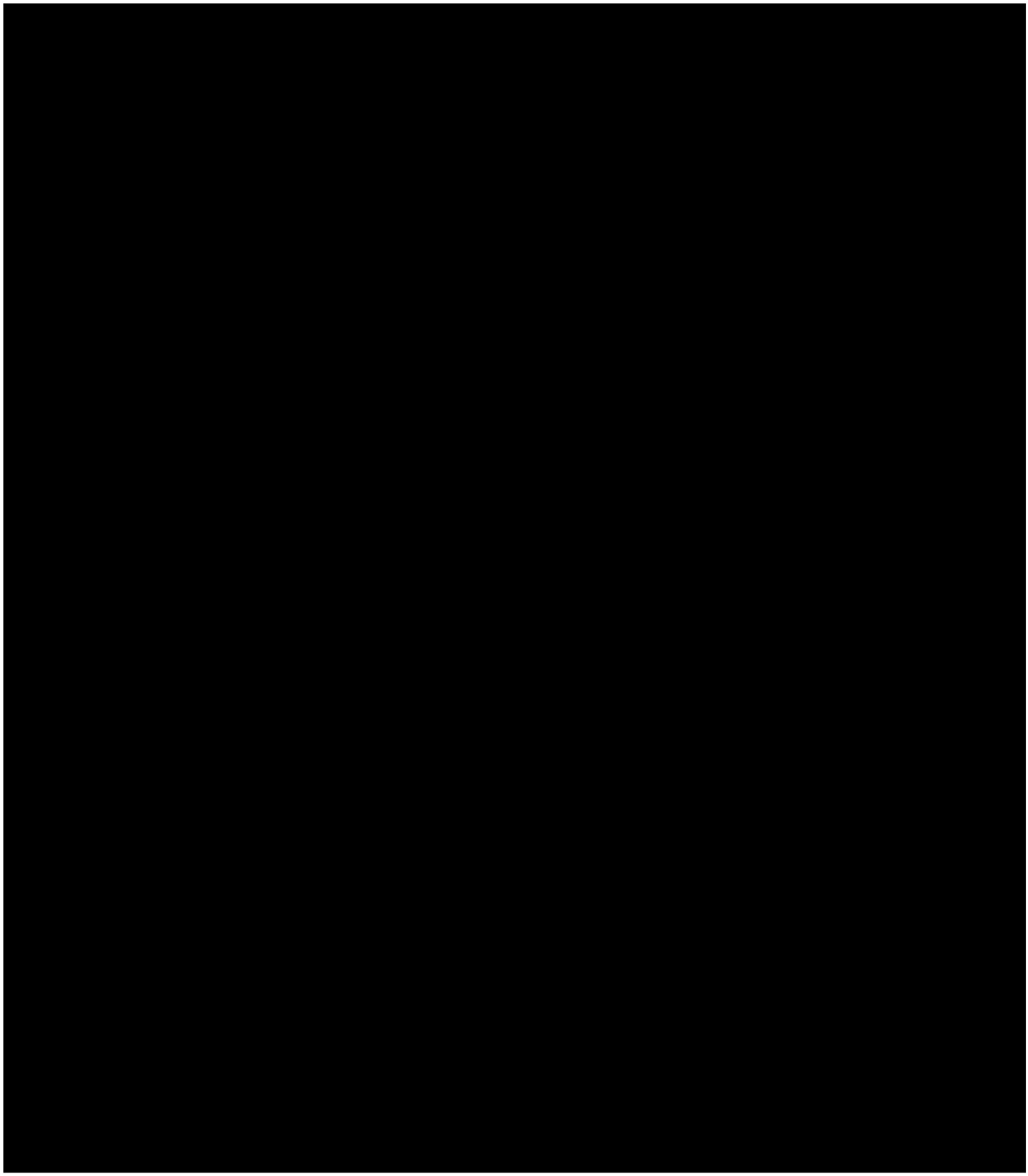


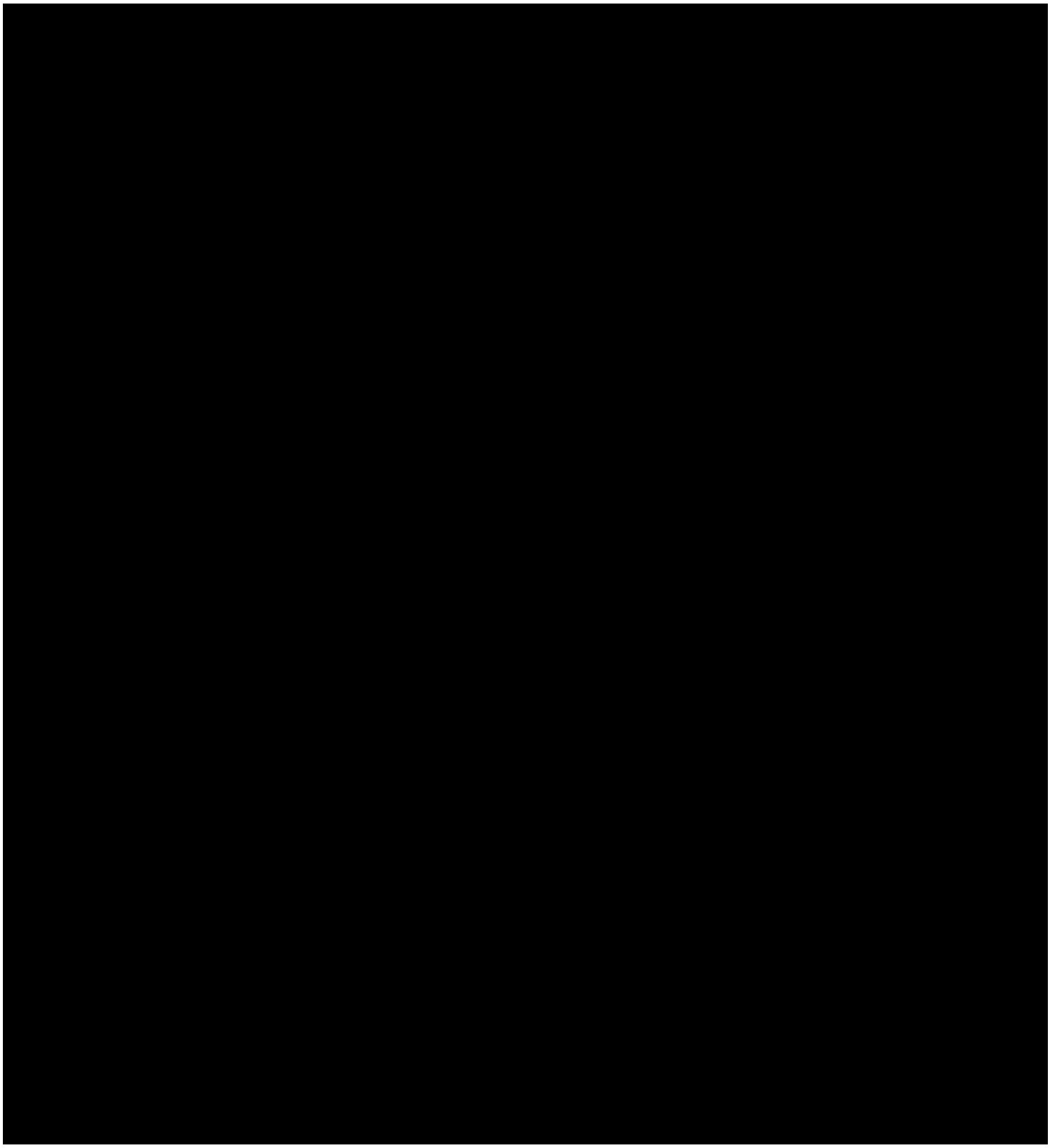


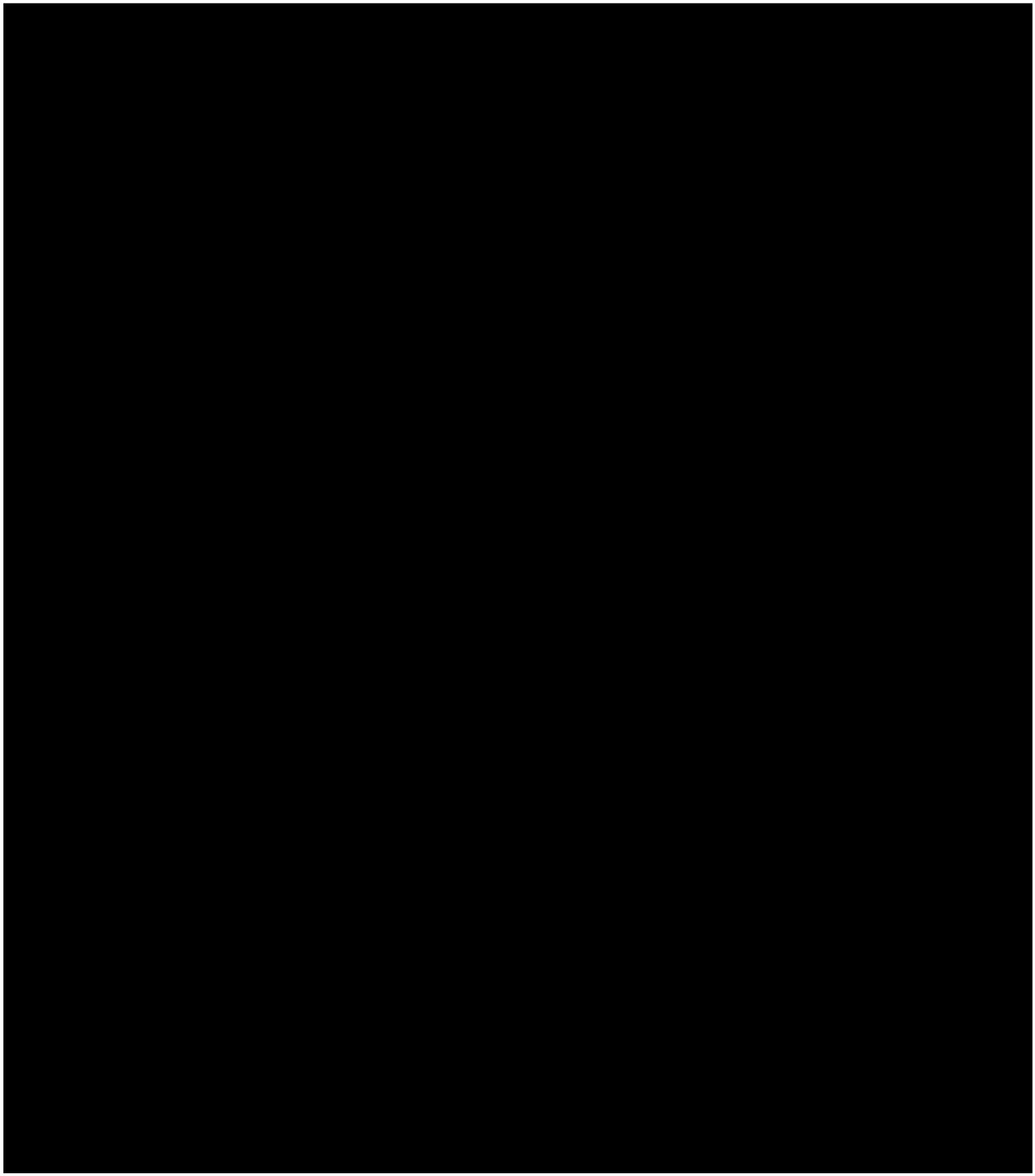












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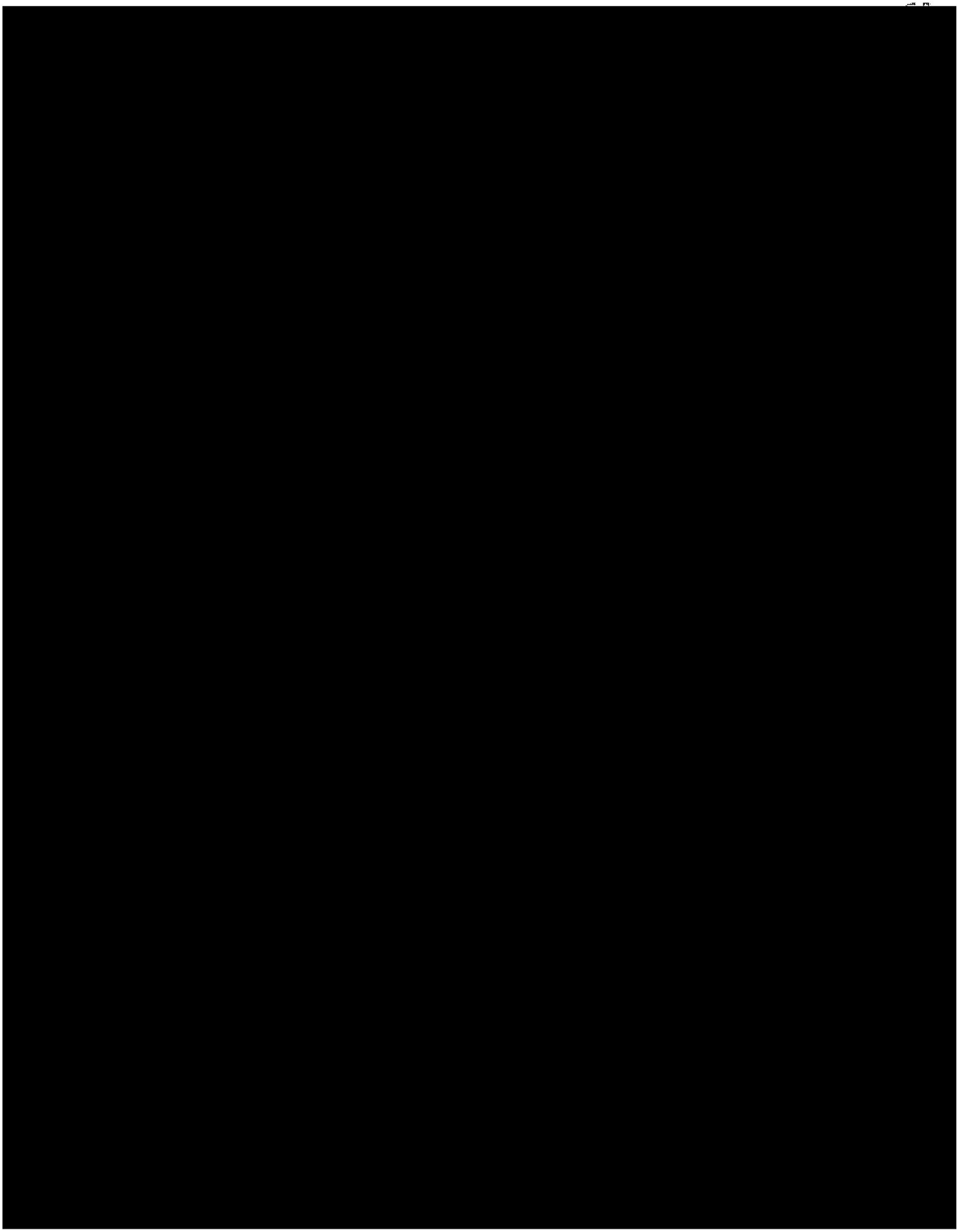

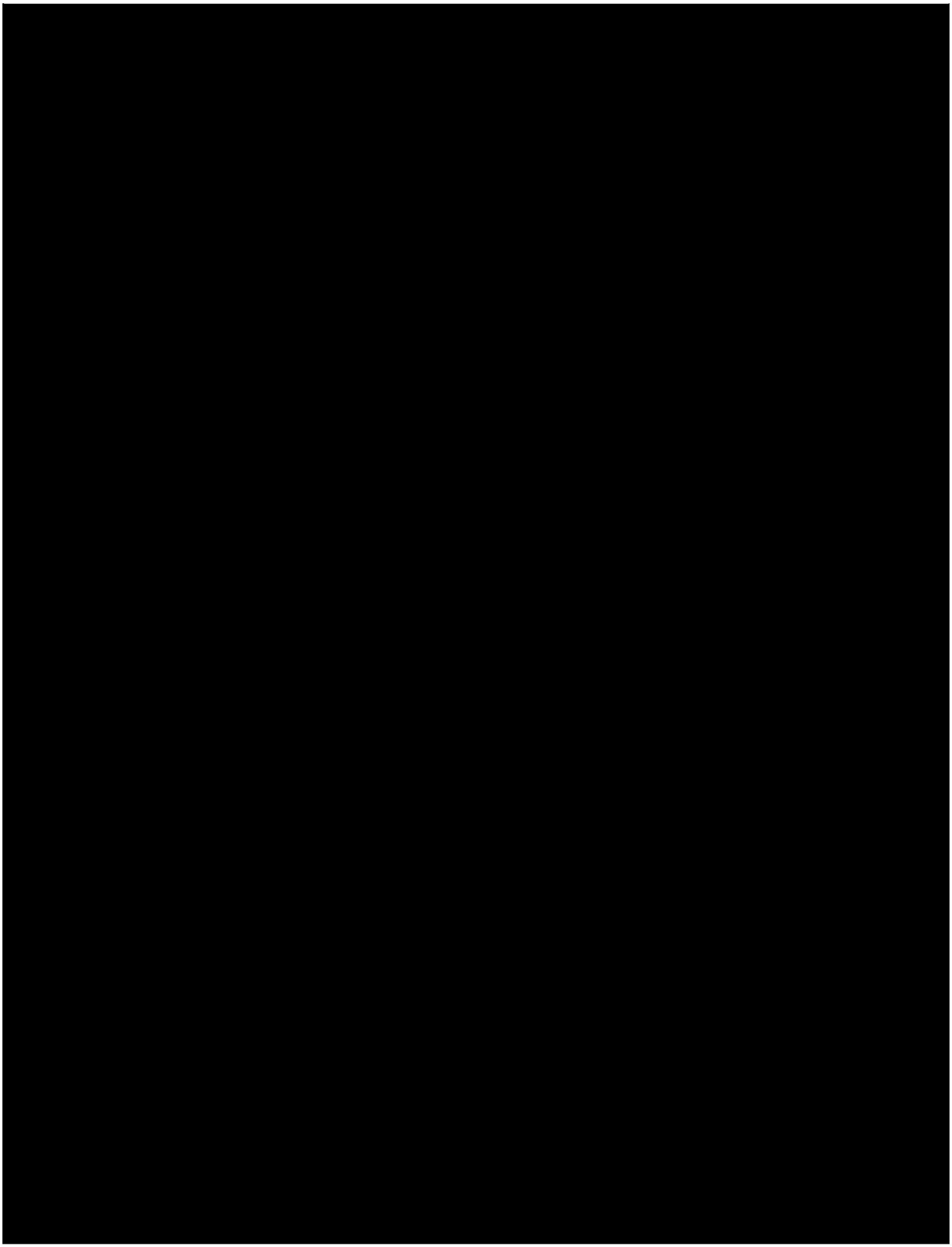

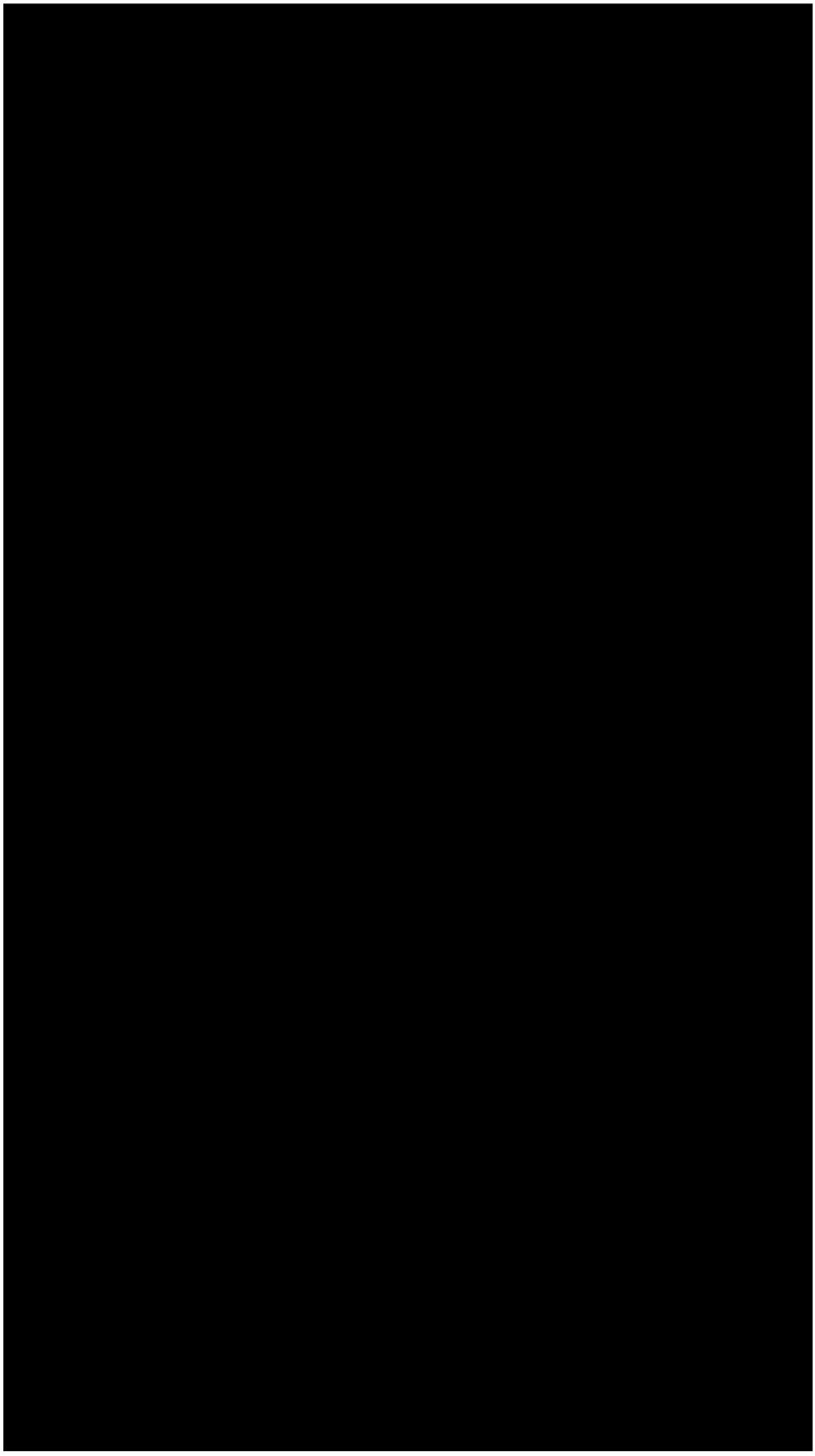

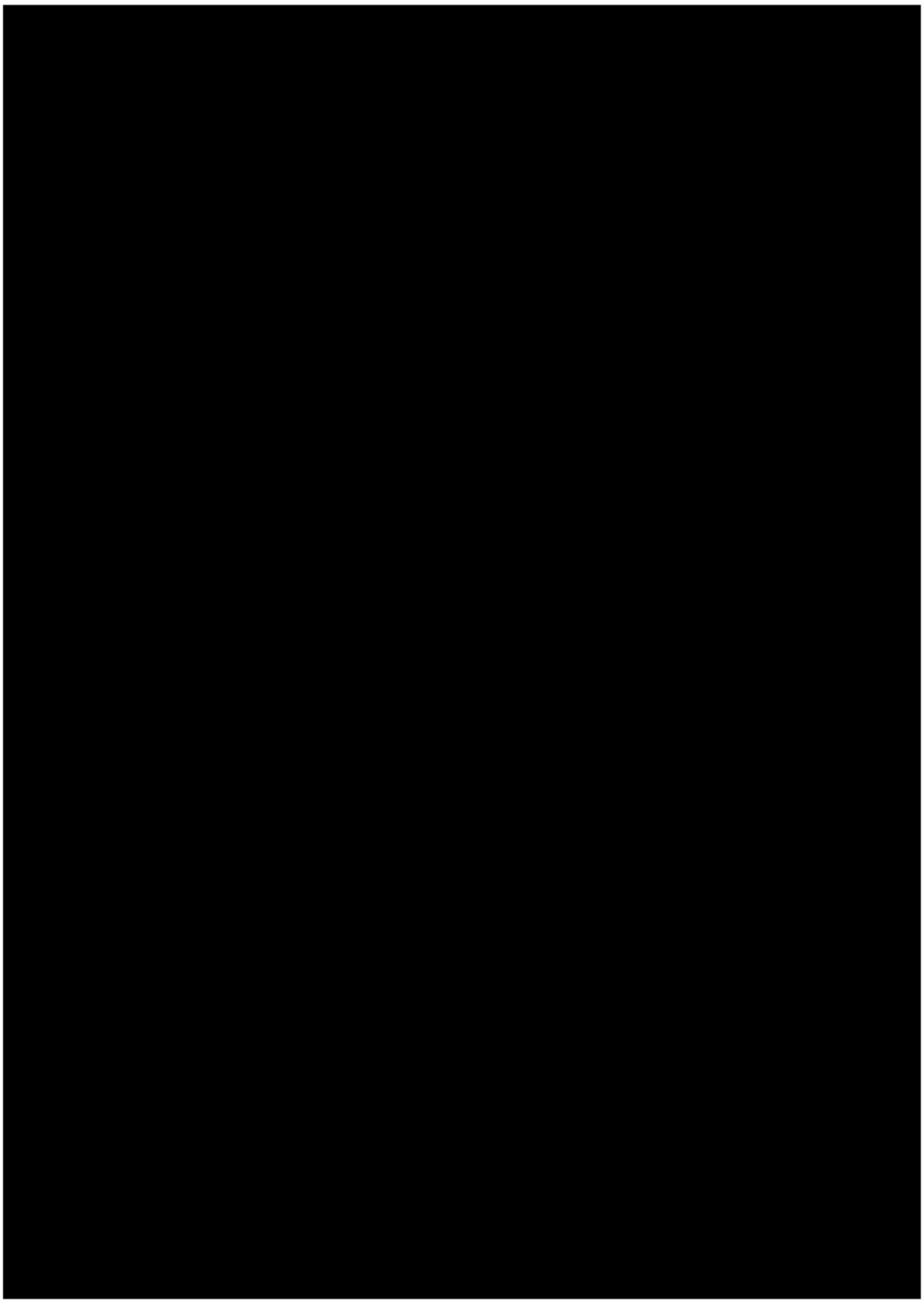

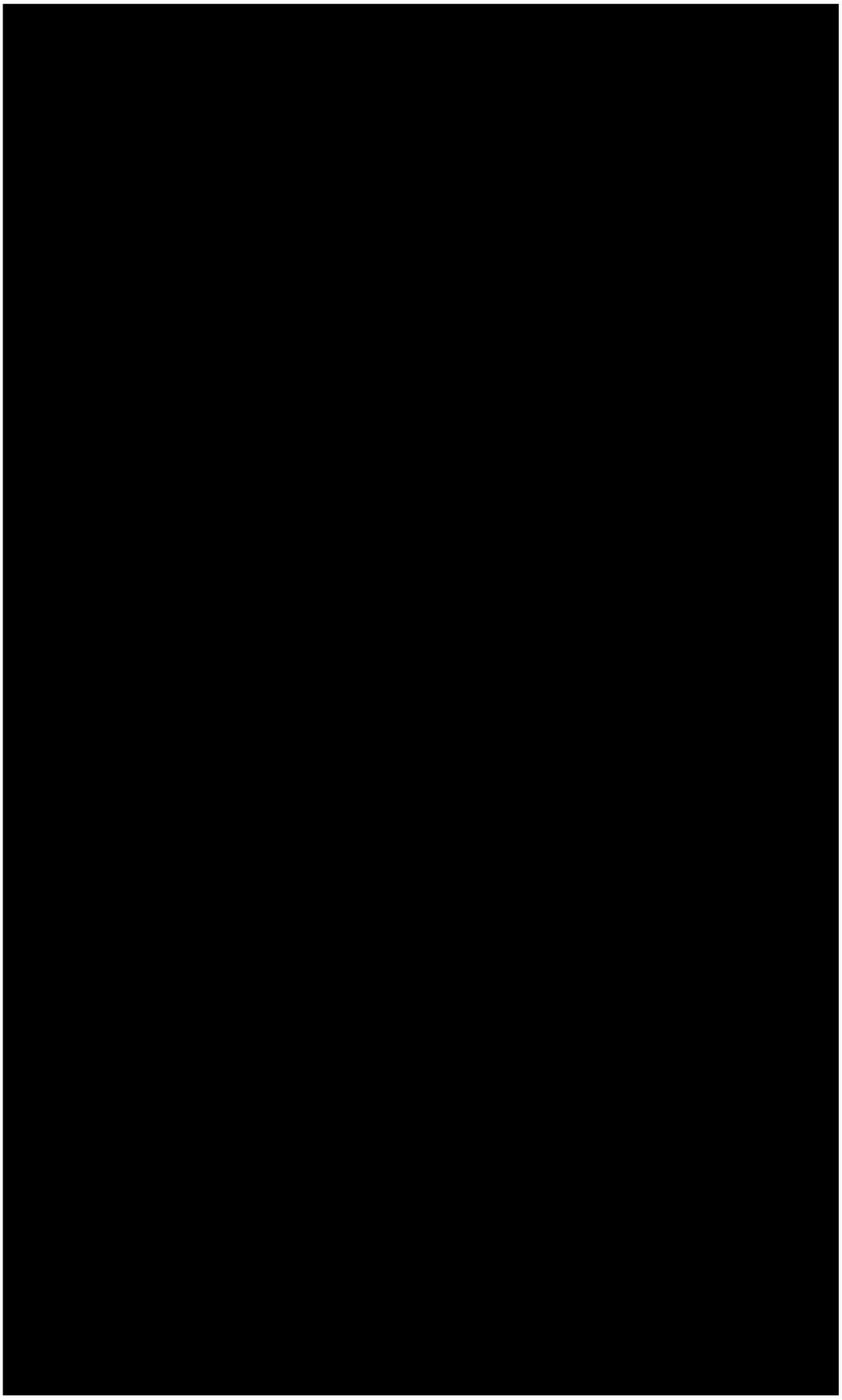

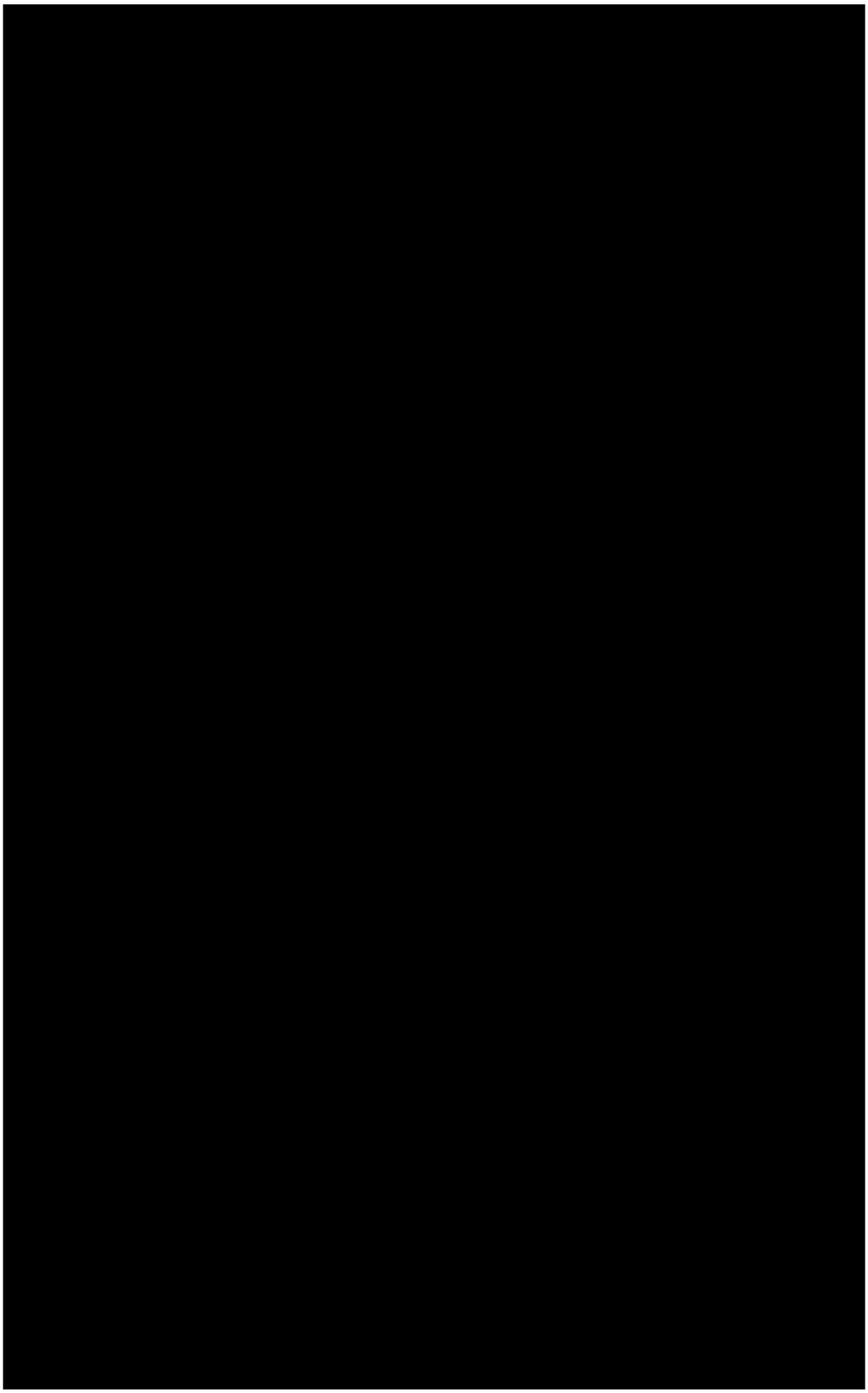

Attachment 7: Temporary Windbreaks

[redacted]

Attachment 8: Draining Equipment